## INDEX

# Index

## 1.1 INTRODUCTION

Quolus Construction Services is a labour contractor supplying labour and tradespeople to the construction Industry on a temporary basis on short term contracts. This situation does not reduce the requirement that Quolus Construction Services as an employer accept responsibility for the safety of all employees.

It is recognized and understood that employees will be required to work in an environment where they will in all likelihood be required to comply with the safety requirements of the contractor they are seconded to.

Accordingly, this program will outline as many of the situations they will meet as possible and will provide information as to how they can remain safe.

Always remember your basic rights:

i. The right to refuse unsafe work
ii. The right to know what you are working with
iii. The right to participate in the decision

If you have any safety concerns do not hesitate to call your Quolus manager.

## 1.2 ACTIVITY SPECIFIC PROCEDURES POLICY

Quolus Construction Services will monitor the effectiveness of the Health and Safety Program for the purpose of identifying concerns that have not been adequately addressed elsewhere in the program manual. When concerns are identified, consideration will be given to the activity specific requirements in this program manual to address them.

Workers are encouraged to support the progress of our “leading-edge” health and safety management system. Quolus Construction Services is always willing to consider employee suggestions for additional programs to improve the health and safety of our workforce.

The effectiveness of the health & safety program administered by Quolus Construction Services will be assessed on an annual basis and the program will be improved where necessary. See also Program Review in this section.

Quolus Construction Services’ activity specific program requirements include:

- Hazard assessments
- Confined space entry
- Excavations
- Fall protection
- Lockout
- MSI reduction
- PPE and clothing
- Working near powerlines

## 1.3 HEALTH AND SAFETY POLICY STATEMENT

It is the policy of this company to ensure a safe and healthy workplace for all its employees. Quolus will employ an effective OHS program that involves all its employees in the effort to eliminate workplace hazards. We all want to have a safe and healthy workplace. To ensure this, we need everyone's participation.

The management of Quolus Construction Services recognizes the right of workers to safe and healthy working conditions. Quolus is committed to promoting positive attitudes towards safety and health within the organization for all employees, contractors, and subcontractors. Management is responsible for assisting in the prevention of workplace incidents, injuries, and illnesses. Management will support safety program initiatives and will consider all employee suggestions for achieving a safer, healthier workplace. Quolus endeavors to work in a spirit of consultation with all relevant workplace parties to maintain an effective OHS program.

Supervisors/Foremen are accountable for ensuring that workers are properly instructed and that they comply with all safe work procedures, practices, and regulations to do their work safely. Supervisors/Foremen are responsible for the enforcement of company rules and the correction of all unsafe activities.

All employees are responsible for working safely, knowing, and following all rules, safe work procedures, practices, regulations and actively participate in making their work environment safe, healthy and productive. All employees are expected to correct and/or report all unsafe conditions and activities to their employer, supervisor, or safety representative. Employees are encouraged to work cooperatively toward the prevention of accidents and unsafe conditions. All Quolus Construction Services employees will be held accountable for their actions.

Every Supervisor must ensure the health and safety of all workers under the direct supervision of the supervisor and that they are made aware of all known or reasonably foreseeable health and safety hazards in the area where they work.

Every worker must take reasonable care to: protect the workers' health and safety and the health and safety of other persons who may be affected by the worker's acts or omissions at work, and use or wear protective equipment, devices and clothing as required by the WORKSAFE BC regulations; ensure that the workers ability to work without risk to his or her health or safety, or to the health or safety of any person, is not impaired by alcohol, drugs or other causes; cooperate with the joint health and safety committee or worker health and safety representative for the workplace.

President — January 1 2023 (Date)

Health & Safety Manager — January 1 2023 (Date)

## 1.4 SAFETY POLICY

Quolus Construction Services, as a company, are dedicated to providing and sustaining a safe and healthy working environment as is reasonably possible for all our employees. It is our policy to provide the highest standard of service to our clients without compromising the health and safety of our employees or the general public. This will be achieved through the implementation of a comprehensive health and safety program that is designed to meet all WorkSafeBC, Federal, Provincial and industry standards and Regulation. The cooperation and adherence to this health and safety program is not only expected, but it is also a condition of employment with Quolus Construction Services.

Management is committed to promoting positive attitudes towards health and safety within the organization and recognizes the right of workers to work in a safe and healthy environment. We are responsible and accountable for ensuring a safe work site and for ensuring that physical and health hazards are guarded against or eliminated. We also have the responsibility for developing safe work procedures conducive to a safe and healthy workplace. All workplace parties have responsibilities towards health and safety and adherence to safety requirements is mandatory.

Everyone is expected to correct or report unsafe conditions and activities immediately and to work cooperatively towards the prevention of unsafe actions, activities, and conditions.

Management is accountable for the review of all injuries, frequencies and other incidents and the assessment of the safety management system.

Our health and safety program has been designed with best intentions for all employees, visitors and customers in mind. The health and safety program will be reviewed at least annually to ensure we continue to provide the most up to date safety methods. We, at Quolus Construction Services, feel that accident prevention leads to efficient production, therefore complete cooperation in all its components has been deemed mandatory.

### 1.4.1 Management Responsibilities

Management is responsible and accountable for:

- Ensuring the provision of a safe work environment is reasonably possible for all workers by following and enforcing the WorkSafeBC Safety Regulation.
- Supervisors have the appropriate training and resources to be able to execute their work and provide them with the most effective safety management systems.
- Providing a means of identifying workplace hazards, informing all workers who may be exposed to them, and where feasible eliminating the hazard.
- Supplying and training workers with general and site-specific rules.
- Maintaining safety related records and statistics for distribution to WorkSafeBC or the Joint Health and Safety Committee upon request.
- Discussing Health and Safety issues, concerns, accident trends, and developing a plan for corrective action at regular management meetings.
- Ensuring accidents are investigated and remedial action taken as quickly as possible.
- Participating in a Health and Safety Committee as necessary.
- Ensuring bi-weekly (or as appropriate) toolbox meetings are held.

- Providing for regular inspections of work premises, work practices and equipment with the aim of identifying potentially hazardous acts/conditions, education/training needs and rectifying them.
- Providing appropriate personal protective equipment in accordance with WorkSafeBC Regulation.
- Developing and maintaining emergency procedures, and the training of workers in the performance of these procedures.
- Developing and implementing disciplinary procedures for violations of site safety rules.
- Ensuring first aid facilities, first aid attendants and equipment as required by the current Occupational First Aid Regulation are present on all sites.
- Obtaining and maintaining an active library of MSDS's for WHMIS controlled products.
- Submitting all forms required by WorkSafeBC, i.e., Form 52E40-Employer Incident Investigation Report.
- Setting a good example, especially when visiting a job site by wearing appropriate Personal Protection Equipment (PPE).

### 1.4.2 Supervisory Responsibilities

Supervisory Personnel are responsible and accountable for:

- Familiarizing themselves with promoting and implementing the Health and Safety policies and procedures as well as applicable WorkSafeBC Regulation.
- Perform new employee induction/orientation as well as on the job training and supervision until the new employee displays competency.
- Ensuring that copies of WorkSafeBC Regulation and Quolus Construction Services' Safety Manual are readily accessible to all employees.
- Ensuring that workers are aware of their responsibilities.
- Ensuring first aid attendants and are available.
- Ensuring all workers are supplied with, and trained in the proper use of, Personal Protective Equipment (PPE).
- Ensuring workers are trained and capable of performing their assigned tasks safely without endangering themselves or others.
- Ensuring good housekeeping is maintained on the site at all times.
- Ensuring workers do not enter any areas deemed to be restricted or off limits.
- Where applicable, inspect new work areas prior to commencement of work.
- Authorizing and implementing immediate corrective action to correct conditions determined to be below acceptable safety standards.
- Ensuring accident investigations are carried out by the appropriate personnel.
- Ensuring that all injuries and other incidents are reported to Management for review.
- Reviewing safety records and taking appropriate actions to improve site safety.
- Enforcing disciplinary actions.
- Cooperating and consulting with the Safety Committee.
- Providing documentation to management of all Toolbox meetings using the provided forms and submitting them regularly.
- Setting a good example for all workers to follow.

### 1.4.3 Worker Responsibilities

The Worker is responsible and accountable for:

- Knowing and complying with all Health and Safety Rules, Site Specific rules and Regulation and the applicable WorkSafeBC Regulation.
- Reporting and correcting unsafe acts, conditions, or equipment.
- Operating equipment only when all appropriate guarding is in place and only after receiving appropriate authorization.
- Reporting all work-related injury/illness.
- Reporting to work free from influence of alcohol or drugs.
- Informing their supervisor if they have a physical or mental impairment that may affect their ability to work safely (e.g., back problems, epilepsy) and not working where their impairment may create an undue risk to themselves or anyone else.
- Informing the First Aid Attendant of any medication they are taking that may impair their abilities.
- Conducting themselves in a responsible manner – no horse play, rough housing, or practical joking.
- Maintaining work areas to be clean of debris.
- Wearing and maintaining appropriate Personal Protective Equipment (PPE).
- Reporting to supervisor or employer of the absence of, or any defect in, any PPE, device or clothing or any hazard that is likely to endanger themselves or any other person.
- Understanding their right to refuse unsafe work and refusing to perform any work which may put themselves or others in a hazardous situation.
- Reporting to the supervisor or employer any contravention of WorkSafeBC Regulation or Quolus Construction Services rules, or an applicable order they are aware of.
- Taking reasonable care to protect their health and safety and the health and safety of other persons.
- Handling controlled substances in accordance with WHMIS and/or TDG Regulation.
- Taking part in all toolbox meetings.
- Setting a good example.

### 1.4.4 Visitor Responsibilities

All visitors to Worksites are accountable and responsible for adhering to the following:

- Visitor vehicles must be left outside the security gate unless prior authorization has been approved.
- No drugs or alcohol are allowed on site.
- All visitors must wear a hard hat, high visibility vest, safety footwear and safety glasses.
- All visitors are to be escorted on site and be in line with their escort.
- All signs and site Regulation are to be strictly adhered to.

## 1.5 DRUG AND ALCOHOL POLICY

Quolus has a responsibility to provide a safe and productive work environment for all employees. Drug and alcohol abuse in the workplace can result in accidents, injuries, lower productivity, loss profits, increased health care costs and legal difficulties for employees and employers. The use, possession or sale of illegal drugs and alcohol in the workplace poses serious risks to the health,

safety and well-being of our employees and others. Quolus Senior Management has created and endorses this policy in order to provide a safe workplace for all employees and to ensure the safety of those who may be affected by the conduct of our employees.

All employees are prohibited from manufacturing, cultivating, distributing, dispensing, possessing, or using illegal, mind-altering, or intoxicating substances while on Quolus premises (including parking areas and other company grounds), or while performing work duties away from Quolus premises. In addition to the obligations set out in this policy, all employees must comply with any additional site-specific standards and policies.

Employees must report to work Fit for Duty and shall not report to work, or continue to work, impaired in any way by drugs or alcohol. Employees shall not report to work bearing the after effect of use of illicit drugs or alcohol, or intentional misuse of prescribed drugs. Quolus employees will comply with job site protocols which could include performing safety-sensitive job tasks and/or job tasks at a site designated as requiring site access testing will be tested for the use of drugs and/or alcohol. Quolus is entitled to reasonable efforts to ensure workers have not been previously removed or prohibited from controlled premises for abuse of drug or alcohol or violation of an employer drug and alcohol policy.

Employees may request help if needed to treat an addiction. Workers must notify their supervisor if they are taking prescription medication that may impact their ability to perform their job safely. Over-the-counter medications such as allergy or cold and flu medications may impair a worker's ability and should also be reported.

## 1.6 WORKPLACE BULLYING AND HARASSMENT POLICY

Bullying and harassment is not acceptable or tolerated in this workplace. All workers will be treated in a fair and respectful manner.

### 1.6.1 Harassment and Discrimination in the Workplace Policy

Quolus is committed to fostering a harassment-free workplace where all employees are treated with respect and dignity.

Quolus will make every reasonable effort to ensure that no employee is subjected to discrimination and harassment in the workplace. In particular, it is Quolus' responsibility to ensure that its policies, practices, activities, work arrangements and facilities do not have unlawful discriminatory effects on those individuals protected under the Canadian Human Rights Act. This act protects those employees who face discrimination based on their race, nationality or ethnicity, color, religion, age, sex, sexual orientation, disability, marital status, or pardoned conviction.

### 1.6.2 Harassment, Discrimination and Violence Prevention Program

Quolus management recognizes that all workers have the right to work in a violence and harassment free workplace and therefore will make every reasonable effort to identify all potential sources of violence in order to eliminate and/or minimize these risks. Hence, Quolus has implemented the Workplace Violence and Workplace Harassment program.

All incidents and alleged incidents of workplace harassment or workplace violence, no matter of what magnitude or whom it may involve, must be treated seriously, and handled in a manner which includes immediate reporting to the Supervisor/Manager or Human Resources and, when required,

the police. Whatever the cause or whoever the perpetrator is, workplace harassment and workplace violence is not to be accepted or tolerated.

Treating customers and fellow employees professionally and with respect is the only way we know to conduct business and achieve success

### 1.6.3 Reporting Workplace Harassment or Workplace Violence

**Immediate Assistance**
For immediate assistance: (immediate danger; weapons involvement; physical injury related to violent behavior: and obvious signs of abusive threatening behavior), please contact emergency services immediately or locate the nearest first aid attendant to assist depending on the severity of the matter.

Process of Reporting an Incident
Workers can report incidents or complaints of workplace harassment verbally via phone or in-person, or via email.
The report of the incident should include the following information:

- Name(s) of the worker who has allegedly experienced workplace harassment and contact information
- Name of the alleged harasser(s), position, and contact information (if known)
- Names of the witness(es) (if any) or other person(s) with relevant information to provide about the incident (if any) and contact information (if known)
- Details of what happened including date(s), frequency, and location(s) of the alleged incident(s)
- Any supporting documents the worker who complains of harassment may have in his/her possessions that are relevant to the complaint
- List any documents a witness, another person or the alleged harasser may have in their possession that are relevant to the complaint

Who to Report Workplace Harassment/Workplace Violence To
An incident or a complaint should be reported as soon as possible after experiencing or witnessing an incident. This allows the incident to be investigated in a timely manner.

Report an incident or complaint to Human Resources at (604) 943-1434 ex6 or the OHS Manager at (604) 943-1434 ex4. If the person engaging in workplace harassment belongs to senior management or the CEO, Human Resources will direct the complaint to an external investigator.

All incidents or complaints of workplace harassment shall be kept confidential except to the extent necessary to protect workers, to investigate the complaint or incident, to take corrective action or otherwise as required by law.

## 1.7 INVESTIGATION

### 1.7.1 Commitment to Investigate

Quolus will ensure that an investigation appropriate to the circumstances is conducted when the employer, Human Resources, a Supervisor or Manager becomes aware of an incident or receives a complaint of workplace harassment or workplace violence.

### 1.7.2 Investigation Process

- The person conducting the investigation whether internal or external to the workplace will, at minimum, complete the following:
- The investigator will ensure the investigation is kept confidential and identifying information is not disclosed unless necessary to conduct the investigation. The investigator should remind the parties of this confidentiality obligation at the beginning of the investigation
- The investigator will thoroughly interview the worker who allegedly experienced the workplace harassment and the alleged harasser(s) if the alleged harasser is a worker of the employer. If the alleged harasser is not a worker, the investigator should make reasonable efforts to interview the alleged harasser
- The alleged harasser(s) will be given the opportunity to respond to the specific allegations raised by the worker. In some circumstances, the worker who allegedly experienced the workplace harassment should be given a reasonable opportunity to reply
- The investigator will interview any relevant witnesses employed by the employer who may be identified by either the worker who allegedly experienced the workplace harassment, the alleged harasser(s) or as necessary to conduct a thorough investigation. The investigator will make reasonable efforts to interview any relevant witnesses who are not employed by the employer if there are any identified
- The investigator will collect and review any relevant documents
- The investigator will take appropriate notes and statements during interviews with the worker who allegedly experienced workplace harassment, the alleged harasser, and any witnesses
- The investigator will prepare a written report summarizing the steps taken during the investigation, the complaint, the allegations of the worker who allegedly experienced the workplace harassment, the response from the alleged harasser, the evidence of any witnesses, and the evidence gathered. The report will set out findings of fact and come to a conclusion about whether workplace harassment was found or not

### 1.7.3 Results of the Investigation

Within a reasonable period of the investigation being completed, appropriate corrective action will be taken.

### 1.7.4 Confidentiality

Information about complaints and incidents shall be kept confidential to the extent possible. Information obtained about an incident or complaint of workplace harassment, including identifying information about any individuals involved, will not be disclosed unless disclosure is necessary to protect workers, to investigate the complaint or incident, to take corrective action or otherwise as required by law.

While the investigation is on-going, the worker who has allegedly experienced harassment, the alleged harasser(s) and any witnesses should not to discuss the incident or complaint or the investigation with each other or other workers or witnesses unless necessary to obtain advice

about their rights. The investigator may discuss the investigation and disclose the incident or complaint-related information only as necessary to conduct the investigation.

If necessary, the complainant or the respondent may be moved to a different location within Quolus or provided with alternative reporting relationships. The decision will be made on a case-by-case basis and will reflect the principle that the complainant will not be penalized for making a complaint.

All records of the investigation will be kept confidential.

### 1.7.5 Control Methods

Where practical, violence exposure hazards shall be removed. Where violence exposure hazards cannot be removed controls shall be used to reduce the probability of a violent incident occurring. These risks will be controlled by 2 main methods:

- Engineered Controls – include changes to workplace design or the physical environment or modifications to equipment or tools, and security systems, etc. Engineering controls reduce the risk of violence occurring by creating barriers or otherwise deterring acts of violence
- Administrative Controls – include enacting standard written safe work procedures that minimize workplace violence and harassment including policies on Working Alone, appropriate work schedules, guidelines dealing with threatening workplace behavior, worker training and access to police and emergency services

## 1.8 HARASSMENT POLICY

Quolus Construction Services is committed to providing a workplace free of discrimination where the rights and interests of all individuals are respected. Quolus Construction Services actively supports and practices fair, equitable and reasonable treatment of all its employees, subcontractors, agents, and affiliates. All individuals are assured of the human rights accorded by federal and provincial legislation and an objective process for resolving concerns.

Harassment, either personal or sexual, is not acceptable in the workplace and will not be tolerated. However, discipline for poor work performance is not considered harassment.
“Harassment” means any incident or series of incidents involving unwelcome comments, displays or actions on the bases of race, creed, religion, gender, sexual orientation, marital status, family status, mental or physical disability, conviction of an unrelated to work offense, physical size or weight, age, nationality, ancestry, or place of origin. These are referred to as “prohibited grounds”

A prohibited ground is when an objectionable conduct, comment or display is:

- Directed at a worker
- Made on the basis of any prohibited grounds
- A threat to the health or safety of a worker
- Reasonably expected to cause insecurity, discomfort, offence or humiliation to another person or group.
- Made either implicitly or explicitly a condition of employment
- Used as a basis for any employment decision including but not limited to matters of promotion, raise in salary, job security or benefits affecting the worker.
- Has the purpose or effect of interfering with a person’s work performance or creating an intimidating, offensive or poisoned work environment.

Every worker is entitled to a working environment that is free of harassment.

* Note that some actions may not be considered harassment if not repeated.

### 1.8.1 No Retribution

All employees have a right to make a complaint pertaining to workplace harassment or workplace violence without retribution or threats of retribution.

Any employee, who engages in a reprisal or threatens a reprisal against a person who makes a complaint of workplace harassment or workplace violence or who takes part in a workplace harassment or workplace violence investigation, will be subject to disciplinary or rehabilitative action up to and including termination.

Reprisals could include:

- Unwarranted criticism of an employee's job performance
- The arbitrary reassignment of an employee to a different department, job or set of responsibilities
- The arbitrary failure to extend to an employee opportunity available to others
- The refusal to work with an employee who complains about workplace violence
- The breach of the confidentiality requirements of this Policy

## 1.9 FIT FOR DUTY

Quolus workers must arrive on site on time and in an appropriate condition to do their job in a safe and effective manner. Supervisors will ensure that workers are educated on the company's Fit for Duty policies and procedures.
Quolus supervisors will ensure that all workers have the necessary education, experience, and training to perform their job tasks to prevent loss and risk. Workers must be physically capable of performing their job tasks. A Physical Demands Analysis (PDA) will be prepared for each job duty to ensure workers are placed accordingly.

No person will enter or remain at the job site while under the influence of drugs and/or alcohol. Workers must notify their supervisor if they are taking prescription medication that may impact their ability to perform their job safely. Over-the-counter medications such as allergy or cold and flu medications may impair a worker's ability and should also be reported. Additional details are referenced in the Company drug and alcohol policy.

Being fit for duty also requires that workers behave appropriately while on site and not engage in risky, careless, or dangerous behaviors. Workers will be monitored by supervisors for unsafe behaviors. Workers exhibiting unsafe behaviors shall be removed from the work site.
If a worker is determined to be unfit for duty, supervisors must provide reasonable assistance to the worker. This may include, but is not limited to, transferring the worker to another role, providing a leave of absence, or disciplinary action.

## 1.10 WORKPLACE VIOLENCE POLICY

Quolus is committed to providing a work environment in which individuals are free from harm. Quolus will ensure that all employees and supervisors have the appropriate information, instruction, training, and supervision necessary to prevent and protect themselves from violence in the workplace.
All employees must respect the dignity and rights of co-workers and non-company employees with whom they come into contact while in the course of their duties; advising management if they have been subject to violence or abuse or have witnessed violence against others in the workplace; participating in any educational programs in relation to workplace violence; and cooperating with investigations.

Quolus will make every reasonable effort to identify all potential sources of violence in order to eliminate and/or minimize these risks. Quolus refuses to tolerate any type of workplace violence, within the workplace or at work related activities.

## 1.11 NON-DISCRIMINATION POLICY

Quolus Construction Services provides equal opportunities to people without regard to race, color, gender, nationality, religion, ethnic affiliation, or another distinguishing characteristic.

The Workers Compensation Act of BC includes requirements for the prohibition of discriminatory actions against workers in regard to health and safety issues. Quolus Construction Services supports this initiative and will require compliance from all staff and employees.

To better define and understand discriminatory actions, the following excerpt from Part 3, Division 6 of the WorkSafeBC Act has been provided:

***Division 6 – Prohibition against Discriminatory Action***

*Actions that are considered discriminatory:*

*150 (1) for the purposes of this Division, "discriminatory action" includes any act or omission by an employer or union, or a person acting on behalf of an employer or union that adversely affects a worker with respect to any term or condition of employment, or of membership in a union.*

*(2) Without restricting subsection (1), discriminatory action includes:*

- *a) Suspension, lay-off or dismissal*
- *b) Demotion or loss of opportunity for promotion*
- *c) Transfer of duties, change of location of workplace, reduction in wages or change in working hours*
- *d) Coercion or intimidation*
- *e) Imposition of any discipline, reprimand, or other penalty, and*
- *f) The discontinuation or elimination of the job.*

***Discrimination against workers prohibited***

*151 An employer or union, or a person acting on behalf of an employer or union, must not take or threaten discriminatory action against a worker*

a) *For exercising any right or carrying out any duty in accordance with this Part, the Regulation, or an applicable order*

b) *For the reason that the worker has testified or is about to testify in any matter, inquiry or proceeding under this Act or the Coroner's Act on an issue related to occupational health and safety or occupational environment, or*

c) *For the reason that the worker has given any information regarding conditions affecting the occupational health or safety or occupational environment of that worker or any other worker to:*

   *I. An employer or person acting on behalf of an employer,*

   *II. Another worker or a union representing a worker, or*

   *III. An officer or any other person concerned with the administration of this Part.*

## 1.12 RIGHT TO REFUSE UNSAFE WORK

Regulation 3.24 of the WorkSafeBC Occupational Health and Safety Regulation makes an exception to the "Work Now, Grieve Later" principle by permitting workers to refuse work which they have 'reasonable' cause to believe is unsafe. It is in place to protect workers against unfair dismissal for refusing to carry out work that is felt by the worker to be unsafe. The policy states that no worker must carry out, or cause to be carried out, any work process, or operate or cause to be operated any tool, appliance or equipment that would create an undue hazard to the worker's health or safety or to the health or safety of any other worker. (Undue hazard means a danger that is not normal for that occupation, or a danger under which a person engaged in that operation would not normally carry out.)

The following guidelines will help you to resolve refusal to work issues in a manner that is in accordance with the above regulation:

Workers will not be disciplined for exercising this right.

Procedure for refusing unsafe work:

- The worker immediately reports the problem to the appropriate Supervisory Personnel.
- The Supervisory Personnel must investigate and either correct the problem or inform the worker that the report is invalid.

If a worker still feels the work is unsafe, the Supervisory Personnel must. Re-investigate in the presence of the worker or their selected alternative.
If practical, assign the worker to an alternate duty until the matter is resolved. Assign a different worker to perform the job; this worker must be informed that the job has previously been refused, and the reason(s) for the refusal.
Notify the area superintendent of the situation.

**If the matter is still not resolved,** both the supervisor and the Quolus Construction Services' safety representative must immediately bring in a WorkSafeBC Officer to resolve the situation, no matter what time of day or night. The WorkSafeBC telephone number is 604-273-7711, 24 hours. If possible, have the Safety Coordinator contact WorkSafeBC to arrange this.

This procedure should be strictly adhered to for each refusal, even if the same or another employee has raised a similar issue in the past. This procedure should also be followed for each, and every safety issue given by the employee as reasons for the refusal.

If one or more employees refuse to carry out their assigned duties for reasons of safety, temporary assignment to alternate work (if practical) at no loss of pay is recommended until the safety issue is resolved. If temporary assignment to alternate work is not practical due to a concerted action by a large number of employees not directly involved in the safety matter, the supervisor should:

Notify the area Superintendent and the safety coordinator;
Either:

- Show the employees that a hazardous or unsafe condition does not exist
- Acknowledge the existence of the hazardous or unsafe condition and inform them of the action that will be taken to remedy the problem.

Inform the employees that the matter is being handled precisely under the terms of WorkSafeBC Act Regulation 3.24, and that any employees not directly involved in the safety concern are not entitled to refuse work under this regulation

Instruct the unaffected employees to return to work

Have the Project Manager notify Quolus Construction Services of the refusal to work, the company's intention to follow WorkSafeBC Act Regulation 3.24 and the obligations of Quolus Construction Services personnel on site.

If all efforts fail, employees should be notified that they are no longer being paid and will not be paid until they resume work. No reference to corrective action should be made at this time.

Corrective action is a last resort in safety disputes. It should be considered only when the employee does not have "reasonable cause" to refuse work and has done so only in an act of willful disobedience rather than a result of a safety concern. It is not sufficient that the worker merely have a genuine and honest belief that there is an undue risk.

Corrective action, if considered in terms of Regulation 3.24, must only be considered after a WorkSafeBC Officer has inspected the site and declared it safe and management has clearly determined that the workers were engaged in an act of willful disobedience

## 1.13 DUE DILIGENCE CONSIDERATIONS

Due diligence requires taking 'all reasonable steps' to protect workers from harm. 'All reasonable steps' is based on the level of judgment and care that a person would reasonably be expected to do under the circumstances. An organization that takes all reasonable steps to protect workers from harm and actively manages health and safety is being duly diligent.

Examples of due diligence include the following:

- Identify all workplace hazards.
- Implement all necessary preventative measures.
- Communicate the hazards, preventative measures, and related information to affected workers.

The basic elements of due diligence are education, training, and supervision. Examples of supervision include the following:

- Identify and correct hazards.
- Ensure and verify worker training and education.
- Direct and instruct workers.
- Observe workers directly. Correct unsafe or unwanted behaviour.
- Respond to worker questions and concerns.

If a serious accident does unfortunately occur at a Quolus Construction Services site, it will be necessary to be able to prove to WorkSafeBC that our company has done everything reasonable to prevent the accident. This is the due diligence defense, and it consists of proof that management

- Have communicated safety and health responsibilities and objectives
- Put systems in place to identify and control hazards
- Supervised and trained employees adequately
- Ensured trainers are qualified to train
- Corrected unsafe conditions and acts (including using disciplinary actions when warranted)
- Implemented a viable safety program that is supported by the management and employees.

The burden of proof with regard to due diligence is with Quolus Construction Services. Written records are the only way to prove that events have taken place; therefore, supervisors (and management) must ensure employees are competent and enforce safety standards.

Supervisors and management need to work together to ensure the following is recorded and the records can be made accessible to WorkSafeBC upon request:

- Orientation and training records
- Disciplinary actions
- Inspection reports
- Hazard correction, e.g., Supervisor's Daily Journal
- Incident investigation reports.

**Remember, if it is not written down it did not happen!**

## Index

## 2.1 Hazard Control & Monitoring of Hazardous Conditions

### 2.1.1 Hazard Assessment Policy

Quolus Construction Services will utilize a Job Hazard Analysis Program or Field Level Hazard Assessment (FLHA) to ensure work activities are completed in a safe manner depending on the job site requirements. All potential health and safety hazards will be identified and controlled prior to the commencement of work (Pre-Job) through a Job Hazard Assessment/Analysis. Supervisors will complete a detailed Job Hazard Analysis, with the assistance of workers, of all worksites, jobs, and tasks prior to the commencement of work and regularly throughout the duration of the projects. All corrective actions shall be implemented in a timely manner, recorded, and kept on file. Job Hazard Analysis will be communicated to all employees and contractors at the Toolbox Talk Meetings and posted by the job sites. All workers must review the Job Hazard Analysis (JHA) or Field Level Hazard Assessment (FLHA) and sign the review sheet before commencing work at the sites request.

### 2.1.2 Job Hazard Analysis or Field Level Hazard Assessment (FLHA)

A Job Hazard Analysis is required prior to the start of any new project, task, or job. Its purpose is to anticipate, as much as is reasonable, any hazards or hazardous conditions that are inherent or could arise out of a new project, task, or job. Once the hazards have been identified, the controls for eliminating or minimizing these hazards can then be determined and implemented. Job Hazard Analysis shall be undertaken when major modifications are made to a project, task, or job.
A preliminary Job Hazard Analysis checklist is designed to anticipate any hazards that may be found in the workplace. A modified version of this form, or one designed to reflect the nature of the hazards found in other types of working environments may be used.

Quolus Construction Services supports the implementation of regular and comprehensive inspections for identification and correction of health and safety deficiencies. As required by the Worker's Compensation Act, inspections will consider work areas under our control as well as company buildings, tolls, equipment, machinery, work methods and practices.

Work Site Job Hazard Analysis and safety inspections are key activities in the prevention of accidents.

Their purposes are to:
- Identify existing and potential hazards
- Increase awareness leading to the prevention of workplace accidents and illnesses
- Ensure compliance with standards and regulations.

Worker's Compensation requires that hazards to the safety and health of workers are identified and brought to management's attention. It is the workplace management's responsibility to ensure that the identified hazards are eliminated and, where this is not practicable, to ensure the hazards are controlled and that workers are protected from the hazards.

To meet this requirement, Quolus Construction Services and contractors will provide all necessary resources to ensure that hazard assessments and workplace inspections are effective.
JHA's must be repeated at practicable intervals to prevent the development of unsafe and unhealthy working conditions for example:
- when a new work process is introduced.
- when a work process or operation changes; and/or
- after a worksite changes or is altered.

- some job sites require daily or as required.

All Job Hazard Analysis's and inspections shall be documented to demonstrate due diligence. If no documentation can be presented to show JHA was conducted this could result in Progressive Disciplinary action being taken.

### 2.1.3 Procedure

After one or more hazards have been identified, it may or may not be useful to estimate the level of risk associated with the hazard. This additional step may not be necessary when the hazards identified are all going to be corrected in the immediate future or otherwise dealt with before the hazard could result in an incident or near miss. However, where several hazards have been identified and the resources available to correct the hazards are limited, it is useful to estimate the level of risk for each hazard in order to determine the priority for correcting the hazards.

Prioritizing hazards helps determine what action is required and how quickly to respond to the hazard. Some hazards require immediate action while others may be handled through recommendations, training, or enforcement.

Another possible reason for estimating the risk associated with a hazard would be when one or more members of the workplace begin to (over)react because of the presence of a hazard, expressing a level of fear or agitation which is disproportionate to actual risk of harm. In this situation, a careful and reasoned evaluation of the risk may help to restore a more rational outlook and attitude about the hazard.

### 2.1.4 Hazard Reduction and Control

The types of hazards that may be present on job Sites are:

**PHYSICAL HAZARDS**

- Crushing forces (e.g., getting caught in machinery or equipment)
- Cuts (e.g., getting cut by saws, grinders etc.)
- Falls from heights (e.g., falling from ladders, into excavations etc.)
- Excessive noise (e.g., working near equipment and machinery)
- Impact forces (e.g., falling heavy objects)
- Heat stress (e.g., exposure to UV radiation, humid, hot weather)
- Cold stress (e.g., working in near zero, wet, cold and/or windy weather)
- Material handling (e.g., excessive bending or unassisted lifting of heavy objects)
- Airborne particulate (e.g., dusts, particles etc. that can cause eye injury)

**CHEMICAL HAZARDS**

- Corrosives (Acids and bases that can burn skin)
- Oxidizers (compressed oxygen that can add oxygen to a fire)
- Skin irritants (solvents, paints etc. that can dry out the skin)
- Lung irritants (Irritant dusts, welding fumes, mists etc.)
- Toxic materials (poisons that cause illness or death, silica)
- Reactive materials (chemicals that explode if shaken or dropped or give off

dangerous products when mixed with other materials).

**BIOLOGICAL HAZARDS**

- Needles and condoms (found occasionally on site, may carry infectious diseases requiring special handling procedures.)
- Body Fluids (when treating injured workers who may have an infectious disease, follow universal precautions).

### 2.1.5 Hazard Controls

The first consideration in hazard control is to determine if the hazards can be controlled or eliminated at their source (where the problem is created) through applied engineering.

Where this is not practical, controls may be placed between the source and the worker. The closer the control is to the source of the hazard, the better. Where this is not possible, hazards must be controlled at the level of the worker. For example, workers can be required to use a specific work procedure to prevent harm.

One type of hazard control may be completely effective. A combination of several different types of hazard controls may also work well. Whatever method is used, the Joint Health and Safety Committee should examine all hazards to find the root cause. It might be better to redesign a work process than simply improve a work procedure. For example, it is better to replace, redesign or isolate a noisy machine, than issue hearing protection to workers.

Personal protective equipment (PPE) and normal types of clothing are often used as the main method for protecting workers from hazards. PPE does an excellent job in protecting personnel and reducing injuries but, getting rid of the hazard, or controlling it, is an even better way to protect personnel.

In every instance where it is reasonably possible, Quolus Construction Services employees and subcontractors will try to eliminate hazards to reduce the need for the use of PPE. The priority of approach that will be used for hazard control is as follows:

When implementing control measures, the hierarchy is as follows:

**1) Engineering Controls**

Engineering Controls provide the highest degree of control because they eliminate or control the hazards at their source. They include:

**Elimination** – Getting rid of the hazardous job, tool, process, machine, or substance. Examples include:

- Using material handling equipment rather than having workers lift, lower, carry, etc. materials manually.
- Move an activity, to eliminate the need to work from heights.

**Substitution** – If elimination is not practical, substitute or replace one process with another. Examples include:

- Substituting a hazardous substance with a non/less hazardous substance.
- Selecting tools, equipment and machinery that require less maintenance.

**Redesign** – Redesign work site, workstations, work processes and jobs. Examples include:

- Installing guardrails on elevations.
- Providing non-slip working surfaces.

**Isolation** – Containment or enclosure. Examples include:

- Sound reducing enclosures for noise.
  - Negative pressure fume hoods in laboratory settings.

**Barriers** – Block the hazards. Examples include:

- Guards on machines.
- Enclosures and covers.

**2) Administrative Controls**

Administrative Controls change or alter the way the work is being conducted. This includes changes to Safe Job Procedures, Safe Work Practices, policies, etc. or providing training. Administrative Controls are not considered as effective as Engineering Controls but are preferred to PPE.

**3) Personal Protective Equipment (PPE)**

Personal Protective Equipment (PPE) is considered the last line of defense against hazards. Examples of PPE include respirators and fall protecting equipment. PPE is less effective than engineering and administrative controls.

It may be necessary to develop other written procedures to help ensure that all work is performed in a safe and efficient manner. Procedures may be needed for tasks that are deemed to have a significant inherent risk or are sufficiently complicated that hazards may be encountered if the task is performed incorrectly.

Written procedures will enable Quolus Construction Services to:

- Identify and communicate hazard information.
- Organize work processes and tasks in an orderly and efficient manner.
- Communicate task procedures during training in a clear, efficient, and effective manner.
- Establish the correct methods for conducting tasks and work processes.
- Comply with WorkSafeBC regulatory requirements.

### 2.1.6 Assessment Process

Workers are informed of hazards on each site at a site orientation.

Quolus Construction Services has developed a Hazard Assessment form to review with our workers on a job site once they have commenced work. These forms are returned to head office for filing.

Risk evaluation, or risk analysis, involves a careful prediction of the consequences of an accident caused by the hazard. The level of risk associated with a hazard is estimated by considering a combination of two factors: (1) the likelihood or probability of the hazard causing an accident and, (2) the severity of the consequences if it did happen, in terms of harm to people and/or damage to property. This may be calculated by the following formula:

**Hazard Probability Category**

Ideally, probability estimates can be based on frequencies or actual past occurrences. If that data is not available, the following definitions may be used:

| Category | Term | Definition |
|---|---|---|
| **1** | Almost Impossible | Very unlikely to occur during task |
| **2** | Conceivable | Not likely to occur during task |
| **3** | Possible | Occurs sometimes during task |
| **4** | Has Happened | Likely to occur several times during task |
| **5** | Almost Certain | Likely to occur many times during task |

**Hazard Severity Category**

A severity estimate is based on the potential destructive consequences. The following definitions may be used.

| Category | Term | Definition |
|---|---|---|
| **1** | First Aid | Potential first aid injuries onsite, very short term, less than 1 day business interruption |
| **2** | Medical Aid | probably would not affect personal safety or health and thus, less than a lost workday, but nevertheless is in violation of specific criteria |
| **3** | Modified Work | may cause minor injury, or illness, or minor property damage |
| **4** | Lost Time | may cause serious injury, severe occupational illness resulting in lost workdays or major property damage |
| **5** | Fatality | may cause death or loss of a facility |

**Risk = Probability x Severity**

## 2.1.7 Risk Ranking Table

Risk levels will be assigned during the hazard assessment process. Hazards are assessed as High, Medium, or Low.

| Risk Category | | Definitions |
|---|---|---|
| **A** | Extreme | STOP all work, contact immediate Supervisor. A safe job procedure must be in place prior to the commencement of the work. |
| **B** | High | Immediate risk reduction controls required. STOP and THINK and apply standards, Safe Operating Practice, Job Hazard Assessments and Field Level Risk Assessment processes. Approval to continue at current level of risk by District Manager, Construction Manager and Health and Safety Manager. |
| **C** | Medium | Risk controls must be considered. Appropriate risk controls shall be applied for repetitive occurrences. Apply Standards, Safe Operating Practices, Job Hazard Assessments and Field Level Risk Assessment process. To continue at current level of risk, approval required by 2 senior supervisory project team members. |
| **D** | Low | Risk reduction controls may be required. Apply Safe Operating Practices and Field Level Risk Assessment processes. Managed appropriately at field level. |

**Risk Level Table**

| | | Severity | | | | |
|---|---|---|---|---|---|---|
| **Probability** | | **1** | **2** | **3** | **4** | **5** |
| | **1** | **1-L** | **2-L** | **3-L** | **4-L** | **5-M** |
| | **2** | **2-L** | **4-L** | **6-M** | **8-M** | **10-H** |
| | **3** | **3-L** | **6-M** | **9-M** | **12-H** | **15-H** |
| | **4** | **4-L** | **8-M** | **12-H** | **16-H** | **20-E** |
| | **5** | **5-M** | **10-H** | **15-H** | **20-E** | **25-E** |

**E – EXTREME RISKS:** STOP all work, contact immediate Supervisor. A safe job procedure must be in place prior to the commencement of the work.

**H – HIGH RISKS:** Immediate risk reduction controls required.

**M – MEDIUM RISKS:** Risk controls are required. Risk controls must be considered.

**L – LOW RISK:** Risk reduction controls may be required. Acceptable risk (controls will still be justified)

When the hazard and risk analysis is completed, develop safe work procedures, and instruct and train workers in the procedure to follow to minimize the risk of injury or disease.

## 2.2 CRITICAL TASKS

Managers and Supervisors require training in Hazard Identification, Elimination and Control. The following identifies critical tasks and the typical hazards that need to be identified, eliminated and/or controlled by an employer.

Critical tasks are determined by the joint committee in consultation with management and by referring to company incidents, hazard assessments, hazard ratings and potential for injury.

The following tasks have been deemed to be critical in that they, when uncontrolled, are of a high hazard rating:

| Description of Task or Hazard | Hazards<br>*Considerations to: People, Equipment, Material, Environment, Tools, (Chemical, Biological, Physical, Hygiene and Ergonomics)* | Pre-Control Risk Rating | Control | Post Control Risk Rating |
|---|---|---|---|---|
| **LOCKOUT –TAGOUT** | Electrical shock/arc, unexpected movement, caught in or between, crushing, struck by | HIGH | De-energize equipment, lockout, verification, training, work procedures, hazard assessment | LOW |
| **FALL PROTECTION** | Falls from elevation, drops | HIGH | Fall protection equipment and training, verification, work procedures, hazard assessment | LOW |
| **RIGGING & HOISTING** | Falling objects, heavy equipment, contact with others, struck by | HIGH | Correct equipment, pre use inspections, lift plans, verification, training, work procedures, hazard assessment | LOW |
| **MECHANICAL STORED ENERGY** | Electrical shock, unexpected movement, caught in or between, crushing | HIGH | De-energize equipment, lockout, verification, training, work procedures, hazard assessment | LOW |
| **BARRICADING** | Falls from elevation, public interaction | HIGH | Proper guardrails, signage, inspections, training, communication, hazard assessment | LOW |
| **PPE** | Non-compliance, misuse, incorrect use | HIGH | Providing proper PPE, training, work procedures, inspections, hazard assessment | LOW |
| **CONFINED SPACE ENTRY** | Atmospheric hazards, access/egress, localized hazards, energized equipment | HIGH | Customer confined space procedures, permits, if required, air tests, hazard assessments, PPE, lockout | LOW |

| | | | | |
|---|---|---|---|---|
| **WELDING FLASH & FUMES** | Hexavalent chromium, exhaust fumes, flash, burns, fires/explosions | HIGH | PPE, training, exhaust fans, hot work permits, fire watch, fire abatement, work procedures, welding screens, hazard assessment | LOW |
| **ACETYLENE TORCH CUTTING** | Fires, explosions, burns, exhaust fumes | HIGH | PPE, training, fire abatement, work procedures, hazard assessment | LOW |
| **HAZARDOUS MATERIALS** | Improper storage, chemical reactions, fumes, skin contact, inhalation, absorption, penetration, permeation | HIGH | WHMIS 2015, training, PPE, work procedures, hazard assessment | LOW |
| **WORKING NEAR HEAVY EQUIPMENT/ MOVING EQUIPMENT** | Unexpected movement, struck by, line of fire, visual obstructions, poor maintenance, public interaction, impacts, crushing or pinching | HIGH | Inspections, observations, PPE, work procedures, public protections, barricades, signalers, training, eye contact with operators, hazard assessment | LOW |
| **FALLING OBJECTS & FLYING DEBRIS** | Other work areas/trades, equipment, overhead work, public interaction | HIGH | PPE, training, work procedures, barricading, work planning, communication, hazard assessment | LOW |
| **ERGONOMICS** | Improper set up, poor workstations, awkward body position, repetitive motions, vibration | MEDIUM | Training, proper workstations, ongoing evaluations, job rotation, micro breaks, anti-vibration handles, PPE, hazard assessment | LOW |
| **LADDERS & SHELVING UNITS** | Falls from height, slips, shifting and tumbling, improper set up | MEDIUM | Training, PPE, work procedures, proper use, hazard assessment | LOW |
| **GRINDING MATERIALS** | Exhaust fumes, flying debris, explosions/fires | MEDIUM | PPE, training, fire abatement, work procedures, hazard assessment | LOW |
| **MACHINE GUARDING** | Rotating equipment, caught in or between, pinched, manual lifting, ergonomics | MEDIUM | Training, guarding in place, lockout, work procedures, hazard assessment | LOW |
| **EXCESSIVE NOISE** | Materials, machines and equipment, other work areas, trades | MEDIUM | PPE, training, work procedures, communication, hazard assessment | LOW |
| **CHEMICAL SPILLS & ENVIRONMENTAL CONCERNS** | Chemicals, fumes, public interactions, spills | MEDIUM | PPE, training, spill response, spill kits, handling or waste and disposal, hazard assessment | LOW |
| **STACKING MATERIALS** | Unexpected movement, falling or shifting objects, manual lifting, work above shoulders | MEDIUM | Tools and equipment, mechanical aids, securing items, work procedures, height limits, hazard assessment | LOW |
| **MOUNTING & DISMOUNTING** | Slips, falls | MEDIUM | Training, maintain 3-point contact, hazard assessment | LOW |

| | | | | |
|---|---|---|---|---|
| **EQUIPMENT** | | | | |
| **LOADING & UNLOADING MATERIALS** | Heavy loads, congested areas, moving equipment, other trades, public interaction, overhead hazards, weather | MEDIUM | Communication, training, clear distances, job planning, hazard assessment | LOW |
| **CUTTING MATERIALS** | Sharp edges/objects, fumes | MEDIUM | PPE, work procedures, hazard assessment | LOW |
| **MANUAL LIFTING** | Heavy loads, awkward body positions, push and pull forces, trips | MEDIUM | Job planning, elimination of manual lifting, mechanical assists, hazard assessment, partners, proper body position | LOW |
| **RESPIRATORY** | Chemical fumes/substances, dust/particles, other work areas application, improper storage | MEDIUM | Elimination, substitution, job planning, PPE, dust suppression, job substitution, hazard assessment | LOW |
| **PENETRATIONS & PUNCTURES** | Needles, sharpies, debris | MEDIUM | PPE, work procedures, engineering controls, hazard assessment | LOW |
| **HEAT or COLD EXPOSURE** | Contact dermatitis, frostbite, hypothermia, heat exhaustion/stroke, slips, falls | MEDIUM | Minimize exposure, fluid intake, proper clothing/PPE, time limits, job substitution-rotation- hazard assessment | LOW |
| **PRESSURIZED HYDRAULICS** | Injection, sprays, spills, equipment damage, slips | MEDIUM | PPE, training, equipment inspection, lockout tagout, spill response, hazard assessment | LOW |
| **COMPRESSED AIR** | Flying debris, foreign objects, injection, respiratory, public interaction, other workers-jobs | MEDIUM | PPE, work procedures, job planning, hazard assessment | LOW |

## 2.3 HAZARD / INCIDENT REPORTING

The purpose of this form is to provide workers with the means and opportunity to report a health or safety incident or concern to their supervisor in the expectation that the supervisor will respond to the report with the appropriate action within a reasonable time. The item reported should then only be submitted to the Health & Safety Committee for recommendations when the worker does not get either an appropriate response or the hazard/incident will affect workers outside the control of the supervisor or his/her coordinator.

**NOTE: Items/issues that are easily agreed upon by the employee and supervisor or can go through the existing work order system do not need to go through this procedure.**

Information required on form:

1. Worker's name,
2. Worker's location,
3. Date of report,
4. Worker's supervisor,
5. Brief description of incident or hazard with specific attention to the potential risk or outcome if allowed to continue,
6. WCB regulation or Quolus procedure/policy referenced,
7. Brief description of corrective action sought,
8. Supervisor's findings,
9. Supervisor's signature,
10. Date of signature.

Procedure for form completion, distribution, and follow-up:

- Worker to complete items 1 through 7 above, retain photocopy of the form for his/her records, forward original to his/her supervisor and forward photocopy to their JOHSC member.
- Within 24 hours of receiving the form the supervisor is to investigate the concern and evaluate whatever corrective action, if required, will be undertaken.
- Findings of the supervisor/manager are to be recorded on the form with projected date of completion.
- Supervisor is to maintain the original form for his records and make two photocopies of
- the completed form. One copy is to be forwarded to the worker and one is to be
- forwarded to Human Resources and the JOHSC members.
- Human Resources will ensure that the supervisor responds to the complaint in the required time frame and will provide copies of all forms to members of the JOHS Committee at the next meeting.

If, after the above process is complete, the worker is not satisfied with the actions undertaken by the supervisor, the worker shall notify Human Resources that the matter has not been satisfactorily resolved. Human Resources shall investigate the issue and recommend whatever remedial action is required, if any, to the Department Manager.

## 2.3.1 HAZARD / INCIDENT REPORT

**(1) Worker's Name:** _____ **(2) Jobsite:** _____

**(3) Date Submitted:** _____ **(4) Supervisor's Name:** _____

**(5) Hazard or Incident :**

_____
_____
_____
_____
_____
_____

**(6) WSBC Regulation or Quolus Procedure(s)/Policy(s) Referenced:**

_____

**(7) Remedial Action or Investigation Recommended:**

_____
_____
_____
_____
_____

**TO BE COMPLETED BY SUPERVISOR:**

**(8) Remedial Action to be Undertaken and projected date to be completed.**
**If NO ACTION will be undertaken explain rationale:**

_____
_____
_____
_____
_____
_____
_____

**(9) Supervisor's Signature:** _____ **(10) Date:** _____

**NOTE:** Original to be sent to the employee's shift Coordinator/Supervisor. One photocopy to be kept by worker and one photocopy to be sent to Human Resources and the JHSC member. Supervisor to record remedial action to be undertaken on original and retain it for follow-up. Photocopy of completed form to be forwarded to worker and Human Resources.

**NOTE:** Safety representative may submit hazard/incident report on behalf of worker.

## 2.4 REQUIRED RISK ASSESSMENTS

The following list is provided to make Quolus Construction Services personnel aware of the regulatory requirements for risk assessments as specified on the WSBC OHS Regulation:

| OHSR # | Description | Regulation |
|---|---|---|
| 3.16 | Occupational First Aid Services | (2) For the purpose of complying with subsection (1), the employer must conduct an assessment of the circumstances of the workplace, including<br>(a) the number of workers who may require first aid at any time,<br>(b) the nature and extent of the risks and hazards in the workplace, including whether or not the workplace as a whole creates a low, moderate, or high risk of injury,<br>(c) the types of injuries likely to occur,<br>(d) any barriers to first aid being provided to an injured worker, and<br>(e) the time that may be required to obtain transportation and to transport an injured worker to medical treatment.<br>(3) The employer must review the assessment under subsection (2)<br>(a) within 12 months after the previous assessment or review, and<br>(b) whenever a significant change affecting the assessment occurs in the employer's operations. |
| 4.13 | Emergency Preparedness and Response | (1) The employer must conduct a risk assessment in any workplace in which a need to rescue or evacuate workers may arise.<br>(2) If the risk assessment required by subsection (1) shows a need for evacuation or rescue, appropriate written procedures must be developed and implemented, and a worker assigned to coordinate their implementation. |
| 4.28 | Violence in the Workplace | (1) A risk assessment must be performed in any workplace in which a risk of injury to workers from violence arising out of their employment may be present.<br>(2) The risk assessment must include the consideration of<br>(a) previous experience in that workplace,<br>(b) occupational experience in similar workplaces, and<br>(c) the location and circumstances in which work will take place. |
| 4.48 | Ergonomics | When factors that may expose workers to a risk of MSI have been identified, the employer must ensure that the risk to workers is assessed. |
| 5.53 | Workplace Monitoring | (1) If a worker is or may be exposed to a hazardous substance, the employer must ensure that<br>(a) a walkthrough survey is conducted to assess the potential for overexposure taking into account all routes of exposure, including inhalation, ingestion, and skin contact, and<br>(b) reassessment is conducted when there is a change in work conditions which may increase the exposure, such as a change in production rate, process, or equipment.<br>(2) If the walkthrough survey required by subsection (1) reveals that a worker may be at risk of overexposure to an airborne contaminant, the employer must ensure that air sampling is conducted to assess the potential for overexposure.<br>(3) Additional workplace monitoring to reliably determine worker exposure is required if |

| | | |
|---|---|---|
| | | (a) the assessment under subsection (2) reveals that a worker may be exposed to an air contaminant in excess of 50% of its exposure limit, or<br>(b) measurement is not possible at 50% of the applicable exposure limit.<br>(4) Workplace exposure monitoring and assessment must be conducted using occupational hygiene methods acceptable to the Board.<br>(5) The results of workplace exposure monitoring and assessment, or a summary of the results, must be provided to workers at their request without undue delay. |
| 5.88 | Emergency Washing Facilities | The employer must ensure that the selection of emergency washing facilities is based upon an assessment of the risks present in the workplace, according to Table 5-2. |
| 5.99 | Emergency Procedures | An employer must ensure that an assessment is conducted of the risks posed by hazardous substances from accidental release, fire or other such emergency. |
| 6.6 | Asbestos | (1) The employer must ensure that a risk assessment is conducted by a qualified person on asbestos-containing material identified in the inventory referred to in section 6.4(1)(c) or (3), as applicable, with due regard for the condition of the material, its friability, accessibility and likelihood of damage, and the potential for fiber release and exposure of workers.<br>(2) The employer must ensure that a risk assessment has been conducted by a qualified person before any demolition, alteration, or repair of machinery, equipment, or structures where asbestos-containing material may be disturbed.<br>(3) Before a work activity that involves working with or in proximity to asbestos-containing material begins, the employer must ensure that a qualified person assesses the work activity and classifies it as a low risk work activity, a moderate risk work activity or a high-risk work activity. |
| 6.34 | Biohazardous Materials | (1) If a worker has or may have occupational exposure, the employer must develop and implement an exposure control plan, based on the precautionary principle, that meets the requirements of section 5.54 and that includes the following:<br>(a) a risk assessment conducted by a qualified person to determine if there is a potential for occupational exposure by any route of transmission.<br>(b) a list of all work activities for which there is a potential for occupational exposure.<br>(c) engineering controls and administrative controls to eliminate or minimize the potential for occupational exposure.<br>(d) standard or routine infection control precautions and transmission-based precautions for all work activities that have been identified as having a potential for occupational exposure, including<br>(i) housekeeping practices designed to keep the workplace clean and free from spills, splashes or other accidental contamination,<br>(ii) work procedures to ensure that contaminated laundry is isolated, bagged and handled as little as possible, and<br>(iii) work procedures to ensure that laboratory or other samples containing a biological agent designated as a hazardous substance in section 5.1.1 are handled in accordance with the *Laboratory Biosafety Guidelines 3rd edition, 2004*, issued by the Public Health Agency of Canada;<br>(e) a description of personal protective equipment designed to eliminate or minimize occupational exposure.<br>(f) a program to inform workers about the contents of the exposure |

control plan and to provide them with adequate education, training and supervision to work safely with, and in proximity to, a biological agent designated as a hazardous substance in section 5.1.1.
(g) a record of all training and education provided to workers in the program described in paragraph (f).
(h) a record of all workers who have been exposed, while performing work activities, to a biological agent designated as a hazardous substance in section 5.1.1.

---

6.59 Lead

(1) In this section, "existing monitoring data" means data
(a) gathered under section 5.53 or 6.61, or
(b) as described in section 6.61.1(2)(b).
(2) An employer must not permit workers to engage in a work activity or lead process that may expose workers to lead dust, fumes, or mist unless a risk assessment has first been completed by a qualified person.
(3) The risk assessment must include consideration of all of the following:
(a) the hazards of lead, including the exposure limit.
(b) any information contained on a label or in a safety data sheet provided by a supplier, manufacturer, or employer in respect of
(i) the lead content in the materials, coatings, or products to be used in the lead process, and
(ii) the health effects of lead exposure.
(c) the scope, circumstances and nature of the work activity or lead process, including
(i) whether section 5.50 applies, given the length of a shift,
(ii) any changes between shifts in the scope, circumstances or nature of the work activity or lead process,
(iii) whether the work activity involves welding, soldering, brazing, cutting or other hot work processes,
(iv) the potential routes of exposure to lead dust, fumes, or mist during the work activity, or while engaging in the lead process, including by inhalation or ingestion,
(v) the potential level and duration of the exposure referred to in subparagraph (iv), and
(vi) the results of any relevant health monitoring, if applicable, conducted
(A) in relation to an exposure control plan under section 5.54(2)(f), or
(B) as part of a health protection program under section 6.67.
(d) the effectiveness of existing and planned control measures, as determined through exposure monitoring, to prevent or minimize worker exposure to lead dust, fumes or mist, including with respect to access to the workplace by unprotected workers.
(e) any additional information the employer needs to complete the risk assessment.
(4) A qualified person may rely on existing monitoring data for the purpose of assessing control measures under subsection (3)(d) only if it is reasonable to do so based on both of the following:
(a) the relevance of the existing monitoring data and whether additional exposure monitoring may be needed to reassess the effectiveness of existing and planned control measures because of changes in personnel or to the scope, circumstances or nature of the work activity or lead process.
(b) if applicable and available, the results of any health monitoring conducted on workers since the existing monitoring data was gathered.
(5) An employer must ensure that a risk assessment is reviewed by a

| | | |
|---|---|---|
| | | qualified person if any of the following occur:<br>(a) there is reason to believe risk assessment is no longer valid.<br>(b) there has been a significant change in the scope, circumstances or nature of the work activity or lead process to which the risk assessment relates.<br>(c) the results of any exposure monitoring or health monitoring show it to be necessary.<br>(6) If changes to the risk assessment are necessary as a result of the review under subsection (5), the employer must ensure that the risk assessment is changed accordingly. |
| 6.118 | Toxic Process Gases | The employer must ensure that a risk assessment is conducted for toxic process gases. |
| 7.12 | Vibration | The evaluation of hand-arm vibration and whole-body vibration must be conducted by the employer in accordance with<br>(a) for hand-arm vibration, *ISO Standard 5349-1:2001, Mechanical Vibration - Measurement and Evaluation of Human Exposure to Hand-transmitted Vibration - Part 1: General Requirements* and *ISO Standard 5349-2:2001, Mechanical Vibration - Measurement and Evaluation of Human Exposure to Hand-transmitted Vibration - Part 2: Practical Guidance for Measurement at the Workplace,* as amended from time to time.<br>(b) for whole-body vibration, *ANSI Standard S3.18-2002/ISO 2631-1-1997, Mechanical Vibration and Shock - Evaluation of Human Exposure to the Whole-Body Vibration - Part 1: General Requirements,* as amended from time to time.<br>except as otherwise determined by the Board. |
| 7.20 | Radiation | (1) If a worker exceeds or may exceed an action level, ionizing radiation or action level, non-ionizing radiation, the employer must develop and implement an exposure control plan meeting the requirements of section 5.54(2).<br>(2) The instructions to workers developed under subsection (1) must be posted or otherwise available in the work area or near the applicable equipment controls. |
| 7.29 | Heat Stress | (1) If a worker is or may be exposed to the conditions specified in section 7.27, the employer must<br>(a) conduct a heat stress assessment to determine the potential for hazardous exposure of workers, using measures and methods that are acceptable to the Board, and<br>(b) develop and implement a heat stress exposure control plan meeting the requirements of section 5.54(2). |
| 7.34 | Cold Stress | If a worker is or may be exposed to the conditions specified in section 7.33, the employer must<br>(a) conduct a cold stress assessment to determine the potential for hazardous exposure of workers, using measures and methods that are acceptable to the Board, and<br>(b) develop and implement a cold exposure control plan meeting the requirements of section 5.54(2). |
| 8.4 | Personal Protective Equipment | If an evaluation of workplace conditions is required to determine appropriate personal protective equipment, the evaluation, where practicable, must be done in consultation with the joint committee or the worker health and safety representative, as applicable, and with the worker who will use the equipment. |
| 9.9, 9.11 | Confined Space Entry | OHSR 9.9<br>(1) A hazard assessment must be conducted for each<br>(a) confined space, or each group of confined spaces which share similar characteristics, and |

| | | |
|---|---|---|
| | | (b) work activity, or group of work activities which present similar hazards, to be performed inside a confined space.<br>(2) The hazard assessment required by subsection (1) must consider<br>(a) the conditions which may exist prior to entry due to the confined space's design, location, or use, or which may develop during work activity inside the space, and<br>(b) the potential for oxygen enrichment and deficiency, flammable gas, vapor or mist, combustible dust, other hazardous atmospheres, harmful substances requiring lockout and isolation, engulfment and entrapment, and other hazardous conditions.<br><br>OHSR 9.11<br>(1) The hazard assessment and written confined space entry procedures must be prepared<br>(a) by a qualified person who has adequate training and experience in the recognition, evaluation, and control of confined space hazards, and<br>(b) in consultation with the person assigned overall responsibility for administration of the confined space entry program and with the joint committee or the worker health and safety representative, as applicable.<br>(2) For the purposes of subsection (1)(a) qualifications which are acceptable as evidence of adequate training and experience include<br>(a) certified industrial hygienist (CIH), registered occupational hygienist (ROH), certified safety professional (CSP), Canadian registered safety professional (CRSP) or professional engineer (P. Eng.), provided that the holders of these qualifications have experience in the recognition, evaluation, and control of confined space hazards, or<br>(b) Repealed. [B.C. Reg. 243/2006, effective January 1, 2007.]<br>(c) other combination of education, training, and experience acceptable to the Board. |
| 12.98 | Abrasive Blasting/High Pressure Washing | The employer must ensure that a risk assessment is done before any abrasive blasting activity, high pressure washing process, or related cleanup is started which may cause release of a harmful level of an air contaminant from a surface or coating containing a toxic heavy metal or asbestos. |

# Index

## 3.1 SAFE WORK PRACTICES AND PROCEDURES

**Safe Work Practice & Safe Job Procedures Policy**

It is the policy of **Quolus** that all company employees are properly instructed in the safe performance of their duties. Safe work practices (SWP) and safe job procedures (SJP) will be enforced in the same manner as rules and regulations. The company will determine which safe work practices and procedures are needed, and whether they are being followed by reviewing inspection records and accident investigation records, observing jobs, and evaluating worker suggestions and joint health & safety committee recommendations.

Management in conjunction with the joint health & safety committee is responsible for the revision and development of safe work practices & safe job procedures.

Supervisors are responsible for ensuring all workers understand and comply with general safe work practices and job procedures. Records of all training and site safety meetings shall be maintained at the workplace and on completion of the project shall be submitted to the company health and safety designate.

Workers need to know the safest way to do their work. This includes knowing the hazards of their jobs and their workplace and knowing how to control these hazards . Having safe work practices and procedures in place is an essential component of workplace safety and training. Safe work procedures must be developed by a competent person and implemented for all critical and hazardous tasks.

### 3.1.1 For all Safe Work Practices and Safe Job Procedures the following Policy and Responsibilities will apply:

**Company Safety Policy**

- Adhere to WorkSafeBC Regulation as well as any local Government health and safety Regulation
- Provide the safest possible conditions
- Ensure all employees are properly trained in and abide by this Safe Work Procedure
- Monitor the effectiveness of this Safe Work Procedure
- Update and revise this Safe Work Procedure as deficiencies become apparent
- Believe that safety is everyone’s responsibility, and a team effort must be made to keep safe work site conditions.

**Employer Responsibilities**

- To provide a safe environment in which to perform work.
- To provide safe tools, equipment, and materials to facilitate the work being performed.
- To ensure all workers are trained and perform the scope of work safely.
- To ensure that all Supervisors understand that those workers must comply with all safety aspects of this procedure and that the Safe Work Procedure is understood by all workers.

**Employee Responsibilities**

- To ensure he/she is properly trained and performs the task safely.
- To ensure he/she uses only safe tools, equipment, and materials to facilitate safe construction.
- **USE COMMON SENSE;** if you don't know the procedure or proper equipment to use, **ASK!**
- Ensure that the Safe Work Procedure is understood by all.

### 3.1.2 Definitions

**Safe Work Practice:** A written set of guidelines established to help workers perform a task a safe manner.

**Safe Job Procedure:** A written step-by-step set of instructions for performing complex or hazardous tasks from beginning to end.

**Competent Person:** A person who is knowledgeable and experienced in the work to be conducted.

Safe work practices may be combined with safe work procedures.

**Example:** There may be a safe work practice for ladders in the workplace. There may also be safe job procedures for performing a task while on a ladder. Each process uses the same safe work practice for ladders; however, the procedure uses a different and more complex set of steps for the job it describes.

### 3.1.3 Guidelines for developing Safe Work Practices and Safe Job Procedures

- Whenever possible, use a Safe Work Procedure or Safe Job Procedure template or form.
- Involve experienced workers who regularly perform the job or have done the job before.
- Conduct a field level hazard assessment of the entire work area.
- Create step-by-step instructions to complete the job in the correct order of operation.
- Identify all hazards associated with each step.
- Establish controls for the hazards identified.
- Use vocabulary appropriate for the workers involved.
- Write short clear sentences.
- Use consistent terminology.
- Ensure instructions are accurate and easy to understand.
- Review with workers prior to implementation and ensure a full understanding from every worker.
- Everyone must sign and date the document, and the document must be filed for future review.

**All supervisors are required to be familiar with Safe Work Practices and Safe Job Procedures contained in this manual.**

## 3.2 ASBESTOS

Asbestos is the generic name for a group of naturally occurring fibrous minerals. Asbestos color may range from white to pale yellow, green, or blue. Asbestos fibers are very harmful to the lungs. They may cause lung scarring (asbestosis), lung lining scarring (pleural scarring), cancer of the lung lining (mesothelioma) or lung cancer. Time lapses before the disease becomes evident may be 20-40 years. Workers who smoke have 10-15 times greater risk of lung cancer from asbestos exposure than workers who do not smoke. WorkSafeBC has set a maximum exposure limit of 0.1 fibers/$m^3$ and lists asbestos as a known human carcinogen and an ALARA substance (exposure to be kept **A**S **L**OW **A**S **R**EASONABLY **A**CHIEVABLE).

The high strength, flexibility, heat and chemical resistance, and frictional properties of asbestos led to its widespread use in electrical insulation, high strength asbestos cement products, pipe covering, floor tiling and asphalt. A good measure of the hazard posed by asbestos is its friability – the ease with which it can be crumbled or pulverized. Products with "bound" asbestos do not pose a hazard unless they are cut, sawn, ground or sanded.

New construction materials currently used do not normally contain asbestos. Quolus Construction Services employees are not likely to encounter asbestos unless working on or with construction materials produced before 1980. This is most likely to occur when tying into old water/sewer mains, during demolition work or renovating older buildings.

The following guidelines are to be followed if it becomes apparent, or you suspect, that asbestos containing materials may be present:

- If you believe there may be asbestos where you are working, e.g., inside a pipe chase, alert your supervisor immediately. The supervisor will take immediate actions including:

  a) Alerting workers in the vicinity to the presence of the material.
  b) Removing the workers from the environment where exposure may occur.
  c) Restricting access to the area and posting warning notices.
  d) Contact an approved asbestos removal contractor to take a sample and provide an assessment.
  e) Where necessary, coordinating the removal or encapsulation of the asbestos (only low and moderate risk abatement activities will be undertaken by Quolus Construction Services – high risk abatement procedures will be contracted out).
  f) Filing a complete report with head office.

  In circumstances where it is necessary that work continue in the hazard area, workers who may be affected by the presence of asbestos will be provided with written procedures and protective clothing and equipment, which must be used.

### Asbestos Project Notification

The owner or the prime contractor must ensure that WorkSafeBC receives a Notice of Project at least 24 hours before beginning work on the following types of projects:

- Removing, encapsulating, or enclosing friable asbestos building materials.

Demolishing, dismantling, or repairing any part of a structure or building in which insulating materials containing asbestos have been used or in which asbestos containing products have been manufactured.

- The notification must include:
  a) Name and address of the principal contractor (if any) and the owner.
  b) Address or location of the project.
  c) Starting date and estimated duration of the project.
  d) A description of the project, including its size, estimated cost of labor and materials.
  e) Detailed written work procedures which will be used to minimize the risk to workers who might be exposed to asbestos material.

**NOTE:** Notice of Project Asbestos (NOPA) Forms are available from WorkSafeBC. A copy of the completed form is to be posted at the job site.

**Asbestos "Low-Risk" or "Moderate Risk" Work Activity Procedures**

Activities where there is a low risk of exposure to airborne asbestos fibers include:

- Installing or removing manufactured products containing asbestos where sanding, cutting or similar operations are not required.
- Using non-powered hand tools to cut, shape, drill or remove a manufactured product containing asbestos.
- Working in close proximity to friable material containing asbestos provided that the asbestos material is not disturbed.
- Transporting or handling materials containing asbestos in sealed containers.

The following procedures will be used in these activities to control employee exposure to asbestos:

- Where possible, asbestos materials must be handled and removed in a water saturated condition. Surfactants (wetting agents) should be used with water to assist in thoroughly wetting asbestos materials.
- Dry asbestos removal can only be undertaken with prior written approval of WorkSafeBC (contact the nearest regional OHS Manager).
- Vacuum cleaners used to clean up asbestos materials must be fitted with a HEPA filter.
- The air in the vicinity of workers engaged in cleaning surfaces of asbestos or clean-up of waste materials will be continually misted with water.
- All surfaces exposed to asbestos contamination must be effectively cleaned by vacuum cleaning or damp wiping.
- After completing the removal of asbestos materials, exposed surfaces must be washed or vacuum-cleaned and treated with a sealant.
- Water streams and application of sealant or encapsulates must be controlled to prevent excessive airborne asbestos fiber generation. Use of airless or low-pressure application systems is recommended.

- Remove all visible dust on work surfaces with a damp cloth or a vacuum cleaner fitted with a HEPA filter.
- Where necessary, use plastic drop sheets or similar materials to prevent the spread of asbestos dust to other work areas.
- When non-powered hand tools are used to cut, shape, or drill a manufactured product containing asbestos, the product should be wetted, whenever possible, to minimize release of airborne asbestos fibers.
- During the work and immediately upon completing the work:
  a) Clean up dust and waste by vacuuming and discharging the air through a HEPA filter, or wet sweeping or mopping.
  b) Drop sheets must be wetted, folded to contain the dust, bagged, placed in a sealable container, and disposed of as asbestos waste.
- The wearing of half mask, dual cartridge respirators approved for asbestos fibers is required where workers may be or are exposed to airborne asbestos fibers while performing low risk work activities.
- Exposure monitoring must be conducted to ensure that the protective measures taken, e.g., use of a half mask respirator is sufficient for the exposure level.
- A continuous clean up and disposal program must be in place to prevent unnecessary accumulations of waste materials containing asbestos. At the end of each work shift, all asbestos waste material must be in proper containers. The project supervisor must make prior arrangements for an acceptable disposal site.
- Asbestos waste, including contaminated disposable clothing, must be placed into sealed containers that are labeled as containing asbestos material. Containers of asbestos waste must be cleaned by wiping with a damp cloth (to be disposed of as asbestos waste) or with a vacuum cleaner fitted with a HEPA filter and removed from the work area.
- Waste material must be placed in impervious containers (polyethylene bags at least 6mm (0.006 in) thick are acceptable), sealed and labeled or tagged “ASBESTOS”.
- The outside of sealed containers of asbestos waste must be decontaminated by vacuum cleaning or by damp wiping.
- Deliver asbestos waste to an approved dumpsite that conforms to provincial and municipal requirements. For identification of approved sites contact the Regional Office of the BC
- Ministry of Environment, Lands and Parks. Transport drivers must be informed of the precautions that must be taken and vehicles may be required to carry signs or placards specifying the nature of the cargo (refer to the Transport of Dangerous Good Act).
- Clothing to be laundered must first be vacuum cleaned, then placed in water-soluble plastic bags and sealed and labeled prior to being sent to laundry facilities. Onsite laundry facilities are preferred to Laundromats. Cleaned clothing should be packaged and used only for asbestos work. Workers who launder asbestos contaminated clothes must be informed of the hazards of asbestos and the precautions required for handling contaminated clothing.

**Possible sources of asbestos**

- Roof felt and shingles
- Loose, blown-in insulation, such as vermiculite
- Incandescent light fixture backing

- Roof gutters can be made of asbestos cement
- Artificial fireplace logs and ashes
- Acoustic tiles
- Deck under sheeting
- Asbestos pad under a fireplace hearth
- Pipe insulation
- Main panel and fuse box; each fuse wire has an individual asbestos flash guard
- Door and gasket covers
- Backing behind recessed lighting
- Boiler and furnace insulation
- Asbestos can be found in stucco
- Soffit boards can be made of asbestos cement or asbestos insulating board
- Textured or stipple-coated walls and ceilings
- Asbestos cement (transit) board siding and under sheeting
- Outlets and switches
- Gypsum board filling compound, and patching and joint compound for walls and ceilings
- Window putty
- Flooring: vinyl tiles and linoleum sheet flooring; flooring adhesive
- Downpipes can be made of asbestos cement
- Insulation of electrical wires
- Heat reflector for wood stoves

## 3.3 BACKFILL

**Safe Work Practice**

**Backfilling from top of the bank.**

- A designated spotter above will guide any equipment to the back fill area. The spotter must wear hi-visibility clothing (a vest or coveralls).
- Before starting, all personnel involved will be made aware of the dangers in this area and then notify all those on site.
- The lower-level spotter will communicate to equipment operators and workers to back away
- When backed away far enough, the lower-level spotter will signal to above spotter an ‘all clear’ sign.
- The above spotter then signals the operator to proceed with the dump.
- Equipment and workers shall not approach until the load is completely dumped.

**Safety Equipment Required**

- Proper PPE
- Hi-visibility Vest
- Proper signage must be used at all times.

## 3.4 BARRICADES and GUARDRAILS

### 3.4.1 Barricades

Quolus will ensure barricades are provided if a worker may accidentally, or through the work process, come into contact with:

a) moving parts of machinery or equipment,
b) machinery or equipment with pinch point hazards,
c) surfaces with temperatures that may cause skin to freeze, burn or blister,
d) energized electrical equipment,
e) machinery or equipment that may be hazardous due to its operation, or
f) any other hazard.

This does not apply to machinery that already has a barricade that:

a) automatically stops the machinery if a worker comes into contact with a moving part or pinch,
b) prevents a worker from coming into contact with a hazard referred to above, or
c) eliminates the hazards referred to above before a worker can be injured.

If Quolus determines that an effective barricade cannot be provided in the circumstances, we will ensure that an alternative mechanism or system or a change in work procedure is put into place to protect workers from being exposed to hazards that exist if there is no barricade.

Quolus will place warning signs on machinery that starts automatically:

a) on a clearly visible location at a point of access to the machinery, and
b) that give clear instructions to workers on the nature of the hazard.

**Tampering with barricades**

A person must not remove a barricade from a machine that is operating if the barricade is not designed to be removed when the machine is operating.

A person must not remove a barricade or make it ineffective unless removing it or making it ineffective is necessary to perform maintenance, tests, repairs, adjustments, or other tasks on equipment.

If a worker removes a barricade or makes it ineffective, the worker must ensure that:

a) alternative protective measures are in place until the barricade is replaced,
b) the barricade is replaced immediately after the task is completed, and
c) the barricade functions properly once replaced.

If a barricade for machinery is removed or made ineffective and the machinery cannot be directly controlled by a worker, the worker who removes the barricade or makes it ineffective must lock out or lock out and tag the machinery or render it inoperative.

### 3.4.2 Guardrails

A worker at risk of falling more than 3 meters must be protected by a safety net, a fall-arrest system, a travel-restraint system, or guardrails. In most cases, guardrails are the most common and convenient means of fall protection.

*"guard"* means a protective barrier around an opening in a floor or along the open sides of stairs or a ramp, landing, balcony, mezzanine, raised walkway or any other area to prevent a fall to a lower level, or inadvertent entry into a dangerous area.

Areas to be protected include:
- open edges of floors, mezzanines, and balconies
- open edges of scaffolds, platforms, and ramps
- openings in floors, roofs, and other working surfaces not otherwise covered or protected
- edges of slab formwork
- edges of bridge surfaces
- Locations where a worker may fall into water, operating machinery, or hazardous substances.

*"guardrail"* means a guard consisting of a top rail 102 cm to 112 cm (40 in to 44 in) above the work surface, and a midrails located approximately midway between the underside of the top rail and the top of the toe board, if one is provided, or the work surface if no toe board is provided.

*Guardrail locations*
An area accessible to workers must have guards or guardrails installed in any of the following circumstances:
(a) if a raised floor, open-sided floor, mezzanine, gallery, balcony, work platform, ramp, walkway, or runway is 122 cm (4 ft) or more above the adjacent floor or grade level.
(b) on both sides of any walkway over or adjacent to any substance which is a hazard if a worker fell in, or on it, or which is over machinery or work areas.
(c) around the perimeter of any open container or containment area such as an open vat, bin, tank or pit which is 122 cm (4 ft) or more in depth and which has sides that do not extend at least as high as required for a guardrail above the adjacent grade or work surface.
(d) if a stairway ends in direct proximity to dangerous traffic or other hazard to prevent inadvertent entry into the dangerous area.

### 3.4.3 Requirements

Unless designed by a professional engineer, temporary wooden guardrails on floors and platforms must meet the following criteria:
(a) posts must be spaced not more than 2.4 m (8 ft) apart, except a scaffold may have posts spaced not more than 3 m (10 ft) apart.
(b) wooden top rails must be at least 38 mm x 89 mm (2 in x 4 in nominal) lumber for a span of up to 2.4 m between supports, and at least 38 mm x 140 mm (2 in x 6 in nominal) lumber for a span of 2.4 m to 3 m between supports.
(c) wooden midrails must be 19 mm x 140 mm (1 in x 6 in nominal) or 38 mm x 89 mm (2 in x 4 in nominal) lumber.
(d) wooden rails must be secured to the tops or inner sides of their vertical supports.
(e) wooden guardrail posts must be at least 38 mm x 89 mm (2 in x 4 in nominal) lumber and must be installed with the narrow dimension facing the open edge.

(f) plastic or wire mesh fencing of adequate strength may be used in place of the midrails, but posts and top rails must comply with the requirements of this section and such fencing must be secured in place.

Wood-slat guardrails, wire rope, and manufactured wire mesh systems are also acceptable. They must, however, be at least as strong and durable as wooden guardrails, with the same minimum dimensions.
Guardrails must be capable of resisting any load likely to be applied. This means extra reinforcement in special situations, such as where forklifts or buggies are used.
Guardrails should be installed as close to the edge as possible.

Guardrails should be installed on balconies. It is not enough, for example, simply to barricade the entrance to a balcony.

### 3.4.4 Toe boards

Toe boards shall be erected along the edges of the overhead walking/working surface, for a distance sufficient to protect persons working below.

**Toe boards shall:**

- Be capable of withstanding a force of at least 50 lbs. applied in any downward or outward direction.
- Be a minimum of 5.5 inches tall from their top edge to the level of the walking/working surface.
- Have no more than 0.25 inches clearance above the walking/working surface.
- Be solid or have openings no larger than one (1) inch in size.
- Where tools, equipment, or materials are piled higher than the top edge of a toe board, paneling or screening shall be erected.

### 3.4.5 Floor Openings

Guardrails are the preferred method for protecting workers near floor openings but may not always be practical. Narrow access routes, for example, may rule them out. In such cases, securely fastened covers – planks, plywood, or steel plates – may be the best alternative.

Use 48 mm x 248 mm (1 7/8” x 9 ¾” full-sized No. 1 spruce planks. In some cases, pallet-like designs can make covers stronger and less likely to be removed.

Make opening covers stand out with bright paint. Include a warning sign – DANGER! OPENING – DO NOT REMOVE! DO NOT LOAD!

Fasten the cover securely to the floor to prevent workers from removing it and falling through the opening.

The table below indicates load limit for two different spans and grades of planks for opening covers.

| Uniformly Distributed | Up to 5-foot Span | Up to 7-foot Span |
|---|---|---|

| Load per sq. Foot | | |
|---|---|---|
| **150 pounds** | No. 1 Grade | Not allowed – load exceeds plank capacity |
| **100 pounds** | No. 1 Grade | Select Structural Grade |
| **75 Pounds** | No. 1 Grade | No. 1 Grade |

**Notes:**

1. **Planks are spruce-pine-fir species group (SPF).**
2. **Planks are at least 1 7/8" thick and 9 ¾" wide.**
3. **Allowable stresses conform with CSA Standard CAN3-086-1984 "Engineering Design in Wood".**
4. **No stress increases are included for load sharing or load duration.**
5. **Width of opening should be no greater than span.**
6. **Loads indicated are maximum for grade and loading conditions, with cover completely "decked in" with planks.**

### 3.4.6 Temporary removal of guardrails

If a guardrail must be removed to accommodate work:

- Only that portion of the guardrail necessary to allow the work to be done may be removed, and
- Workers exposed to a fall hazard must be protected by another fall protection system when the guardrail is absent.

The guardrail must be replaced:

- When the unguarded area is left unattended, and
- After the work is completed if the circumstances still require guardrails.

## 3.5 BLASTING

**Company Safety Policy**

- The Job Site will ensure all Blasting Sub-Contractors are certified and the work is within the scope of their certification.
- All Quolus Construction Services employees will follow the directions of the certified blaster in regard to any and all blasting activities.
- No worker shall enter an area closed for blasting unless directed to by the certified blaster.
- The signal for blasting is 12 short whistle signals sounded at 1 second intervals.
- At least two minutes shall elapse between the signal sounding and the blast occurring.
- 1 prolonged whistle of at least 5 seconds will signal the all-clear.

## 3.6 BOOM TRUCKS AND DELIVERIES

**General**
The safe operation of Boom Trucks is dependent on the operator, the mechanical condition of the unit, and the assurance that the truck is not being used to lift loads in excess of the maximum rated capacity.

All operating regulations, manufacturer recommendations, and Safe Work Procedures must be observed. All lifting devices must be inspected before use. Defects that might affect the safe operation of a lifting device must be repaired before the equipment is operated.

**Equipment Familiarization**
The operators should be thoroughly familiar with the location and operation of controls, correct operating procedure, maximum lifting capacities and the safety precautions applicable to the unit before operating. The rated load capacity (or load chart) must be clearly marked on a lifting device. Set out emergency procedures to be followed in case of equipment failure or accident. Review the last entries in the equipment logbook to ensure you are familiar with those entries.

**Positioning**
Always seek the best possible work site when parking the truck mounted crane. An ideal job site parking location would be firm, level, and dry ground or pavement. Avoid uneven, rocky, or muddy terrain, steep grades, or locations with unnecessary overhead obstructions, such as structures and power lines. Maximum loads shown on the capacity chart are based on the level condition of the machine/unit. Lift capacities are greatly reduced if the machine is not level. Where the unit must be operated on a slope, use outrigger pads or timbers to level the truck. If the truck must be positioned in an area that is not leveled, work from the rear of the truck. If the truck must be used across an incline, always work with the boom on the uphill side of the truck. Set the truck parking brake securely before using the crane.

**Equipment Check**
- Do a visual check of the entire unit looking for any cracks, deformity (damage), pools of leaking fluids, or outrigger creep.
- Check that the tires are properly inflated.
- Check engine oil, radiator coolant and hydraulic reservoir levels.
- Check brake lights, flashers, turn signals, headlights, horn and windshield wipers for proper operation.
- Extend outriggers and operate the boom through two complete cycles to check the operation of the controls and hydraulic cylinders.
- Check the load line cable in accordance with the manufacturer's requirements and lubricate where called for.

**Operation**
The following list of operational tips is to be reviewed prior to use of the unit:
- Ensure that for stability, outriggers are down and on firm ground before using the lifting unit.
- Be sure that all workers stand clear of the outriggers as they are being lowered.

- Prior to operation, consult load chart to ensure that the unit has the capacity necessary for the loads to be lifted. The rated load capacity (or load chart) must be clearly marked on a lifting device.
- Prior to lifting a load, ensure that you make straight pulls, ensure the boom and load lines form a straight line. Side pulls can damage the boom and even tip the unit over.
- Don't allow personnel to ride on hooks or loads.
- Do not move loads over people.
- Do not lift a load until all personnel are clear.
- Do not allow hook or load block to pull tight against boom tip when lowering or extending boom. This can cause the load line to break.
- Load lines must be properly attached to the winch drum and at least two wraps must remain on the drum at all times.
- Do not modify the machine or add attachments, unless they are manufacturer approved.
- Keep the load close to the ground whenever possible.
- Do not operate the crane during electrical storms or when high wind conditions exist.
- Do not perform any maintenance work on the unit unless it is immobilized or blocked up in place.
- Do not attempt service or repair while the crane is operating.
- Do not disconnect hydraulic operating components when there is pressure in them.
- Maintain at least a ten-foot safety area between the crane tip and any obstructions or power lines.
- Ensure that maintenance and lubrication is done according to manufacturer's specifications.
- Never reposition or move the unit leaving the boom in a raised position.

**Completion of Work**

- Return the boom to the road travel position and make sure that the load line hook is tied down so that it cannot swing freely.
- Retract the outriggers.
- Return the engine's throttle to the idle position, depress the clutch, and disengage the power take-off; Release the hand brake on the vehicle.
- Remove and stow the wheel chocks. Release the parking brake before moving the unit.
- Bring the unit's logbook up to date by making the daily entry.

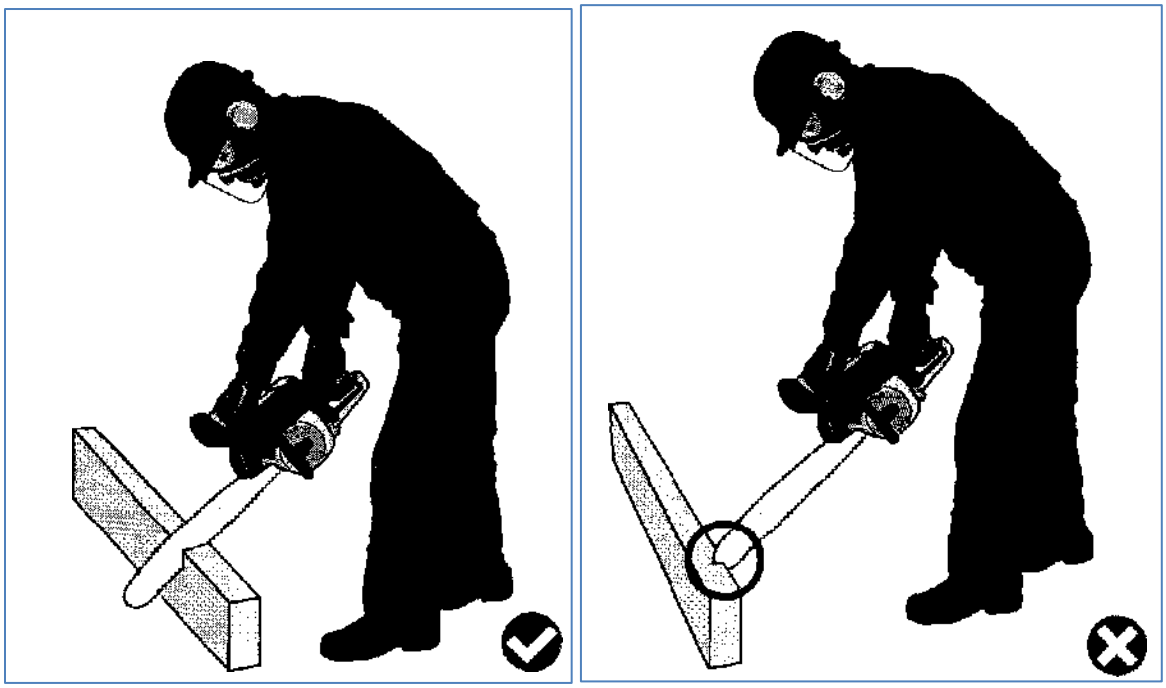
## 3.7 CHAINSAWS

**Safety Equipment Required**

- Each worker is to ensure that all his PPE and working tools are in proper working condition
- Eye protection
- Ear protection
- Chaps and full-face shield were required.

**Safe Work Procedure**

- If you have never used a chainsaw, ask for instructions
- Inspect chain to ensure it is installed correctly
- Correct tension on chain
- Chain is to be sharp
- Check oil in all oil chambers
- Ensure chain brake is operating
- Do not use the chainsaw if the brake is not operating correctly
- Ensure material to be cut is clean
- Ensure material to be cut is firmly held and supported close to the line of the cut to prevent binding of blade
- A chainsaw is never to be handled with-out hand guards
- Ensure work area is clean and free of obstacles
- Extreme caution to be exercised when cutting material above the waist
- The chain must come to a stop before moving from one cut to another
- Store chainsaw in clean dry area
- Ensure chain cover is in place
- Ensure fuel and oil is not leaking.



Hold the saw securely with both hands. Wrap your fingers and thumbs around the handles. This grip helps prevent your hands from being dislodged and provides control in the event of a kickback. Know where the bar tip is at all times.

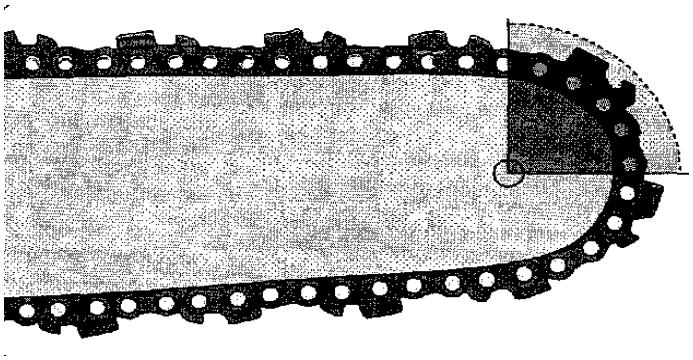
- Don't allow the material to bind (close) on the saw chain.

- Never walk around with a running saw.
- Don't operate the saw on a ladder.
- Don't use the saw above shoulder height.

**Kickback**

The most common hazard associated with using chainsaws is a violent kickback, which can result in serious injury. Kickback can occur when the nose or tip of the guide bar touches an object or when wood closes and pinches the saw chain during the cut. Kickback may result in a lightning-fast reverse reaction, kicking the guide bar up and back toward the operator.

Before using a chainsaw, make sure the cutting area is clear. Secure the material you're cutting. The black circle in the image below shows a point of contact, which can lead to kickbacks.



## 3.8 COMBUSTION ENGINES INDOORS

**General**
When working with Petroleum (gasoline, diesel, propane), Power Equipment (bobcat, concrete saw, quick cut saw, etc.) in indoor environments there is always a risk of elevated CO levels. A risk assessment should be conducted to determine if there is a potential for the build-up of CO. Carbon Monoxide (CO) is a product of incomplete combustion; it is toxic, odorless and an invisible gas.

When the symptoms are mild, the victim may not link them to CO poisoning.
The symptoms associated with CO poisoning are:
- Headache
- Nausea

More severe poisoning symptoms include:
- The previously mentioned symptoms becoming worse
- Progression to mental confusion
- Coma and death

CO produces its effects by interfering with the ability of the blood to carry oxygen to the tissues and more importantly, to the brain.

**Safe Work Practices:**

- If there is a risk of elevated CO levels the following procedures must be followed:
  - If possible, use local exhaust ventilation systems to remove the exhaust from the outside.
  - Ensure that there is adequate ventilation. Use dilution ventilation (force fresh air into the work area), this will reduce the build-up of CO.
  - Use continuous CO monitoring instrument to ensure that workers are not exposed to elevated levels.
  - When and if the CO monitor indicates elevated levels, the area should be evacuated until levels return to normal.

**First Aid Measures**

- In the event of CO poisoning, the following procedures should be followed:
- Remove victim to fresh air.
- Keep the victim warm and at rest. Activity may worsen the effects of CO by increasing the demand for oxygen.
- Take the victim to a hospital. The victim will receive enriched oxygen to accelerate the removal of CO from the blood.
- When the victim is not breaking, start artificial respiration. If there is no pulse, start CPR and have someone call for medical assistance (911).

## 3.9 COMPRESSED AIR/COMPRESSORS

**General**
Air powered tools in construction range from stapling guns to jack hammers. Supervisors shall ensure all workers are adequately trained in safe work and operating procedures as per the manufacturer's instructions for compressors and air hoses.

With regards to cleaning with compressed air, workers shall be aware of the WorkSafeBC Regulation 4.42, "Cleaning with compressed air", which states:

(1) Compressed air or steam must not be used for blowing dust, chips, or other substances from equipment, materials, and structures if any person could be exposed to the jet, or to the material it expels or propels and an injury or health hazard due to fire, explosion or other cause is likely to result.

(2) Subject to subsection (4) compressed air may not be used for blowing harmful or hazardous dusts or other harmful substances from clothing being worn by workers.

(3) If clothing is to be cleaned before leaving the work area, suitable cleaning equipment must be used.

(4) Compressed air may be used in specially designated areas for blowing dusts or other substances from clothing being worn by workers, provided that
  (a) the substances have an exposure limit greater than 1.0 mg/m$^3$,
  (b) appropriate respirators and eye protection are worn, and
  (c) the compressed air supply pressure is limited to a pressure of 70 kPa gauge (10 psig), or safety nozzles which have the same pressure limiting effect are used.

Compressors, airline hoses and their connections/couplings shall be inspected prior to use, looking for damage, and cuts.

WARNING: COMPRESSED AIR CAN CAUSE SERIOUS INJURY AND DEATH!

**Safe Work Practices:**

- Compressed air must not be used to blow debris or to clear dirt from any worker's clothes. Air under pressure can enter the blood stream through the skin and cause death.
- Ensure that the air pressure has been turned off and the line pressure is relieved before disconnecting the hose or changing tools.
- Hose couplings (twist fittings) are to be secured against dislodgment. Whip Check restraints, or other effective restraints, are to be used where dislodgment of a connection could harm a worker and/or where the inside line diameter exceeds ½ inch.
- Workers using compressed air to clean surfaces are to wear eye and hearing protection and ensure the other workers are away from any operation and fallout area.
- Wear Personal Protective Equipment (PPE), such as eye protection and face shields, and ensure other workers in the area are made aware of, or have restricted access to, the hazard area.
- Hoses must be checked on a regular basis for cuts, bulges, or other damage. Ensure that defective hoses are repaired or replaced.
- A proper pressure regulator and relief device must be in the system to ensure that the correct desired pressure is maintained.
- The correct air supply hose must be used for the tool/equipment being used.
- The equipment must be properly maintained according to the manufacturer's requirements.
- Follow manufacturer's general instructions and comply with legislated safety requirements.

## 3.10 COMPRESSED GAS CYLINDERS

### Acetylene, Oxygen and Other Pressurized Fuel Cylinders

Acetylene and oxygen cylinders are under high pressure and should be handled with extreme care. Cylinders shall be kept in an upright position, either on a tank cart or tied to a vertical building member, such as a building column. Never lay cylinders down.

### Safe Work Practices

- Cylinders and other containers of pressurized substances may only be modified or repaired in accordance with the manufacturer's instructions.
- Cylinders and other containers of pressurized substances, other than hand-held aerosol spray cans, must be equipped with appropriate pressure relief mechanisms.
- Compressed gas containers that require pressure testing must bear a valid, current indication of testing.
- Compressed gas cylinders must not be hoisted by slings or magnets, dropped, subjected to impact, handled by the regulator, or used as a roller or work support.
- Cylinders must, at all times, be strapped or chained to prevent falling over.
- Cylinders must not be allowed to drop or bump together during transport.

- Cylinders must, where practicable, be kept on end.
- Acetylene cylinders placed in a horizontal position must stand in a vertical position for at least one hour prior to use.
- Cylinders must not be placed near excessive heat, sparks, molten metal, electric current, flames, and physical damage and should be stored in dry locations to prevent corrosion.
- Sparks, molten metal, electric current or flames must not be allowed to come in contact with cylinders or their attachments.
- Oxygen cylinders and their fittings must not come in contact with grease or oil, including that from hands, gloves, or clothing.
- Oxygen must never be used as a substitute for compressed air.
- Empty cylinders must have the pressure regulator removed, the valve closed tightly, the protecting cap put on (unless integral guards are provided) and be marked “empty”.
- SDS must be made available for Oxygen and Acetylene and all compressed gas cylinders.
- Valve handles or valve wrenches shall be retained in place while cylinders are in use.
- Check all connections for leaks.
- Keep hose in the clear so that it cannot be damaged.
- Protect gauges and torches from damage.
- The use of regulators and flash arrestors are mandatory.
- Do not use oxygen to blow out or clean equipment.
- Do not take cylinders into elevator pits; keep them in a well-ventilated area.
- Do not lift cylinders with their protective caps.
- Propane and butane are heavier than air, and highly explosive. Guard against leaks when using this equipment.

  **Use only in well-ventilated areas. Unburned gas from even a small leak will settle in pockets such as elevator pits, stairwells, or other areas.**
- Shut off valves and purge all hoses immediately after each use.
- Cylinder caps shall be in place whenever cylinders are not in use, being moved, or while they are in storage.
- Acetylene and oxygen cylinders can be temporarily kept in a hand cart if they are used in the current 24-hour period.
- Oxy/Acetylene regulators must be equipped with flash arrestors.
- When not in use, oxygen and acetylene cylinders shall be stored at least 20 ft (6.1 m) apart or separated by a one-half-hour (30-minute) rated fire-resistive wall or partition at least 5 ft (1.5 m) high and shall be secured to prevent tipping.
- Empty cylinders shall be marked “MT.”
- Cylinders shall never be stored in gang boxes.

## 3.11 CONCRETE GRINDING (SEE SILICA SWP)

An Exposure Control Plan must be written and implemented on each site when concrete grinding must be done. All employees shall ensure that airborne contaminants are reduced or eliminated by engineered controls (e.g., local exhaust ventilation or wet processes).

In the absence of adequate engineering controls, proper respiratory protection shall be utilized accordingly (refer to Respirator Program):

**Ceiling Grinding:**

Use a Half-face, dual cartridge respirator with HEPA cartridges.

**Hand-held Grinding:**

Use a Powered Air Purifying Respirator.
Or
Vacuum assist grinder with a Half-face, dual cartridge respirator with HEPA cartridges.

## 3.12 CONCRETE PUMPING

**Safe Work Procedure**

- The concrete pump operator must ensure that all WorkSafeBC Requirements are being met.
- The crane operator has been notified prior to raising the concrete truck boom.
- Proper PPE must be worn at all times.
- A concrete placing boom or mast not affixed to a concrete pump must bear an identification plate specifying:
  a) The manufacturer's name
  b) The model and serial number
  c) The maximum allowable concrete pressure in the delivery pipe
  d) The maximum allowable pipe diameter and permitted wall thickness.

**Manufacturer's Manual**

The manufacturer's operation and maintenance manual for a concrete pump, placing boom and mast must be readily accessible to the operator and to maintenance personnel.

**Inspection and Maintenance Records**

Records of inspection and maintenance must be made by the equipment operator and other persons inspecting and maintaining a concrete placing boom or mast.

**Pre-Use Inspection**

- The operator must inspect a concrete placing boom or mast and test its safety and control devices before use on each shift and record the results of the inspection and tests in accordance with OHS Regulation section 20.29.
- Any defects found in the concrete placing boom or mast must be recorded and reported immediately to the supervisor, who must determine the course of action.
- If a defect may affect the safe operation of the concrete placing boom or mast, the equipment must not be used until the defect has been remedied.

**Controls**

Controls for a concrete placing boom or mast must have their function clearly identified.

**Hydraulic Cylinders**

Hydraulic cylinders on a concrete pump, placing boom and mast must have pressure relief valves to prevent cylinder and boom damage due to excess pressure. Hydraulic holding valves must be used on a placing boom or mast if hydraulic hose or coupling failure could result in uncontrolled movement of mechanisms.

**Marking Weight**

A trailer or skid mounted concrete pump must have a permanent, legible notice stating the total weight of the unit.

**Emergency Shut-Off**

A concrete pump must have a clearly labeled emergency stop switch near the hopper, which if activated will stop the pumping action.

**Agitator Guarding**

- Concrete pump agitator guarding must be maintained to the pump manufacturer's specifications, with reasonable allowance for wear.
- Bent bars in a concrete pump agitator grill guard must be repaired.
- Concrete pump grill bar spacing may be increased to a maximum bar spacing of 8 cm (3 ¼ in) when pumping concrete mixes with a slump of 5 cm (2 in) or less, provided specific instructions are given to the crew regarding the hazard present due to the larger openings in the grill guard.
- The distance from the grill bars to the concrete pump's agitator must be at least 7.5 cm (3 in).
- A concrete pump agitator grill guard must be hinged or bolted in place.
- A person must not stand on the grill when the concrete pump or agitator is running.

**Engine Exhaust**

A concrete pump's engine exhaust system must be arranged to prevent exhaust exposure to the operator and hopper area.

**Housekeeping**

The deck area of a concrete pump must be kept clean and fee of unnecessary objects.

**Outriggers**

- Outriggers must be used in accordance with the concrete placing boom or mast manufacturer's specifications.
- Extendible outriggers for a concrete placing boom or mast must be marked to indicate maximum extension.
- A concrete placing boom or mast manufactured after January 1, 1999, must have its outriggers or jacks permanently marked to indicate the maximum load they will transmit to the ground.

**Load on a Placing Boom**

- The load on a concrete placing boom or mast must not exceed the specification of the manufacturer or a professional engineer.
- The length and diameter of hose suspended from a concrete placing boom or mast must not exceed the specification of the manufacturer or a professional engineer.
- A concrete placing boom or mast must not be used to drag hoses or other loads.

**Pipe Diameter & Thickness**

- The diameter and weight of pipe mounted on a concrete placing boom or mast must not exceed the boom manufacturer's specification or the specifications of a professional engineer.
- The pipe wall thickness must be sufficient to withstand a pressure greater than the maximum pressure that the concrete pump can produce in the concrete being pumped.
- The method used to measure pipe wall thickness on a concrete pump, placing boom or mast must be in accordance with the manufacturer's instructions. Pipe sections must be replaced when thickness measurements indicate that wall thickness has been reduced to the limits specified by the manufacturer.

**Pipe Clamps**

- Pipe clamps used with pipe carrying concrete must have a pressure rating at least equal to the pipe pressure rating.
- To ensure proper connection of concrete delivery pipes, pipe and pipe clam contact surfaces must be free of concrete and other foreign matter when a connection is being made.
- Quick connect clamps used on a concrete delivery pipe must be pinned or secured after installation to keep them from inadvertently opening.

**Delivery Pipe**

Delivery pipe between the concrete pump and the placing system must be supported and anchored to prevent movement and excessive loading on pipe clamps.

**Restraining Devices**

Restraining devices providing a safety factor of at least 5 must be used on attachments suspended from the placing boom or mast tip.

**Concrete Pump Lines**

- Concrete pump discharge line couplings, if located where inadvertent disconnection could cause injury to workers, must be guarded.
- The guards on a discharge line coupling must be positioned to effectively deflect in a safe direction any jet of concrete, which might result from disconnection of the coupling.

**Equipment Inspection**

A concrete placing boom and mast must be inspected in accordance with good engineering practice at intervals not exceeding 12 months, repaired as necessary, and certified safe for use by a professional engineer, the manufacturer or the manufacturer's authorized agent.

**Repair Certification**

Replacement parts used for repair of a concrete placing boom or mast must meet or exceed the original manufacturer's specifications or be certified by a professional engineer.

**Boom & Mast Weight**

The weight of each removable section of a concrete placing boom or mast must be permanently and legibly marked on the section.

**Restriction on Use**

A concrete placing boom or mast must not be used to hoist loads.

**Compressed Air Cleaning**

- A concrete delivery pipe system other than an individual section of pipe may be cleaned out using compressed air, but the system must be securely anchored before such cleaning is done.
- Any flexible discharge hose must be removed before cleaning out concrete delivery pipes using compressed air.
- Only workers essential to the clean out process may be in the vicinity of concrete delivery pipes when they are pressurized with air.
- An air system being used to clean out concrete delivery pipes must have a shutoff valve.
- A trap basket must be attached to the discharge end of the concrete delivery pipe to receive the cleanout ball or go-devil.
- A blowout cap must have a bleed valve to relieve air pressure in a delivery pipe being cleaned using compressed air.
- Delivery pipes must be depressurized before clamps and fittings are released.

**Operator's Duties**

The operator of a concrete placing boom or mast must have full control of the pump and placing equipment controls whenever the equipment is operating and engage in no other duties while operating the concrete pump and placing boom or mast.

**Work Near Power Lines**

A concrete placing boom or mast must not come within the minimum distances, specified in Part 19 (Electrical Safety), to energized high voltage conductors or exposed energized electrical equipment, except as provided for in that Part.

**Hopper Signal Device**

If a concrete placing boom operator cannot see and monitor the hopper on the concrete pump from every location, including during the pumping activity, there must be a device at the hopper for the concrete delivery truck driver and other workers to signal the pump operator if there is a problem at the pump or hopper.

## 3.13 TRUCK DUMPING – FLY SPREADING

**Hazard Assessment**

| JOB STEPS | HAZARDS | CONTROL MEASURES |
|---|---|---|
| 1. Security of Site | ➢ Traffic | Worksite must be protected from passing traffic by the use of traffic controls such as lane closures, detours, barricades, or traffic control persons |
| | ➢ Pedestrians (Public) | Area must be blocked off from pedestrian (public) access. |
| | ➢ Site Conditions | Ensure access is free of tripping slipping or falling hazards. Ensure access is large and accessible enough to bring materials through without excess strain or maneuvering. |
| 2. Truck arrives on site, unhooks trailer and positions into place (either backing or driving forward into place) | ➢ Truck striking worker. | All workers must be aware of their surroundings at all times. With hearing protection and the noise of other equipment working it is difficult to hear truck traffic on site. The truck guide must ensure all workers are out of the path of the truck. |
| | ➢ Truck tipping over<br>➢ Trailer rolling away | The ground must be level.<br>Trailer must be secured from movement. |
| 3. Truck is guided into place | ➢ Worker struck by truck<br>➢ Truck tipping over<br>➢ Truck striking equipment | Workers must be aware of the location of the trucks.<br>The ground must be level.<br>Area must be clear of equipment and debris<br>Truck guide must give clear instructions to driver and stand to the back of the truck – not off to the side where the driver cannot see them. |

| | | |
|---|---|---|
| 4. Begin dumping load while moving truck forward. | ➢ Pinch points if tailgate sticks.<br><br>➢ Worker struck by material being dumped<br><br>➢ Worker struck by truck<br><br>➢ Equipment struck by truck<br><br>➢ Overhead power lines struck by truck.<br><br>➢ Rocks shooting out from truck tires and striking workers nearby.<br><br>➢ Truck tipping over | Workers are not to free the tailgate. The driver is required to exit his truck and free the tailgate if it is stuck.<br><br>Workers must maintain adequate distance between themselves and the truck while dumping is occurring.<br><br>Workers must be aware of their surroundings and stay out of the way of mobile equipment.<br><br>The pathway for trucks must be kept clear at all times. No equipment can be left on the road while trucks are dumping. Be aware of the presence of dozers/loaders behind the truck working the newly dumped material.<br><br>Truck guides must be aware of all hazards including the location of overhead lines.<br><br>Workers in the vicinity must be aware of the possibility of flying rocks. Hard hats are mandatory on all sites. Keep the roadway scraped clean (if paved).<br><br>Ground must be even, and truck guide should be aware of any fluctuations in ground or roadway hazards that may cause the truck to become unstable when the box is lifted. |
| 5. Repeat with trailer | ➢ See above | See above |
| 6. Exit site | ➢ Collision with oncoming traffic<br><br>➢ Striking worker | Traffic control (if required) will be in place to ensure trucks exit the site safely.<br>Workers must be aware of the presence of trucks at all times. Drivers are often looking behind them as they exit the site after dumping. If you are working on the road in front of the truck do not assume the driver has seen, you. |

## 3.14 CONFINED SPACE PROCEDURES

"Confined Space" refers to "an area, other than an underground working, that is

- enclosed or partially enclosed,
- not designed or intended for continuous human occupancy,
- has limited or restricted means for entry or exit that may complicate the provision of first aid, evacuation, rescue, or other emergency response service, and
- large enough and so configured that a worker could enter to perform assigned work".

This can include an excavation, trench, manhole, tank, storage bin, process vessel, or other enclosure, not designated or intended for human occupancy. When a person is required is to enter therein, special precautions are necessary to:

1. protect the person from a harmful atmosphere therein, or
2. prevent the person from becoming entrapped in a material stored therein, or
3. otherwise ensure the person's safety therein.

Due to the diversity of job sites and the variables involved in confined spaces, it may be beneficial for each site to have a site-specific plan. No worker may enter a confined space unless he or she has been properly trained and has been given **WRITTEN** permission to enter by a qualified person (see NOTE following). For training and further information, contact the Corporate Safety Manager prior to work commencing in any confined space work.

***NOTE: No worker may enter a confined space until a confined space entry permit is completed. Entering a confined space without following the specific entry and procedures and exposure procedures, as found in the Confined Space Entry Program manual, is cause for immediate discipline.***

**General Requirements**

1. Prior to entering any confined space, a qualified person must determine what the hazards are (i.e., lack of Oxygen or the presence of flammable or poisonous gases, and other potential harmful atmospheric conditions that may be present) and develop safe work procedures that will address all hazards present.

2. Air testing must be done by a qualified person with a gas monitor correctly calibrated for the potential harmful atmospheric conditions that may be present.

3. Adequate ventilation, respiratory equipment and fall protection equipment may be required.

4. Workers must be trained in emergency procedures and have a method of extracting an injured worker.

5. If any unusual odor, taste, or irritation is noticed, leave space immediately.
6. Do not rely on your sense of smell only. A gas monitor is available from the Corporate Safety Monitor to use as a much more reliable detector of Carbon Monoxide, Hydrogen Sulphide (sewer gas), low oxygen levels, and flammable gases.

7. Never take any cylinders of oxygen, acetylene, or other gases into a confined space. Ensure that if hoses supplying compressed gas are taken into a confined space, they are removed if space is vacated for longer than 10 minutes.

8. A standby person must be stationed at an appropriate nearby location at all times while the confined space work is being performed and communication is to be maintained at all times. NO SMOKING in any confined space.

## 3.15 CONTROLLING EXPOSURES

Some of the common approaches to be used to control hygiene hazards on Quolus Construction Services sites include the following:

- Implementing a hearing conservation program.
- Issuing PPE to workers:
- Respirators for airborne contaminants (respirator fit testing required).
- Barrier creams for skin contact with irritant chemicals.
- Using wet methods when concrete grinding to control silica dust.
- Testing for exposure levels.
- Using safe procedures as outlined on the MSDS and training workers in safe use procedures.
- Providing readily available wash facilities to remove contaminant materials.
- Installing emergency wash facilities for use in case of accidental exposure.
- Monitoring worker health to determine exposure effects (noise, lead, asbestos, silica).

**Exposure Control Plan**

An exposure control plan prepared and managed on site by the client.

- In general, when:
  a) Exposure monitoring indicates that a worker is or may be exposed to an air contaminant in excess of its exposure limit.
  b) Measurement is not possible at 50% of the applicable exposure limit.
  c) Otherwise as required by WorkSafeBC.

- Specifically for possible exposure to:

  a) Asbestos

Blood borne pathogens

The exposure control plan must be written and include the following:

- A statement of purpose and responsibilities for assessing the risks and controlling the exposure(s).
- Details on the identification of the risks, the assessments to be performed and/or that have been performed, and the control measures taken to limit exposure.
- Details on the education and training that is to be provided.
- The written procedures that have been produced (as may be required) to inform personnel about hazards and establish safe work methods.
- Details on the documentation that is required (such as records) to ensure that the issues are addressed as required by regulation and good management practice.
- A review, at least annually, and regular updates may be necessary. This will be done in consultation with the occupational health and safety committee.

## 3.16 CRANES

**Safe Work Practice**

- Crane operators must be certified to operate the crane in use.
- Be aware of the following hazards:
  - Employees can get caught in between the crane housing and the counterweight
  - Employees can get struck by an unintended load
  - The crane can be overloaded or set up on unstable footings and employees can be crushed by the weight of overturned cranes or collapsing portions of the cranes
- Never stand or walk under loads that are being hoisted
- Fully barricade area around moving superstructures during lifting or moving operations
- Never go into an area during lifting operations unless absolutely necessary and then only when the operator is fully aware of your presence
- Prior to lifting, ensure that all cranes are placed on firm footings. Utilize outriggers as per the manufacturer's requirements
- Ensure that all material lifts are performed by qualified riggers
- When equipment is used in hoisting operations, a standard signal system shall be used; only the designated qualified signalman shall give signals. The signal code shall be conspicuously posted adjacent to the signalman and operator's location. Electrical or mechanical signal systems shall be used in cases where the operator cannot observe the signal.
- Traveling speed shall be posted on all equipment and shall not be exceeded.
- The rated load capacity (or load chart) must be clearly marked on a lifting device.
- Equipment shall maintain a minimum clearance of 10 feet from high-voltage lines unless the current has been shut off or the equipment has been adequately guarded.
- Riding on equipment by unauthorized persons is prohibited.

- Getting on or off any equipment while it is in motion is prohibited.
- Riding on loads, hooks, hammers, material hoists, and buckets shall not be permitted.
- Loads, booms, buckets, etc. shall not be swung over the heads of workmen.
- While a load is suspended from a crane, derrick, hoist, forklift, gantry, or carried on an elevator platform, the operator shall not leave their position at the controls until the load has been landed, or platform has been returned to the ground level.
- Accessible areas within the tail swing radius of cranes shall be barricaded.
- No modifications or additions, which affect the capacity of safe operation of the equipment, shall be made to any crane without written approval of the manufacturer.

## 3.17 DEFECTIVE TOOLS

**GENERAL**

At Quolus Construction Services we recognize that defective tools can cause serious and painful injuries. If a tool is defective in some way, DON'T USE IT.

An unsafe tool, machine or piece of equipment must be removed from service and identified in a manner which will ensure it is not inadvertently returned to service until it has been made safe for use.

**Safe Work Practice**

To ensure safe use of hand tools, remember:
1. Never use a defective tool.
2. Double-check all tools prior to use.
3. Ensure defective tools are either repaired or replaced.
4. Be aware of problems like:
    - Chisels and wedges with mushroomed heads
    - Splits or cracked handles
    - Chipped or broken drill bits
    - Wrenches with worn out jaws
    - Tools that are not complete, such as files without handles

<u>Be aware of problems like:</u>

- Chisels and wedges with mushroomed heads
- Split or cracked handles
- Chipped or broken drill bits
- Wrenches with worn out jaws
- Tools which are not complete, such as files without handles

<u>To ensure safe use of hand tools, remember:</u>

- Never use a defective tool.

- Double check all tools prior to use; and
- Ensure defective tools are repaired.

Air, gasoline, or electric power tools require skill and complete attention on the part of the user even when they are in good condition. Don't use power tools when they are defective in any way.

Watch for problems like:

- Broken or inoperative guards,
- Insufficient or improper grounding due to damage on double insulated tools,
- No ground wire (on plug) or cords of standard tools,
- The on / off switch not in good working order,
- Tool blade is cracked,
- The guard has been wedged back on a power saw.

All defective tools are to be tagged for repair and returned to the designated area for repair or replacement.

**REMOVAL PROCEDURE**

All clients should have specific Defective Tool procedures. Ensure that you understand and follow the client procedures.

Every tool, machinery or equipment has to undergo a quick inspection before it can be put to use. The following procedure will be followed when a defect is detected:

1. Use designated tape and wrap it around the tool
2. Use a permanent marker pen to label the tape “DO NOT USE”
3. Return the tool to the office

A determination will be made to either repair or dispose of the tool.

## 3.18 DEMOLITION AND RENOVATION

Employers and the owner must ensure a qualified person does an inspection to identify hazardous materials before work begins on the renovation of a building or structure, or the demolition or salvage of:

- A building or a structure
- Machinery
- Equipment

The inspection must include machinery, equipment, the building or structure, and the workplace. it must identify hazardous materials, such as asbestos, lead, mercury, or PCBs (polychlorinated biphenyls).

The qualified person will prepare a report with the inspection results (i.e., a hazardous materials survey). This report must be available at the workplace.

If the qualified person identifies hazardous materials, a qualified contractor must remove and dispose of them safely. Before starting a hazardous materials abatement, the owner, prime

contractor, or employer working on a residential building must ensure a notice of project is submitted to WorkSafeBC at least 48 hours before the abatement work starts. This notice must be posted on the site for the duration of the abatement work.

**Note:** Another notice of project must be submitted before starting other construction-related work activities, such as demolition and excavation.

Once the abatement is done, a qualified person must do a post-abatement inspection. The qualified person will prepare a written confirmation (a clearance letter) to confirm removal of the hazardous materials. This report must be readily available on site.

If previously unidentified or other hazardous materials are found during demolition, all work must stop until a qualified person can do a risk assessment and the materials are safely contained or removed by a qualified contractor.

## 3.19 DUMP TRUCK LOADING/UNLOADING

**Safe Work Procedure**

- Truck drivers for the trucking companies must be alert to workers, moving equipment and materials being transported by cranes when entering and traveling on the project site.
- Truck drivers for the trucking companies must wear a hard hat, steel-toed boots and high visibility apparel (vests) whenever they leave the cab of their truck on a project site.
- Truck drivers for the trucking companies are to remain in the truck while awaiting their turn to be loaded and during the loading procedure.
- The excavator operator will position trucks by means of communicating to the driver with hand signals and the excavator horn. Trucks should be spotted in a position so that the loading machine does not swing over the truck cab.
- People other than the truck operator, must stand well clear of loading operations. The restricted area extends from 3 m (10 feet) in front of the front bumper of the truck back to and includes the complete length of the hitch if the truck is towing a pony. The restricted area also includes the complete swing radius of the excavator counterweight and the bucket and also extends 3 m (10 feet) out past the far side of the dump truck.
- Truck drivers for the trucking companies and other operators of equipment must not drive into the swing radius of cranes, excavators, or shovels when such equipment is in operation.
- Truck drivers for the trucking companies may leave the loading position only upon receiving the signal to do so from the excavator operator.
- Rocking the truck to loosen a load is dangerous and should be avoided. Trucks must not be driven with the box raised.
- Never position yourself under the raised box of a truck unless it is safely blocked up from the frame of the truck by a heavy timer or other safety device.
- Anyone trying to contact the excavator operator or the truck driver during the loading operation must make eye contact with both the truck driver and the excavator operator. The excavator operator must stop operations before anyone enters the restricted area. When leaving the restricted area, the person must leave in full view of the truck driver and the excavator operator. Loading may only restart once the person has left the restricted area.
- All dump trucks must be 1998 or newer, pre-inspected daily and maintained for road and public safety.

- Equipped and using back up warning alarms and flashing amber lights when accessing and operating on site.
- Truck Driver safety orientation requirements must be completed and adhered.

## 3.20 ELECTRICAL SAFETY

A common incident in construction is contact with overhead or underground power lines. Injuries and fatalities can occur from incidents involving low voltages or high voltages. The resulting injuries can range from shock to severe burns.

***Low voltage*** **means "a potential difference (voltage) from 31 to 750 volts inclusive, between conductors or between a conductor and ground."**

***High*** **voltage means "a potential difference (voltage) of more than 750 volts between conductors or between a conductor and ground."**

Identifying overhead and underground power lines during the planning phase is required and helps keep workers safe and eliminate costly delays resulting from incidents.

**Working around energized high-voltage equipment and conductors**

Incidents involving high voltages (over 750 V) can result in severe injuries and death. Potential hazards include contact with a body part, mobile equipment, or a tool or piece of building material being held by a worker. During land clearing, there's a risk of trees being felled or pushed into overhead power lines.

For any work activity near high-voltage electrical equipment and conductors the following is required:

- Determine the location and voltage of the high-voltage electrical equipment and conductors. Contact the utility owner controlling the system — for example, BC Hydro.
- Ensure the limits of approach (minimum distances) are maintained at all times.
- Determine what activities may occur near the overhead power lines. Examples include the following:
  - Using mobile equipment, such as mobile cranes or forklifts, to deliver materials to the workplace.
  - Doing building-envelope work activities, such as siding or balcony work. The materials, tools, and equipment being used may come close to overhead power lines.
  - Before workers start working near high-voltage electrical equipment or conductors, they must be informed of the location and voltage of the equipment and conductors, as well as the work arrangements and procedures to be followed.

### 3.20.1 Minimum distances (limits of approach)

Employers, prime contractors, homeowners, and workers must maintain the minimum distances specified in the tables below.

**Minimum approach distance for working close to exposed electrical equipment or conductors (Table 19-1A from Part 19 of the OHS Regulation)**

| Voltage (phase to phase) | Minimum distance | |
|---|---|---|
| | Meters | Feet |
| Over 750 V to 75 kV | 3 | 10 |
| Over 75 kV to 250 kV | 4.5 | 15 |
| Over 250 kV to 500 kV | 6 | 20 |

**Minimum clearance distance for passing under exposed electrical equipment or conductors (Table 19-1B from Part 19 of the OHS Regulation)**

| **Voltage (phase to phase**) | **Minimum** Meters | **distance** Feet |
|---|---|---|
| Over 750 V to 75 kV | 2 | 6.5 |
| Over 75 kV to 250 kV | 3 | 10 |
| Over 250 kV to 550 kV | **4** | 13 |

Risk controls must always be implemented according to the hierarchy of controls. You must consider the controls in the following order:

1. Displace or reroute the electrical equipment and conductors from the work area while the work activities are being completed, if practicable.
2. If this isn't practicable, isolate and ground (de-energize) the electrical equipment, if practicable.
3. If isolation and grounding aren't practicable, visually identify and guard the electrical equipment and conductors. Cover guards or physical barrier guards must be installed.

If these limits can't be maintained or movement by workers or equipment could result in inadvertently entering these minimum distances, you must contact the utility owner to get an assurance in writing (form 30M33) and have it signed by a representative of the utility owner.

**Cover guarding and visual identification**

- Cover guarding is not considered an insulator. It doesn't prevent electrical arcing between the electrical equipment and conductors and any mobile equipment or people. Cover guarding doesn't change the limits of approach.

- When using visual identification for power lines, you must designate a qualified safety watcher or use range-limiting or field-detection devices acceptable to WorkSafeBC.
- Workers who will be near high-voltage lines must be informed of the location and voltage of the lines, as well as the work arrangements and procedures to be followed.

### Contact with energized power lines

- If a machine makes contact with an energized power line, equipment operators and workers on the site need to act with extreme caution. Anything in contact with the machine will be energized for some distance around the machine, especially the ground around it.
- If it's a high-voltage power line, stay back at least 10 m (33 ft.). Contact the utility owner and emergency services (call 911), depending on the circumstances.

### Underground electrical equipment and conductors

- When you dig, you run the risk of hitting buried power lines, conduits, pipelines, or other utilities. Employers, prime contractors, homeowners, and workers working on residential buildings must accurately determine and identify the locations of underground power lines before digging holes, trenches, or other excavations. Excavating, digging, and driving ground rods or other long metal objects into the ground can be dangerous around buried power lines. Fence-post holes may be deep enough to reach lines.
- Before starting work, employers should contact their local utility owners and BC 1 Call to determine the locations of underground utilities at the workplace.

## 3.20.2 Working around low-voltage equipment and conductors

Many workers are injured by contact with energized low-voltage power lines (750 V or less). Generally, workers suffer burns and physical injuries from electric shocks, or even fatal injuries. Other injuries can also result from contact with energized low-voltage power lines. For example, if a worker comes into contact with a power line while on a roof or ladder, the electric current could also cause the worker to fall.

**Before working close to energized low-voltage equipment, energized parts must be effectively guarded.**

- If uninsulated, energized parts are not guarded with approved cabinets or enclosures, then suitable barriers or covers must **be provided if a worker unfamiliar with the hazards is working** within 1 m (3.3 ft) of the energized parts.
- The employer should contact the utility owner to determine what work arrangements and procedures need to be followed while working near low-voltage power lines. Examples of these power lines are telecommunication lines, service-drop lines to buildings, and trolley lines.

## 3.20.3 Portable electrical equipment

- When planning for your workplace, plan for the safe use of portable electrical equipment, such as temporary power-supply boxes and temporary lighting. Keep in mind that using approved equipment won't eliminate every hazard if the equipment is damaged or you're

using it in the rain or wet areas. Most electrical-equipment manufacturers specify that their equipment shouldn't be used in wet or damp conditions.

- When working outside or in wet or damp conditions, you must use Class A-type ground-fault circuit interrupters (GFCIs) for portable electrical equipment. The GFCIs must be installed either at the receptacle or at the panel.
- The workplace may use GFCIs in combination with an Assured Grounding Program. The program can be a good inspection tool when used in conjunction with GFCIs.
  - The program ensures that the hot, neutral, and ground wires of electrical cords are connected to the proper terminals and are electrically continuous.
  - To determine this, perform a continuity test on extension cords and power tools when they're put into service, every three months afterward, and following repairs.
- The temporary supply box used during construction can be an electrical hazard. It consists of several outlets used by contractors. The temporary distribution panel should be under strict control and have a lockable cover to prevent tampering by others.
- Make sure temporary-lighting cords aren't trapped in doorways, where the door could pinch the cords and damage the protective shield. Replace missing or burnt-out bulbs to ensure there are no exposed connections and that there's enough lighting for safe working conditions.

## 3.21 ELEVATING WORK PLATFORMS

### 3.32.1 Scissor lifts, booms, and giraffes

**Note:** The following rules are intended as guidelines only. Specific Safe Work Procedures must be utilized by any workers using this machinery.

- No person may operate work platforms without authorization unless they have been trained by a certified operation trainer that meets the requirements of the WorkSafeBC.
- Equipment must be used and maintained in accordance with applicable Occupational Health and Safety Regulations. Safe workloads must be clearly marked as required.
- A pre-use inspection must be performed by the operator before use each day, using a checklist and recorded in a logbook.
- Logbooks must be available and maintained and the manufacturer’s manual must be immediately available.
- Guardrails with toe boards and safety chains must be in place and a fall protection harness and lifeline/lanyard must be in place and used.
- If a unit is lifted with outriggers, it must be in place and fall protection harness and lifelines must be in place and used.
- Carrier vehicles of elevated work platforms must be immobilized against inadvertent motion before workers occupy the platform and hazards such as power lines must be identified prior to use.
- Scissors lifts must be guarded where there is a possibility of workers inadvertently coming into contact with any hazardous moving parts of the lifting mechanism.

- All vehicle-mounted giraffes or self-propelled boom-supported elevated work platforms must be non-destructively tested every 12 months.
- Every elevating work platform must be fitted with a warning system for forward, reverse, up and down motions.
- All self-propelled elevating work platforms (except truck-mounted platforms) must be fitted with tilt angle indicators or warning devices as described in the Occupational Health and Safety Regulation.
- The Quolus supervisor or site Safety Representative shall review the guidelines for usage as set out by the Scaffold Industry Association and WorkSafeBC regulations prior to a worker being given authorization to proceed.

### 3.21.2 Elevating work platforms

**Workers operating elevating work platforms, such as self-propelled boom lifts and scissor lifts, may be exposed to the following hazards:**

- Falling or tipping over because of slopes, uneven terrain, curbs, holes, or objects on the ground
- Contact with overhead obstructions, such as power lines

**General requirements for elevating work platforms**

- Select and use elevating work platforms that meet CSA Group or ANSI standards. The following are some examples of requirements in the standards:
  - Ensure that the supporting surface is firm and level. Make sure the wheels are in contact with the ground before elevating or repositioning the platform.
  - Don't stand on guardrails.
  - Don't exceed the working load limit of the elevating work platform with tools, equipment, or workers.
  - Maintain full control of the equipment, and comply with the laws governing its operation at all times.
  - Follow the manufacturer's safe operating instructions.
  - Ensure only workers who are properly trained and authorizes operate the elevating work platform.
  - Inspect equipment before use and as required during use to ensure it is operating safely.
  - Report to your supervisor or employer any defects or conditions that could affect the safe operation of the equipment. Don't use damaged equipment.
  - Before operating equipment, be aware of overhead obstructions and hazards, such as high-voltage power lines. Stay clear of them, and maintain the limits of approach when working around or passing under energized electrical equipment and conductors.
  - Always wear fall-arrest protection in elevating work platforms. For specific requirements for fall protection on elevating work platforms, see Part 13 of the Regulation.
  - Use only lifts with controls that are protected from inadvertent operation.
  - Ensure that each set of operating controls on the lift has an emergency stop device within easy reach of the operator. These devices must be labelled STOP and coloured red.

## 3.22 ENVIRONMENTAL PROTECTION PRINCIPLES

The environmental policy and procedures has been put in place for the protection of **Quolus** personnel, our clients, society at large, and the environment.

**Quolus employees will be guided by the following principles:**

- **Prevent** – We will plan our activities during stages of estimating and pre-construction to prevent or limit environmental damage.
- **Consult** – We will consult with all local, provincial or federal groups having jurisdiction in our work areas, to ensure that we comply with all legislated requirements and take prudent action to protect the environment.
- **Improve** – We will promote the use of practices that will meet or exceed all environmental standards and general good practice.
- **Monitor** – We, through our site supervisors, will monitor all work areas under our control, and keep current with legislation to ensure that environmental protection measures are maintained at all times.
- **Correct** – We will take appropriate action to correct any environmental damage arising from our operations
- **Respond** – We will respond immediately to any emergencies created by our actions to protect our workers, the public and the environment.
- **Train** – We will ensure that any environmental training programs required for our employees will be provided.

### 3.22.1 Potential Workplace Hazards (Common to Construction Sites)

**Chemical substances:** These may include but are not limited to:

| | |
|---|---|
| Acetylene - welding and cutting gas | Ammonia - in some brick-work and concrete washes |
| Asbestos - insulation | Cadmium fumes - brazing with rods containing cadmium |
| Carbon monoxide - from incomplete combustion of fuels | Concrete dust - dusts generated during cutting and grinding |
| (Di)Chlorodifluoromethane (CFC) - refrigerants | Formaldehyde - foamed insulation |
| Glass Fibre dust - insulation | Hydrogen chloride - in some masonry cleaners and de-scalars |
| Hydrogen fluoride - in some masonry cleaners | Hydrogen sulphide - found in some sewers and pits |
| Iron oxide fumes - in some welding fumes | Lead-plumbing use and stripping of some paints |
| Nitric acid - in some masonry cleaners and de-scalars | Oxygen - frequently displaced in confined spaces |
| Ozone - in welding fumes | Portland cement - dusts generated during mixing |
| Quartz dust - cutting or grinding granite, terrazzo tiles | Silica sand - dusts generated during sandblasting/storage |
| Sulphuric acid - in some masonry cleaners | |

**Environmental Practices**

To meet the legal requirements regarding prevention of personal over-exposure to hazardous products and contaminants in the workplace, according to WHMIS 2015/GHS guidelines:

- Spill containment and clean-up products and procedures are in place at worksites requiring them.
- Limit emissions from vehicles and equipment in enclosed spaces.
- Provide adequate ventilation where it is necessary to provide relief from hazardous airborne substances.
- Serious environmental contamination will be documented, and authorities advised where required.

### 3.22.2 Environmental Containment Procedures

The release of a contaminant may happen as a result of equipment malfunctions and human error. In the event of a release of a contaminant, Quolus will respond by immediately reporting the release of the contaminant to the site CSO.

The following is an outline of preventative techniques and responses that will enable **Quolus** employees to prevent, and if necessary, respond to, any harmful air, land, or water borne contamination of the environment.

**Contamination Types:**

- **Land:** the spillage of any liquid or solid that may negatively affect the soil, strata, flora and fauna, or persons in the short or long term.

- **Water:** the spillage of any liquid or solid that may negatively affect the ecosystem or portability of the immediate body of water or connected bodies of water in the short or long term.

- **Air:** the release of airborne substances (dust, vapours, gases, fumes, etc.) that may negatively affect the respiratory health of humans, flora, or fauna, in the short or long term.

**Major incidents:**

- An emergency presents an immediate threat to life, or an immediate hazard to property and/or to the environment.
- An uncontrolled release, vehicle collision, line, valve or tank rupture with an extensive release of hazardous materials occurs e.g. uncontrolled leakage from the rupture of a gasoline storage tank.
- May extend beyond the site property, including materials released in or adjacent to water courses.
- Are immediately reportable under legislation.

**Serious incidents:**

- Present a safety, property and/or an environmental hazard
- Are controllable but involve a high rate of release with the possibility of affecting a wide area.

- This includes small leaks of very hazardous materials, and may include materials released in or adjacent to water courses.
- Requires assistance from personnel outside of the company. i.e. environmental personnel.
- May have a potential to extend beyond the company site/property.

**Minor incidents:**

- Present minimal potential to safety, property damage or environmental hazard.
- Are localized and controllable.
- Can be contained and cleaned up immediately by personnel first on the scene or with minor assistance.

### 3.22.3 Spill Response

Where spills may have occurred, follow this procedure:

- Get away (if it may be a health hazard).
- Identify what you saw, and what was released.
- Prevent or inhibit the further release of product (if it is safe to do so).
- Report the spill to the site CSO.
- Alert others.
- Seal off the area.
- Look for and assist any injured or overcome persons.
- Get proper equipment, PPE, and materials to deal with the spill.
- Contain the spill (from traveling to drains, waterways, or away from the immediate release location to limit further contamination).
- Clean up the spill.
- It is the responsibility of the client to notify proper agencies when and where it is necessary to do so.

## 3.23 EQUIPMENT AND MACHINERY

**Safe Work Practices**

- Workers must not wear loose fitting clothing and/or jewelry if they could come into contact with moving parts.
- Do no operate any equipment or machinery that you are not familiar with and have received training on.
- Operate equipment or machinery only with all factory installed or approved guards and control devices in place. A fixed guard must not be modified to be readily removable without the use of tools.
- Check all guards and control devices prior to use. Ensure all machinery and equipment is fitted with adequate safeguards which: (a) protect the worker from contact with hazardous power transmission part, (b) ensure that a worker cannot access a hazardous point of operation, and (c) safely contain any material ejected by the work process which could be hazardous to a worker. Rotating parts, such as frictions drives, shafts, coupling and collars, set screws and bolts, keys and keyways, and projecting shaft ends, exposed to contact by workers must be guarded. Exposed moving parts on mobile equipment, which are a hazard to the operator or to

other workers, must be guarded, and if a part must be exposed for proper function, it must be guarded as much as it is practicable consistent with the intended function of the component.

- Inspect equipment for defects or changes in condition at the beginning and end of each shift.
- A person must not intentionally remove, impair, or render ineffective any safeguards provided for the protection of workers.
- Any defective equipment or machinery must be immediately removed from use and reported to the supervisor.
- Equipment and machinery operation manuals must be available at the place of work.
- Equipment or machinery must never be cleaned, oiled, adjusted or repaired until after being turned off and/or disconnected from its power source.
- Never swing suspended loads over workmen.
- Keep proper clearance from all structures and voltage lines.

## 3.24 EXCAVATIONS and TRENCHES

This section is an overview of high-risk work activities that may take place during trenching and excavation work. It doesn't include every hazard you may encounter during this construction phase.

### 3.24.1 Definitions

**Excavation** — Any cut, cavity, trench, or depression in the earth's surface resulting from rock or soil removal.

**Trench** — An excavation of any length that's less than 3.7 m (12 ft.) wide at the bottom and more than 1.2 m (4 ft.) deep.

**Adjacent to an excavation** — Within a distance less than or equal to the overall depth of the excavation, measured from a vertical line through the toe of the excavation face (1 horizontal to 1 vertical).

**Note:** Working in excavations and trenches is considered high-risk work. The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures when necessary.

### 3.24.2 General

Excavations are restricted spaces which are subject to collapse at any time. Water pressure, frost, shock, vibration, weight of excavated material or nearby equipment, and depth all play a part in adding to the forces which are already present. A professional engineer or professional geoscientist familiar with the forces involved is the only one capable and authorized to determine if an excavation is safe to enter and only under specific conditions.

According to section 20.78 of the Regulation, excavation work must follow the written instructions of a qualified, registered professional (i.e., a professional engineer or geoscientist) in the following situations:

- The excavation is more than 6 m (20 ft.) deep.
- There's an improvement or structure adjacent to the excavation.
- The excavation is subject to vibration or hydrostatic (water) pressure that is likely to result in hazardous ground movement.
- The ground slopes away from the edge of the excavation at an angle steeper than a ratio of 3 horizontal to 1 vertical.

**NO EMPLOYEE SHALL ENTER ANY EXCAVATION OVER 1.22 m (4 ft.) IN DEPTH UNLESS THE FOLLOWING CONDITIONS ARE MET:**

The excavation walls are sloped at angles which provide a stable face. In no case shall such a slope be steeper than 3 horizontal to 4 vertical; or

The sides have been supported by shoring, piling or bracing which meets the requirements of the WorkSafeBC Occupational Health and Safety Regulation or have been designed and certified by a professional engineer or professional geoscientist. The certification must show how and for what types and depths the support system may be used, what conditions (such as rain or heavy equipment) will have on the excavation and must have an expiry date. A copy must be available at the site of the system.

When employees are required to enter excavations between 1.2 m (4 ft.) and 3.0 m (10 ft) in depth, a ladder must be provided in the immediate area where employees are working. The ladder must extend to the bottom of the excavation and 0.91 m (3 ft.) above ground level. Any excavation deeper than 10 feet will require a stairway or ramp for access and egress.

All excavations must meet the requirements of the WorkSafeBC Occupational Health and Safety Regulations. Excavations must be sloped or supported according to the design of a registered professional engineer or professional geoscientist when the excavation is:

a) greater than 6 meters (20 ft) in depth; or
b) adjacent to structures, or
c) subject to vibration or hydrostatic pressure, or
d) as determined by the General Contractor or a WorkSafeBC inspector.

The design, instruction & back-up information on the subsurface conditions expected to be encountered during the excavation must be kept on the job site and be available for review.

### 4.24.3 Safe Work Procedure

The following rules will be enforced without exclusion:

- Excavation work must be carried out in accordance with the specifications and requirements of a registered professional engineer and/or those of the WorkSafeBC OHS Regulation.
- The location of underground utility services must be accurately determined and marked before starting excavation work.

- Excavation work close to a utility must be undertaken in conformity with applicable provincial and federal Regulation and with the requirements of the owner of the service.
- Workers must not enter any excavation more that 1.2 m (4 ft) deep unless:
  a) The sides of the excavation are sloped to a safe angle or benched as specified in the WorkSafeBC OHS Regulation or in accordance with the designs and instructions of a professional engineer.
  b) The sides have been supported by the use of sheet piling, or shoring and bracing meeting the standards set out in WorkSafeBC OHS Regulation.
  c) The workers are protected by other means acceptable to WorkSafeBC.
- Sloping of the sides excavations may be done instead of shoring only where workers have protection equivalent to that provided by shoring. In no case may a slope be steeper than 3/4 horizontal to 1 vertical unless provided for by a registered professional engineer experienced in geo-technical design.
- Trench support systems must be inspected daily and must be maintained in fully effective condition.
- Shoring uprights must extend from at least 30 cm (1 ft) above ground level to within 60 cm (2 ft) from the bottom of the trench except where roadway covers are utilized.
- Are not exposed to undue risk. In general, shoring must be installed from the top down and removed in reverse order.
- When workers are required to enter trenches or more than 1.2 m (4 ft) deep, a safe point of entry and exit must be provided within 8 m (25 ft) of the immediate work area.
- Excavated material must be kept back a minimum distance of 60 cm (2 ft) from the edge of the trench and 1.2 m (4 ft) from any other excavation.
- Barricades shall be placed to prevent inadvertent entry and placement of mobile equipment.
- Water must not be allowed to accumulate in excavations where it may affect the excavation's stability or endanger workers.
- Loose material must be removed from trench sides prior to entry

**Other excavation requirements**

- Remove or secure trees, utility poles, rocks, and similar objects adjacent to the excavation area if they could endanger workers.
- Provide a safe entry and exit. If workers are required to enter a trench deeper than 1.2 m (4 ft.), the safe entry and exit must be located within 8 m (25 ft.) of the workers and the excavation must be safely supported or sloped to the entry and exit location.
- Cover or guard excavations that are hazardous to workers. For example, use guardrails to protect workers from falling.
- Walkways across excavations must be at least 50 cm (20 in.) wide. If a walkway crosses an excavation that's more than 1.2 m (4 ft.) deep, it must have guardrails on both sides that meet the requirements of Part 4 of the Regulation.
- Keep excavated material back at least 60 cm (2 ft.) from the edge of trench excavations and 1.2 m (4 ft.) from other excavations.

- Don't allow water to accumulate in an excavation if it might affect the stability of the excavation or endanger workers.

### 3.24.4 Hazard Assessment - Excavation (Over 4 ft Deep)

| JOB STEPS | HAZARDS | CONTROL MEASURES |
|---|---|---|
| 1. Security of Site | Traffic | Worksite must be protected from passing traffic by the use of traffic controls such as lane closures, detours, barricades or traffic control persons |
| | Pedestrians (Public) | Area must be blocked off from pedestrian (public) access. |
| 2. Inspection of Site:<br>➢ Soil Conditions<br>➢ Locate Services<br>➢ Depth Required<br>➢ Sloping or Shoring | Cave-in, Flooding | Competent person must inspect site before excavation commences to assess the risk of cave-in and/or flooding.<br>Trenches must be re-inspected before any re-entry |
| | Stability of structures | Must identify collapse risk of adjoining structures (such as buildings or roads) before excavation commences. |
| | Underground Services | Underground services must be located before digging commences. A written record of all requests, responses and representations should be kept on site with job records. |
| 3. Excessive Noise | Hearing Loss | Wear Hearing protection |
| 4. Excavate | ➢ Excavator falling in.<br>➢ Striking worker with machine and/or spoil pile<br>➢ Worker falling in excavation | Follow proper procedures. The spoil pile must be at least 2 ft from excavation edge. Machines must maintain safe distance from excavation (soil conditions must be evaluated) Workers must stay out of equipment blind spots and not enter the range of the equipment without establishing eye contact with operator. |

**Hazard Assessment - Setting Cages and/or Manholes in Excavations**

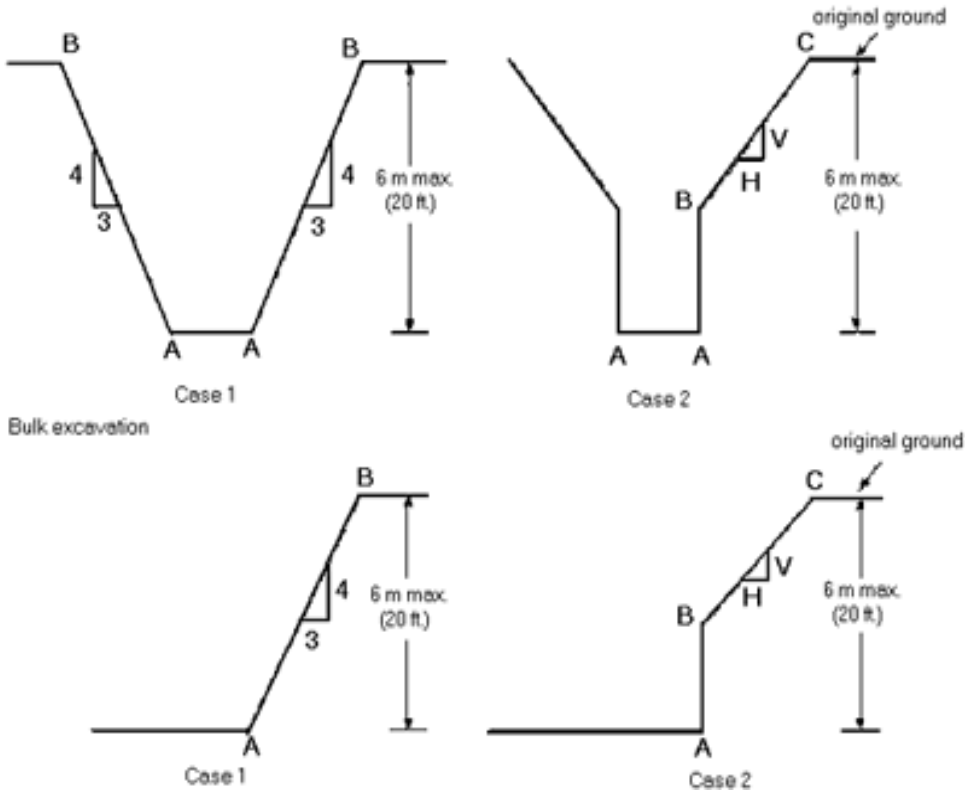
| JOB STEPS | HAZARDS | CONTROL MEASURES |
|---|---|---|
| 1. Security of Site | ➢ Traffic<br><br>➢ Pedestrians (Public) | Worksite must be protected from passing traffic by the use of traffic controls such as lane closures, detours, barricades or traffic control persons<br><br>Area must be blocked off from pedestrian (public) access. |
| 2. Inspection of Site:<br>➢ Soil Conditions<br>➢ Locate Services<br>➢ Depth Required<br>➢ Sloping or Shoring | ➢ Cave-in, Flooding<br><br>➢ Stability of structures<br><br>➢ Underground Services | Competent person must inspect site before excavation commences to assess the risk of cave-in and/or flooding.<br>Trenches must be re-inspected before any re-entry<br><br>Must identify collapse risk of adjoining structures (such as buildings or roads) before excavation commences.<br><br>Underground services must be located before digging commences. A written record of all requests, responses and representations should be kept on site with job records. |
| 3. Excessive Noise | ➢ Hearing Loss | Wear Hearing protection |
| 4. Clamp Clutches onto Bases (of Manholes) Skip Step for Cage. Safety clutch locks in. Must ensure they are turned the correct way. | ➢ Finger Pinch<br>➢ Crush Injuries | Keep finger out of pinch points. Use proper procedures. |

| | | |
|---|---|---|
| 5. Hook up Base (or Cage) to Excavator | ➢ Crush injuries<br>➢ Pinches | Workers to avoid pinch points. Use proper Rigging Procedures |
| 6. Lift Base/Cage and put into place | ➢ Worker Struck by Base/Cage | Never stand directly underneath load- Proper Lifting procedures. |
| 7. Set Base/Cage into place | ➢ Pinches<br>➢ Crush Injuries<br>➢ Slips,trips,falls | Use Proper lifting Procedures. Be aware of pinch points.<br>Be aware of surroundings and footings at all times. Workers are not to be in excavation prior to cage being in place. |
| 8. Unhook base/cage from rigging | ➢ Pinches<br>➢ Struck by Cage<br>➢ Slips,trips and falls | Proper access procedures. Avoid pinch points and awareness of ground, surroundings. Care must be taken to avoid being struck by the rigging as it exits the excavation |

### 3.24.5 Excavation and Trenching – Sloping and Shoring diagrams

1. **Sloping in lieu of shoring**

Figure 20-1 Sloping in lieu of shoring

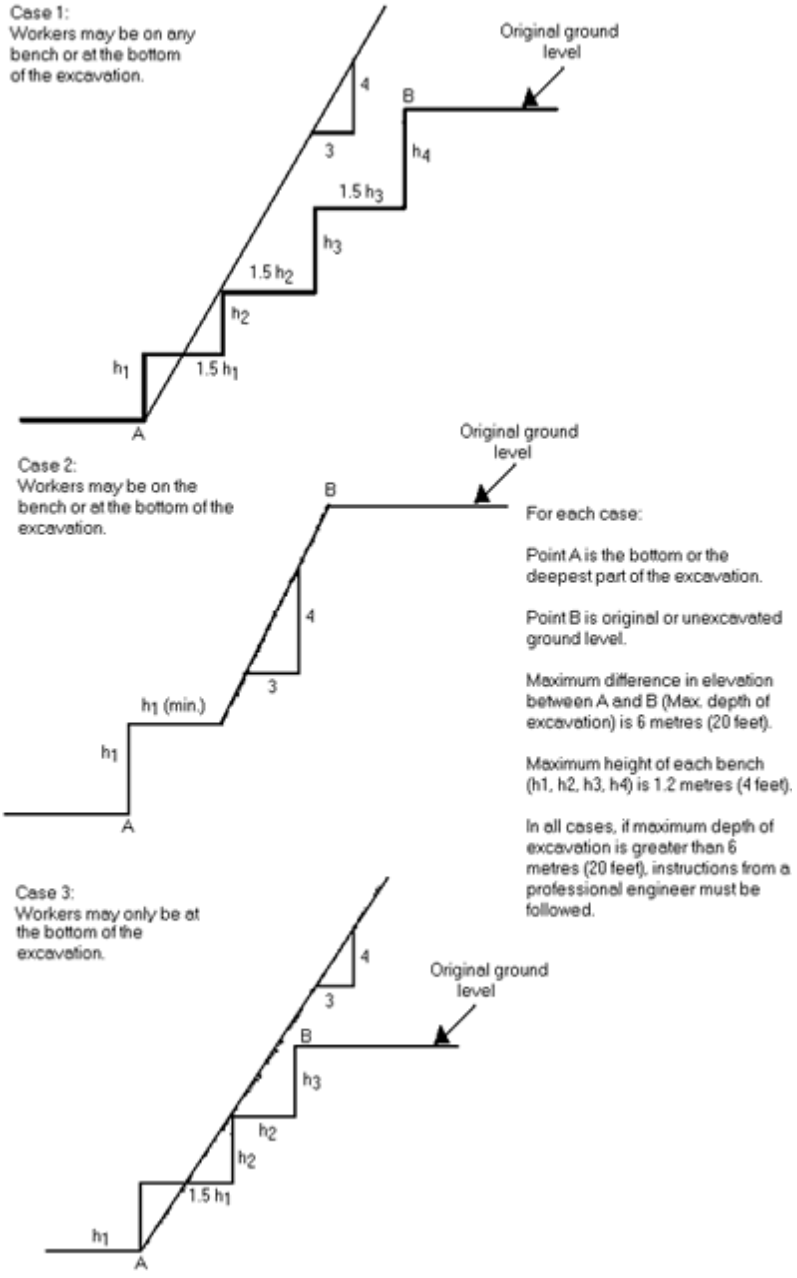



Case 1 (trench or bulk excavation) - maximum slope of excavated face, shown as line AB, in hard and solid soil is 3 horizontal to 4 vertical.

Case 2 (trench or bulk excavation), maximum height of vertical portion, shown as line AB is 1.2 metres (4 feet).

For Case 2 (trench or bulk excavation), the maximum permissible slope of the excavated face BC for the corresponding height of the lower vertical cut AB is as follows:

Figure 20-2: Benching in lieu of shoring




For each case:

Point A is the bottom or the deepest part of the excavation.

Point B is original or unexcavated ground level.

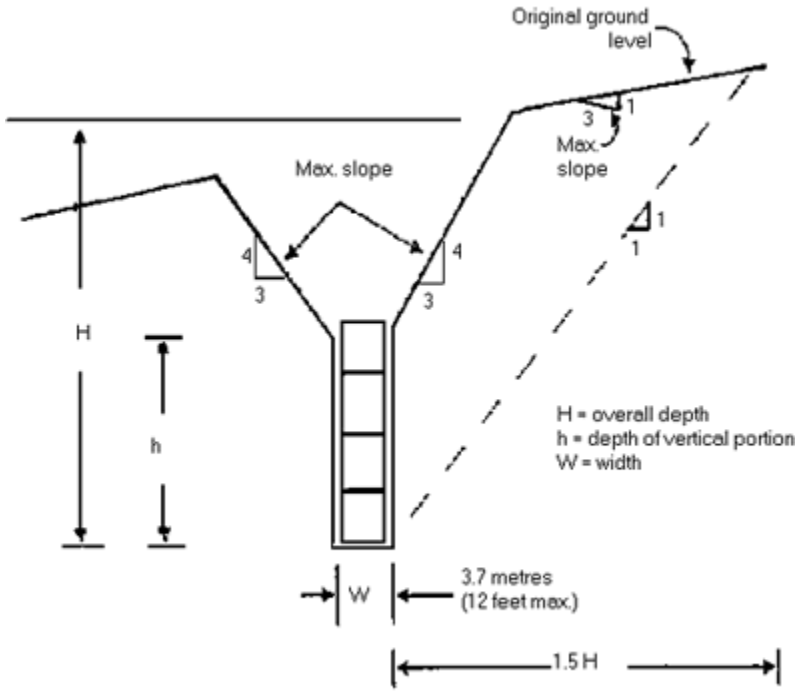
Maximum difference in elevation between A and B (Max. depth of excavation) is 6 metres (20 feet).

Maximum height of each bench (h1, h2, h3, h4) is 1.2 metres (4 feet).

In all cases, if maximum depth of excavation is greater than 6 metres (20 feet), instructions from a professional engineer must be followed.

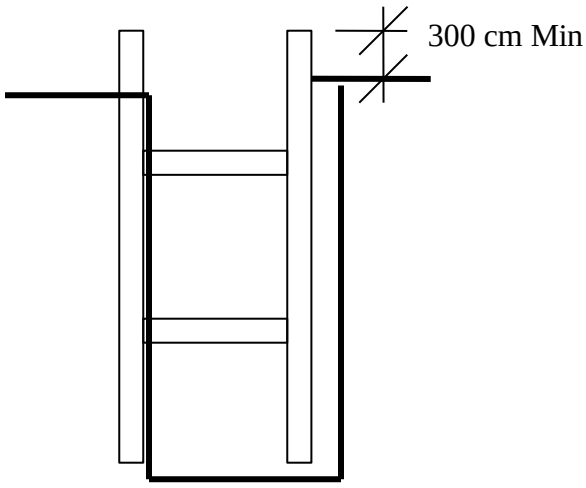
## 2. Combined supporting and sloping

Figure 20-3: Combined supporting and sloping




Shoring must be adequate for excavation depth H.
Depth H cannot exceed 6 metres (20 feet).

**3. Diagram of shoring extension above trench**




## 3.25 EXPOSURE TO CONTAMINATED SHARPS

**General**

The following exposure incidents are potentially harmful:

- Skin is punctured with a contaminated sharp.
- A mucous membrane (the eyes, nose or mouth) is splashed with blood or certain body fluids.
- Non-intact skin is splashed with blood or certain body fluids.

Non-intact skin is skin that can be fresh open cuts, nicks, wounds, abrasions, chapped and damaged skin and skin with diseases, such as eczema and dermatitis.

**Safe Job Procedures:**

1. **Get first aid immediately.**
   - If the mucous membrane of the nose, eyes, or mouth is affected, flush with lots of water at sink or eyewash station.
   - If there is a sharp injury, allow to bleed freely. Then wash the area thoroughly with non-abrasive soap and water.

2. **Report incident.**
   Report the incident as soon as possible to your supervisor and first aid attendant. This should **not** cause significant delay in seeking medical attention.

3. **Seek medical attention immediately.**

Seek medical attention immediately – **preferably within two hours –** at the closest emergency room, or at a health care facility. Immunization or medication may be necessary. These may prevent infection or favorably alter the course of the disease if you do become infected. Blood tests should also be done at the time. You may need to see your family doctor within the next five days for a follow-up, such as counseling and medication.

4. **Should the exposure be from a used syringe, place it in a needle container and take with you when seeking medical aid.**

## 3.26 FALL PROTECTION – WORKING AT HEIGHTS

Working above a floor or grade is part of the job for construction workers. Falls from elevations, such as roofs, raised floors, ladders, scaffolds, and work platforms, are a common cause of injuries in residential construction.

Work done by Quolus Construction Services will occasionally involve work from heights. Quolus Construction Services will conduct a risk assessment in these situations to determine appropriate fall protection requirements to protect employees and sub-trades. The process is as follows:

If the work to be conducted has a:

- Hazard of a fall from 3 m (10 feet) or more
- Fall hazard from a lower height which involves an unusual risk of injury.

Then:

- A fall protection system must be used where the first priority is the use of guardrails
- If guardrails are not practicable, then fall restraint is the next priority
- If fall restraint is not practicable, then fall arrest must be used
- If fall arrest is not practicable, then control zones or control zone and a safety monitor must be used.

### 3.26.1 Types of fall protection

Fall protection systems must be considered in the following order: guardrails, fall restraint, fall arrest, and other procedures acceptable to WorkSafeBC. This is the hierarchy for fall protection.

**1. Guardrails**

An area accessible to workers must have guards or guardrails installed if any of the following is 122 cm (4 ft.) or more above grade or above the adjacent floor:

- A raised floor
- An open-sided floor
- A mezzanine, gallery, or balcony
- A work platform
- A ramp, walkway, or runway

Specific exceptions are described in section 4.56 of the Regulation.

A guardrail is a guard with a top rail that's 102-112 cm (40-44 in.) above the work surface and a midrail approximately midway between the underside of the top rail and the top of the toeboard, if one is provided, or the work surface if no toeboard is provided.
Where practicable, properly constructed guardrails built as a system and appropriately attached to a structure are the first system of fall protection you must use. If guardrails aren't practicable, the next fall protection system that must be used is fall restraint.

2. **Fall restraint**

Fall-restraint systems prevent workers from falling from a work position or from travelling to an unguarded edge from which the worker could fall.

Fall protection equipment typically consists of an anchor, lifeline, lanyard, harness, and connection devices, such as carabiners or rope grabs. Fall protection equipment must meet and be used according to an applicable CSA Group or ANSI standard that was in effect when the equipment was manufactured.

An anchor for fall restraint must be able to support at least 3.5 kN (800 lb.) or four times the maximum arrest force.

**3. Fall arrest**

If guardrails and fall-restraint systems aren't practicable, the next fall protection system that must be used is fall arrest. Fall-arrest systems are designed to catch falling workers before they strike the surface below. They consist of fall-arrest harnesses, shock-absorbing lanyards, and lifelines connected to an adequate anchor point.

An anchor for fall arrest must be able to support at least 22 kN (5,000 lb.) or two times the maximum arrest force.

**4. Other procedures acceptable to WorkSafeBC**

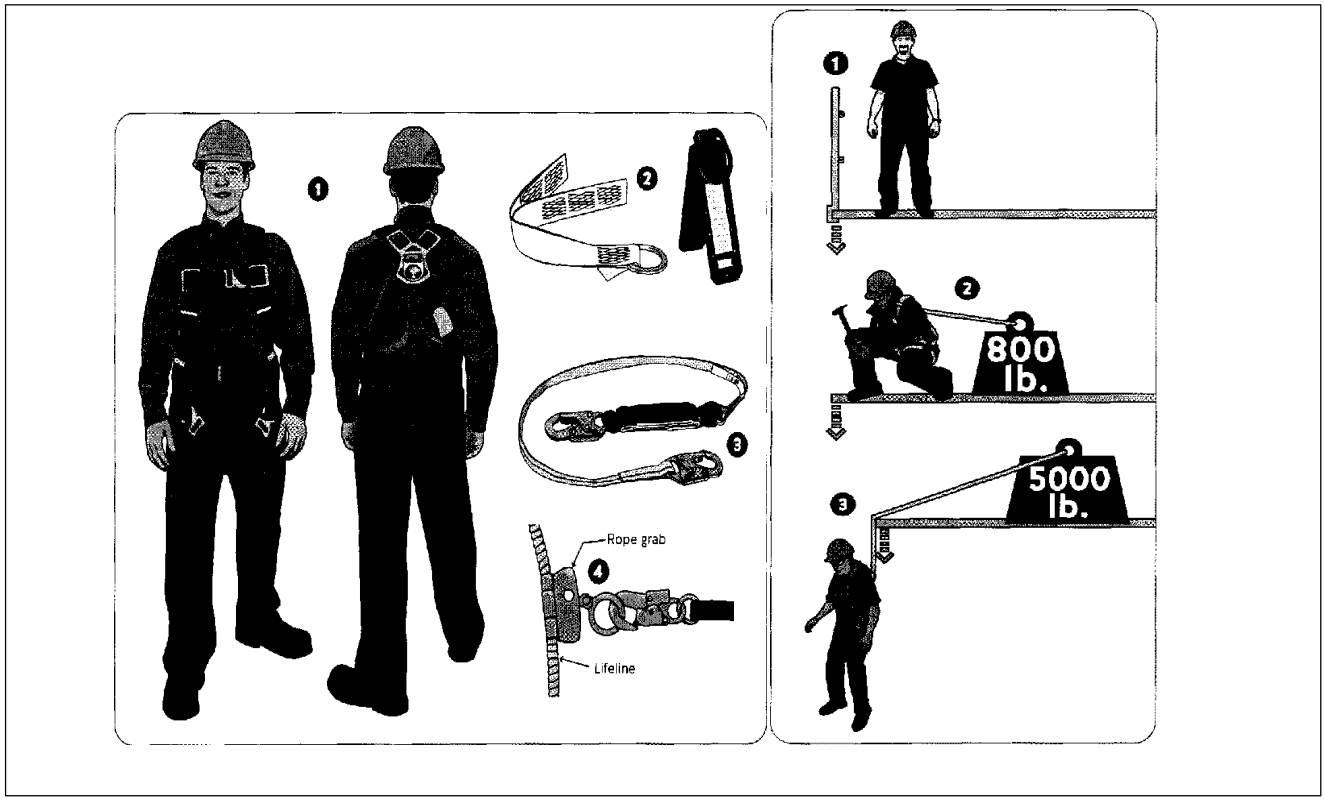
If it is determined by a supervisor that the first three options are practicable, or they will result in a hazard greater *than* if the system was not used, then the supervisor must ensure that work procedures are followed. The work procedures must be acceptable to WorkSafeBC and minimize the risk of injury to a worker from a fall. The most commonly used Other Procedure is the use of a “Control Zone”. You must have a written site-specific fall protection plan, and all workers must be trained, when using other procedures acceptable to WorkSafeBC.

The specific fall protection plan must include:

- The work area to which the Control Zone and the fall protection plan applies,
- the names of the workers trained in the fall protection plan,
- the method of delineation of the Control Zone,
- the work to be conducted in the Control Zone,

- The name and duties/responsibilities of the Control Zone monitor,

**NOTE: All workers working with either 'fall restraint', 'fall arrest' or 'other procedures' systems must show valid prove of training by a competent person or agency.**




1. Personal fall protection harness. 2. A synthetic webbed anchor strap and a metal roof anchor (ridge anchor). 3. A shock-absorbing lanyard. 4. A vertical lifeline with an attached rope grab and lanyard.

## 3.27 FIRST AID

For construction projects, employers and prime contractors both have responsibilities when it comes to first aid. It is required to plan for first aid and to conduct an annual first aid assessment to determine first aid requirements for the site.

As specified in section 3.16 of the Regulation, the employer and/or the prime contractor must provide the first aid equipment, supplies, facilities, first aid attendants, and services that are adequate and appropriate for both of the following:

- Promptly rendering first aid to workers if they suffer an injury
- Transporting injured workers to medical treatment

If two or more employers are operating at a workplace at the same time, the prime contractor must do the following:

- Assess the workplace as specified in sections 3.16(2) and 3.20 of the Regulation.
- Do everything reasonably practicable to establish and maintain first aid equipment, supplies, facilities, first aid attendants, and services as specified in section 3.16 of the Regulation.

The type and quantity of equipment, supplies, facilities, first aid attendants, and services must at least meet the requirements of Schedule 3-A in Part 3 of the OHS Regulation.

All Quolus workers who are injured on the worksite must, as soon as practicable, report the injury to the site first aid attendant and notify your Quolus supervisor of the nature of the injury and the treatment provided.

## 3.28 FORKLIFT DEVICES

Forklift operators must follow all applicable Vehicle and Mobile Equipment safety rules, Provincial requirements and the manufacturer's operation instructions. Manufacturer's instructions shall be maintained at the location of use of the vehicle. No modifications may be made to the equipment.

**Safe Work Practices**

- Forklift must be inspected before use and any defects found must be repaired by authorized personnel.
- Materials and equipment must be loaded on the forklift in a manner that prevents any movement of the load, which could create a hazard to workers.
- All loads, which could be subject to shifting during transportation, must be restrained if such shifting would result in the forklift becoming unstable.
- Carry loads as low as possible.
- Do not drive with arms, head or legs outside the confines of the forklift.
- Any operator who cannot clearly see the load or off-load points and the full path of travel must use a signal person.
- Sound horn and slow down when approaching pedestrians, doorways, ramps and other forklifts or vehicles.
- Forklifts being used indoors must be taken outside for refueling.

- Observe and obey the load capacity of the forklift. Load capacity must be clearly marked on the device.
- When shutting a forklift down: level and lower the forks, apply the parking brake and put the controls in neutral.
- Do not elevate anyone on the forks unless in an engineered and approved man cage that is secured to the forklift. The forklift must not be used to transport personnel in these situations.
- Forklift operators are to follow all applicable Vehicle and Mobile Equipment safety rules.
- Forklift operators must be trained and certified in accordance with recognized standards and WorkSafeBC Regulation. Forklifts must not be operated unless the operator is authorized to do so.
- Seat belts must be used at all times when operating the forklift.
- Forklifts used in enclosed spaces must be shut down when not in use to minimize emissions into the work area and must be equipped to ensure emissions meet air quality standards.
- Do not exceed the load capacity of the forklift.
- When shutting a forklift down, level and lower the forks, apply the parking brake and put the controls in neutral.
- Forklift trucks may only be used to lift personnel if a properly designed and approved lifting device is used and is firmly attached to the forks.

**Employee Qualifications**

Only authorized, competent personnel will be permitted to operate a powered industrial truck. Initial training and refresher training will be given to authorized personnel every three years for the operation of powered industrial truck.

**Forklift/Lifting Device Operations**

- Powered industrial trucks shall be used only for the purpose intended by the manufacturer. All manufacturers' instructions shall be followed.
- Powered industrial trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Personnel, other than the operator, shall not be permitted to ride on powered industrial trucks.
- When a powered industrial truck is left unattended, the load should be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set.
- A powered industrial truck shall not enter a trailer or truck until the brakes have been set and the wheels chocked.
- An overhead guard shall be used as protection against falling objects. A load backrest shall be used to minimize the possibility of the load or part of it from falling.
- For all sit-down forklifts, seat belts must be used during operation of the forklift.

**Rated Load Capacity**

Quolus will ensure that a lifting device has a plate or weatherproof label permanently secured to it that legibly shows:

- the manufacturer's rated load capacity,

- the manufacturer's name, and
- the model, serial number and year of manufacture or shipment date

If a lifting device is not commercially manufactured, Quolus will ensure that it has a plate or weatherproof label permanently secured to it that legibly shows the rated load capacity according to the professional engineer's certification.

**Forklift Truck - Traveling**

- All traffic regulations shall be observed under all conditions. The truck shall be operated at speeds that will permit it to be brought to a stop in a safe manner. A safe distance of approximately three truck lengths from the truck ahead shall be maintained.
- The operator shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. Operators shall not pass other vehicles at these locations.
- Forklifts shall be driven with the forks as low to the ground as practical.
- Stunt driving and horseplay shall not be permitted.
- All employees loading truck trailers and trucks shall ensure all wheels are chocked (two of them) and jack stands are in place prior to loading the vehicle.

**Forklift Inspection and Maintenance**

- Prior to operating a powered industrial truck or any lifting device, the competent operator shall perform an inspection of the vehicle. This shall be done at the beginning of each shift or prior to use of a truck.
- Maintenance and inspection records (log books) will be maintained for each lifting device.
- Any powered industrial truck not in safe operating condition shall be removed from service.
- Defects that might affect the safe operation of a lifting device must be repaired by authorized personnel before the equipment is operated.

- Records of the inspections are to be kept with the mobile equipment. Maintenance records are to be maintained by the branch offices and made readily available upon request.

## 3.29 GENERATORS

Generators are generally found on construction sites and under the responsibility of the prime contractor.

**Safe Work Practices**

- Place the generator at least 1 m (3 ft.) away from the buildings or other equipment during operation.
- Operate the generator on a level surface. If the generator is tilted, fuel spillage may result.
- Exhaust gas contains poisonous carbon monoxide. Never run the generator in an enclosed area. Be sure to provide adequate ventilation.
- Know and understand the manufactures recommendations for use.
- Know how to stop the generator quickly in case of emergency. Understand the use of all generator controls, output receptacles, and connections.
- Be sure that anyone who operates the generator receives proper instruction.
- The generator is a potential source of electrical shock if misused.
- Keep away from rotating parts while the generator is running.
- Connections for standby power to a building's electrical system must be made by a qualified electrician and must comply with all applicable laws and electrical codes. Improper connections can allow electrical current from the generator to back feed into the utility lines. Such back feed may electrocute utility company worker or others who contact the lines during a power outage, and when utility power is restored, the generator may explode, burn, or cause fires in the building's electrical system.
- Always maintain 20-lb fire extinguisher 20 feet from the generator.

**Electric Shock Hazards**

- The generator produces enough electric power to cause a serious shock or electrocution if misused.
- Using a generator or electrical appliance in wet conditions, such as rain or snow, near a pool or sprinkler system, or when your hands are wet, could result in electrocution. Keep the generator dry.
- If the generator is stored outdoors, unprotected from the weather, check the Ground Fault Circuit Interrupter (GFCI) receptacle, and all other electrical components on the control panel, before each use. Moisture or ice can cause a malfunction or short circuit in electrical components that could result in electrocution.
- Do not connect to a building's electrical system unless a qualified electrician has installed an isolation switch.

**Fire and Burn Hazards**

- The exhaust system gets hot enough to ignite some materials.
- Keep the generator at least 1 m (3 ft.) away from buildings and other equipment during operation.
- Keep flammable materials away from the generator.

- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the generator indoors.
- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks where the generator is refueled or where gasoline is stored. Refuel in a well-ventilated area with the engine stopped. A metal gas must be used for refueling.

**Carbon Monoxide Hazards**

- Exhaust contains poisonous carbon monoxide, a colourless and odourless gas. Breathing exhaust can cause loss of consciousness and may lead to death.
- If you run the generator in an area that is confined, or even partially enclosed, the air you breather could contain a dangerous amount of exhaust gas. To keep exhaust gas from building up, provide adequate ventilation.

**Warning Label Location**

- Read all labels before operating the generator.
- The labels should be considered as permanent parts of the generator. If a label comes off or becomes hard to read, contact an authorized Honda generator dealer for replacements.

## 3.30 GRINDING AND ZIP CUTTING

**General**

Severe injury may occur if proper protective equipment is not used and properly maintained.

**Safe Work Practice**

- Check the tool for the correct distance from the abrasive wheel, maximum $^1/_8$" or 3 mm.
- Replace the grindstone when adjustment of the rest cannot provide $^1/_8$" or 3 mm.
- If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
- Protect your eyes with goggles. If grinding plastic, a full-face shield must be worn.
- Remove hanging jewelry.
- Tie or confine long hair.
- Each time a grinding wheel is mounted, the maximum approved speed stamped on the wheel bladder should be checked against the shaft rotation speed of the machine to ensure the safe peripheral speed is not exceeding the manufacturer's recommendation.
- Each grinding wheel shall be inspected closely and sound or ring-tested to be sure that it is free from cracks or defects. (To test, wheels should be tapped gently with a light non-metallic instrument. If they sound cracked or dead, they could fly apart in operation and so they shall not be used. A sound and undamaged wheel will give a clear metallic tone or "ring".)
- The flanges supporting the grinding wheel should be a maximum of $^1/_3$ the diameter of the wheel and must fit the shaft rotating speed according to the manufacturer's recommendation.
- To prevent the wheel from cracking, the user shall be sure it fits freely on the spindle. The spindle nut shall be tightened enough to hold the wheel in place, without distorting the flange.

Follow the Manufacturer's recommendations. Care shall be taken to assure that the spindle wheel will NOT exceed the abrasive wheel specifications.

- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel.
- Do not stand directly in front of grinding wheel when it is first started.
- Portable grinding tools shall be equipped with safety guards to protect workers, not only from the moving wheel surface, but also from flying fragments in case of breakage.
- Unplug or lockout the grinder before doing adjustments or repairs.
- Never leave a grinder unattended while the wheels are turning.
- Use pliers or vice grip to hold small items.
- Allow object you are grinding to cool before handling it.
- Guards on grinders shall not be removed.

## 3.31 HAND TOOLS

**Safe Work Practice**

- Use tools only for the job for which they were intended.
- Carry sharp tools in a heavy belt or apron rather than pockets, and hang tools at your sides, not behind your back.
- Carry tools in a manner that does not interfere with using hands on a ladder or climbing on a structure.
- Wear appropriate personal protective equipment (safety glasses, gloves, etc.)
- Wear appropriate personal protective equipment (safety glasses, gloves, etc.).
- Maintain tools carefully, keep them clean and dry, and store them properly after use.
- Inspect tools for defects prior to use.
- Re-dress burred or mushroomed heads of striking tools.
- Do not apply excessive pressure on tools.
- Prior authorization is required when using tools near live electrical circuits. USE EXTREME CAUTION! Do not use cushion grip handles as a replacement for insulated handles.
- Pull on wrenches and pliers. Never push unless you are using an open hand.
- Pliers and pipe wrenches shall not be used on nuts and bolts
- Crescent wrenches shall never be used in place of the proper-type wrench.
- Use a soft metal hammer or one with a plastic, wooden or rawhide head
- Face adjustable wrenches forward, and turn the wrench so pressure is against permanent jaw.
- Do not increase leverage by adding sleeves to increase tool length
- Do not cut or chip towards yourself when using cutting tools or chisels.
- Do not re-dress, grind, weld or heat-treat hammer heads.
- Do not use one hammer to strike another hammer.
- Do not use a dull chisel. Re-dress heat-treated tools with a whetstone.
- Do not hoist with C-clamps. Use LOAD-RATED lifting clamps.
- Replace cracked and broken handles on files, hammers, sledges and screwdrivers.
- Cold-chisels, center-punches, etc., shall be dressed to eliminate mushrooming.
- Exercise extreme caution when using tools near live electrical circuits. Do not use cushion grip handles as a replacement for insulated handles.
- Do not hoist with C-clamps. Use special lifting clamps.

- Only use hand tools for its attended purpose, keep spring on vise grips loose to reduce kick back when opening or unexpectedly opening. Never attach tools to clothing or skin might be at risk for pinching.

## 3.32 HEALTH HAZARDS

Quolus Construction Services will conduct an occupational hygiene "Job Site Inspection" on any work-site where there is a potential for over-exposure to harmful substances or there may be adverse environmental conditions that can affect employee health. The walk through survey will be conducted by a qualified person (as defined by the WorkSafeBC OHS Regulation) and as a minimum consider the following:

- Potential for overexposure
- Routes of exposure including inhalation, ingestion, and skin contact
- Who is at risk?

The results of the Job Site Inspection survey will be documented to show that it has been done. A reassessment will be performed if work conditions change.

If the Site Inspection survey reveals that there is a potential for over exposure, Quolus Construction Services will stop work, inform job site OHS or management to ensure necessary procedures and controls are being followed such as a qualified person:

- Conducts sampling/testing to determine exposure levels.
- Implements acceptable methods for monitoring of worker exposures, if the sampling reveals that exposure levels may approach 50% of permissible exposure limits.
- Develops an exposure control plan if exposures will exceed 50% of permissible exposure.

Exposure control plans will also be required if workers are exposed to excessively hot or cold environments.

### Controlling Exposures

Some of the common approaches to be used to control hygiene hazards on Quolus Construction Services sites include the following:

- Implementing a hearing conservation program.
- Issuing PPE to workers:

  Respirators for airborne contaminants (respirator fit testing required).
  a) Barrier creams for skin contact with irritant chemicals.
- Using wet methods when concrete grinding to control silica dust.
- Testing for exposure levels.
- Using safe procedures as outlined on the MSDS and training workers in safe use procedures.
- Providing readily available wash facilities to remove contaminant materials.
- Installing emergency wash facilities for use in case of accidental exposure.

- Monitoring worker health to determine exposure effects (noise, lead, asbestos, silica).

**Exposure Control Plan**

An exposure control plan prepared and managed on site by the client.

- In general when:
  d) Exposure monitoring indicates that a worker is or may be exposed to an air contaminant in excess of its exposure limit.
  e) Measurement is not possible at 50% of the applicable exposure limit.
  f) Otherwise as required by WorkSafeBC.
- Specifically for possible exposure to:
  b) Asbestos
  c) Blood borne pathogens or bio-hazardous materials
  d) Lead
  e) Toxic process, e.g. gas exposure.

The exposure control plan must be written and include the following:

- A statement of purpose and responsibilities for assessing the risks and controlling the exposure(s).
- Details on the identification of the risks, the assessments to be performed and/or that have been performed, and the control measures taken to limit exposure.
- Details on the education and training that is to be provided.
- The written procedures that have been produced (as may be required) to inform personnel about hazards and establish safe work methods.
- Details on the documentation that is required (such as records) to ensure that the issues are addressed as required by regulation and good management practice.
- A review, at least annually, and regular updates as may be necessary. This will be done in consultation with the occupational health and safety committee.

**Special Occupational Hygiene Initiatives**

During the course of Quolus Construction Services' projects, there will be the need to address certain occupational hygiene health issues on a relatively on-going basis e.g. noise exposure and hearing conservation program. Other health issues may be a rare or one-time occurrence e.g. working with or around asbestos. The following guidelines for occupational hygiene initiatives focuses on the common health concerns, with basic information provided on other less frequent health issues for awareness purposes. All Quolus Construction Services personnel must be aware of these issues and initiatives. If for any reason you feel that they are not being addressed as per the guidelines provided or you have other occupational hygiene health concerns, raise them with your supervisor or worker representative so they can be addressed.

## 3.33 HEAT AND COLD STRESS EXPOSURE

### 3.33.1 Heat and Cold Exposure

Workers who are required to work in high temperatures or cold environments must take precautions against exposure.

A healthy worker acclimatizes to this exposure and can maintain a normal temperature by conserving heat in the cold and by dissipating heat when it is hot.

When a body sweats excessively to dissipate heat, the resulting loss of body salts and fluids causes a muscular reaction called heat cramps. Prolonged exposure to a hot environment causes heat exhaustion. When the temperature control mechanisms of the body fail, stroke results and the person may die.

***Heat Exhaustion***

***Symptoms***

- Pulse week and rapid
- Breathing rapid and shallow
- Vision blurred
- Skin cold and clammy
- Nausea and vomiting.

***Treatment***

- Move out of the heat.
- Place at rest.
- Loosen tight clothing.
- Keep head low, raise legs and feet slightly.
- For cramps, give a glass of slightly salted water (add ¼ teaspoon salt). Give as much as the casualty will take.
- Watch breathing: get medical help.

**Heat Stroke**

***Symptoms***

- Temperature of 42C to 44C
- Pulse rapid and progressively weaker
- Breathing noisy
- Often no perspiration in cases of non-exhaustion heat stroke
- Nausea and vomiting.

***Treatment***

- Sponge with cold water.
- Cover with wet sheets.
- Direct current or air around casualty by hand or electric fan.
- Obtain prompt medical aid.

***Cold Exposure***

Exposure to cold can injure the surface of the body causing local tissue damage. It can also cause general body-cooling that can be fatal.
Contribution factors include:

- Temperature
- wind velocity
- worker's age and physical condition
- degree of protection from outer clothing or covering
- exposure to cold or icy water.

A body exposed to dangerously low temperature can suffer injuries such as hypothermia and frostbite.

**Stay Warm**

Wear clothing that will maintain body heat without sweating. Several layers or light, loose-fitting clothing trap air and have greater protective value than one layer of heavy clothing.
Cover your head and keep your ears warm.
Avoid tight-fitting boots. When practical, change boots regularly to allow each pair to dry completely. This will keep your feet a lot dryer and warmer.
Wear mittens instead of gloves when practical. This will keep your hands a lot warmer.

**Stay Dry**

Avoid wetness due to sweating, rain or snow. Wetness contributes to heat loss.

**Stay Safe**

- Limit the length of time you spend in extreme cold conditions.
- Have someone check you for signs of frostbite.
- Avoid fatigue
- Rest periodically in a sheltered location.
- Avoid Tobacco
- Nicotine decreases blood flow and increased the possibility of cold injury.
- Avoid Alcohol
- Alcohol dilates the blood vessels, alcohol causes additional heat loss.

### 3.33.2 Frostbite

Skin looks white, waxy, and feels numb. Freezing causes hardening.
Warm frostbitten area gradually with body heat. Do not rub.
Do not thaw hands or feet unless medical aid is far away and there is no chance of refreezing.
Parts are better thawed in a hospital.
If there are blisters, apply sterile dressings and bandage lightly to prevent breaking. Get medical attention.

### 3.33.3 Hypothermia

Caused when body temperature falls below normal during prolonged exposure to cold, it can develop quickly and be fatal.
Danger signs are shivering, slurred speech, stumbling, and drowsiness.

Condition is severe when shivering stops. Unconsciousness and stopped breathing may follow. First aid for hypothermia must

- stop further cooling of the body
- provide heat to begin re-warming.

**Treatment**

- Remove casualty carefully to shelter. Movement or rough handling can upset heart rhythm.
- Keep the casualty awake.
- Remove wet clothing and wrap casualty in warm covers.
- Re-warm neck, chest, abdomen, and groin - but not extremities.
- Apply direct body heat or safe heating devices.
- Give warm, sweet drinks, if casualty is conscious.
- Monitor breathing, give artificial respiration if needed.

Call for medical aid or transport carefully to nearest facility.

## 3.34 HOOK BLADES (KNIVES)

Hook knives are the only piece of equipment used by Quolus's crew that has caused more than one injury. All new employees must be thoroughly schooled on the proper use of hook knives.

**Safe Work Practice**

- Kevlar gloves must always be worn when using a hook knife.
- Never cut patches with the patch resting on one's thigh;
- Cut away from oneself whenever possible;
- Always use vice grips to hold test strips while cutting samples. The force required to cut through the double thickness may cause the test strip to slip if only held by hand. In addition, the double thickness may cause the hook to slip out of the material - make sure cutting direction is not towards yourself.
- Always keep the hook knife in a pouch or other suitable receptacle. The point of the hook can work its way through clothing and be exposed to cut with little or no visual warning; and
- Never use a knife or blade that is damaged.

## 3.35 HOT WORK PROCEDURE

For the purposes of this policy, Hot Work refers to any temporary operation involving open flames or producing heat and/or sparks. This includes but is not limited to: welding (gas or arc), cutting, grinding, brazing, soldering, thawing, and torch applied materials. Their improper use, however, can result in loss of life and property by fire and explosion. This policy delineates responsibility precautions, and procedures to prevent Hot Work mishaps.

***General Safe Work Practices***

- Local regulations or contract requirements may require a hot work permit before using portable cutting or welding equipment.
- Never start work without proper authorization.
- All operators must be competent and licensed in order to use cutting or welding equipment.

- Move combustible material to a safe area. If combustible material can't be moved, cover completely with fire-retardant material.
- Have a fire extinguisher readily accessible where employees are working. Extinguishers shall be of ABC type, minimum 2A:20BC rating.
- Never burn or weld over other workers.
- After completing a burning or welding operation, monitor the scene of work for fires. Inspect adjacent areas as well.
- Do not use cutting or welding equipment near flammable liquids. Do not cut or weld on closed tanks which have held flammable liquids or other combustibles.
- Ensure there is sufficient ventilation to remove potentially toxic fumes in areas of concern.
- Never use empty containers such as drums as a work station. They may contain potentially hazardous fumes.
- Consideration should be given for air monitoring by qualified personnel.
- Keep cutting and welding equipment in good operating condition at all times. Equipment found to be defective shall be tagged immediately and returned to the shop for repair by a qualified person.
- Operators shall never wear oil-stained clothing.
- Always hold lighted acetylene and propane torches – do not lay them down or hang them on beams or planks. A safe area shall be selected for resting a live electrode holder before striking an arc.
- Assure proper ventilation is provided for gas welders.
- Torch valves should be opened to vent pressure from the line and shut again.
- Use appropriate fire rated PPE such as proper eye protection when welding, cutting and chipping
- When welding and cutting be aware of other people in the area. Advise them to look away when welding.
- Be aware of falling splatter, hot slag and sparks
- Never enter in a confined space without proper gas tests and a required safety lookout

**Individuals performing "hot work" must comply with the following procedures:**

- Any person who is required to carry out "hot work" must complete, and obtain prior authorization as directed by the hot work permit onsite, which is to be posted within 30 feet (10 m) of the work area.

**Prior to commencing any "hot work" that person must:**

- Complete a hazard assessment of the area in which the "hot work" is to be performed.

- Ensure the removal of all combustible material within a 30 foot radius.
- Appropriately cover or wet down any combustible material, within that 30 foot area, that cannot be removed.
- Ensure that they have the appropriate PPE for the type of a "hot work" they are about to perform.
- Ensure that if hot work must be performed above an area where other workers are present, make sure that control measures are taken to protect the worker(s) below from sparks, debris and other falling hazards.

- Ensure all pieces of equipment are inspected prior to use which includes testing for leaks such as from hose, regulator or cylinder.
- When using gas must ensure the equipment is working properly and has a flash back arrestor between the torch and the regulator. If worker not completing work but third party is, ensure they have inspected their equipment.
- Ensure that a watch person is assigned to the area and that that watch person will be trained or instructed as to his/her duties during the period of “hot work”. Watch person must conduct watch during hot work activity and 30 minutes following activity.
- Ensure that the watchperson is appraised of the hazards inherent in the task and provide all necessary PPE so that they are appropriately protected. Such PPE may include: Safety eye wear or face shield (grinding/welding), hard hat, and hearing protection.
- Ensure that the watchperson is equipped with appropriate fire-fighting equipment and is instructed in the use of that equipment, prior to the “hot work” commencing.

**No person shall perform “hot work” on or within a confined space without first determining the contents or prior contents of same. It is determined that the contents, or prior contents are combustible then:**

- Where the confined space is empty it must be sufficiently washed down and/ ventilated, prior to the “hot work” commencing.
- Where the confined space has contents then such contents shall be removed and then the confined space washed down and/or ventilated prior to the “hot work” commencing.
- Where the confined space has contents and it is not possible to remove such contents then consultation with persons who have knowledge in this type of “hot work” must be initiated. If after the consultation it is determined that an employee cannot safely perform this “hot work” the company shall contract the work out to someone who has knowledge of such “hot work”.
- Where a contractor is engaged to perform such “hot work”, he/she will be given all information of which Quolus is aware. Also, that contractor will follow the intent and rules of this policy, except where the exception arises in that he/she is engaged in “hot work” of which he/she has specific knowledge or expertise and another policy or procedure is more appropriate.

**Equipment Inspection and safety:**

Before performing hot work, the Quolus operator will ensure that the equipment is free from defects, leaks, oil and grease.

Where applicable, suitable safety devices to prevent reverse gas flow and to arrest a flashback will be installed on each hose in an oxy-fuel system, between the torch and the regulator. These must also be inspected before each use.

## 3.36 HOUSEKEEPING AND CLEANING

Many injuries result from poor housekeeping, improper storage of materials and cluttered work areas are not safe. To maintain a clean, hazard-free workplace, all groups - management, supervision, and workers - must cooperate.

**General**

Regulations for job safe housekeeping require

- daily jobsite cleanup program
- disposal of rubbish
- individual cleanup duties for all workers
- materials piled, stacked, or otherwise stored to prevent tipping and collapsing materials stored away from overhead power lines
- work and travel areas kept tidy, well-lit, and ventilated
- Signs posted to warn workers of hazardous areas.

**Safe Work Practices**

- Gather up and remove debris as often as required to keep work and travel areas orderly.
- Keep equipment and the areas around equipment clear of scrap and waste.
- Keep stairways, passageways, and gangways free of material, supplies and obstructions at all times.
- Secure loose or light material stored on roof or on open floors to prevent blowing by wind.
- Pick up, store, or dispose of tools, material, or debris which may cause tripping or other hazards.
- Before handling used lumber, remove or bend over protruding nails and chip away hardened concrete.
- Wear appropriate PPE such as eye protection when there is any risk of eye injury.
- Do not permit rubbish to fall freely from any level of the project. Lower by means of chute or other approved devices.
- Do not throw materials or tools from one level to another.
- Around table saws and similar equipment, keep the immediate area clear of scrap to avoid tripping hazards and provide sound footing.
- Airborne wood dust can be a respiratory hazard, causing problems ranging from simply irritation of the eyes, nose, and throat to more serious health effects. Dust collectors should be installed in shops to remove sawdust from air and equipment. Wood dust is also very flammable.
- In construction, saws and other tools are often operated in the open air where dust presents no hazard. However, dust masks or respirators should be worn whenever ventilation is inadequate.

## 3.37 JACK HAMMERING

**General**

This type of concrete demolition job is commonly seen on a construction site.

Safe Work Practices

- Approved safety equipment: safety glasses or face shield and work gloves and hearing protections are to be worn.
- Control dust levels or wear respiratory protection, either a dust mask or respirator.
- Determine locations of any services that could be damaged from demotion.
- Worker should be fully trained in the operation at hand.
- Ensure a safe working surface.

**Electric Tools:**

- Check extension cords, switch and other components before use.
- Use only the extension cord gauges that suit tool amperage and cord length.
- Power feed cords must be three-wire cord with three-prong plugs and grounded three-pole receptacles.
- Use ground fault circuit interrupter (GFCI) in wet areas.

**Air Tools:**

- Approved safety equipment: safety glasses or a face shield and gloves and hearing protection are to be worn.
- Air hoses must be tied together.
- Secure quick-couplers with wire to prevent disconnecting.
- Always shut off the air supply and release the air in the lines before disconnecting fittings

## 3.38 LADDERS

***Note:*** *The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures when necessary.*

### 3.38.1 General

Every year in construction many injuries are caused by ladder accidents. These accidents involve falls resulting in serious injuries and fatalities.
The following are major causes of accidents.

- Ladders are not held, tied off or otherwise secured.
- Slippery surfaces and unfavourable weather conditions cause workers to lose footing on rungs or steps.
- Workers fail to grip ladders adequately when climbing up or down.
- Workers take unsafe positions on ladders (such as leaning out too far).
- Placement on poor footing or at improper angles causes ladders to slide.

- Ladders are defective.
- High winds cause ladders to topple.
- Near electrical lines, ladders are carelessly handled or improperly positioned.

**Warning:** many ladder accidents occur when personnel are getting on or off the ladder.
Use both hands firmly on rungs before stepping onto a ladder. Use 3-point contact when climbing up or down a ladder. That means two hands and one foot or two feet and one hand on the ladder at all times. Clean mud and snow off your boots before climbing a ladder.

**Extension ladders**

Extension ladders are used mainly for access but at times are used to perform work. The work being performed should be for short durations of not more than 15 minutes. When workers find themselves in a situation where they will be working from extension ladders and a fall of 10 feet or more exists and they are unable to maintain 3 point contact (one hand and both feet for stability) with the ladder to perform their job, fall prevention procedures must be implemented (harness with lifeline/lanyard).

**Wooden Ladders**

Never paint a wooden ladder. Paint hides signs of deterioration and may accelerate rotting by trapping moisture in the wood. Treat with a clear, non-toxic wood preservative or coat with a clear varnish.
Inspect frequently for splits, shakes, or cracks in side rails and rungs, warping or loosening of rungs, loosening or metal hardware, and deformation of metal parts.

**Aluminum Ladders**

Treat aluminum ladders with care. They are more liable to damage than wooden ladders. Because they conduct electricity well, never use aluminum ladders where electrical contact is possible. Check side rails and rungs regularly for dents, bends, and loose rungs. If repair by a competent person is not possible, the ladder should be destroyed.

**Fibreglass Ladders**

Fibreglass-reinforced plastic side rails do not conduct electricity well and are resistant to corrosion but heat-sensitive. They must not be exposed to temperatures above 93.2C (200F).

Inspect regularly for cracks and “blooming” - tufts of exposed glass fibre where the mat has worn off. Coat the worn area with an epoxy material compatible with the fibreglass.

**Step, Trestle, and Platform Ladders**

Step, trestle, and platform ladders must have spreader arms that lock securely in the open position. Use the ladders only in the open position, not as straight ladders propped or leaning against the structure.

**Fixed Ladders**

Ladders permanently fixed to structures such as tanks, stacks, silos, and bins are often used by work crews during construction and renovation. Safety harnesses and lifelines or safety belts and ladder climbing devices must be used by workers ascending, descending, or working from the ladders. Fall-arrest systems are recommended even where safety cages are installed because the systems provide more positive fall protection than cages.

**Job-Built Ladders**

Wood used for job-built ladders should be straight-grained and free of loose knots, sharp edges, splinters, and shakes. The ladder should not be longer than 9 metres (30 feet). Used by many workers, job-built ladders deteriorate rapidly. They should be inspected every day or so. If defective, repair immediately or take out of service and destroy.

Job constructed ladders must have:

- Side rails constructed from #2 Grade or better 4 cm x 9 cm (2" x 4" nominal) dimensions for ladders up to 5 Meters (16 feet) in length, and from #2 Grade or better 4 cm x 13.5 cm (2" x 6" nominal) dimensions for ladders between 5 Meters (16 feet) and 7.3 Meters (24 feet) in length.
- Cleats and spacers no less that 2 cm x 6 cm (1" x 3" nominal) dimensions for ladders up to 5 Meters (16 feet) and 2 cm x 9 cm (1" x 4" nominal) dimensions for ladders between 5 Meters (16 feet) and 7.3 Meters (24 feet).
- Side rails must not be notched, dapped, tapered or spliced.

### 3.38.2 Safe Work Practices

**Ladder Condition and Placement Practices**

- All ladders used by Quolus employees must be grade 1, meeting CSA, ANSI or other standards acceptable to WorkSafeBC Regulation.
- Ensure the ladder is the correct ladder for the job and that it is clean and undamaged. Always inspect a ladder prior to using it.
- Ladders must be inspected for defects prior to use. Ladders with broken rungs, split rails, worn or broken safety feet, frayed or damaged ropes must be taken out of service and reported to a supervisor.
- Remove from service all ladders with broken rungs, split rails, worn or broken safety feet, frayed or damaged ropes
- Clear scrap and material away from the base and top of the ladder since getting on or off the ladder is relatively hazardous.
- Before setting up ladders, always check for overhead power lines, or other electrical hazards and other obstructions. Never use aluminum ladders near live electrical equipment or wires
- When setting up a ladder, secure the base and "walk" the ladder up into place.
- Set the ladder on a firm, level surface. On soft, un-compacted, or rough soil, use a mud sill.
- Do not set up ladders in doorways, passageways, driveways, or any other location where they can be struck or knocked over unless doors have been locked, blocked or have a lookout person.
- Set straight or extension ladders one foot out for every 3 to 4 feet up, depending on length of ladder. Ladder feet must be placed on a firm surface.
- To erect long, awkward, or heavy ladders, get help to avoid injury from overexertion

- Make sure that rails on ladders extend at least 3 feet (1 metre) above the landing. This allows for secure grip while stepping on or off.
- Ensure ladders are placed at a minimum 4:1 incline when against the top support.
- Secure the base and top of the ladder against accidental movement.
- Never erect ladders on boxes, carts, tables, or other unstable surfaces.
- Do not position ladders against flexible or moveable surfaces.
- If metal ladder is to be used near electrical equipment the electrical equipment is to be de-energized and locked out and tagged out.
- All portable ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized parts.
- Never use ladders horizontally as scaffold planks, runways, or any other service they have not been designed for.
- Do not splice short ladders together to make a long ladder. The side rails will not be strong enough for the extra loads.
- Do not use ladders for bracing. They are not designed for this type of loading.
- Never rest a ladder on its rungs. Ladders must rest on their side rails.
- Vertical access ladders must:
  - be fixed in position with side rails extending 900 mm (3 ft) above the top landing
  - have rungs at least 150 mm (6 in) away from the surface to which the ladder is attached.
  - be offset at rest platforms at least 9 metres (30 ft), unless workers on the ladder use fall-arrest equipment
- Be equipped with a safety cage where workers may fall more than 3 metres (10 ft).
- Doorways must be blocked, locked or guarded while ladders are used in front of them.
- Do not use ladders in a horizontal position as runaways or scaffolds. Do not place ladders against a windowpane.
- Lower extension ladders to their latched position before repositioning.
- Be aware of overhead high voltage power lines when moving or setting up ladders.
- Ladders used for ascending or descending from one level to another must extend at least 1 meter (3 feet) above the upper landing except where there is restricted clearance and the ladder is adequately secured.
- Step ladders are considered work performance ladders and straight ladders are considered access ladders only.
- Use ladders of sufficient length. DO NOT add makeshift extensions. Ladders used for ascending or descending from one level to another must extend at least three feet above the upper landing.
- Metal ladders or wire reinforced wooden ladders must not be used near energized electrical equipment unless permitted by manufacturer's specifications.
- Ladders used in locations where they may be struck by workers or equipment in the areas must have a watcher stationed at the bottom. Ladders must not be left standing in such a location when not in use.
- Ladders in use must be secured to prevent movement.
- Ladders are to be used by one person at a time unless on opposite halves of a gang ladder.
- Ladders must not be coated with paint or other coating that impairs the process of inspecting the condition of the ladder.

### 3.38.3 Ladder Use Practices

- Single-width job-built ladders are only meant for one worker at a time. A double-width ladder can be used by two workers providing they are on opposite sides.
- Always face the ladder when climbing up or down and while working from it.
- Maintain 3-point contact when climbing up or down. That means two hands and one foot or two feet and once hand on the ladder at all times.
- Working from the top two rungs or steps of a ladder is prohibited unless permitted by the ladder manufacturer's specifications.
- Stand no higher than the third or fourth run from the top. Maintain knee contact for balance.
- Keep your centre of gravity between the side rails. Your belt buckle should never be outside the side rails.
- When climbing up or down, do not carry tools or material in your hands. Use a hoist rope instead.
- Keep boots clean of mud, grease, or any slippery materials which could cause loss of footing.
- When working 3 metres (10 feet) or more above the ground or floor, wear a safety harness with the lanyard tied off to the structure.
- Use fall-arrest equipment such as ladder climbing devices or lifelines when working from long ladders or when climbing vertical fixed ladders.
- Work on ladders shall be for a short duration only. Longer duration work over 10 feet or above hazardous surroundings will require the usage of fall protection equipment.
- When working off of a ladder, the maximum reach of a worker will be 18" from the side rail. No over-reaching is allowed. Another means of performing the work must be found. It is easier and safer to climb down and move the ladder over a few feet to a new position.

### 3.38.4 Inspection and Maintenance

- Ladders should only be repaired by personnel competent in this kind of work.
- Defective ladders should be taken out of service and either tagged for repair or scrapped.
- Inspect ladders for structural rigidity.
- Inspect non-skid feet for wear, imbedded material, and proper pivot action on swivel feet.
- Replace frayed or worn ropes on extension ladders with type and size equal to manufacturer's original rope.
- Check aluminum ladder for dents and bends in side rails, steps, and rungs. Do not use metal pipe to replace a rung.
- Check wooden ladders for cracks, splits, and rot.
- Check all ladders for grease, oil, caulking, imbedded stone and metal, or other materials that could make them unsafe.

### Trade Considerations

A surprising number of accidents occur when workers take the first step onto the bottom rung of a ladder. These falls are usually not serious but may cause sprains, fractures, and contusions that often result in lost-time injuries. The first step is often the point where the unstable, unsecured ladder will slide or tip.

## 3.39 LIFTING AND MATERIAL HANDLING

### General

Every material handing operation is different. Each part of the construction industry must take care to ensure safety practices are in place at every stage of material handling. Every worker and supervisor has a safety role to play in material handling. Good housekeeping, proper lifting and loading procedures and proper packaging are all-important.

Where required a material Safety Data Sheet (SDS) should be readily available at the site for the material being moved.

### Safe Work Practices

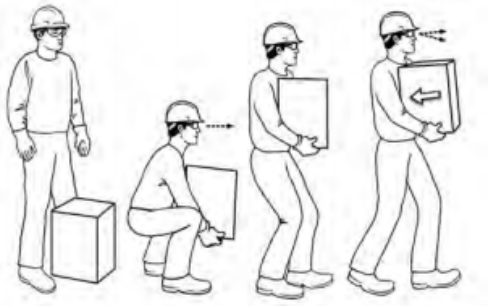
- If uncertain of proper handling procedures for the product refer to Material Safety Data Sheets.
- Do not exceed the recommended load limits of vehicles used in handling materials.
- Determine how the material will be transported. Wherever possible, use trucks, boom trucks, forklifts, dollies, carts, wheelbarrows, and hoists.
- Inspect the object to be lifted to determine how it will be grasped.
- Make sure load is free of sharp edges, protruding nail points, slivers or other hazards that might cause injury to the hands or body.
- Ensure the vehicle operator skilled enough for the job at hand and has good visibility.
- Where possible palletize materials. Do not pile material too high so it won't be susceptible to toppling over or unstable if bumped on the bottom.
- On arrival to jobsite, check for breakage or spillage before off-loading.
- Is there a fire risk? Keep flammable material away from potential ignition sources.
- Check for power line hazard.
- When any heavy object is to be lifted and carried to another point, evaluate the route that materials have to be move through. I.e. tight corners, stairs, obstructions, etc.
- Instruct workers on objectives and procedures for materials handling.
- Ensure there are enough workers to do the job right.
- Ensure there is safe working space for workers, equipment and material.
- Ensure that appropriate personal protective equipment is used.
- Do not permit material storage within 6ft of escalator wellways.

### When lifting by hand

Incorrect lifting methods require unnecessary effort and often cause strain or other types of injuries. When it is necessary to lift any object which is difficult for one person to handle, ask for help.

Two common injuries that occur in our industry are back sprain or strain. Low-back pain is the most common ailment. The misconception that back injuries are only caused by improper lifting lulls us into a false sense of security. Overexertion, overextending, overreaching and improper bending are some of the many causes of low-back pain. Most of the low-back ailments are normally not of a serious nature, until we choose to ignore the warning signs. When this happens, the backaches become chronic.

1. Plan your move
    a. Size up the load and ensure that you have a clear view and path for carrying materials
    b. Get help as needed
    c. Use a dolly or other device if necessary.
2. Use a wide-balanced stance with one foot slightly ahead of the other.
3. Get as close to the load as possible.
4. Tighten your stomach muscles as the lift begins.
5. When lifting, keep your lower back in its normal arched position and use your legs to lift.
6. Pick up your feet and pivot to turn - don't twist your back.
7. Lower the load slowly, maintaining the curve in your lower back.



**Proper Lifting Technique Safe Work Practices:**

- Check object for slivers, nails, sharp edges
- Avoid twisting, keep back straight
- Lift with legs not back.
- Do not attempt to lift items that are obviously too heavy or bulky
- Ensure that your grip is firm
- Your back can manage most lifts - if you lift correctly.
- Avoid lifting above shoulder height. This causes the back to arch, placing heavy stress on the small joints of the spine.
- Do not catch falling objects. Your muscles may not have time to coordinate properly to protect the spine.
- Push rather than pull. Pushing allows you to maintain the normal curves in your back.
- When lifting object that are awkwardly shaped, such as long lengths of lumber or rail, proper technique is essential.
- Squat and lift on end of the object, walk up the object to the midpoint, then lift the entire object off the ground. Remember to ask for help if load is too heavy
- Weight Transfer:
    - Pull the object toward you while transferring your weight to the lift side.
    - Lift only to the level required.
    - Shift your weight to your other leg while pushing the object into position.

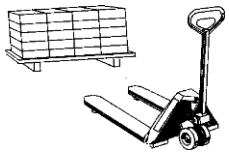
**Two-Person Lift**

Lifters should be of similar height. Before starting they should decide on lifting strategy and who will take charge.

For a two-person lift of a long load, the lifter who takes charge must see that the load is carried on the same side, with a clear line of vision.

Begin by lifting load from ground to waist height. Then lift the load from waist to shoulder.

**Carrying on Stairs**
Use your stomach muscles to help support and protect your back. If possible, the tallest and/or strongest person should be at the bottom of the load.

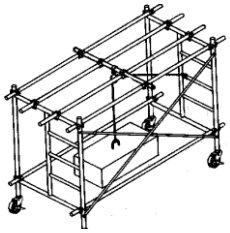


**Mechanical Help**

Use material-handling equipment such as carts, dollies, lift trucks or pallet jacks whenever you can.

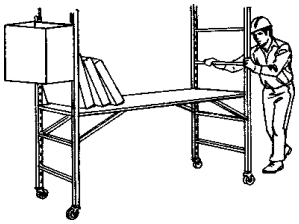
Pallet jacks can only be used where surface conditions allow.

Lift tables with casters for heavy components can be helpful. These tables are light, carry loads of several hundred pounds, and have adjustable heights from one to several feet.



Rolling frame scaffolds with a few tube and clamp component may be useful for moving heavy object such as motors or drives where other devices such as forklifts are not available.

Scaffold frames with tube-and clamp components, casters, and a small boat winch have many used in moving and lifting components weighting 100 – 200 pounds.



A small rolling scaffold can be used to provide access or to transport tools and materials.

## 3.4 LIFTING WALLS

**Safe work procedures must be developed, and workers trained, prior to lifting walls or wall panels. Procedures must include such items as:**

- Minimizing manual lifting where possible. Ensuring there are enough workers to do the job safely.
- Installing kickers to prevent the bottom of the wall from slipping off the subfloor.
- Ensuring no workers are below the wall being lifted.
- Barricading or guarding the danger area to prevent workers from entering.
- Displaying conspicuous warning signs all around the danger area.
- Not lifting walls in windy conditions.
- Making sure workers near the edge are protected by a fall protection system.
- Installing temporary braces immediately after the wall is upright.

- Installing guardrails as soon as it's practicable — for example, before lifting the wall or once the wall is upright and supported.

**Trusses**

Pre-manufactured open web joists and trusses must not be erected until clear and appropriate written instructions from a professional engineer or the manufacturer of the joists or trusses are available at the workplace. These instructions must include details on safe erection procedures.

Truss installers should familiarize themselves with all written instructions, drawings, and documents provided by truss manufacturers and professional engineers. These manufacturers or engineers are required to provide instructions on how to safely erect truss materials.

**Temporary and permanent bracing during truss erection**

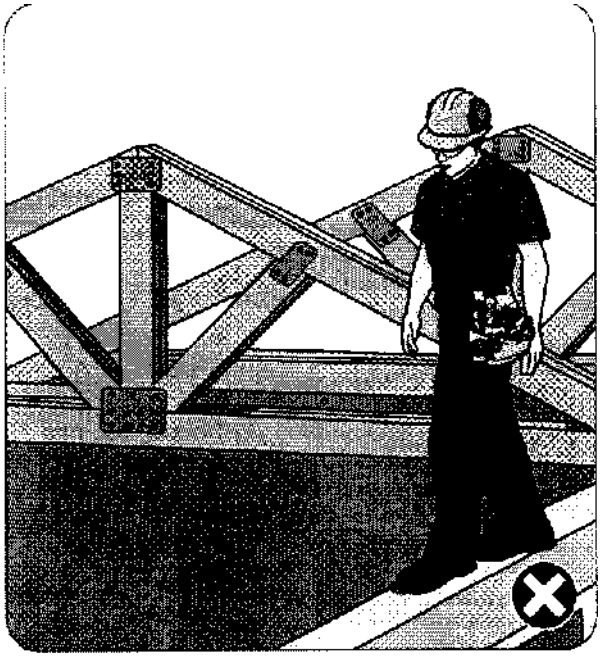
Open web joists and trusses are typically shipped with written instructions and design drawings. Typically, these drawings indicate requirements for permanent bracing and temporary bracing required for safe erection. If these instructions aren't included, contact the manufacturer or a professional engineer for them before erecting any trusses.

Truss-erection work shouldn't continue if any of the following conditions exist:

- Erection and bracing instructions aren't available at the site or are obviously incomplete.
- Erection and bracing instructions aren't being followed.
- Walls or skeletal structural building frames aren't adequately braced.
- Heavy loads are being applied to trusses before installing all the bracing, bridging, and decking.

According to section 20.72 of the Regulation, erection includes hoisting a partial or entire roof, floor, or other component. For example, a roof is prefabricated on the ground as a unit in one or more pieces and is then hoisted with a crane into position on the building. This operation requires written instructions from a professional engineer or the truss manufacturer. These instructions must include details on all the bracing needed for the lift and the location and construction of the lifting points, complete with rigging details as necessary for lifting the roof safely. This applies to all open web joists and trusses, including those made of wood, metal, or other materials.

Bracing must be installed to support trusses as necessary to safely withstand any loads likely to be imposed on them during the erection process.



When erecting trusses, use an appropriate work platform on the inside of the building. Positioning the work platform 102-112 cm (40-44 in.) below the perimeter wall will allow the wall to act as a guardrail during erection. You may need additional guardrails in window openings. Don't walk on the top plate to erect trusses.

## 3.41 OVERHEAD POWER LINES AND ELECTRICAL SAFETY

***Note:*** *The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures.*

**Supervision**

Supervisors must make sure that workers under their direction and control are aware of the dangers associated with their task and are fully trained to perform their work safely.

**Workers**

Workers must be familiar with the work that they are to perform and the safety precautions required for the work is to be carried out. Know your job and how to do it safely. If you don’t know, ask!

No employee shall be employed, no material shall be stored or handled, and no equipment or machinery shall be operated within the following minimum distances, from any energized high voltage electrical conductor (WorkSafeBC Table 19-1):

Work on ladders shall be for a short duration only. Longer duration work over 10 feet or above hazardous surroundings will require the usage of fall protection equipment.

### 3.41.1 Voltage (Limits Of Approach)

| Phase to phase | Minimum Distance | |
|---|---|---|
| | Feet | Meters |
| 751 V to 75 kV | 10 | 3 |
| Over 75 kV to 250 kV | 15 | 4.5 |
| Over 235 kV to 550 kV | 20 | 6 |

The above table starts at 751 volts. It must be emphasized that work on 31 to 750 volts can also be dangerous. Work shall be performed in a manner to prevent contact by any worker with the energized conductors.

**EXCEPTIONS:** The only exceptions to the above requirements shall be for qualified persons using safe work procedures acceptable to WorkSafeBC or to workers under qualified supervision as per the OHS Regulation. A Letter of Authorization (WorkSafeBC Form 30M33) shall be obtained from BC Hydro (or the authority utility) or WorkSafeBC prior to work commencing on or near energized conductors. This form must be completed by the Superintendent.

### 3.41.2 Guarding

When energized electrical conductors are GUARDED, special precautions must be taken. A qualified safety watcher must be posted and positioned so that both the equipment and the load and the equipment operator can be seen.

When the minimum distance cannot be maintained safely due to the circumstances of the work, the types of tools used or due to unplanned movement of a worker or equipment brings them within the minimum distance allowable:

- Stop all associated work.
- Call BC Hydro, arrange for a meeting at the worksite to decide whether the energized conductors can be:
  - de-energized;
  - effectively guarded;
  - displaced or re-routed.
- Get assurance in writing which of these actions will be taken and when. This Letter of Assurance must be signed by the person controlling the electrical system (WorkSafeBC Form 30M33).

Ensure the written assurance is available on site and communicated to all persons in the area where people, tools or equipment when moved or stored, can come within the minimum allowable distance. The safety watcher must signal stop to the equipment operator whenever the equipment or load is likely to contact the flagged warning line.

Workers, equipment and loads must not touch or handle the flagged warning lines.

Only persons qualified to work with high voltage electricity are allowed to touch or handle the electrical guarding.

### 3.41.3 If Contact Occurs

1. **Ripple Effect:**

If anything makes contact with a high voltage power line, such as a tree or an un-insulated boom on a truck, or if a broken power line falls to the ground or lands on a vehicle, electricity will flow to the ground and spread out in concentric circles like the ripples in a pool of water.
Voltage is very high at the point where electricity makes contact with the ground. The level of intensity decreases as the distance increases from the point of contact. Zero voltage is approximately 10 meters/33 feet from the point of contact.

2. **Step Potential:**

Due to the difference in voltage as one moved towards or away from the source of electricity it is possible to "step" between high and low voltage differences. The human body is usually a better conductor of electricity than the ground. The electricity can flow between the feet through the body with sometimes devastating results. This is referred to as "step potential".

### 3.41.4 Temporary Power Guidelines

- Only qualified persons will be permitted to enter an electrical vault/ substation that contains energized equipment.
- Only qualified persons will work on or repair electrical systems, or tools. All temporary wiring must be installed and maintained in accordance with all applicable codes.
- Temporary electrical cords must be covered or elevated and be kept clear of hallways and other locations where they may present a tripping hazard.
- Splices in electrical cords must retain the mechanical and electrical integrity of the original. Electrical tape splices are not permitted.
- Energized wiring in junction boxes, circuit breaker panels, etc. must be protected from accidental contact whenever it is left unattended.
- Temporary lighting lamps that are broken or burned out must be replaced as soon as possible. Bulbs must not be removed from other areas to provide lighting.
- CXWT Brewery Cord is not allowed to be used anywhere on new construction sites.
- Do not work on any circuits when standing on metal or in water.
- The electrical foreman on site shall be responsible for ensuring that proper site specific written procedures for electrical lock out are provided and used and must ensure that this information is dispersed to all on site.
- All flexible power tool cords and extension cords must be inspected, tested, marked, and documented. All electrical extension cords, tools and equipment must have a ground plug or be double-insulated.
- Ground fault circuit interrupters must be used with all electrical and temporary lighting when used outdoors or in wet, damp locations.
- Damaged or defective electrical tools must be tagged "Out of Service" and handed to the supervisor for repair.

***NOTE:*** *See section on Power tools for additional guidelines on electrical safety.*

## 3.42 LEAD PROGRAM

Lead is an element that has been used in many forms over a number of centuries. It is most commonly encountered in the construction industry as lead based paint. Lead compounds include metallic lead, lead alloys, lead oxide, and lead sulphate. Lead is still used in industrial paints e.g. red lead oxide primer.

Lead is a persistent toxic substance that can pose a serious health risk to our employees. Because of that, Quolus employees are directed NOT to perform activities on materials or surfaces that may or do contain lead.

This includes disturbance of adjacent surfaces through activities such as hot work (cutting, burning, and welding, grinding or sandblasting).

Quolus employees are not trained for lead removal, disturbance, or disposal.

**Potential Exposure Activities**

Most over-exposure to lead occurs in construction and modernization. Operations that can generate exposure during elevator/escalator maintenance/installation include:

- Welding; torch cutting on lead coated metals or adjacent to lead containing surfaces.
- Sanding; grinding surfaces of lead coated materials.
- Electrical maintenance and repair to lead wiring and connections.

**NOTE:** THESE OPERATIONS SHALL HAVE MUCH HIGHER POTENTIAL FOR LEAD EXPOSURE IN ALTERATIONS AND REPAIRS IN SMALLER AREAS WITH POOR VENTILATION/AIR EXCHANGE.

**Notification Requirements**

Building Owners are required to advise of lead containing materials at their facility (there are possibly some state regulations). Many facilities may have data to show lead containing material, and this may only require a request of any such information.

## 3.43 LOCATING UNDERGROUND SERVICES

**Safe Work Procedure**

The following procedures are to be complied with prior to drilling or digging into areas where underground services are or may be located.

- Specifications of the site are to be examined carefully by the supervisor prior to below grade drilling or digging. During this drawing review, **all** underground services are to be noted.
- Existing utilities drawings obtained by management or the supervisor from the Municipal Utilities Department, BC Hydro, BC Gas and BC Telephone showing plan, elevation and sections are to be compared to the site's specifications.

- If there are any discrepancies, the supervisor must advise the appropriate authority (Municipal Utilities Department, BC Hydro, BC Gas or BC Telephone).
- Appropriate authorities must also be advised when drilling or digging operations will occur close to their services and if their presence on site is required for further information or access into manholes.
- If any anchors are within 1 m (3 ft) of underground services, especially BC Hydro ducts or BC Gas piping, the supervisor must request site specifications to be revised to suit.
- BC One Call should be contacted during normal business hours, at least two full working days prior to a planned excavation, for assistance in locating all underground utilities. To access the system dial:
  - (Toll free) 1-800-474-6886
  - (Cellular) *6886
  - (Greater Vancouver) 604-257-1940.
- If access into existing utility manholes is required for the location of existing underground services, the appropriate authorities are to be notified. BC Hydro representatives are the ONLY personnel allowed to enter a BC Hydro manhole due to liability issues. If difficulty arises in getting BC Hydro to respond, contact the Regional Manager (Metro Vancouver 604-528-3016) for assistance. If the Regional Manager's response is inadequate, contact BC Hydro's Safety Manager (Metro Vancouver 604-528-2425).
- If removal of a utility manhole lid is required to check the information received from the Utilities Department's drawings, then a gas detector and respirator (if required) must be used and Confined Space Entry procedures strictly adhered to.
- Prior to drilling or digging near services close to the grade elevation, the supervisor must have his crew hand excavate in several locations to confirm the exact location of the underground service.
- Prior to drilling or digging close to an underground service, an accurate layout procedure by the supervisor using a measuring tape must take place, marking the holes' location on the unexcavated berm or face.

## 3.44 MATERIAL STORAGE, UNLOADING VEHICLES

Always

- Ensure proper weight capacity is recognized before storing materials on shelving, landings, etc.
- Make sure trucks and tools are rated for the load you are lifting.
- Secure all materials when handling or storing.
- Use proper operating/lifting procedures when using powered industrial trucks.
- Always get assistance for lifting heavy material or hard to handle materials. This may require getting the proper tool such as a pallet jack, a-frame hoist, etc.

Housekeeping

- Be aware of and remove all tripping hazards from the work place.
- Always ensure there is no debris left unattended near any gap or opening.
- Keep tools and equipment properly secured when not in use.
- Never step on a covered opening if you are unsure of the rating of the cover.
- Never store materials in such a way that it can cause an additional hazard.

## 3.45 MOBILIZING EQUIPMENT

Mobilizing equipment can usually occur outside the boundaries of the worksite and onpublic property or roadways. The following hazards might be present:

- Traffic
- Pedestrians (Public)
- Hearing Loss
- Slips, trips, Falls,
- Crush Injuries,
- Struck injuries,
- improper storage of equipment causing damage.

**Safe Work Procedures**

- Worksite must be protected from passing traffic by the use of traffic controls such as lane closures, detours, barricades or traffic control persons
- Area must be blocked off from pedestrian (public) access.
- Workers must wear hearing protection
- Proper procedures to be followed when mobilizing equipment.
- Equipment to be inspected before unloading.
- High Visibility Apparel to be worn at all times.
- Care is to be taken when removing equipment and materials from truck to ensure no pinch points are contacted and crane procedures are followed if a mobile crane is utilized.
- Items are to be stored safely and not piled on top of each other to prevent materials falling.
- Workers required to do stretching program at start of day to help reduce risk of Strains and Sprains.
- Ensure Public safety by pre-selecting equipment drop-off locations and utilizing traffic control methods.
- Workers to review hazards at the start of each day including all pinch points, ground conditions and PPE requirements. Workers to not locate themselves directly behind anchors while tensioning.

## 3.46 MONITORING WORKPLACE EXPOSURE

Management shall monitor workers for the following agents to ensure exposures are maintained at or below permissible concentrations:

- Chemical agents, for example: asbestos and concrete dusts
- Physical agents, for example: noise, vibration
- Biological agents, for example: urine and blood specimens

Ambient dust and sound levels shall be measured as required by provincial Health, Safety & Environmental regulations. Refer to the provincial safety regulations for further information pertaining to permissible levels and concentrations.

Before any work is started, a survey of building materials must be conducted to confirm that no toxic materials are present (i.e.: asbestos, PCB, etc.). This survey must be requested in writing and available on site for review by provincial safety inspectors or workers.

Any jobsite containing asbestos materials, customer must provide written survey report detailing location of asbestos and other related materials as per provincial regulations. When asbestos is present an asbestos related Safe Job Procedure in written form must be created and all work must be in conformance with the provincial safety regulations.

**Mould**

Moulds are microorganisms that produce thousands of tiny particles called spores as part of their reproductive cycle. They can be virtually any colour – red, blue, brown, green, white or black.

When disturbed by air movement or handling, moulds release their spores into the air.
Procedure to follow when mould is discovered:

- If a worker enters an area and discovers mould they are to stop all work, leave the site and contact their immediate Supervisor.
- Supervisor will be required to report this to the Prime Contractor and until cleaned up, no work is to be completed on the site.
- Once site is cleaned the Prime Contractor needs to show proof that the mould has been removed and it is safe for the mechanics to come back on site.

## 3.47 OCCUPATIONAL HYGIENE AND EMPLOYEE HEALTH POLICY

Quolus Construction Services will take all reasonable steps to ensure that our employees are protected from health hazards through adequate control measures. These control measures will ensure that worker exposure does not exceed allowable permissible limits. This will be accomplished by implementing and maintaining an occupational hygiene program as part of the overall health and safety program. The occupational hygiene program will focus primarily on site hazards that can affect employee health. This includes exposures common to the construction industry such as:

- Noise
- Chemical exposures:
  a) Silica Dust
  b) Asbestos
  c) Lead
  d) Wood Dust
- High heat environments
- Low (cold) temperatures
- Entry into hazardous atmospheres, e.g. confined spaces
- WHMIS, Transportation of Dangerous Goods & Waste hazardous materials

### 3.47.1 Identifying Health Hazards

Quolus Construction Services will conduct an occupational hygiene "job site inspections" on any work-site where there is a potential for over-exposure to harmful substances or there may be adverse environmental conditions that can affect employee health. The job site inspection will be conducted by a qualified person (as defined by the WorkSafeBC OHS Regulation) and as a minimum consider the following:

- Potential for overexposure
- Routes of exposure including inhalation, ingestion, and skin contact
- Who is at risk?

The results of the job site inspection will be documented to show that it has been done. A reassessment will be performed if work conditions change.

If the walk-through survey reveals that there is a potential for over exposure, Quolus Construction Services will stop work report to job site OHS or management and ensure a qualified person:

- Conducts sampling/testing to determine exposure levels.
- Implements acceptable methods for monitoring of worker exposures, if the sampling reveals that exposure levels may approach 50% of permissible exposure limits.
- Develops an exposure control plan if exposures will exceed 50% of permissible exposure.

Exposure control plans will also be required if workers are exposed to excessive hot or cold environments.

### 3.47.2 Controlling Exposures

Some of the common approaches to be used to control hygiene hazards on Quolus Construction Services sites include the following:

- Implementing a hearing conservation program.
- Issuing PPE to workers:
- Respirators for airborne contaminants (respirator fit testing required).
- Barrier creams for skin contact with irritant chemicals.
- Using wet methods when concrete grinding to control silica dust.
- Testing for exposure levels.
- Using safe procedures as outlined on the MSDS and training workers in safe use procedures.
- Providing readily available wash facilities to remove contaminant materials.
- Installing emergency wash facilities for use in case of accidental exposure.
- Monitoring worker health to determine exposure effects (noise, lead, asbestos, silica).

### 3.47.3 Exposure Control Plan

An exposure control plan prepared and managed on site by the client.

- In general when:

- Exposure monitoring indicates that a worker is or may be exposed to an air contaminant in excess of its exposure limit.
- Measurement is not possible at 50% of the applicable exposure limit.
- Otherwise as required by WorkSafeBC.

- Specifically for possible exposure to:
  - Asbestos
  - Blood borne pathogens or bio-hazardous materials
  - Lead
  - Toxic process, e.g. gas exposure.

The exposure control plan must be written and include the following:

- A statement of purpose and responsibilities for assessing the risks and controlling the exposure(s).
- Details on the identification of the risks, the assessments to be performed and/or that have been performed, and the control measures taken to limit exposure.
- Details on the education and training that is to be provided.
- The written procedures that have been produced (as may be required) to inform personnel about hazards and establish safe work methods.
- Details on the documentation that is required (such as records) to ensure that the issues are addressed as required by regulation and good management practice.
- A review, at least annually, and regular updates as may be necessary. This will be done in consultation with the occupational health and safety committee.

**Special Occupational Hygiene Initiatives**

During the course of Quolus Construction Services' projects, there will be the need to address certain occupational hygiene health issues on a relatively on-going basis e.g. noise exposure and hearing conservation program. Other health issues may be a rare or one-time occurrence e.g. working with or around asbestos. The following guidelines for occupational hygiene initiatives focuses on the common health concerns, with basic information provided on other less frequent health issues for awareness purposes. All Quolus Construction Services personnel must be aware of these issues and initiatives. If for any reason you feel that they are not being addressed as per the guidelines provided or you have other occupational hygiene health concerns, raise them with your supervisor or worker representative so they can be addressed.

## 3.48 PNEUMATIC TOOLS

Pneumatic tools are powered by compressed air and include chippers, drills, hammers and sanders.

There are several dangers encountered in the use of pneumatic tools. The main danger is getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

**Safe Work Practices**

- Only authorized, experienced and trained workers may use pneumatic nailing and stapling tools.
- Inspect the tool before connecting to the air supply. Ensure screws and caps are securely tightened. Check hoses for cuts or bugles, and replace if defective.
- Eye protection is required and face protection is recommended for employees
- When working with noisy tools proper hearing protection is required.
- Employees shall check to see that they are fastened securely to the hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard.
- Inspect the equipment before connecting to the air supply. Ensure screws and caps are securely tightened. Check hoses for cuts or bulges and replace if defective.
- A safety clip or retainer shall be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.
- Pneumatic tools used for nailing and stapling must be held against the work surface before pulling the trigger.
- Do not use compressed air to clean dust from clothes or any part of the body.
- When cleaning with compressed air, the operator must control debris in such a manner as to not allow any debris to fall over the edge of the building or decks.
- Safety features must not be disengaged or overridden.
- Operating triggers must never be secured in the “on” position under any circumstances.
- The manufacturer-specified air pressure for tools, hoses and fittings must never be exceeded.
- Do not point the tool towards yourself or others, regardless of whether it is empty or not.
- Do not lay hoses across walkways or laneways.
- Operating triggers must never be held in the “on” position while moving between work positions.
- Screens shall be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers or air drills.
- Compressed air guns shall NEVER be pointed toward anyone. Users shall NEVER “dead-end” it against themselves or anyone else.
- The air supply must be disconnected before adjustments or repairs are made to the tool.

### 3.48.1 Pneumatic Nailer/Stapler

Workers using nail guns and stapling tools are at risk of injuring themselves and nearby workers. Most incidents are hand and finger injuries, but there can be serious injuries if a nail is shot into a worker's chest, face, eye, head, or abdomen.

**Safe Work Procedures:**

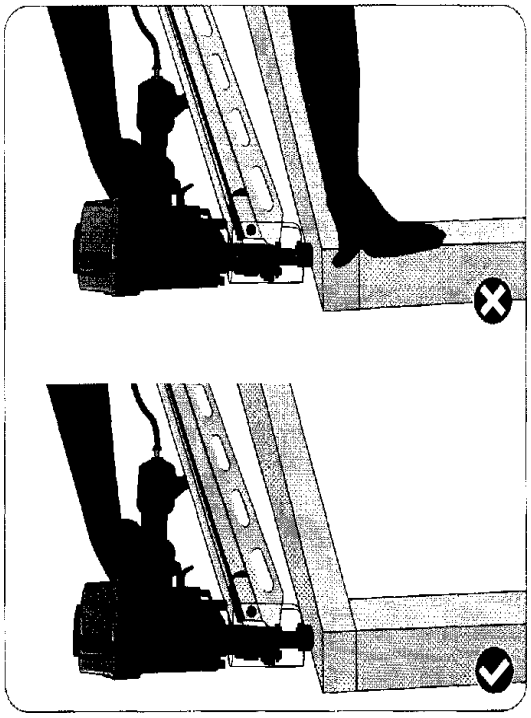
- Tools must be used and maintained as to their manufacturer’s instructions.
- Always handle the tool as if it contains fasteners
- Do not bypass or remove manufacture-installed safety devices.
- Permit only trained and experienced workers to operate pneumatic nailing and stapling tools.

- Wear proper eye and hearing protection.
- Inspect tools before connecting to their power supply.
- check the safety mechanisms.
- ensure that screws and cylinder caps are securely tightened.

- Check that the tool is properly connected to the air supply and is in working order before using.
- Ensure the safety mechanism is working.
- Always handle the tool as if it contains nails or staples. Never point a stapler or nailer at yourself or others.
- Disconnect the tool from the air supply and exhaust all air from the tool by squeezing the trigger when;
  - Servicing or adjusting the tool;
  - not in use;
  - cleaning or adjusting;
  - clearing a blockage
- Do not squeeze the trigger unless the nosepiece of the tool is directed at a safe work surface
- Do not carry or load with your finger on the trigger/switch.
- Ensure the tool is maintained in safe operating condition
- When the tool is not working properly and safely, remove from service and have it repaired
- Do not tape the trigger/switch in the on position.
- Make sure the tool is maintained in safe operating condition.
- inspect the tool and equipment components before use. Don't use damaged tools or equipment.
- Wear eye and hearing protection.
- Before use, make sure the tool is connected tightly to the air supply.
- Don't operate the tool at air pressures above the manufacturer's specifications.
- Don't point the tool at yourself or anyone else.
- Don't squeeze the trigger unless the point of operation is directed at a safe work surface.
- Keep your finger off the trigger between tasks, such as when walking around.
- The trigger of a pneumatic nailing or stapling tool must not be taped or otherwise secured in the "on" position, or held in the "on" position while moving between tasks.
- Don't overreach when using the tool.
- Don't use compressed air to blow dust or debris from your clothing. Air can be forced through your skin and into blood vessels. This can lead to a serious injury that may require surgery.

**Sequential trip versus contact trip**

Consider using sequential trip instead of contact trip. With contact trip, you depress the trigger and then place the gun's nose against the nailing surface. Every time the gun's nose hits a surface, a nail fires. With sequential trip (or restricted trip), you place the gun's nose against the nailing surface and then pull the trigger. This prevents the accidental release of a nail and the chance of a second nail firing if the gun recoils.



When using a pneumatic nail gun, make sure you hold the material you are nailing at a safe distance from the point of contact.

## 3.49 POWDER ACTUATED TOOLS

**General**

There are a number of tools utilizing an explosive charge in use throughout the construction industry to drive fastenings.

The manufacturers of these devices provide detail instructions, along with the legislation specifically set out for their use. These instructions must be adhered to at all times.

**Safe Work Practices**

- Only properly trained and qualified operators are to use this type of tool. The user shall possess proof of this training issued by the manufacturer, authorized dealer/distributor or other competent source. The worker must be familiar with WSBC Regulation.
- The tool must be CSA standard approved for “Explosive Actuated Fastening Tools”.
- The tool should be loaded just prior to use with the correct load for the job anticipated.
- The tool should never be pointed at anyone, whether loaded or unloaded. Hands should be kept clear of the muzzle end at all times.
- Explosive/powder actuated tools must never be used in an explosive or flammable atmosphere.
- When used, the tool must be held firmly at right angles to the surface being driven into.
- The operator must wear eye and hearing protection. Where there is a danger of spilling, full-face protection must be worn. Hearing protection is also to be worn in confined areas.

- To prevent free-flying studs, ensure that the material being driven into will not allow the stud to completely pass through it. Ensure that no one is working behind material that fasteners are being shot into.
- Manufacturer's recommendations should be consulted and followed whenever there is a doubt about the material being driven into, maintenance procedures or load strength to be used.
- Workers must be authorized by their foreman or supervisor to operate the tools.
- Repair of powder-actuated tools by unqualified persons is not permitted.

## 3.50 POWER TOOLS

Power tools commonly used in residential construction include portable circular saws, table saws, chainsaws, quick-cut (cut-off) saws, sabre (reciprocating) saws, chop saws, grinders, drills, and other power tools.

### 3.50.1 Power Tools, Portable Lighting and Power Cord Safe Work Practices

- Ensure tools are properly grounded (three-prong plug) or are double-insulated.
- When portable electric tools (including table saws) are used outdoors or in a wet or damp location, they must be protected by an approved Ground Fault Circuit Interrupter outlet at the panel or a GFCI breaker at the panel. Under no circumstances may GFCI's be used at the tool ends of extension cords. Alternate ground fault protection may be provided by the correct implementation of the General Contractors Assured Grounding Program.
- Keep power cords clear of tools during use.
- Suspend power cords over aisles or work areas, when possible, to avert stumbling or tripping hazards.
- Do not carry electrical tools by the power cord.
- Avoid octopus electrical connections.
- Wear appropriate protective gear when using power tools for grinding, cutting and sanding operations including eye and/or face protection.
- Only pre-authorized workers with formal and/or on-the-job training (who have demonstrated observed competence) shall be permitted to use power tools.
- Use Lock Out Procedures before repairing or adjusting power.
- Inspect tools, power cords and electrical fittings for damage, broken or inoperative guards prior to each use. Repair or replace damaged equipment. Never use a defective tool.
- Do not wear gloves, loose clothing or jewelry while using revolving power tools.
- Switch tools off before connecting them to a power supply.
- Do not use electric tools in wet or damp locations unless tool is connected to a ground-fault circuit interrupter (GFCI).
- Ensure tools and portable lights are properly grounded (three-prong plug) or are double insulated.
- Never tamper with or remove three-prong grounding plugs or pins. This eliminates the grounding protection. When grounded outlets are not available -– as may be found in older buildings – adapter plugs shall be used with the grounding wire secured to a positive ground. (Note: The cover plate screw may not give a positive ground; use your meter or GFCI tester to test for positive ground.)
- Double-insulated tools may be used if they are distinctively marked with the words "Double Insulated.

- When using extension cords, make sure the cord is plugged into a grounded outlet of correct voltage and the cord is capable of carrying the expected load.
- Flexible cords shall be used in continuous lengths without splice or tape
- Keep power cords clear of tools during use.
- Portable lights shall be equipped with guards to prevent accidental contact with the bulb. Unless guards and handles are properly grounded, they shall be made from nonconductive materials.
- Portable lights shall not be suspended by their electric cords, unless cords and lights are designed for this means of suspension
- Suspend power cords over aisles or work areas, when possible, to avert stumbling or tripping hazards.
- Do not carry electrical tools by the power cord. Never throw tools, equipment or material from one work level to another.
- Keep all cords coiled when not in use. To prevent cord damage do not wrap cords tightly around tools.
- Hand-held power tools shall not be equipped with a “dead man” control. It may have a lock-on control provided turn off can be accomplished by a single motion of the same finger or fingers that turn it on
- Avoid octopus connections.
- Wear safety glasses or goggles when using power tools for grinding, cutting chipping and sanding operations.
- Wear hearing protection when operating power tools.
- Power operated cutting tools shall have a functional brake.
- Avoid forcing tools; let the tool do the work.
- Unplug power when adjusting or cleaning the tool.
- Never use electrical tools for purposes other than intended.
- Keep guards in place and properly adjusted to Manufacturer’s specifications.
- Have a firm footing and be properly braced when using power tools.
- Don't operate power tools in explosive atmospheres, such as where there are flammable liquids, gases, or dust. Power tools create sparks, which may ignite dust or fumes.
- When using large hammer drills, the drill bits can suddenly stop or reposition if they strike something, and the drill's torque can twist your wrist severely.
-

### 3.50.2 Power Tools with Guards

- When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.
- Safety guards shall never be removed when a tool is being used.
- One or more types of guarding may be provided to protect the operator and other employees from hazards such as those created by:
  - Point of operation.
  - In-running nip points.
  - Rotating parts
  - Flying chips and sparks.

- Portable circular saws, having a blade diameter greater than two (2) inches, shall be equipped with a guard above and below the base plate or shoe. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

**Safe work practices for specific tools**

This section lists some safe work practices for working with electric tools, power saws, table saws, quick-cut (cut-off) saws, and abrasive-wheel grinders. This section doesn't include every single tool or safe work practice. Always refer to the manufacturer's instructions for any tool you're using.

### 3.50.3 Electric tools

**Considerations when working with electric tools include the following:**

- Make sure tools are properly grounded or double insulated. Grounded tools must have a three-wire cord with a three-prong plug that's plugged into a properly grounded three-pole outlet. Don't break off a plug's third (ground) prong.
- Always turn off the power by using the tool's on-off switch. Don't disconnect the power supply by pulling or jerking the cord from the outlet. Pulling the cord rather than the plug can result in electric shock.
- Suspend power cords over walkways or working areas wherever possible to eliminate tripping hazards.
- Don't allow vehicles or equipment to run over unprotected power cords. If left unprotected, cords can be damaged even though they may appear to be intact.
- Don't use light-duty power cords for heavy load applications.
- Don't carry electric tools by the power cord.
- Don't tie knots in power cords. Knots can cause short circuits and electric shocks.
- Don't overload a circuit.

### 3.50.4 Portable Table Saw

**Safe Work Procedures:**

Power saws include circular saws, sabre (reciprocating) saws, and mitre saws. The following are some of, but not necessarily all the procedures to follow when using a circular saw. If unsure ask your supervisor:

- Secure the material to be cut to prevent binding and kickback.
- Don't pinch material onto a running saw blade. Always let material fall after a cut.
- Use the right blade for the material you're cutting. Make sure the blade is sharp and installed correctly.
- Before cutting materials, check for obstructions or foreign objects, such as nails or screws, in the cutting path.
- Before cutting materials, ensure the worker is positioned in a safe location to prevent contact with hazardous points of operation, pinch points, and kickback.
- Wear proper eye protection and hearing protection, and when required for dust, wear a dust mask.

- Select and use the proper sharp blade designed for the work to be done.
- Ensure the power supply is disconnected before changing blades or making saw adjustments.
- Hold the saw securely with both hands when ripping.
- When ripping, make sure the wood is held securely in position. Use a wedge to keep the stock from closing and causing the saw to bind.
- Before cutting check the wood for obstructions which could cause the saw to kickback.
- Allow the saw to attain full power before starting your cut.
- Make sure all cords are clear of the cutting area before starting the cut. Disconnect the electrical cord before adjusting or changing the blade. Keep the saw blade guard in good working order.
- Ensure the retracting guard has returned to its proper position before setting the saw down.
- Do not fix or hold the retractable blade guard in the open position.
- Avoid twisting the saw while cutting to change direction or saw alignment unless the blade is designed for this purpose.
- Do not use a saw that vibrates or is defective in any way.
- Discard any blade that has developed a crack from the eye or the collar and where the blade has developed a crack from its outer diameter whose length is more than 1120 the diameter of the saw blade.
- Inspect for cracked blades and/or broken teeth. Replace when the blade is cracked.
- Do not carry the saw with your finger or hand on the trigger switch. Keep the saw blade guard and motor clean and free of sawdust.
- Where harmful vapours or dusts are created, appropriate respiratory protection must be worn.

### 3.50.5 Power saws

**Table saws**

Considerations when working with table saws include the following:

- Keep your hands clear of the saw cut while operating the saw.
- Keep your body to the side of the saw blade, out of the line of a potential kickback.
- Ensure the saw blade doesn't extend more than 6 mm (A in.) above the top surface of the material being cut.
- Use the saw-blade guard with a spreader and anti-kickback fingers for ripping or cross-cutting operations.
- Always use a push stick.
- Don't perform free-hand sawing.
- Don't reach around or over a moving saw blade.
- Don't leave the table saw unattended while the saw blade is moving.
- Using a single push stick.

### 3.50.6 Abrasive-wheel grinders

Portable and fixed grinding wheels are designed to operate at very high speeds. When they shatter, the fragments can travel at 500 km/h (300 mph) and cause serious injury. Workers using grinders should be trained to use them safely and should know about rpm (revolutions per minute) limitations.

Considerations when working with abrasive-wheel grinders include the following:

- Use only abrasive wheels that match the diameter and speed (rpm) rating of the grinder. A low-rpm abrasive wheel may shatter on a high-rpm grinder.

- Inspect grinding stones and abrasive wheels for nicks, cracks, and other defects. Replace them immediately if they're damaged.
- Don't use the side of the wheel for grinding unless it's designed for such use.
- Before setting a portable grinder down, turn it off and wait until it stops completely.
- Ensure guards are in good working order and are being used. Refer to the manufacturer's instructions for the appropriate guard to be used with the proper type of blade, stone, or wheel.

### 3.50.7 Quick Cut Saws

Hand-held portable circular quick cut saws are commonly known as cut-off saws in construction. They are widely used for cutting concrete, masonry products, sheet metal products (both steel and aluminum) and light steel sections such as angles and channels.

**Hazards**

Cut-off saws are high powered compared to similar tools. Hazards include high-speed blade rotation, blade exposure during operation and exhaust from the internal combustion engine, the usual power source.

The saws also create clouds of dust when dry-cutting masonry and showers of hot sparks when cutting metal products, especially steel.

These hazards can result in cuts, kickbacks, exposure to carbon monoxide fumes, exposure to dusts (silica from concrete and masonry products in particular), burns, flying particles in the eye, and other injuries from flying material when work is not secured for cutting or when blades fly apart.

These hazards can be controlled by:

- Operators trained to use cut-off saws properly and to wear the right protective equipment such as eye, hearing and respiratory protection.
- Saws kept in good working condition, equipped with proper blades or disks and used with all guards in place.
- Work secured to keep it from shifting during cutting.
- Caution around sharp edges left by cuts.

**Training**

Operators should be instructed in the care, maintenance and operation of cut-off saws. They should read the operating manual, review the major points and receive both oral and written instruction.
Time spent on instruction will reduce accidents and injuries as well as prolong the service life of the saw. As a minimum, the operator should be instructed in:

- Care of the saw
- Installing disks and blades
- Mixing fuel and fuelling the saw
- Starting the saw

- Supporting and securing work to be cut
- Proper cutting stance and grip
- Proper cutting techniques for different material
- Respiratory protection against dusts
- How to inspect and store abrasive disk.

Cracked, broken or worn parts should be replaced before the saw is used again. Guards and air-intakes should be cleaned regularly and often. Abrasive disks should be checked before installation and frequently during use. Correct excessive blade vibration before trying to make a cut.

In confined areas, make sure that ventilation is adequate. Gasoline driven saws release carbon monoxide gas – odorless, colorless, and highly toxic.

**Starting**

Most of the following procedures are for gasoline-powered cut-off saws; the type most commonly used in construction.

- Use caution when preparing the oil/gasoline mixture and when fuelling the saw. No smoking or ignition sources should be allowed in the area where fuel is mixed or tanks are filled.
- Fill the tank outdoors in a well ventilated space at least 3 meters from the area where the saw will be used. Spilled fuel should be wiped off the saw.
- Check the saw for leaks. Sometimes vibration makes gas lines leak.
- Carry the saw with the disk or blade removed and with the muffle away from you.
- Start the saw in an area clear of people and obstacles. Under no circumstances should anyone be standing in front of the saw as its starts or while it's running.
- Put the saw on a smooth and hard surface for starting. The guard should be properly set for the type of cut beforehand.
- Assume a solid well-balanced stance. Do not wrap the starter cord around your hand, this can cause injury.
- Set one foot on the rear handle, put one hand on the top handle to lift the blade off the surface and use the other hand to pull the starter cord.
- Avoid fuelling the saw on or near formwork; gasoline spills are a fire hazard. Use a funnel to avoid spills.

**Warning: Always shut off saw before fuelling.**
**Keep fuel container well clear of work area.**

- Do not overfill the saw or run it without securing the fuel tank cap. Gasoline seeping from the tank can saturate your clothing and be ignited by sparks thrown from metal cutting. Only use the cap supplied by the manufacturer.

- Once the saw is running, release the throttle and make sure the engine drops to idle without the disk or blade moving.

- Run the engine at full throttle and let the disk or blade run freely to make sure it turns on the arbor without wobbling or vibrating.

**Support**

One of the major hazards with cut-off saws is failure to support and secure the work to be cut.

The saw is powerful enough to throw material around unless it is securely held and supported. Standing on material to hold it down is not recommended.

For repeated cuts of masonry or metal pieces, a jig is ideal for efficiency and safety. The jig should be designed and built to hold material in place after measurement without further manual contact.

**Stance and Grip**

The cut-off saw is a heavy, powerful tool that must be held by hand. Operators need a secure stance with legs apart for balance and support. The saw should be held at a comfortable, balanced location in front of the operator.

Grip the saw firmly with one hand on each handle. Hold your forward arm straight to keep the saw from kicking back or climbing out of the cut.

**Cutting**

Although skill in handling the cut-off saw can only be learned through practice, some safety considerations and operating techniques must always be kept in mind, even by the most experienced operators.

Work should be supported so that the disk or blade will not bind in the cut. Support heavier materials on both sides of the cut so the cut piece will not drop or roll onto the operator's foot.

Lighter materials can generally be allowed to fall. In all cases, the cut should be as close as possible to the supporting surface.

**Kickback and Pull-In**

Kickback can happen extremely fast and with tremendous power. If the segment of the disk or blade contacts the work, the disk or blade starts to climb out of the cut and can throw the saw up and back toward the operator with great force.

- For cutting, keep the throttle wide open. Ease the blade down onto the cut line. Do not drop or jam the blade down hard. Move the saw slowly back and forth in the cut.
- Hold the saw so that the disk or blade is at right angles to the work and use only the cutting edge of the disk or blade. Never use the side of a disk for cutting. A worn disk will almost certainly shatter and may cause severe injury.
- Beware of blade run-on; the blade may continue to rotate after the cut and run away with a saw set down too soon.
- Secure and support the material at a comfortable position for cutting. Make sure that the material will not move, shift, or pinch the blade or disk during cutting.

- Keep steady balance and solid footing when making cut.
- Do not support the work on or against your foor or leg.
- Use both hands to control the saw. Maintain a firm grip with thumb and fingers encircling the handles.
- Do not force the saw to one side of the cut. This will bend the disk or blade and cause it to bind, possibly to break.
- When re-entering a cut, do so without causing blade or disk to pinch.
- Never let the upper quarter segment of blade or disk contact the material.
- Run the saw at full throttle.
- Do not cut above chest height.
- Water cooling is recommended for cutting masonry materials. It prolongs disk life and reduces dust exposure.
- Keep pressure on the saw reasonably light. Although more pressure may be necessary for hard materials, it can cause an abrasive disk to chip or go “out of round”. This in turn will make the saw vibrate. If lowering the feed pressure does not stop the vibration, replace the disk.
- Pull-in occurs when the lower part of the disk or blade is stopped suddenly, e.g. a cut closing up and binding. The saw pitches forward and can pull the operator off balance.
- To be protected against kickback and pull-in, maintain a well balanced stance and two handed grip on the saw at all times when cutting.
- Do not carry the saw any distance with the engine running. Stop the engine and carry the saw with the muffler away from you.

**Disks and Blades**

Disks and blades are available in three basic types:

- Abrasive disks
- Diamond-tipped blades
- Carbide-tipped blades
- Use only the disks and blades compatible with your saw and rated for its maximum rpm. Blades or disks may fly apart if their rpm is not matched to saw rpm. Consult the operating manual for a reputable supplier.

## 3.51 PROPANE

**General**

Since propane is heavier than air and invisible, it is a special concern when it is used on the job site.

All installations and use of this product on the job site must comply with the Government Legislation set out for its safe use.
Suppliers delivering the product or setting up the equipment at the site must be part of the safe work practice.

**Safe Work Practices**

- Nylon slings must be used in a “choker” fashion when loading, off-loading or lifting propane tanks.
- “Lifting lugs” provided on tanks are not to be used. Slings are to be wrapped around the shell of the tank.
- Regulators are to be removed from the tank prior to any movement of the tank.
- Crane hooks shall be equipped with a “safety latch”.
- All trucks, cranes or equipment used to handle propane tanks must be equipped with a fire extinguisher appropriate for the size and type of tank being handled.
- Except in an emergency, a competent certified worker shall perform any movement or repositioning of tanks.
- Tanks are not to be heated to increase flow.
- When in use, propane bottles are to be securely held in an upright position.
- Tanks are not to be hooked up and used without proper regulators.

## 3.52 REBAR PROTECTION

Where work is being performed around or above rebar dowels adequate protection shall be installed:

- Horizontal rebar stubs less than 8 feet above walking or working levels must be covered by anti-abrasion caps.
- Vertical rebar stubs below work areas or below ascent/descent areas shall be protected by gutters constructed with 2x4 and plywood, rebar saddle and 2x4 plate systems, heavy duty conveyor belt material, or other materials or systems acceptable to WorkSafeBC.
- Larger sections such as “zones” that are a hazard to workers shall be covered with suitable boxes or other materials or systems acceptable to WorkSafeBC.
- In pass-through or work areas that are not hazards due to falls from above, rebar shall be covered with anti-abrasion caps or other means acceptable to WorkSafeBC.

### 3.52.1 Inspection of Ropes and Slings (Instructions)

| **POLYPROPYLENE AND NYLON ROPE** | |
|---|---|
| Chalky exterior | Overexposed to sunlight (UV) rays possibly from being left unprotected outside. Remove from service and replace. |
| Dusty residue when twisted open | Wearing from inside out. Usually due to overloading. If extensive, replace rope. |
| Frayed exterior | Damaged by abrasive or sharp edges. Strength may be reduced. |
| Broken Strands | Remove from service and replace. |
| Cold or frozen | Thaw and dry at room temperature. |
| Reduced width | Usually indicates previous overloading. Use caution and reduce lifting capacity or remove from service and replace. |

| **MANILA ROPE** | |
|---|---|
| **Manila rope is not recommended for use in construction and is prohibited for use in fall restraint and fall arrest systems.** | |
| Dusty residue when twisted open | Wearing from inside out. Usually due to overloading. If extensive, replace rope. |
| Broken strands, fraying, spongy feel | Remove from service and replace. |
| Wet | Reduce maximum load limit. |
| Frozen | Thaw and dry at room temperature. |
| Mildew or dry rot | Remove from service and replace. |
| Dry and brittle | Do not oil. Wash with cold water and hang in coils to dry at room temperature. |

| **WIRE ROPE AND WIRE ROPE SLINGS** | |
|---|---|
| Rusty, dry | Apply clean light oil. Do not use engine oil. |
| Excessive outside wear | Indicates rope has been used over rough surfaces or with misaligned or incorrect sheaves. Reduce load capacity according to wear. If any of the outside individual wires are more than 1.3 worn away, replace and remove from service. |
| Broken wires | In running ropes, up to 5 allowed in one rope lay or 2 in one strand in one rope lay or, in standing ropes, up to 2 in one lay and a maximum of 1 at an end connection. If any of these limits are exceeded, replace rope and remove from service. |
| Crushed, jammed or flattened strands | Replace and remove from service. |
| Bulges in rope | Replace and remove from service. |
| Gaps between strands | Replace and remove from service. |
| Core protrusion | Replace and remove from service. |
| Heat damage, torch burns or electric arc damage | Replace and remove from service. |
| Frozen | Allow to warm at room temperature. Avoid sudden loading of cold rope. |
| Kinks, bird-caging | Replace and remove from service. |
| Size reduction | Replace and remove from service if reductions are in excess of 0.4 mm (1.64 in) for ropes up to and including 8 mm (5/16 in), I mm (3/64 in) for ropes greater than 8 mm (5/16 in) up to and including 19 mm (3/4 in), 2 mm (1/16 in) up to and including 29 mm (10 in) or 3 mm (3/32 in) for ropes greater than 29 mm (10 in). |
| Sharp bends | Sharp corners should be avoided. Use pads such as soft wood, rubber hose, old carpet, etc. to avoid damaging slings and ropes. |

| **CHAIN SLINGS** | |
|---|---|
| Capacity safety tag | Use only alloy steel identified as an “A: or “8” for overhead lifting. |
| Stretched or deformed links | Return to manufacturer for repair or remove from service. |
| Cracks, nicks or gouges | Return to manufacturer for repair or remove from service. |
| Failure to hand straight | Return to manufacturer for repair or remove from service. |
| Corrosion pitting | Return to manufacturer for repair or remove from service. |
| Burns | Return to manufacturer for repair or remove from service. |
| Reduction in chain diameter of any link | Reference the requirements of WorkSafeBC Regulation regarding chain sling wear rejection criteria. If allowable limits exceeded, remove from service. |

| **POLYPROPYLENE AND NYLON ROPE** | |
|---|---|
| Chalky exterior appearance | Overexposed to sunlight (UV) rays. Should be checked by manufacturer or replaced and removed from service. |
| Frayed exterior | May have been shock-loaded or abraded. Inspect very carefully for signs of damage. |
| Breaks, tears or patching | Replace and remove from service. |
| Frozen | Thaw and dry at room temperature before use. |
| Oil contaminated | Replace and remove from service. |

## 3.53 ROOF WORK

Roof work often takes place at elevations where there is a potential for a fall from 3 m (10 ft.) or more above grade, or where a fall from a lesser height could result in serious injury. Employers must ensure a fall protection system is used to protect workers from hazards associated with falls from elevation.

Falls from roofs are a common cause of injuries in residential construction. There are several activities that occur on the roof, including deconstructing the roof during demolition, constructing the roof itself, and installing the roofing material. Employers working on residential buildings must ensure their workers are protected if there's a risk of falling. For more information, see "Fall protection," pages 78-81.

Before loading materials onto a roof, ensure that it can withstand expected loads, including concentrated loads of roofing materials, equipment, and workers. You may need information from a professional engineer.

If there are skylights, skylight openings, or other roof openings accessible to workers, guard them with appropriate covers or guardrails. Ensure that these covers or guardrails can withstand potential loads.

When working around skylights or other roof openings, ensure they're effectively guarded or covered to protect workers from falling.

If the roof material allows for it, workers must use toe-holds if the roof has a slope of 8:12 (8 vertical to 12 horizontal) or more. Toe-holds must be at least 38 mm x 140 nun (2 in. x 6 in. nominal). They're generally installed after workers have installed the first three courses of shingles.

Orient toe-holds with the 6 in. side perpendicular to the roof. When attaching toe-holds to the roof using manufactured roof jacks, follow the manufacturer's instructions.

## 3.54 SCAFFOLDS and WORK PLATFORMS

Types of scaffolds and other work platforms include manufactured (access) frame, wood frame, trestle, ladder-jack, pump-jack, and rolling (baker's) scaffolds. Each of these work platforms have their own requirements. Always follow the manufacturer's instructions.

### 3.54.1 Definitions

**Scaffold** — Any temporary elevated work platform and its supporting structure used for supporting workers, materials, or equipment.

**Work platform** — An elevated or suspended temporary work surface used for supporting workers and including a scaffold and boatswain's chair.

- A scaffold's base must be set on adequate sills or pads to prevent sinking or slipping and must be affixed where required. Any part of the base must be able to support the maximum load.
- Use adjusting screws or other approved methods to level the scaffold instead of blocking.
- Bracing shall be in accordance with the manufacturers recommendations via cross bracing, horizontal bracing, diagonal bracing or a combination thereof to adequately support the scaffold.
- As required, stabilizers may be required to better support the scaffold.
- When scaffolds are partially or completely enclosed, additional support and stabilization will be required as the wind load must be taken into account.
- Do not erect scaffolds near overhead electrical power lines unless the proper precautions have been taken. Consult the Power Company Authority.
- Install guardrails on the open sides of scaffolds where required by the manufacturer's instructions and the Regulation. You may not need to install guardrails if the platform is next to a structure that provides protection equivalent to guardrails and the open space between the platform and the structure is 30 cm (12 in.) or less.
- Planking of the work level platform must be a minimum of 20 inches and additional planks shall be used if the distance between front and rear supports is greater than 30 inches so that an opening of not greater than one scaffold plank, (10”) exists.
- Scaffold planks shall not be sloped more than 2 feet vertically in 10 feet horizontally.
- Scaffolding shall be inspected by the site Safety Representative before work is performed on a scaffold.
- Ensure that the scaffold you intend to use is the correct one for the job.
- Scaffolds and stationary work platforms shall be erected in accordance with approved safety standards and by a Competent Person.
- When used, wooden or synthetic planks shall be scaffold grade or approved by a Qualified Person for scaffold and stationary work platforms use capable of withstanding 4 times the working load.
- The assembly and disassembly of scaffolds and stationary work platforms shall be done using a safety harness and lifeline anytime there is more than a 3 meters (10 feet) fall exposure.
- Ladders are required to reach working surfaces more than 3 ft (610 mm) above or below the point of access.
- No planks shall be of such length as to extend into passageways where there is a possibility of planking being bumped by the movement of people, materials or equipment through the area.
- If it is necessary to have workers below the work area, make sure cover protection is provided. A minimum of 3/4 in. (19 mm) plywood on 2 in. (51 mm) planking shall be used.
- Do not climb cross braces on scaffolds.
- When using tubular welded frame scaffold, the sections shall be joined together using the lock pins provided for that purpose.
- Spacing between ladder rungs shall meet provincial regulations standards.
- Scaffolds and stationary work platforms shall be tied into the building with rigid connectors spaced 4 times the minimum width at intervals not exceeding 26 ft (7.9 m).
- Do not use ladders or other devices on top of scaffold to increase working height.
- Do not overload scaffold platform with material.
- Unless the scaffold is fully planked and equipped with proper guardrails and toeboards, the employee shall be tied off using a personal fall-arrest system.
- Ensure scaffolds and work platforms are inspected and are safe and able to withstand the load, regardless of who erected the scaffold. Don't use damaged equipment.
- Erect scaffolds so the vertical members are plumb with the ledgers and the bearers are level.

- Only use components that are compatible with the scaffold or work platform. Don't use pallets, boxes, concrete blocks, bricks, or other unstable material to support scaffolds.
- Ensure safe access is provided to every work platform.
- Ensure that work platforms are strong enough to bear the loads placed on them. Secure work platforms to the supporting equipment, structure, or surface to which they're attached.
- Ensure that scaffold platforms are at least 50 cm (20 in.) wide, except for work platforms used with ladder jacks, pump jacks, or similar systems. These platforms must be at least 30 cm (12 in.) wide.
- Secure scaffolds to a building or structure if the height of the scaffold is greater than three times its minimum base dimension or in any other circumstances if required for stability.

- **Prior to use you must check that:**

- Inspect all scaffold parts and locking devices regularly before and during use. Do not intermix frames and components manufactured by different companies.
- Ensure leveling adjustment screws have not been over extended.
- A scaffold must be erected with the vertical members plumb, and with the ledgers and bearers level.
- The base of a scaffold must have bearing plates or sills that rest on a solid surface and are sufficient to support the weight of the scaffold.
- The poles, legs and uprights of a scaffold must be securely and rigidly braced to prevent movement.
- A scaffold must be effectively guyed or secured to a building or structure
- If the height of the scaffold exceeds three times its minimum base dimension, or
- In any other circumstances if required for stability.
- Unless otherwise specified by the manufacturer, height adjustment devices must not extend more than 2/3 of their total length or 60 cm (24 in), whichever is less.
- All connections between the parts of a scaffold must be secure.
- All scaffolds will be erected and maintained in accordance with the manufacturers specifications

### 3.54.2 Scaffold planks

General requirements that apply to scaffold planks include the following:

- Inspect all scaffold planks before use.
- Ensure that lumber or manufactured scaffold planks used for work platforms consist of at least two planks placed side by side to provide a work surface with a minimum nominal width of 50 cm (20 in.). For ladder-jack and pump-jack platforms, the required width for manufactured planks is 30 cm (12 in.).
- Ensure scaffold planks are secured against separation from the supporting equipment, structure, or surface to which they're attached.
- Scaffold planks should completely cover the area between front and rear vertical supports or the rear guardrail.

### 3.54.3 Wood frame scaffolds

Wood frame scaffolds must be constructed and used according to WSBC standard *WPL 1-2004 - Design, Construction and* Use *of Wood Frame Scaffolds.* The standard provides information on the use of single-pole and double-pole wood scaffolds. This section will focus on single-pole wood scaffolds only because they're more commonly used in residential construction.

A single-pole wood scaffold. Don't overload scaffold planks, use them as sills, or subject them to any condition that could affect their integrity.

All wood scaffolding must be constructed using No. 2 or better lumber — either Douglas fir-larch, hemlock-fir, spruce-pine-fir, or coast Sequoia spruce. Hand-select scaffolding materials to eliminate split, warped, or otherwise defective lumber.

### 3.54.4 Single-pole wood scaffolds — light duty

The spacing of vertical supports and bearers for a light-duty, single-pole wood scaffold must not exceed 3 m (10 ft.). The inner ends of bearers must be supported by bearer blocks and securely fastened to wall scabs. Refer to the following table.

A single-pole wood scaffold set up to provide a safe work area for exterior (building-envelope) work activities at elevation above a floor or grade. You may be required to double some lumber planks, one on top of the other.

**Plank specifications**

Sawn-wood planks must be hand-selected only from Douglas fir-larch, hemlock-fir, spruce-pine-fir, or coast Sequoia spruce.

Manufactured scaffold planks are available in various lengths and duty ratings. They must be installed and used according to the manufacturer's specifications.

### 3.54.5 Ramps and platforms

Safe access must be provided for workers. Sloping platforms must not exceed 1 vertical to 5 horizontal. They must have cleats spaced no more than 400 mm (16 in.) apart or a non-skid surface.

When using sloping platforms for access, make sure they are at least 500 mm (20 in.) wide.

### 3.54.6 Trestle scaffolds

General requirements that apply to trestle scaffolds include the following:

- Set up and use trestle scaffolds following an applicable standard and the manufacturer's instructions. (Always follow manufacturer's instructions.)
- Don't add extensions to the trestle legs.
- Don't use stepladders for trestle scaffolds.

### 3.54.7 Ladder-jack scaffolds

General requirements that apply to ladder-jack scaffolds include the following:

- Set up and use ladder-jack scaffolds according to an applicable standard and the manufacturer's instructions. (Always follow manufacturer's instructions.) Ensure that a copy of the instructions is available on site for workers' reference.
- Only use ladder-jack scaffolds on heavy-duty ladders (CSA Grade 1 or ANSI Type I, with a maximum length of 6 m/20 ft.).
- Ensure the weight limits of the ladder-jack scaffold aren't exceeded.
- Ensure ladders used for the ladder-jack scaffold are sufficiently secured so it's stable.
- Workers on ladder-jack scaffolds must be protected by a fall protection system. (For more information, refer to the manufacturer's instructions.)

### 3.54.8 Pump-jack scaffolds

Requirements that apply to pump-jack scaffolds include the following:

- Erect, operate, and maintain pump-jack scaffolds as per the manufacturer's instructions. Ensure that a copy of these instructions is available on site for workers' reference.
- Secure metal poles as specified by the manufacturer.
- Ensure there's at least one brace up to 7.3 m (24 ft.). Above that height, make sure bracing spans are no more than 4.9 m (16 ft.) from top to bottom.
- Don't use metal poles that are more than 15.2 m (50 ft.) high, unless certified by an engineer.
- Place poles on mud sills or other adequate, firm foundations.
- Ensure the weight limits of the pump-jack scaffold system aren't exceeded.
- Ensure the work platform is secured to the pump-jack brackets and is at least 30 cm (12 in.) wide.
- Ensure workers use fall protection. (For more information, see "Fall protection," pages 78-81, and refer to the manufacturer's instructions.)

### 3.54.9 Manufactured (access) scaffolds

Manufactured (access) scaffolds must be assembled and used as per the manufacturer's instructions and the CSA Group or ANSI standard to which the scaffold was designed. Other requirements include the following:

A ladder-jack scaffold system. The manufacturer's instructions may specify that a fall protection system is required at any height.

- Inspect the scaffold before use.
- Set up the scaffold on a firm and level base. The supporting surface where the scaffold is going to be erected must be capable of withstanding the loads likely to be imposed by the set-up and use of the scaffold.
- Ensure the components used in the scaffold structure are compatible and capable of supporting the combined weight of the scaffold and any intended loads.
- Provide an appropriate means of access to each work platform. Some manufacturers include hatches in their scaffold platforms that allow workers to climb up the inside of the end frame.

- Scaffold planks should completely cover the area between front and rear vertical supports or the rear guardrail. (For more information, refer to the manufacturer's instructions.)
- If the height of the scaffold is more than three times the base dimension, secure the scaffold to the structure.
- If the scaffold is enclosed by a tarp or any other cover, construct, erect, and use the scaffold according to the instructions of a professional engineer.

Ladders must not be used to extend the height of a scaffold. Instead, add another section of scaffold to extend the height.

### 3.54.10 Rolling scaffolds

Rolling scaffolds (also known as baker's or mobile scaffolds) can be hazardous if they're not designed, maintained, assembled, and used according to applicable standards.

The following are additional requirements that apply to rolling scaffolds (also known as baker's or mobile scaffolds):

- Ensure that the floor or surface on which the scaffold moves is level and free from pits, holes, depressions, and obstructions. (For more information, refer to the manufacturer's instructions.)
- Don't stay on the scaffold if you're moving it.
- Ensure that at least two of the four scaffold wheels are swivel casters. Install the caster's height-adjusting pins or screws so the casters can't fall out of the scaffold's supporting legs. (For more information, refer to the manufacturer's instructions.)
- Ensure the wheels have locking devices.

## 3.55 SCISSOR LIFTS AND BOOMS

**General**

Scissors lift operators must follow all applicable Vehicles and Mobile Equipment safety rules and have the required qualifications to operate the machinery. In addition, the following rules apply specifically to their operation.

**Safe Work Procedure**

- Scissor lifts and boom operators must follow all applicable Vehicle and Mobile Equipment safety rules.
- Equipment must be used and maintained in accordance with applicable WorkSafeBC requirements.
- Guardrails, toe-boards and safety chains must be in place.
- Fall arrest equipment secured to a suitable anchorage point must be in place and used on all boom elevating work platforms. (Does not apply to scissor lifts used on a firm, level surface).
- The base of the unit may only be repositioned with the platform in the full lowered or stowed position unless the operator has confirmed the supporting surface is firm, level, clear of depressions or obstructions and that wheels and/or outriggers are contacting the ground.
- If a unit is fitted with outriggers, it is to be equipped with notices indicating the circumstances under which the outriggers are to be used.
- Carrier vehicles of elevated work platforms must be immobilized against inadvertent motion before workers occupy the platform.

- Scissor lifts must be guarded where there is a possibility of workers inadvertently coming into contact with any hazardous moving parts of the lifting mechanism.
- All vehicle mounted self-propelled boom-supported elevated work platforms must be subject to non-destructive testing at least every 24 months.
- Every elevating work platform must be provided with an emergency stop button on the platform and an emergency lowering control.
- Every elevating work platform must be fitted with a warning system for forward, reverse, up and down motions.
- All self-propelled elevating work platforms (except truck mounted platforms) must be fitted with tilt angle indicators or warning devices as described in the WorkSafeBC OHS Regulation.

## 3.56 TEMPERATURE EXTREMES

### 3.56.1 Temperature Extremes - Heat

The need for assessing exposure to heat is entirely dependent upon the temperature in the work area measured with a Wet Bulb Globe Temperature (WBGT) device. A WBGT device measures not only the ambient temperature, but also the amount of heat dissipation through evaporation (perspiration) and the amount of radiant heat present. The WGBT temperatures and exposure limits are as follows (OHS Regulation, Part 7, Table 7-2):

| Action Levels and Exposure Limits | | |
|---|---|---|
| **Work load[1]** | **Action level (2 hour TWA)** | **Exposure limit[2] (2 hour TWA)** |
| Light<br>Work that generates a metabolic rate of less than 200 kcal/hr such as: performing light hand work while seated or standing, casual walking. | 28 WBGT$^{O}$C | 30 WBGT$^{O}$C |
| Moderate<br>Work that generates a metabolic rate of between 200 and 350 kcal/hr such as: hand and arm work, arm and leg work, picking fruits and vegetables, brisk walking. | 24.7 WBGT$^{O}$C | 26.7 WBGT$^{O}$C |
| Heavy<br>Work that generates a metabolic rate greater than 350 kcal/hr such as: shoveling, sledge hammer work, sawing, planning, digging, axe work, pushing or pulling heavy loads, angle grinding, restocking cans on shelves. | 23 WBGT$^{O}$C | 25 WBGT$^{O}$C |

[1] If work involved a continuous task the work load is based on the metabolic rate for that task. If the work involved a variety of tasks or is intermittent, the work load is based on the average metabolic rate for the various activities, weighted according to the duration of each.

[2] The WBGT for a particular work situation is the time-weighted average over the hottest 2 hour period of work.

| Table 7-3 Clothing Correction Values | |
|---|---|
| **Clothing Type** | **Correction Value (WBGT$^{O}$C)** |
| Cotton coveralls worn over light summer clothing | 2 |
| Winter work clothing | 4 |
| Impervious coveralls | 6 |

WBGT measurements take into consideration the amount of internal heat load the body must handle produced by physical activity. It is this combination of heating the body through ambient temperatures, radian heat load and internal heat production vs. the ability to cool the body (i.e. perspiration) that determines whether or not the hot environment is dangerous or safe.

To assess the potential risks from heat exposure and determine the appropriate course of action:

- Determine if the WBGT in the work areas to be evaluated will ever exceed the limits set out in Table 7-2. If not, then heat stress is not an issue. If so, go to the next step.

  **Note:** the priority here should be to implement controls so that the exposure is below the allowable limits. If so, then further evaluation is not required.

- Assess the work activities that will take place and determine if they will be light, moderate or heavy. Also determine how long personnel will be exposed to the hot environment. This process will give an indication on whether or not further evaluation and controls are necessary. If not, then heat stress is not an issue. If so, go to the next step.
- Determine if the exposure will be one time, infrequent or a regular occurrence. If it will be an on-going type of exposure an exposure control plan is required (as per OHS Regulation Section 5.54). Also go to the next 2 steps.
- Take actions to control the exposure (when not practicable by engineering controls) through:
  a) Administrative controls such as work procedures/instructions and work/rest cycles.
  b) PPE such as reflective clothing, or air or water cooled clothing.
- Also take the following actions as required by OHS Regulation and good management practice:
  a) Provide cool potable water close to the work area and encourage frequent water intake.
  b) Post warning signs in high heat stress areas.
  c) Educate and train workers and supervisors about signs and symptoms of heat related disorders, responsibilities for leaving hot environments at the first signs of a heat related disorder and methods to reduce the effects of working in a hot environment.
  d) Keep records of the heat stress assessment and education/training provided.
  e) Remove heat stress victims from the area immediately and provide first aid treatment by a Level 2 or 3 attendant or physician.

**Exposure Control Plan**

If an exposure control plan is required, it must be written and include the following:

- A statement of purpose and responsibilities for assessing the risks and controlling the exposure(s).

- Details on the identification of the risks, the assessments to be performed and/or that have been performed and the control measures taken to limit exposure.
- Details on the education and training that are to be provided.

- The written procedures that have been produced (as may be required) to inform personnel about hazards and establish safe work methods.
- Details on the documentation that is required (such as records) to ensure that the issues are addressed as required by regulation and good management practice.
- A review, at least annually, and regular updates, as may be necessary. This will be done in consultation with the occupational health and safety committee.

WorkSafeBC publishes an excellent reference document that applies to this topic entitled **Heat**

### 3.56.2 Temperature Extremes - Cold

Assessing for exposure to cold temperatures is very similar to the methodology used to assess exposure to heat extremes. The need for assessment is entirely dependent upon the temperatures that the personnel will be exposed to and whether or not there is a danger of the occurrence of either:

- **Hypothermia** – a lowering of the body core temperature below 36$^{O}$C. Personnel are most often at risk of hypothermia in conditions when they are wet, the ambient temperature is near or below 0$^{O}$C and they are exposed to a wind. Submersion in cold water can bring on severe hypothermia very rapidly.
- **Frostbite –** a freezing of parts of the body. The face, hands and feet are the body parts most easily affected. There is a danger of frostbite if temperatures are below -1$^{O}$C and flesh is unprotected. Contact with cold surfaces in sub-zero temperatures can cause frostbite to occur very quickly.

To determine the appropriate course of action when evaluating cold exposure:

- Determine if personnel will be exposed to conditions that may result in either hypothermia or frostbite. If not, then cold stress is not an issue. If so, go to the next step.
- Determine if the cold exposures will be below -1$^{O}$C and have the potential to result in frostbite. If not go to the next step. If yes, then determine under what conditions, time of year, weather conditions, work areas, tasks and personnel affected, etc. that this exposure may occur. Then go to the 4$^{th}$ step.
- Determine under what conditions hypothermia is likely to be an issue. Include the time of year, weather conditions, work areas, tasks, personnel affected, etc. Then go to the next step.
- Take actions to control the exposure through:
    - Engineering such as eliminating the need to work where there is a cold exposure, heating the work areas, etc.
    - Administrative controls such as work procedures/instructions, work/rest cycles that reduce exposure times and re-warming especially of the hands when the work requires exposing the hands to cold conditions.
    - PPE such as warm clothing and protection of the face, hands and feet in extreme temperatures.

- Also take the following actions as required by OHS Regulation and good management practice:
  - Provide a re-warming facility, which can be a heated vehicle (this is a regulatory requirement where the cold exposure is below –7$^{O}$C with the wind chill factored in, see Table 7-4 in the OHS Regulation for equivalent wind chill temperatures).
  - Provide eye protection where there is a hazard to the eyes from ultraviolet light, glare or blowing ice crystals.
  - Provide opportunities to change into dry clothing if the worker becomes wet or is immersed in cold water.
  - Post warning signs in areas where and when there is a risk of cold exposure.
  - Educate and train workers and supervisors about:
    - Signs and symptoms of cold related disorders.
    - Appropriate clothing for work in cold environments.
    - Proper re-warming procedures.
    - Good eating and drinking practices for maintaining body heat in cold environments.
    - Safe work practices for the work that is to be performed.
    - Responsibilities for leaving cold environments at the first signs of a cold related disorder.
    - Methods to reduce the effects of working in a cold environment including steps to be taken to reduce or eliminate contact with cold surfaces that could result in frostbite.
  - Keep records of the cold stress assessment and education/training provided.
  - Remove cold stress victims from the area immediately and provide first aid treatment by a Level 2 or 3 attendant or physician.

## 3.57 TIGER TORCHES

**General**

Tiger torches, although valuable to a job site, are sometimes misused in a manner that can make them dangerous.

**Safe Work Practices**

- When a torch is used, an adequate fire extinguisher must be present.
- Torches are not to be used for heating of work areas or thawing of lines and equipment, etc. when not in use.
- Ensure that the propane bottles are properly shut off.
- Fuel lines are to have regulators.
- Propane bottles shall be secured in an upright position.

## 3.58 TRAFFIC CONTROL

### General

Traffic control person (TCP). It is rare that Quolus employees will need to be involved in traffic control, but in the event, it is necessary, employees will receive traffic control training. Additionally, traffic control equipment such as communication devices, signage, barricades, and flashers will be made available by management.

All flag persons shall be responsible persons who have been instructed in and who have demonstrated knowledge of traffic control and flagging procedures. Prior to commencing work on any new project, traffic control persons are required to re-read WorkSafeBC Occupational Health and Safety Regulation 18 in its entirety.

Traffic control persons are required when any of the following conditions prevail:

- Traffic is required to pass a worker, equipment or other obstruction, which may block all or part of the traveled roadway.
- Workers or equipment are employed on the traveled way over the brow of a hill, around a sharp curve, or at any other location where sight distance is not adequate for oncoming traffic to have adequate warning of their presence.
- It is necessary to institute a one-way traffic system through a construction zone where traffic volumes are heavy, approach speeds are high and a traffic signal system is not used.
- Construction vehicle traffic is not coordinated with an existing traffic control system, an existing traffic signal light system is not adequate to regulate traffic, or the work encroaches into an intersection so as to interfere with regular traffic movement.
- Traffic speed or volume is a hazard to workers while setting up or removing other traffic control devices.
- Other traffic control devices are not available for emergency protection.
- Workers are not adequately protected by other traffic control devices.

### Safe Work Practice

- Ensure that there is adequate signage and that they are placed properly. Make sure you as TCP are positioned as required in the above mentioned manual.

- Each flag person shall have as standard apparel a STOP and SLOW paddle, a red or blaze orange high visibility vest conforming to the regulations, and when required, a high-visibility hard hat and cuffs, and CSA approved footwear.
- Keep protective vests, hard hats, cuffs and signs in good clean condition. Ensure that clothing is adequate (i.e. shorts are not acceptable).
- Traffic Control Persons, (TCP's), should keep in mind the weather that they are working in. In warm weather, make sure you have plenty of water at hand. Watch for signs of heat illnesses and protect yourself from sunburn. In cold weather, dress appropriately, preferably in layers. Watch for signs of hypothermia and frostbite. The TCP's supervisor should check on the TCP on a regular basis, especially in extremes of temperature.

- You must deal with all types of motorists. Be friendly but do not enter into long conversations.

Should you encounter an unruly motorist or pedestrian, do not confront them. Report them to the RCMP after your shift.

- When using 2 TCP's, ensure that both are familiar with the communication process whether you are using radios or hand signals.
- Any person assigned to be a traffic control person must be adequately trained and certified.
- Traffic control signs and devices will be positioned and used as specified in the Traffic Control Manual (issued by the Ministry of Transportation).
- Signs and devices must be located so as to allow traffic to move by or through the work area in a controlled manner and, if necessary, to come to a controlled stop with due regard for the prevailing weather and road conditions.
- A sign advising of a traffic control person ahead will be placed in advance of each traffic control person's station, and this sign must be removed promptly when a traffic control person is no longer on duty at that station.
- The traffic control person will stand in a safe position, preferably on the driver's side of the lane under the TCP's control, be clearly visible, and have an unobstructed view of approaching traffic.
- The traffic control person will be positioned at least 25 m (80 ft) away from the work area unless circumstances or space requirements, such as working at or near an intersection, dictate otherwise.
- The TCP will wear high visibility apparel according to WSBC regulation. Apparel will include a fluorescent background colour, wrist and lower leg bands fitted with a minimum 5 cm (2 in) wide fluorescent retro reflective strip about their entire circumference, except that wrist and lower leg bands are not required for a traffic control person performing this function on an emergency or a temporary basis and not as part of their normal duties, and safety headgear of a high visibility colour with a strip of retro-reflective tape across the top from front to back and on the sides.
- When more than one TCP is necessary, each person will be provided with, an effective means of communication when they are not visible to each other.

If 2 or more traffic control persons are required to work as a team at the worksite, responsibility for coordination of changes in traffic flow is assigned and radio communications are available when required. The traffic control devices must be put in place before commencing operations and must be removed when they are no longer required.

## 3.59 UV EXPOSURE

In recent years there has been growing concern over the health risks of exposure to the sun's ultraviolet (UV) radiation. Construction workers are particularly at risk because they often work outdoors.

Long-term health risks of UV exposure include skin cancer. Every year there has been an alarming increase in the incidence of skin cancer. Sunlight is the main source of UV radiation known to damage the skin and cause skin cancer. Exposure to the sun's UV radiation is widely recognized as a highly preventable cause of skin cancer.

Melanoma is the least common but most dangerous type of skin cancer. The incidence of melanoma in men is rising faster than all other cancers. According to the Canadian Dermatology

Association (CDA), the mortality rate from malignant melanoma is increasing, particularly in middle-aged males.

**What Workers Can Do**

- Apply a broad-spectrum sunscreen with a sun protection factor (SPF) of 15 or greater to all exposed skin areas. Be sure to cover your ears and the back of your neck. Apply sunscreen 20 to 30 minutes before you go out in the sun. Reapply sunscreen every 2 hours.
- Use an SPF 15 or higher sunscreen lip balm and reapply every two hours. Skin cancers can develop on lips.
- Wear clothing that covers as much of the skin as possible. Tightly woven material will offer greater protection as a physical block to UV rays.
- Try to find a shaded area for your breaks and lunch. Examine your skin regularly for any unusual changes.
- The most important warning sign for skin cancer is a spot on the skin that is changing in size, shape, or colour. The danger signs include any wound or skin patch that doesn't heal properly or scales. Be particularly attentive to any mole that grows or becomes irregular in shape, especially if it is multicoloured. If anything looks unusual, see your doctor as soon as possible. Skin cancers detected early can almost always be cured.

## 3.60 VEHICLES AND MOBILE EQUIPMENT

**Safe Work Procedure**

Quolus Construction Services has adopted the following policy regarding the use of company vehicles:

- All drivers of company vehicles must possess a valid, appropriate driver's license.
- Every worker required to drive a company vehicle or operate mobile equipment must have read the safety rules applicable to mobile equipment and vehicles.
- Workers must not operate company vehicles while impaired by alcohol, fatigue, sickness or drugs (prescription or recreational).
- Seatbelts must be worn by drivers and all passengers.
- Operators must use running lamps or illuminated headlamps during daytime hours.
- Workers must not operate mobile equipment unless they have been adequately instructed in the safe use of the equipment and have demonstrated to a supervisor that they are competent to operate the equipment, or is operating the equipment under the supervision of an authorized instructor.
- Unauthorized workers must stay off powered mobile equipment while the equipment is in motion.
- Operators of Quolus Construction Services's mobile equipment or vehicles are responsible for the safe operation of the equipment. They must maintain full control of the equipment and must comply with all laws and rules regarding the operation of the equipment, including the mandatory use of the seatbelt.
- If an operator has reason to believe that the equipment or a load is hazardous they must report it to their supervisor.

- Immediately before putting mobile equipment in motion, check loads for condition of blocking, hold-downs, lashings and clearance signals.
- Operators must obey all signs governing the movement, operation or parking of vehicles on any work site or public or private road.
- The mobile equipment operator is the only worker allowed to ride the equipment, unless seats or other safe facilities for other workers are provided and used.
- Workers must not ride with any part of their bodies outside the vehicle or equipment, or stand in or on any vehicle or equipment unless protected against being thrown off balance.
- Workers must not get on or off a moving vehicle. Ensure the vehicle/equipment is stopped and brake applied. Using three-point contact and a safe foot placement when getting on and off the vehicle/equipment is mandatory; do not jump.
- Operators must not leave the controls unless the equipment or vehicle has been secured against movement by setting parking brakes and transmission locks, lowering any blades, buckets or forks to the ground and chocking wheels where necessary.
- Operators must keep the cab, floor or deck of mobile equipment free of materials, tools or other objects that could create a tripping hazard, interfere with the operation of controls or interfere with exiting the vehicle.
- Tools and equipment carried in any part of a vehicle or piece of mobile equipment where workers are riding must be placed or secured to prevent injury to worker.
- Mobile equipment used for lifting or hoisting must be operated within the safe working load limits.
- All equipment must be pre-inspected before use, including the use of checklists and logbooks for mobile equipment, elevating lifting devices, and cranes.

## 3.61 VIBRATION

Vibration transferred from tools and equipment can affect hands and arms. One result may be hand/arm vibration syndrome (HAVS). This disease causes the following changes in fingers and hands:

- circulation problems such as whitening or bluish discoloration, especially after exposure to cold
- sensory problems such as numbness and tingling
- musculoskeletal problems such as difficulty with fine motor movements—for instance, picking up small objects.

Workers who use vibrating tools such as jackhammers, grinders, riveters, and compactors on a daily basis may develop HAVS. Preventing this disease requires cooperation between employers and workers.

**Employers**

- Provide power tools with built-in vibration-reducing components.
- Review exposure times and allow rest breaks away from vibrating tools.
- Ensure proper tool maintenance (worn grinding wheels or tool bearings can lead to higher vibration levels).
- Train exposed workers in prevention techniques.
- Provide anti-vibration gloves.

**Workers**

• Wear appropriate clothing in cooler weather to maintain core body temperature.
• Wear gloves whenever possible.
• Wear anti-vibration gloves when using power tools and equipment.
• Avoid smoking (smoking contributes to circulatory problems).
• Report any poorly functioning tools immediately.

## 3.62 WORKING ALONE

Quolus Construction Services workers will generally not be working alone; however, from time to time it may be necessary for some of our employees to be working alone or in isolation. In this situation it will be necessary to establish a method of checking the well-being of that employee. Following are the methods to be used in order of preference.

- Direct observation at appropriate intervals.
- Contact with supervisor or each other by radio or telephone at appropriate interval. Generally every couple of hours for tasks that are not considered hazardous and every 20 minutes for high hazard rating tasks.

If any of these methods is not practical a suitable method of ensuring the employees ongoing safety will be established prior to the worker being directed to work alone.

- The written site-specific procedure will include:
- Hazards present and controls used
- Appropriate contact interval times
- Specific contact person and their contact information including emergency backup method of contacting them.
- Procedures for emergency use if person does not check in and cannot be reached.
- Provisions for ensuring the workers are trained in working alone prior to work commencing. This includes both the worker and contact person.

**Hazardous Work**

- Wherever reasonably practicable, Quolus (Canada) Limited will avoid requiring employees from having to perform hazardous work alone and will schedule this type of work to be completed during normal work hours, in the presence of other workers.
- Where it is necessary to perform hazardous work alone, workers will be required to utilize the Check-In Procedure, and communication devices (e.g. cellular telephone, GPS, two-way radio, etc.) will be provided to ensure that the employee is capable of checking-in at appropriate intervals.
- Training and education will be provided to ensure that the worker is knowledgeable in the proper safe work practices, use of personal protective equipment, use of all required machinery and tools, as well as hazard identification and hazard avoidance.

**Travel Alone**

- Quolus will provide safety mechanisms for employees that are required to travel alone in the following manner:
- Quolus employees that are required to travel alone shall utilize the Check-In Procedures to ensure their ongoing communication with Quolus.

- Communication devices (e.g. cellular telephone, GPS, two-way radio, etc.) will be provided to ensure that the employee is capable of checking-in at appropriate intervals.
- A travel plan will be created for each instance of employee travel that provides details pertaining to the proposed destination, estimated time of arrival, return time or date, contact information, mode of travel, and alternate plans in the event of bad weather, traffic problems, etc.
- Examine the vehicle (as appropriate) to ensure that it is in good working condition (e.g. maintenance up-to-date, adequate levels of fuel, etc.), has proper levels of insurance, is equipped with emergency supplies (e.g. spare tire with tools, first-aid kit, etc.), a method of communication (e.g. cellular phone, GPS, etc.), and has available road-side assistance.

## 3.63 WORKING NEAR HEAVY EQUIPMENT

**General:**
The terms, conditions, and precautions for various tasks as outlined in the Quolus Corporate Safety Program and the Provincial OH&S Regulations will apply to all work on Quolus sites. This SWP highlights the more significant factors applicable to jobsites. The Contractor must ensure any additional locally legislated regulations and/or work procedure requirements are included as well as ensure the employee performing the task is adequately informed of all potential hazards and action to be taken relative to precautions.

**Safe Work Procedure**

Heavy equipment is often operating in the same areas as other construction activities.

- Make sure that you understand where the equipment is operating, and that the operator knows where you are working;
- Make eye contact with the operator – DO NOT ASSUME HE/SHE CAN SEE YOU
- Throwing a rock into their field of vision will help get their attention
- In heavy traffic projects, employees are required to wear traffic vests.
- When operating equipment in this type of environment, employees must be aware of oncoming traffic and if need be a flag person will be used; and
- All Quolus vehicles must have back-up alarms activated; notify the Supervisor if the vehicle you are driving is without a working back-up alarm.

## INDEX

## 4.1 SAFE WORK PRACTICES AND JOB PROCEDURES

### 4.1.1 Safe Work Practice & Safe Job Procedures Policy

It is the policy of **Quolus** that all company employees are properly instructed in the safe performance of their duties. Safe work practices (SWP) and safe job procedures (SJP) will be enforced in the same manner as rules and regulations. The company will determine which safe work practices and procedures are needed, and whether they are being followed by reviewing inspection records and accident investigation records, observing jobs, and evaluating worker suggestions and joint health & safety committee recommendations.

Management in conjunction with the joint health & safety committee is responsible for the revision and development of safe work practices & safe job procedures.

Supervisors are responsible for ensuring all workers understand and comply with, general safe work practices and job procedures. Records of all training and site safety meetings shall be maintained at the work place and on completion of the project shall be submitted to the company health and safety designate.

Workers need to know the safest way to do their work. This includes knowing the hazards of their jobs and their workplace and knowing how to control these hazards . Having safe work practices and procedures in place is an essential component of workplace safety and training. Safe work procedures must be developed by a competent person and implemented for all critical and hazardous tasks.

### 4.1.2 For all Safe Work Practices and Safe Job Procedures the following Policy and Responsibilities will apply:

**Company Safety Policy**

- Adhere to WorkSafeBC Regulation as well as any local Government health and safety Regulation
- Provide the safest possible conditions
- Ensure all employees are properly trained in and abide by this Safe Work Procedure
- Monitor the effectiveness of this Safe Work Procedure
- Update and revise this Safe Work Procedure as deficiencies become apparent
- Believe that safety is everyone’s responsibility, and a team effort must be made to keep safe work site conditions.

**Employer Responsibilities**

- To provide a safe environment in which to perform work.
- To provide safe tools, equipment, and materials to facilitate the work being performed.
- To ensure all workers are trained, and perform the scope of work safely.
- To ensure that all Supervisors understand that those workers must comply with all safety aspects of this procedure and that the Safe Work Procedure is understood by all workers.

**Employee Responsibilities**

- To ensure he/she is properly trained and performs the task safely.
- To ensure he/she uses only safe tools, equipment, and materials to facilitate safe construction.
- **USE COMMON SENSE;** if you don't know the procedure or proper equipment to use, **ASK!**
- Ensure that the Safe Work Procedure is understood by all.

### 4.1.3 Definitions

**Safe Work Practice:** A written set of guidelines established to help workers perform a task a safe manner.

**Safe Job Procedure:** A written step-by-step set of instructions for performing complex or hazardous tasks from beginning to end.

**Competent Person:** A person who is knowledgeable and experienced in the work to be conducted.

Safe work practices may be combined with safe work procedures.

**Example:** There may be a safe work practice for ladders in the workplace. There may also be safe job procedures for performing a task while on a ladder. Each process uses the same safe work practice for ladders, however the procedure uses a different, more complex set of steps for the job it describes.

Guidelines for developing Safe Work Practices and Safe Job Procedures

- Whenever possible, use a Safe Work Procedure or Safe Job Procedure template or form.
- Involve experienced workers who regularly perform the job, or have done the job before.
- Conduct a field level hazard assessment of the entire work area.
- Create step-by-step instructions to complete the job in the correct order of operation.
- Identify all hazards associated with each step.
- Establish controls for the hazards identified.
- Use vocabulary appropriate for the workers involved.
- Write short clear sentences.
- Use consistent terminology.
- Ensure instructions are accurate and easy to understand.
- Review with workers prior to implementation and ensure a full understanding from every worker.
- Everyone must sign and date the document, and the document must be filed for future review.

**All supervisors are required to be familiar with Safe Work Practices and Safe Job Procedures contained in this manual.**

## 4.2 CHEMICAL EXPOSURE PROCEDURES

Working with Chemicals
WHMIS (Right-To Know) legislation requires all employees be given adequate information and training on the long- and short-term health effects of chemicals they work with. Quolus has established a WHMIS Program to provide and communicate this information to all employees. All

employees should take the steps necessary to safeguard their health by following the procedures established in this program.

A copy of this program – along with a chemical inventory list and corresponding Safety Data Sheets (SDSs) are to be made available for review and is required to be kept at the Head office and all construction sites where you spend a full shift or eight hours.

Chemicals affect the human body differently. The physical makeup of the chemical, the amount of exposure (time and quantity), and the manner in which the chemical is absorbed by the body all play a role in the resulting effects. As long as exposures are not excessive, many potentially dangerous substances are eliminated naturally from the body. It is important to remember that most materials can be removed this way, and their effects are usually not cumulative.

What is important is the dose or amount of a particular chemical that is absorbed over a period of time. Too much of a chemical, either all at once or over time, may be dangerous.

### 4.2.1 Chemicals are absorbed into the body in three ways:

**Inhalation** – The chemical is taken in with the air we breathe, either as a vapor, dust, gas, fume or mist.
**Ingestion** – The chemical is ingested either intentionally or accidentally. i.e. failure to properly wash hands before eating, drinking or smoking, could lead to accidental ingestion.
**Absorption** – It is absorbed through the skin. This occurs for only a limited number of chemicals.

Inhalation is by far the most common way in which chemicals enter the body. How much enters and is subsequently absorbed through the lungs is a function of the chemical. The human respiratory system is extremely effective at removing dust from the air that is breathed. Only the smallest particles reach the lungs. The majority are trapped in the nose and throat, and later eliminated.

The amount of liquid chemicals entering the lung depends on how fast the liquid evaporated into the air. This is a function of the surrounding (ambient) temperature and the vapor pressure of the liquid (the higher the vapor pressure, the faster the evaporation rate). How much is absorbed varies with each chemical.

Industrial Hygienists are engaged in the science of protecting workers from the harmful effects of chemicals. They are trained to recognize, evaluate and control potential exposures to chemicals in the workplace. Today, many chemicals have been studied, and as a result, their effects have been identified. Levels of acceptable exposure for a normal work day have been determined. These are known as threshold limit values (TLV), or permissible exposure limits (PEL).

In general, there are two major types of effects which are of concern when talking about chemical exposure – the short term or acute effects, and the long term or chronic effects. Some chemicals have both, some one or the other.

Asbestos is an example of a substance that can result in chronic health effects. Asbestos fibers enter the body through inhalation of airborne asbestos particles and can become embedded in the tissues of the respiratory or digestive systems. Diseases associated with asbestos exposure often do not manifest themselves for 25-35 years following the start of exposure. The risk of disease is significantly increased when both asbestos exposure and smoking occurs.

Most acid gases exhibit only acute health effects. Exposure to acid gases can be extremely irritating, causing a sore throat, coughing and tearing of the eyes. However, once exposure stops, the effects generally pass with no lasting results. The exposure limits are designed to eliminate both short- and long- term symptoms.

Information on a particular chemical (or mixture of chemicals) can be found on the material Safety Data Sheet (SDSs) for that chemical. This gives the trade name, manufacturer, chemical components, exposure limits, and effects of exposure, precautions to follow, as well as data on the vapor pressure, flammability, etc., and other physical data.

For more information about a specific chemical, talk to Superintendent/Manager, review the SDSs and discuss the procedures for handling the chemical established by Quolus (Canada) Ltd. Fortunately, most chemicals used in the elevator industry are of low toxicity, but like any chemical, must be used correctly to avoid hazardous conditions.

### 4.2.2 Chemical Examples

**Oils and Grease**

OSHA has established an exposure limit of 5 milligrams per cubic meter (mg/m3) for oil mist in air. In the elevator industry, exposure results from physically handling the oil. Airborne exposures are virtually nonexistent. The biggest potential hazard results from contact with the oil (especially used oil) on the skin. Use gloves where appropriate. Always wash hands thoroughly when they become oily – use soap and water.

**Cleaners**

Check the label on the container or the SDS for the appropriate personal protective equipment to wear prior to working with any chemicals.

**Painting**

Some paints contain solvents that can be combustible or flammable. Some spray containers have flammable propellants. Some paints have undesirable odors.
Use spray paint only in well ventilated areas.
Field employees shall only use paints approved by Quolus, employees shall follow the instructions for use on the container label. Concerns should be communicated to Supervisors and material safety data sheets should be reviewed to confirm no hazard exists.

**Welding**

Welding produces fumes from the metals being joined and the welding rods being used. In addition, radiation from the arc can damage the eyes, so appropriate goggles or a welding mask or hood shall always be used.

In the elevator industry, iron oxide fumes are the primary exposure encountered. The recommended exposure level is 5 mg/m3 (even in industrial environments where welding operations are continuous this level is seldom exceeded). Overexposure can cause welding fume fever which causes flu-like symptoms. Welder’s exposure is further reduced by the welding mask or hood.

In cases where welding is to be performed on painted surfaces, the paint shall first be removed, using company approved methods, in case the paint contains lead, which can rapidly vaporize during the welding process. Adequate ventilation must always be provided.
A SDS is required for welding rods.

**Flammable Liquids and Solvents**

When using paints, solvents and chemicals, read the warning labels, appropriate SDSs and follow instructions.

- Avoid getting solvent on clothing. If clothing becomes contaminated, it shall be changed immediately.
- Flames, sparks or any other ignition source shall be kept away from flammable liquids and their vapors. Smoking is prohibited in areas where such materials are used or stored, and “No Smoking” signs shall be posted in these areas.
- Flammable liquids shall not be transferred from one container to another unless electrically interconnected.
- Store in properly labeled safety cans or in original container if one gallon or less.
- Flammable and combustible materials shall not be stored in areas used for exits, stairways or areas normally used for the safe passage of people.
- Be sure there is adequate ventilation when storing flammable or combustible materials.
- No more than 25 gal. (90.84 L) of such materials shall be stored in a room, unless an approved safety storage cabinet is provided.

**Batteries**

- Before energizing equipment, ensure doors on battery compartment are closed. There have been isolated reports of batteries exploding when first put under load.
- Batteries shall not be stacked on each other as this may crack the case.
- Do not clean battery cases with cleaning solvents.
- Return all used batteries to local office for proper disposal.
- Be aware that all bottles of eye wash and boxes of baking soda are dated and shall be routinely checked and replaced as necessary. Make certain that a currently dated eye wash bottle and box of baking soda is available.
- If acid gas/fumes are detected, immediately exit the room and notify a supervisor.
- Acid gas/fumes are readily detected by an irritation in the nose and throat.
- As charging produces hydrogen which readily burns, machine rooms should be well ventilated to prevent hydrogen build up.

**Chemical substances**. These may include but are not limited to:

| | |
|---|---|
| Acetylene-welding and cutting gas | Ammonia-in some brick-work and concrete washes |
| Asbestos-insulation | Cadmium fumes-brazing with rods containing cadmium |
| Chlorine gas-common at pulp and paper plants | Carbon monoxide-from incomplete combustion of fuels |
| Concrete dust-dusts generated during cutting and grinding | (Di)Chlorodifluoromethane-refrigerants |
| Formaldehyde-foamed insulation | Glass Fibre dust-insulation |
| Hydrogen chloride-in some masonry cleaners | Hydrogen fluoride-in some masonry cleaners |

| | |
|---|---|
| and de-scalars | |
| Hydrogen sulphide-found in some sewers and pits | Iron oxide fumes-in some welding fumes |
| Lead-plumbing use and stripping of some paints | Mercaptans-common at pulp and paper plants |
| Nickel fumes-welding stainless steel | Nitric acid-in some masonry cleaners and de-scalars |
| Oxygen-frequently displaced in confined spaces | Ozone-in welding fumes |
| Portland cement-dusts generated during mixing | Quartz dust-cutting or grinding granite, terrazzo tiles |
| Silica sand-dusts generated during sandblasting/storage | Sulphuric acid-in some masonry cleaners |

### 4.2.3 Environmental Practices

To meet the legal requirements regarding prevention of personal over-exposure to hazardous products and contaminants in the workplace, according to WHMIS 2015/GHS and OHS guidelines.

- Spill containment and clean-up products and procedures are in place at worksites requiring them.
- Limit emissions from vehicles and equipment in enclosed spaces.
- Provide adequate ventilation where it is necessary to provide relief from hazardous airborne substances.
- Serious environmental contamination will be documented, and authorities advised where required. Standard reporting practices for spills include:
- Oils and lubricants.
- Fuels.
- Glycol.
- Corrosives, acids.
- Solvents.

**Environmental Containment Procedures**

The release of a contaminant may happen as a result of equipment malfunctions and human error.
In the event of a release of a contaminant, Quolus will respond by:
Ensuring the safety and health of its employees, subcontractors and the public.
Mobilizing the necessary crews and equipment to contain and clean up the contaminant to protect the environment.
Report the release of the contaminant to the appropriate government agencies immediately.
Complete Environmental Incident Report Form.

The following is an outline of preventative techniques and response that will enable **Quolus** employees to prevent, and if necessary, respond to, any harmful air, land, or water borne contamination of the environment.

**Contamination Type:**

**Land:** the spillage of any liquid or solid that may negatively affect the soil, strata, flora and fauna, or persons in the short or long term.

**Water:** the spillage of any liquid or solid that may negatively affect the ecosystem or portability of the immediate body of water or connected bodies of water in the short or long term.

**Air:** the release of airborne substances (dust, vapours, gases, fumes, etc.) that may negatively affect the respiratory health of humans, flora, or fauna, in the short or long term.

**Major incidents:**
An emergency presents an immediate threat to life, or an immediate hazard to property and/or to the environment.
An uncontrolled release, vehicle collision, line, valve or tank rupture with an extensive release of hazardous materials occurs e.g. uncontrolled leakage from the rupture of a gasoline storage tank.
Requires the involvement of an Emergency Team trained in spill contaminant and clean up.
May extend beyond the site property, including materials released in or adjacent to water courses.
Are immediately reportable under legislation.

**Serious incidents:**
Present a safety, property and/or an environmental hazard
Are controllable but involve a high rate of release with the possibility of affecting a wide area.
This includes small leaks of very hazardous materials, and may include materials released in or adjacent to water courses.
Requires assistance from personnel outside of the company. i.e. environmental personnel.
May have a potential to extend beyond the company site/property.

**Minor incidents:**
Present minimal potential to safety, property damage or environmental hazard.
Are localized and controllable.
Can be contained and cleaned up immediately by personnel first on the scene or with minor assistance.

**Risk Assessment**

Prior to any project being undertaken, it is necessary to undertake a risk assessment to determine the potential for any of the above types of contamination. The following is an outline of the procedures to be used to prepare for potential workplace contaminants:

**Land and water**

Where liquid products will be used (fuel, solvents, paint products, etc.), spill control and clean-up products (spill kits) should be available on site. These spill kits should consist of: absorbent booms (to contain spills), pads or pillows (enough to soak up the liquid quantity you have), shovel, disposal bags, and protective equipment (Tyvek coveralls, chem. resistant gloves, goggles). Where the risk exists for a waterborne spill, absorbent booms, pads, and pillows must be hydrophobic. These products will also provide for the potential cleanup of solid contaminant.

**Airborne**

Where the potential for airborne contaminants exists, ventilation should be the first consideration, as the dispersal of airborne product eliminates the need for personal protective equipment. Where ventilation may prove difficult, it is necessary to provide protective respirators. Where there may be solid airborne contamination (dust, fume), disposable respirators suitable for filtering out the

contaminants may be used (always follow manufacturers recommendations regarding use and limitations). Where heavy solid airborne contamination, or vapour, gas or mist may be present, it is necessary to provide dual cartridge type respirators with appropriate cartridges (with or without pre-filters depending on contaminant concentration). Where there may be uncertainty as to the type of respirator suitable for a workplace, respirator manufacturers and distributors can provide this information.

NEVER GUESS AS TO THE SUITABILITY OF A RESPIRATOR FOR AIRBORNE CONTAMINANTS.
IT IS VITAL THAT THE CORRECT RESPIRATOR BE USED FOR SPECIFIC CONTAMINANTS.

### 4.2.4 Spill Response

Where spills may have occurred, follow this procedure:

- Get away (if it may be a health hazard).
- Identify what you saw, and what was released.
- Prevent or inhibit the further release of product (if it is safe to do so).
- Get help, and alert others. Seal off the area.
- Look for and assist any injured or overcome persons.
- Identify the hazards and plan your actions (proceed with local clean up if it is safe to do so, otherwise, call 911).
- Get proper equipment, PPE, and materials to deal with the spill.
- Contain the spill (from traveling to drains, waterways, or away from the immediate release location to limit further contamination).
- Clean up the spill. Notify proper agencies when and where it is necessary to do so.

**Hydraulic Oil** – Worksite Spill Cleanup Procedure

- Upon discovery of a hydraulic oil spill on the field, a site professional is required to equip themselves with the appropriate protection necessary.
- If oil spill ensues in the pit where mechanics are working, a mechanic is to utilize ‘Absorbal’. The following day the mechanic is to remove the ‘Absorbal’ and have it packaged for submission into 20 litre containers to branches for disposal or through set up disposal means. If there is residue remaining in the pit, the above process is to be repeated.
- If oil spill ensues outside the pit, a mechanic is to either utilize ‘Absorbal’ or absorbent pads. The following day the mechanic is to remove the ‘Absorbal’ and/or absorbent pads. The contents are to be packaged in 20 litre containers and sent to branches for disposal or through set up disposal means. If there is residue remaining, the above process is to be repeated.
- Any used substances such as oil/cleaning products that are packaged in containers exceeding 20 litres and/or missing lids will be refused for pick up as it represents a hazard during transportation.
- Upon arrival of the dispatched truck, the driver will only remove contaminated cleaning materials from site after examining and ensuring that proper procedures have been met when packaging hazardous materials.
- The driver will ensure that the oil containers are secure and safe for delivery to branches or designated disposal facilities for decanting and recycling.

### 4.2.5 Waste Management and Worksite Cleanup

The Job Site will estimate the waste that will be generated prior to work being performed so that the need for containers and waste removal, if necessary, can be determined. Coordination with the site owner or prime contractor will take place to determine whether Quolus will remove waste or dispose of it on site. It is the responsibility of the supervisor to ensure proper waste removal and disposal.

Quolus will ensure that cleanup takes place as frequently as needed to avoid creating a hazard and done. Work areas must be cleaned at the end of the shift, immediately after finishing a job, or as necessary, and at least on a weekly basis. Waste will be organized to ensure easier removal and protection from risk to employees. Proper waste receptacles, including recycling bins, will be provided on site. Waste will be recycled whenever practicable.

Quolus employees will be instructed on the proper handling, storage, and disposal of wastes. This includes instruction on disposal of non-hazardous wastes, trash, or scrap materials. If any hazardous waste is going to be generated, workers will be trained to ensure proper disposal. Proper PPE, including but not limited to gloves, steel-toed boots, protective eye-wear and long pants, must be worn when removing waste and scraps from Quolus job sites.

**Cleaning and Flammable Solvents**

**General**

Cleaning solvents are used in the day-to-day construction work to clean tools and equipment. Special care must be taken to protect workers from hazards, which may be created from the use of these liquids. Wherever possible, solvents should be non-flammable and non-toxic.
The supervisor must be aware of all solvents/flammable material that are used on the job and be sure that all workers who use these materials have been instructed in their proper use and any hazard they pose.

**Safe Work Practices**

- Use non-flammable solvents for general cleaning.
- When flammable liquids are used, make sure that no hot work is permitted in the area.
- Store flammable material and solvents in special storage areas away from heat, spark, flame and direct rays of sun.
- Check toxic hazards of all solvents before use ((M)SDS).
- Provide adequate ventilation where all solvents and flammable material are being used.
- Use goggles or face shields to protect the face and eyes from splashes and sprays.
- Use rubber gloves to protect the hands.
- Wear protective clothing to prevent contamination of workers clothes.
- When breathing hazards exist, use the appropriate respiratory protection.
- Never leave solvents in open tubs or vats – return them to storage drums or tanks.
- Ensure that proper containers are used for transportation, storage and field use of solvents/flammable material.
- Where solvents are controlled products, ensure all employees using or in the vicinity of use or storage, are trained and certified in the Workplace Hazardous Materials Information System. Ensure all WHMIS 2015/GHS requirements are met

## 4.3 CONFINED SPACES

***Purpose***

The purpose of the Confined Space Policy is to establish guidelines to protect our personnel from hazards which they may encounter when they enter into a confined space.

***Scope***

A Confined Space Entry is specialized and highly regulated work. When a worker arrives on the jobsite they must first conduct a JHA. If confirmed that there is a confined space, they must take appropriate action to comply with Confined Space requirements. The Owner/Prime Contractor shall advise Quolus when Confined Space Entry will be a required for the scope of work for any projects. In cases where a confined space is declared, Quolus in consultation with the client shall conduct an assessment to ensure all applicable hazards are identified for the confined space.

Any third party Confined Space monitoring shall be retained by the client. All costs associated with the monitoring is the responsibility of the client. This program applies to all Quolus field employees who may be exposed to a Confined Space during their work.

### 4.3.1 Definitions

**Confined Space:**
- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit.
- Is NOT designed for continuous human occupancy.

**Confined Space Entry Work Permit -** is a written agreement detailing the conditions, planning and precautions under which certain types of work can be conducted.

**Hot Work -** is any work that can generate a spark or source of ignition. This would include welding, cutting, burning, grinding, etc. Such work can impact the environment in any space but with greater risk in a confined space. The increased risk of explosion or fire due to hot work can be considerable. When Hot Work is being conducted in such a space, a hot work permit is required as well as an entry permit.

**Hazardous Atmosphere** - an Atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness

**Qualified –** is a person who has adequate training and experience in the recognition, evaluation and control of confined space hazards,

### 4.3.2 Safe Work Practices - Identifying Confined Spaces

The important thing to remember is that each time a worker plans to enter any work space, the worker should determine if that work space is considered a confined space, as per the OH&S Legislation, by conducting a Job Hazard Analysis.
Be sure a confined space hazard assessment and control program has been followed.

Before entering any confined space, a 'qualified' person must identify and evaluate all the existing and potential hazards within the confined space. Evaluate activities both inside and outside the confined space.
Ensure the confined space is clearly identified with appropriate signage.

**Hazard Control/Assessment**
A worker is not permitted to enter a confined space until a 'qualified' person with adequate knowledge, training and experience has completed a formal written hazard assessment.

The traditional hazard control methods found in regular worksites can be effective in a confined space. These include engineering controls, administrative controls and personal protective equipment. Engineering controls are designed to remove the hazard while administrative controls and personal protective equipment try to minimize the contact with the hazard.

The engineering control commonly used in confined spaces is mechanical ventilation. An Entry Permit system is an example of an administrative control used in confined spaces. Personal protective equipment (respirators, gloves, ear plugs) is commonly used in confined spaces as well.

**Air quality testing**
- The air within the confined space should be tested from outside of the confined space before entry into the confined space. Care should be taken to ensure that air is tested throughout the confined space - side-to-side and top to bottom. A trained third-party worker using detection equipment which has remote probes and sampling lines should do the air quality testing. Always ensure the testing equipment is properly calibrated and maintained. The sampling should show that:
- The oxygen content is within safe limits as per Provincial OH&S regulations
- A hazardous atmosphere (toxic gases, flammable atmosphere) is not present.
- Ventilation equipment is operating properly.
- The results of the tests for these hazards are to be recorded, along with the equipment or method(s) that were used in performing the tests.
- Air testing may need to be ongoing depending on the nature of the potential hazards and the nature of the work. Conditions can change while workers are inside the confined space and sometimes a hazardous atmosphere is created by the work activities in the confined space.

**Air Quality Maintenance**
- Natural ventilation (natural air currents) is usually not reliable and not sufficient to maintain the air quality. Mechanical ventilation (blowers, fans) is usually necessary to maintain air quality.
- If mechanical ventilation is provided, there should be a warning system in place to immediately notify the worker in the event of a hazard or a failure in the ventilation equipment.
- Care should be taken to make sure the air being provided by the ventilation system to the confined space is 'clean' throughout the entire space.
- Ease of air movement throughout the confined space should be considered because of the danger of pockets of toxic gases still remaining even with the use of mechanical ventilation.
- Do not substitute oxygen for fresh air. Increasing the oxygen content will significantly increase the risk of fire and explosion.
- The use of mechanical ventilation should be noted on the entry permit
- Ensure air being removed from the confined space is exhausted away from workers on the outside.

**Fire and Explosion**

- Work where a flame is used or a source of ignition may be produced (hot work) should not normally be performed in a confined space unless:
- All flammable gases, liquids and vapors are removed before the start of any hot work. Mechanical ventilation is usually used to:
- Keep the concentration of any explosive or flammable hazardous substance less than 10% of its Lower Explosive Limit AND
- Make sure that the oxygen content in the confined space is not enriched. Oxygen content should be less than 23% but maintained at levels greater than 18%. (These numbers can vary slightly from jurisdiction to jurisdiction.)
- Surfaces coated with combustible material should be cleaned or shielded to prevent ignition.
- Do not bring fuel or fuel containers into the confined space (e.g., gasoline, propane), if possible. Ensure welding equipment is in good condition.
- Where appropriate, use spark resistant tools, and make sure all equipment is bonded or grounded properly.
- While doing the hot work, the concentrations of oxygen and combustible materials must be monitored to make certain that the oxygen levels remain in the proper range and the levels of the combustible materials do not exceed 5% of the Lower Explosive Limit. In special cases it may not be possible, and additional precautions must be taken to ensure the safety of the worker prior to entering the confined space.

**Other Safety Precautions**

- Many other situations or hazards may be present in a confined space. Be sure that all hazards are controlled including:
- Any liquids or free-flowing solids are removed from the confined space to eliminate the risk of drowning or suffocation.
- All pipes should be physically disconnected, or isolation blanks bolted in place.
- Closing valves is not sufficient.
- A barrier is present to prevent any liquids or free-flowing solids from entering the confined space.
- The opening for entry into and exit from the confined space must be large enough to allow the passage of a person using protective equipment.

Procedure - Confined Space:

- If a client or your supervisor is classifying the work area as a “Confined Space” which requires a permit, specialized equipment and/or additional personnel; then we are to follow the client’s policy.
- Quolus personnel are instructed to bring any site-specific policies to the attention of their immediate supervisor. Quolus will review the site-specific policy with our client and ensure we are able to direct our personnel to correctly follow the procedure.
- This procedure may be applicable to only certain areas on a site; the site should take the time to review each separate area to see if it needs to be included in their confined space program.
- Identified hazards must be properly controlled by implementing appropriate control methods.
- Workers must ensure their PPE is in good working condition and is suitable for the type of work to be performed.
- A full body harness with a lifeline must be worn if a harmful atmosphere exists or may develop, or where entrapped is possible.

### 4.3.3 Space Entry Requirements

- Only Quolus workers trained by a competent person/agency and authorized by their supervisor are permitted to enter the Confined Space.
- Ensure a 'qualified' person has conducted a Confined Space Hazard Assessment.
- Ensure that you have been trained in the Confined Space Entry procedures
- Review the Entry Permit to ensure that air quality monitoring has been conducted and that the Confined Space is safe to enter
- Ensure that there are rescue procedures and equipment on hand as required by the Hazard Assessment and the Entry Procedures.
- Ensure the proper PPE is available prior to entry.
- Sign the Entry Permit prior to entering the Confide Space.
- Use the proper procedures to enter the space.
- If you are unsure of any of the entry procedures or do not feel safe entering the Confined Space, DO NOT ENTER. Contact your supervisor immediately.

**Communications**

- The attendant and entrant must be in continuous communication with each other.
- The Attendant must be provided with a communication device for summoning an adequate rescue response.

**Entry into a Confined Space**

- A worker is permitted to enter a confined space only where:
- The opening is sufficient to allow safe passage of a worker;
- Mechanical equipment in the confined space is locked out;
- Pipes and other supply lines are blanked off;
- Measures have been taken to ensure that, where appropriate, the confined space is continuously ventilated;
- A liquid or free-flowing solid has been removed;
- Explosion-proof illumination is provided where appropriate; and
- Adequate barriers are erected to prohibit unauthorized entry.

### 4.3.4 Emergency Rescue

- Rescue procedures must be established/documented and reviewed prior to any worker entering a confined space.
- If rescue is required the attendant must immediately notify rescue personnel, 911, the local fire department, emergency medical services and the respective Supervisor.
- Rescue personnel, equipment and first aid supplies must be readily available for the duration of the entry.
- Under no circumstances shall the attendant enter the confined space to perform a rescue.

## 4.4 FALL PREVENTION PROGRAM

**Note:** The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures when necessary.

### 4.4.1 Policy

It is the policy of Quolus to ensure that a fall protection system is used when work is being done in an area

from which a fall of 3m (10ft) or more may occur, or;
where a fall from a height of less than 3m involves a risk of injury greater than the risk of injury from the impact on a flat surface.

Such protection shall be afforded by means of barriers, guardrails, fiber or wire guard ropes, safety harnesses and lifelines, personnel safety nets, control zones, or other effective means. A Fall Protection Plan checklist must be done for each worksite to identify all fall hazards and confirm safe work procedures to address them.

All employees of Quolus utilizing fall prevention equipment shall inspect that equipment on a daily basis and any equipment that does not meet the manufacturer's standards for acceptable condition must be placed out of service.

Any fall prevention equipment which has arrested a fall must be removed from further service immediately and not be re-used. Employees must inform their supervisors of all incidents.

**Training**

All employees required to utilize fall prevention equipment shall receive training and instruction on the proper use, regulatory requirements and safe work procedures. Specifically training will include but not be limited to:

- Information about local circumstances, company policy, rules, procedures and regulations.
- Instruction in adequate anchor points and the proper techniques for securing and connecting lanyards and lifelines.
- Guidelines and demonstration on how to inspect and maintain fall prevention equipment.

### 4.4.2 Fall Protection System Components

**Full Body Harnesses**

It is the policy of Quolus to incorporate the use of full body harnesses for all fall arrest activities and all Quolus employees are required to use a full body harness on all sites. All harnesses used by Quolus employees shall conform to CSA Standards. Therefore all body harnesses must have: adjusting thigh straps; waist strap or chest strap or both; sliding D-ring midway up the back; strap across the buttocks.

All belts and straps must be secured firmly. Leg straps should allow comfortable movement but be snug and evenly adjusted. The ends of the straps or belts must be secured by keepers or tucked into the harness. All harnesses used for all arresting application must have a back mounted D-ring located between the shoulder blades. All harnesses must be inspected daily, prior to use. Full body harnesses come in small, medium, large, and extra large. Full body harnesses are also available to fit female workers.

**Buckle**

Inspect for loose, distorted or broken grommets. DO NOT cut or punch additional holes in waist strap. CHECK for torn or elongated holes which could cause the buckle to slip. CHECK the attachment of buckles and D-rings to webbing for excess wear. INSPECT the buckle for distortion and sharp edges. Carefully check corners and attachment points of the center bar. They should overlap the buckle frame and move back and forth in their sockets. The roller must turn freely on

the frame. CHECK that rivets are tight and cannot be moved. INSPECT for pitted or cracked rivets which indicate chemical corrosion.

**Hardware (Forged Steel Snaps, D-Rings)**

Inspect hardware for cracks or other defects. Replace harnesses if the D-ring is not at a 90 degree angle and does not move vertically independent of the body pad or D-saddle. INSPECT tool loops and belt sewing for broken or stretched loops. CHECK bag rings and knife snaps to see that they are secure and working properly. Check tool loop rivets. Check for thread separation or rotting, both inside and outside the body pad belt.

INSPECT snaps for hood and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should be seated into the snap nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to close the keeper firmly.

**Labels**

They should be secure and easy to read.

**Webbing**

Inspect the entire surface of webbing for damage. WATCH for frayed edges, broken fibers, pulled stitches, cuts or chemical damage. Broken webbing strands generally appear as tufts on the webbing surface. Sewn terminations should be secure, complete, and visibly undamaged**.**

**Anchorage**

Fall prevention equipment is only as effective as its anchorage. Anchorage must be substantial to withstand excessive force. In general, vertical lifeline anchors and lanyard attachment points should have an ultimate strength of 5000 lbs (22 kN) in any direction and shall never permit a free fall of more than 4 feet. Each site is different. Specific anchorage points must be identified in the site-specific written Fall Protection Plan**.**

**NOTE: DO NOT** anchor to stand pipes, scupper drain covers, pipes less than 10 inches in diameter, handrails, roof hatches, fixed ladders or stairs, vent pipes, small air conditioning condensers, shoring jacks, formwork, old masonry, or light structural parapets.

**Anchor Straps**

Anchor straps must be installed according to the manufacturer's requirements.

On concrete high-rises, straps must be a 15M (minimum) size reinforcing steel bar for cast in place straps, or 25M (minimum) size stub for unsupported dowel anchorage.
On wood frame construction, the manufacturer's requirements for web overlap, nailing patterns and minimum timber size for anchorage must be followed. CHECK for frayed webbing or any other damage before reusing wood-frame anchor straps.
All anchor straps are to be installed correctly by the site safety coordinator or any other trained worker. Always check the installation of the anchor straps prior to using to ensure they are installed correctly.

All anchor straps must be installed a minimum of 6.5 feet (2 meters) horizontally from the edges of the floors they hang above and should be spaced so as to avoid and swing fall hazards exceeding angles more than 22 degrees.

## Lifelines

Lifeline Inspection

All Lifelines must be inspected prior to use. Any lifeline that is found to be defective or has been subjected to service loading, shall immediately be removed from service and not used again for worker safeguard. Lifelines should be inspected for damage due to abrasion and chafing.

**NOT**E: Ultraviolet light from the sun will eventually deteriorate polypropylene ropes, although most are now manufactured with some UV protection.

Vertical Lifelines

Vertical Lifelines should be 5/8 inch diameter rope made of polypropylene, polyester or other fibers of equal elasticity, durability and resistance to abrasion and have a breaking strength of 6000 lbs (26.7kN). Wire rope lifelines should be used only where flame or heat would damage fiber rope. When lifelines pass over sharp edges, softeners must be used. Lifelines must be long enough to reach the ground (or safe landing level) and must be knotted at its end to prevent the grab or hitch from sliding off the end.

Only one worker may be attached to a Lifeline and each Lifeline must have a separate anchor.
A Lifeline must not exceed 300 feet in length or be attached to the same anchor as outrigger beam tie-backs.

**NOTE:** Always check for obstructions below your working area to ensure your potential fall path is clear. Work directly under the anchorage point at all times as swing falls can result in serious injury or death.

Horizontal Lifelines

Horizontal Lifeline systems should be designed by a professional engineer. Design requires knowledge of fall-arrest loads, anchorage requirements, and the importance of control points.

Lifeline Rope grabs

All rope grabs placed into service by Quolus must be certified as meeting CSA Standards. The following items should form part of rope grab inspections:

Snap hooks and locking snap hooks should function smoothly and not be bent or wobbly. Check that the spring closes the keeper (latch) securely against the snap nose. Locking snap kooks should hold the keeper in its closed position.
Inspect snap hooks, locking snap hooks and eyes for cracks, sharp edges, corroded or pitted surfaces, or distortion.
Check Rope grab for dirt and other contaminants on the interior of the locking mechanism and clean before use.
Check that the spliced eye termination has five full tucks and no loose ends.

**Lanyards**

All lanyards used by Quolus employees must be constructed from either 5/8 inch diameter nylon rope or nylon webbing straps, and must bear the CSA label.

Lanyards:

All lanyards and connecting linkages shall be inspected for defects prior to use.
Always check the lanyard snap hook connections visually to ensure proper engagement; do not rely on hearing an audible snap.
Equipment must be removed from service when any questionable signs of wear or damage are found.

Rope Lanyards:

Thimbles on rope lanyards should not be distorted or have sharp edges. They should be held securely by the rope splice.
Discard a knotted rope lanyard. Rotate the rope lanyard and inspect from end to end for fuzzy, worn, broken or cut fibers.

Web Lanyards:

Examine webbing thoroughly from end to end.
Pay close attention to stitching and rivets, particularly at hardware attachment points.

Look for bent, cracked or broken rivets on web lanyards.
Look for swelling, discoloration, cracks or charring from chemicals or heat damage, or other signs of deterioration or wear.

Length:

The length and anchorage of lanyards must limit a potential fall to no more than 4 feet and at all times, an attempt should be made to keep lanyards as short as possible to minimize fall distance. Lanyards shall not be shortened by tying them in knots. Two lanyards may not be joined together to obtain the length required.

Shock Absorbers:

Typically fall-arrest loads can range from 1200 to 1500 lbs depending on body weight. Shock absorbers can reduce these loads as much as 50%. All shock absorbers used by Quolus employees shall conform to CSA Standards.

Snap Hooks:

Only locking or similar type snap hooks that effectively eliminate the hazard of rolling out shall be used by all Quolus employees.

### 4.4.3 Fall Restraint System

A Fall Restraint System is an anchorage, a lanyard and a full body harness arranged for the purpose of preventing a worker from falling. The anchorage points and its components must be able to hold 800 lbs. of restraint.

It is the responsibility of the worker using the Fall Restraint System to ensure that his/her Lifeline is properly adjusted to prevent entry into the fall hazard.

**Floor, Roof and Wall Openings**

- All openings must be guarded in order to prevent injury to employees.
- All openings larger than 4 x 4 must be guarded by means of guard rails, consisting of top rail, midrail and toe board secured to prevent accidental dislodgment.
- Where guardrails are impractical, an alternative system of guarding or floor covers will be used. The guarding and covers must be of material that will withstand 200kg (440 lbs) of weight per square foot and be secured to prevent accidental dislodgment.
- Further, the cover should be identified as “hole/floor opening” and have a circle with a cross in it, using fluorescent paint and the workers instructed of this method during the site safety orientation.
- If guardrails or covers are not practical, material and personnel safety nets must be installed below.

**Guardrails**

An area accessible to workers must have guards or guardrails installed in any of the following circumstances: (Sec 4.55 Workers Compensation Act):

- If a raised floor, open-sided floor, mezzanine, gallery, balcony, work platform, walkway, or runway is 122 cm (4 ft) or more above the adjacent floor or grade level.
- On both sides of any walkway over or adjacent to any substance which is a hazard if a worker fell in, or on it or which is over machinery or work areas.
- Around the perimeter of any open container or containment area such as an open vat, bin, tank or pit which is 122 cm (4 ft) or more in depth and which has sides that do not extend at least as high as required for a guardrail above the adjacent grade or work surface.
- If a stairway ends in direct proximity to dangerous traffic or other hazard to prevent inadvertent entry into the dangerous area.
- Guardrails must be installed for work over water if a drowning hazard exists. Personal floatation devices must be used if guardrails are not practical for work over water.
- Guardrails must have posts no more than 8 feet apart. Top rails, mid rails and toe boards top rails between 40 and 44 in height and able to withstand a force of 125 lbs. from any direction. Midrails located at a midpoint between the floor and the top rail, and toe boards installed where there is a danger of falling tools or materials and are stacked or stored adjacent to the floor edge.
- Wire rope used as an alternative to rails must meet the WorkSafeBC requirements.
- Where it is not practical to use fall-prevention devices such as guardrails, fall-arresting devices must be used.
- Where fall-prevention devices must be removed for work to proceed, permission to remove them must be obtained from the superintendent. Workers must use fall restraint or arrest

equipment prior to removing guardrails. When fall-prevention devices are temporarily removed, workers must be protected by fall-arresting equipment.
- Guardrails may only be removed in the immediate area where workers are working. Guardrails and barricades that have been temporarily removed must be replaced as soon as possible. They must be replaced immediately if the workers leave the area for any reason, for any period of time. Failure to do this will result in disciplinary action.
- Guardrails shall be installed where balcony, walkway, runway, working platform, or open-sided floor is 4 feet or more above floor level.

### Handrails:

Every flight of stairs having more than 4 risers shall require handrails. Handrails shall be installed on all open sides of stairways, and if the stairwell is enclosed, a guardrail will be installed on one side if the stairwell width is under 44 inches. If the stairwell is over 44 inches, a guardrail must be installed on both sides. The top handrail shall be 32 to 36 inches above the stair tread measured vertically at the nose of the tread. Handrails on open-sided stairways require midrails located midway between the top of the handrail and the nose of the tread.

## 4.4.4 Control Zones and Procedures

Use of control zones and safety monitors must be pre-approved by the client superintendent or site safety representative. If unsure consult with WorkSafeBC. The use of control zones for fall protection must only be used where it is not practical to use any other fall protection system. Should a control zone be allowed as outlined above, any failure to follow the guidelines explicitly, will be subject to discipline under our company Disciplinary Procedures - major infraction.

**Safety Monitor**

A safety monitor must:

- be experienced in the work overseen and trained in the role of safety monitor,
- be present at all times when a worker is the control area,
- have complete authority over the work as it relates to fall prevention,
- engage in no other duties while acting as the safety monitor,
- be located so as to have a clear view of the work,
- be able to have normal voice communication with the worker being protected,
- be instantly distinguished from other workers.

Only workers directly required for the work at hand may be in the control zone. A safety monitor may monitor a maximum of 8 workers. He has the authority to stop the job if he feels it is too dangerous due to weather conditions.

The fall protection plan for the workplace must specify the name if each safety monitor along with a record of their training.

**Control Zones**

Use of a control zone is not permitted where the work surface exceeds 4 vertical in 12 horizontal, on skeletal structural work, or scaffold erection and dismantling.

The control zone must be a minimum of 6.5 feet from the edge. When a worker will be working further from the edge than the designated control zone at all times, no other fall protection system need be used. The control zone must be increased should the conditions be slippery or sloped. The control zone must be physically marked in a manner that is easily recognizable to the workers at all times.

When the work process could result in workers inadvertently stepping within the control zone, barriers or other effective means to prevent access to the zone must be provided or another fall protection system must be used.

### 4.4.5 Fall Protection Plan

**Note:** The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures when necessary.

General

Each site must produce a Fall Protection Plan which is acceptable to the WorkSafeBC and the General Contractor. No person may approach within 6.5 feet of unguarded fall danger areas without using appropriate fall protection equipment.

**Danger Areas**

- Elevator shafts, scaffolding, slab/floor edges, exterior walls, rooftops, or any other area where a fall of 10 feet or more is possible.
- The danger area extends 6.5 feet back an unprotected edge plus the height of any elevated work platforms such as stilts or a ladder. Example: A worker on 2 foot high stilts is in the danger area if within 8.5 feet of an unprotected edge.
- The preferred method of fall protection is guardrails. Fall arrest/ restraint should only be used when guardrails are not practical or adequate.
- Prefabricated scaffolding shall be erected by qualified workers and according to manufacturer' specifications. They shall not be erected with any modifications, defects, or defective parts. Workers must be wearing fall
- The danger zone beneath workers shall be barricaded off to protect other workers and the public from the possibility of falling tools or equipment.
- Materials and tools being stored must be kept 6.5 feet back from the edge except for tools being used and working amounts of materials.
- The Fall Protection Plan must be available on site and reviewed with workers prior to working in fall protection areas. Workers must sign the Fall Protection Plan.

## 4.5 HEARING PROTECTION

**Responsibilities**

All employees and contractors exposed to steady state and/or impact noise levels which exceed permissible exposure levels must wear hearing protection meeting regulatory requirements and which are acceptable to the Company. The Foreman shall ensure that adequate hearing protection is available and worn by the worker. Where a noise hazard is determined to exist,

adequate signage shall be posted. Foremen shall ensure that workers under their control have adequate hearing protection.

### 4.5.1 Hearing Protection Program

- Quolus will ensure an annual Noise Protection and Hearing Conversation Program review is conducted.
- All new Quolus employees will have their hearing tested within 6 months of commencing employment.
- All Quolus employees will have their hearing tested annually. These hearing tests will be arranged by Quolus or the General contractor, with results to be kept on file.
- All aforementioned personnel shall have a valid hearing test card readily available.

***NOTE:*** *Audiometric tests shall be conducted by an approved Audiometric Technician.*

Quolus Construction Services recognizes that noise is a serious problem in the construction workplace. Over time, if noise from machinery, processes or equipment is too loud, it can cause permanent hearing loss. WorkSafeBC OHS Regulation set maximum allowable limits for noise exposure at 85 dBA Lex, (85 dBA average noise exposure over an eight hour period) and a peak noise level of 140 dBA. In the construction industry, equipment and power tools operators and workers in proximity to the equipment may be exposed to noise greater than the allowable limits for unprotected hearing. As a result of the noise levels inherent in our industry, Quolus Construction Services has implemented a hearing conservation program in compliance with regulatory requirements.

Where noise above acceptable levels is present, supervisory staff are responsible for determining whether there are any “engineering controls” that can be practicably applied.

Where engineering controls are impracticable, operators of equipment that produce noise in excess of exposure limits, workers in proximity to such equipment and workers exposed to other job site noise in excess of the limits are required to wear CSA approved hearing protection appropriate for the noise level. This will be provided by the company. Noise hazard areas under Quolus Construction Services’ control will be identified with warning signs.

Our workforce will be provided hearing conservation educational materials, an opportunity to discuss hearing conservation, and ready access to hearing protection as part of our program. Educational materials, which will be presented through supervisor instructions and Toolbox Talks, will address: effects of noise on hearing, the purpose of annual hearing testing and proper use and maintenance of hearing protection.

Workers exposed to noise in excess of allowable limits are required to have annual hearing tests to monitor their hearing. Quolus Construction Services employees are provided the opportunity to have their hearing tested on sites when available. Hearing testing records will be treated as confidential and maintained for the duration of the worker’s employment with the company.

Quolus Construction Services’ Hearing Conservation Program will be reviewed on an annual basis to ensure its on-going effectiveness, however as most workers are not with Quolus Construction Services for more than a few months, hearing tests are not normally conducted.
Recognizing Hearing Loss

One quarter of all workers in BC are exposed to noise in the workplace loud enough to damage their hearing. Noise is the most common hazard in industry. Hearing loss can occur so gradually that you may not even know it is happening, until it is too late. Noise induced hearing loss is permanent; it can't be cured or improved.

Excessive noise damages the sensory cells deep inside your ears. The first danger sign of occupational hearing loss is the inability to hear high-pitched sounds. As the damage continues, the loss will affect your ability to understand speech. Noise can also cause ringing in your ears.

### 4.5.2 Noise Limits

There are maximum limits for worker exposure to noise in the workplace, both for loudness and duration.

A simple way to test the noise level is to stand at arm's length from someone and talk to them. If you must raise your voice to be heard, the noise in the vicinity is probably too loud (or the person you are speaking to has hearing loss).

The length of time that you are exposed to noise is as critical as the volume of the noise. Exposure to continuous noise for 8 hours is far more damaging than 8 hours of noise exposure spread over a few days.

If your ears ring, or sounds seem muffled after the noise stops, your hearing has been affected, at least temporarily. A continuous noise level greater than 85 decibels over an eight hour period can damage hearing.
Noise Control

The most desirable way to reduce noise is to control it at its source e.g. proper maintenance and lubrication of a noisy piece of equipment makes it quieter, or the noise source can be housed in a noise muffling enclosure. These noise control activities are called engineered controls.

Another noise control method is called administrative control. Administrative controls include decreasing time in noisy areas through job rotation or scheduling equipment operation when most workers are off shift. The remaining noise control solution is wearing appropriate hearing protection. This is the most common solution for construction industry workers as their employer frequently has little or no ability to control the source of the noise e.g. the client's equipment in a construction location.

### 4.5.3 Hearing Protection Devices

Hearing protection devices (HPDs) reduce the level of noise reaching the ear. The two main types of protection are earplugs and earmuffs. Earplugs may be inserted into the ear canal or placed over the ear canal (the latter plugs are called canal caps). Earmuffs consist of two dome-shaped cups that cover the entire ear and are held in place by a headband.

**Earplugs**

Earplugs work by blocking the ear canal. Canal caps are a variation of earplugs. Unlike earplugs, which block the ear canal by being inserted into it, canal caps seal the opening of the ear canal by being placed over it.

Workers must be instructed in how to insert earplugs. Instruction is best done at the time of the annual hearing test. Properly inserted earplugs are not painful. The most common problems with earplugs is that they are not sealed deeply enough in the ear canals. Partial insertion results in poor noise reduction, poor retention, and discomfort. When plugs are properly inserted, there will be a slight sensation of pressure, and the wearer's voice will sound louder and more resonant. There will also be some resistance when the user pulls gently on the earplug. Supervisors should be able to recognize the appearance of an improperly seated plug and how to counsel the worker on the correct way to insert it.

Compressible earplugs are usually made of compressible foam. The plugs are rolled between the fingers to compress then and then inserted into the ear canal where the foam expands to fill the canal. For proper insertion, the ear canal must be first straightened by pulling on the outer ear with your other hand; if this is not done, the plug will stick out too much and will not be effective. One size fits most workers, however, if ear canals are too small for a comfortable fit, the plug won't say in place. Some compressible plugs come in several sizes. Alternatively, reusable or custom molded plugs could be selected.

Reusable plugs are generally made of plastic with single, double, or triple ridges that help seal the ear canal. Many brands come in different sizes. These plugs are suitable for workers whose hands may become soiled at work since the ear canal portion of the plug need not be touched. (Compressible plugs rolled between the fingers can become dirty). For proper insertion, the ear canal must be straightened and the plug inserted with a slight twisting motion. When properly inserted, the plug should not fall out. Some resistance should be felt when the plug is gently tugged. The wearer should not be able to pull it out easily.

Custom molded plugs are custom made by taking an impression of a worker's ear, making a mold of it and casting the plug. It is vital that a proper impression of the ear be taken or the finished plugs won't fit well. The plugs must fit the contours of the ear snugly to provide proper noise reduction. Since these plugs can be difficult to insert due to their unusual shape, workers must be shown how to insert them properly. New earplugs will need to be made if the external ear and ear canal change shape with age or extreme weight gain or loss.

Canal caps are held in place be a headband worn either over the head, behind the head, or under the chin, depending on the manufacturer. The cap of "pod" does not insert into the ear, but fits over the opening of the ear canal. The size of ear canal is not as important in fitting these devices. Canal caps are widely used by workers with intermittent or interrupted exposure to noise.

**Earmuffs**

Earmuffs consist of four parts: domes (ear cups), dome liners, cuffs (ear cushions) and headband assembly. Domes are usually made of plastic. Liners are made of foam and/or ear "down". Liners reduce noise reverberation inside the dome. Cuffs may be foam, liquid, or combination foam/liquid filled. The liquid filled cuffs reduce more low frequency sound and make the wearing of safety glasses more comfortable. Foam cuffs are lighter weight. Headband assemblies may be made of plastic, metal, or a combination of both.

Depending on their design, earmuff headbands may be worn over the head, behind the head, under the chin, or the muffs may be mounted on a hard hat. Hard hat mounted earmuffs have less pressure exerted against the side of the head, and are more comfortable than muffs with headbands. The attachment for a hard hat may be fitted into slots on the hard hat, or clipped onto

the brim with an adapter. The proper size adapter must be selected, and may vary according to the brand of hard hat.

Some earmuffs are manufactured for one and two way radio or speech communication. The sound transmitted to the ear from these communication devices should not be able to exceed 85 dBA. If the devices transmit sound above 85 dBA they become a potential noise hazard. Workers are not permitted to wear protection designed or modified to accept AM/FM music transmission, or other such systems.

The effectiveness of an earmuff is determined by the headband tension and fit of the domes over the ears. If headband tension decreases either by routine usage or by deliberate modification by the wearer, noise reduction decreases.

The domes must fit over the entire external ear to provide a proper seal. Modification to domes, such as drilling holes, is not permitted. Wearing safety glasses, caps, or facial hair may interfere with the seal of the dome. Hair should be pushed behind the ears or pinned up out of the way. Thin frames for glasses are preferred to thick ones. Temple pads are available to improve the seal and decrease discomfort caused by the pressure of the dome against glasses. Wearing thick cloth caps should be not permitted if the headband of the earmuffs must fit over the cap. Using earmuffs with a swiveling band will help with this problem.

Jaw size and head shape also pose a fitting problem; some muffs may not fit properly against the side of the head. Workers should try earplugs in such cases. Some earmuffs are made to be worn a certain way to obtain a proper fit. There may be a top and bottom designated, either by the shape of the muffs, or by the manufacturer's instructions.

As with earplugs, individual fitting of muffs at the time of the annual hearing test will help ensure the worker is properly instructed in earmuff use. Workers should bring their hearing protection to their annual hearing re-test so that the fit can be assessed yearly.

The wearing of earmuffs is easy to monitor by supervisors, but supervisors should watch out for improperly worn muffs, particularly the hard hat mounted one in the "snap-out" position. This position reduces the pressure off the cuff on the ear and is designed for use for very short periods of time only.

**Choosing Hearing Protection Devices**

Selecting appropriate hearing protection is not difficult. The class of protection should be based on the worker's eight-hour noise exposure, not a spot measurement of noise in a given area or near a particular machine. For example, an equipment operator's machine may produce noise levels of 99 dBA, but a typical operator's eight hour noise exposure ($L_{ex}$) is 91 dBA because the worker does not have the equipment running for eight hours continuously. There will be breaks for lunch, coffee, walking outside the machine, and so forth.

The class of hearing protection (A, B or C) is based on the attention (noise reduction) provided by the protector at certain pitches or frequencies. Earplugs and earmuffs alike may be classed as A, B or C. Class A provides roughly 30 dB of attenuation, Class B, 20 dB and Class C, 10 dB. The attenuation figures are supplied by the manufacturer.

For noise exposures less than 85 dBA averaged over 8 hours, no protection is required. Above 85 dBA, the recommended class of hearing protection increases with noise level. For example, Class

C protection is recommended for driving a heavy truck (89 dBA). Class A is recommended for operating a pile driver (104 dBA). For extremely high noise levels, wearing double protection (earplugs and earmuffs) is recommended.

Hearing protection devices should be selecting in accordance with the following table:

| Noise Level (dBA) | Class of hearing protector required |
|---|---|
| Less than 85 | No protection required |
| Up to 89 | Class B |
| Up to 95 | Class C |
| Up to 105 | Class A |
| Up to 110 | Class A plug + Class A or B muff |
| More than 110 | Class A plug + Class A or B muff & limited exposure |

The effectiveness of a hearing protector is not determined by its noise-reducing ability alone. If a protector is uncomfortable or if a worker cannot communicate with co-workers, the protector is more likely to be removed by the wearer. Class A protectors are not “the best”; they simply have the most attenuation. Class A protection is not recommended for workers whose noise exposure is less than 95 dBA. Hearing impaired workers in particular resist wearing Class A protection because it makes them unable to hear warning signals or speech. For such workers, Class B protection is often more acceptable and, therefore, more likely to be consistently worn.

Workers with normal or near normal hearing can wear any class of protector. Hearing impaired workers may find hearing protection that greatly reduces noise levels unacceptable. Reduced ability to hear warning sounds, equipment sounds, or verbal instruction may make it difficult for these workers to perform their jobs efficiently or safely.

Where verbal communication is frequently required, hearing protection that greatly reduces noise levels is undesirable, because it will make speech hard to understand.

Many workers who must wear hearing protection also wear other personal protective devices. The resulting combination of protective equipment must be comfortable for the worker. For example, workers wearing respirators, hard hats, and safety glasses may prefer earplugs to earmuffs. Earmuffs are often worn in low temperatures. Earplugs may be preferred in high temperatures or high humidity.

Some workers may have ear canals that are too small for earplugs or ears that are too large for earmuffs. Workers with chronic external ear infections should wear earmuffs, those with skin problems such as dermatitis or eczema surrounding the ear should wear earplugs. For workers who must do a lot of bending over and straightening, or maneuvering in small places, earplugs may be better than earmuffs.

If employers are concerned about monitoring the use of hearing protection by workers, earmuffs are more easily visible. The choice of an all plastic earmuff or earplug may be necessary where possible contact with an electrical hazard is present.

### 4.5.4 Maintaining Hearing Protection

Hearing protection is not usually designed to be repaired. Damaged earplugs must be replaced. New parts are available for earmuffs if domes, cuffs or liners are damage. Employers are required to supply enough hearing protection or replacement parts to ensure only well maintained hearing protection is worn. Proper cleaning of hearing protection will maximize its life span. Advice on caring for hearing protection is provided as follows:

- Compressible earplugs can be washed and reused when dry, although usually they are disregarded at the end of the day.
- Reusable, custom molded plugs and canal caps should be washed at least once a week to remove wax build-up, which may reduce attenuation. Washing should be done at the end of the workday to allow complete drying. Use hand soap and warm water for washing. Do not use harsh solvents or alcohol, they will damage the plug. Most ear plugs come with a carrying case for storage between use. Reusable plugs should last six months to one year and custom molded plugs should last two to five years.
- The hard plastic domes of earmuffs generally need more than wiping with a damp cloth. The domes should last approximately two years. Skin oil, perspiration and some hair preparations have adverse effects on the cuffs. After continual use, the soft and compliant cuffs become hard and can even shrink. Ozone emissions from generators and some welding operations can cause the foam material in the domes to disintegrate and can also harden the seals. Most earmuffs have replaceable cuffs available. Cuff replacement is recommended every six months. Liquid filled cuffs should be checked often to see if the liquid is still present. Cuffs that have leaked should be replaced. The liner material inside the dome should be kept clean. If the liner is discolored, hardened, extremely soiled or mildewed, it should be replaced. Earmuffs must be sufficiently tight to form a good seal. Headbands should be adjusted or replaced as required to maintain adequate pressure. When stored, earmuffs should not be thrown into a toolbox or truck bed where the domes can crack, cuffs can rip, and headbands can bend. Earmuffs should not be left outdoors. Bees, wasps, and spiders may make homes inside earmuff domes. Earmuffs mounted on a hard hat should not be stored with the cuffs pressing against the hat. The constant pressure on the cuffs leads to rapid flattening of the cuffs. Instead, the earmuffs should be kept raised off the hat or snapped out when not in use.

### 4.5.5 Hearing Testing

The only way to ensure that the hearing conservation program is effective is by periodically measuring the hearing of workers. Hearing tests are required for most construction trades workers. Hearing tests are vital because they identify the beginning of noise induced hearing loss long before workers notice it. As part of the test, workers are individually counseled about the results, the follow-up required and when a repeat test will occur. Workers are also counseled about the type of hearing protection to use.
Hearing tests are conducted annually to effectively monitor the hearing of noise exposed workers. The hearing test, including counseling, takes approximately 15 to 20 minutes.

During a hearing test, a worker is seated in a sound proof booth with a window and a set of earphones are placed over the ears. When the worker is ready, the audiometric technician sends a series of tones through the earphones to one ear, and then the other. The worker signals the technician as the tones are heard. The worker's responses are recorded for each ear. Then the results are graphed on a chart called an audiogram.

The audiogram shows how loud a tone must be to be barely heard by the worker, at a number of different pitches or frequencies. In the early stages of noise induced hearing loss, the audiogram

will show some hearing loss for high pitched sounds. As hearing loss advances, the audiogram shows hearing loss for many pitches. Workers with more advanced hearing loss will notice the sounds of speech and surrounding sounds becoming muffled.

As part of the hearing test, workers are counseled about the necessary use, maintenance and replacement of hearing protection. Hearing testing and counseling must be performed by authorized technicians. The first hearing test a worker has is called the baseline test. The results are categorized as:
*Normal* – test is normal or near normal
*Early Warning* – test shows the start of noise induced hearing loss
*Abnormal* – test shows significant hearing loss requiring medical follow-up.

Repeat tests are called periodic tests. They are categorized as:
*Normal Change* – test shows no significant change from previous test; hearing has remained stable
*Early Warning Change* – test shows there has been high frequency deterioration in hearing, likely due to noise exposure
*Abnormal Change* – test shows significant change from the previous test requiring medical follow-up.

The technician is not qualified to determine the cause of abnormal or abnormal change hearing tests.

Records of hearing tests are maintained as long as the worker is employed by the company.

## 4.6 LOCK OUT / TAG OUT (LOTO)

Many serious injuries occur in workplaces every year because of the lack of, or improper use of, lockout procedures. These injuries can be prevented; therefore, lockout procedures must be followed on Quolus Construction Services projects whenever maintenance, cleaning, repair or installation work is performed on any machinery or equipment.

### 4.6.1 Definitions

Most people associate lockout with locking an electrical panel using a lock and key. Lockout also includes isolating equipment by blanking (using a physical barrier), closing and locking valves or blocking (using a physical support). The following definitions are provided to clarify key terms used when discussing lockout.

*Blanking*: Placing a physical barrier in the path of a hazard, such as disconnecting a pipe and placing a cover over it between the hazard and the work area and securing it in place.

*Bleeding*: Means to remove any pressures in the system e.g. pneumatic or hydraulic.

*Blocking:* Placing a physical support or brace to prevent machinery, parts or equipment from moving e.g. putting jack stands under the axles of a vehicle when it is elevated by a hydraulic jack, and personnel are working underneath the vehicle.

*Closing Valves:* To the off/closed position and locking them in that position, which is not a suitable isolation method in itself in some cases such as confined space entry.

*Control of Hazardous Energy:* Means stopping and securing the machine, process or system to protect workers from danger. It must eliminate or control the danger to the safety and health of workers from unexpected start-up of the machine or the release of hazardous energy or substances.

*Disconnecting:* Turning off switches and/or breakers and locking them in the off position.

*Energy Isolating Device (Control Device):* Means the device controlling the flow of power to the machinery or equipment and includes, but is not limited to, switches, circuit breakers, valves and clutches. In the case of electrical controls it means the device controlling the flow of current to the branch circuit which supplies the power to the machinery or equipment. Individual control buttons or switches in control circuits are excluded.

*Hazardous Energy*: Can be any energy source (electric, compressed gas, hydraulic, tensioned spring, mechanical or elevated object), which could release or move and injure or endanger a worker.

*Maintenance*: Means any and all work done to keep a machine in efficient operating condition and includes repairing, servicing, adjusting, changing, cleaning, lubricating and the clearing of obstructions to the normal flow of material.

*Restraining*: Means to attach a device to prevent parts from moving inadvertently e.g. pinning a carriage in place that may move if pneumatic pressure is reduced.

### 4.6.2 Responsibilities

It is the responsibility of each worker to ensure the equipment they are working on is locked-out, locks are installed prior to commencing work on the equipment and locks are removed upon completion of the work. It is important to remember that after applying the lockout the equipment should again be checked to see if it can be started.

Superintendents are responsible for issuing key locks (Combination locks are not permitted) to all personnel that may be required to lockout. These locks must be tagged or numbered in such a manner in which to identify the owner and to indicate whose lock is in use. Only two keys will be issued for each lock. The worker will have one key and superintendent will have the other.

In the instance where work is discontinued overnight or on weekends and no one else is to continue the work, locks should be left in place. When work is to be carried on by a second shift, the oncoming shift must install their locks before outgoing shift removes theirs. Alternatively the superintendent may install a lock of their own for the duration of the shift change.

Removal of a lock will be the sole responsibility of the worker to whom the lock belongs. A superintendent may remove a lock only if every reasonable measure has been made to contact the worker, and where the supervisor has fully ensured that it is safe to do so.

### 4.6.3 Guidelines

**IMPORTANT:** These generic lockout guidelines are to be supplemented by specific written lockout procedures for each piece of equipment or machinery to be locked out. Only authorized person (e.g. those trained in lockout procedures) are to work on machinery or equipment requiring the use of lockout procedures.

The guidelines for lockout are as follows:

- The superintendent responsible for the work requiring lockout procedures will first authorize the work. The superintendent will inform the workers who will be affected by the lockout of the extent and duration of the lockout procedures.
- All possible sources of contact with energy sources, mechanical hazards, or chemical materials will be identified before lockout procedures commence.
- Once the possible energy sources, mechanical hazards, or chemical materials have been identified steps will be taken to isolate them from the area to be worked on.

**Electrical**

*Plugs*:

Where the machine utilizes a *PLUG*, disconnect the plug and place the male end of the plug on the machine in a location readily visible to the person performing the work. This method may only be used where the worker completes the work with the source of re-energization in their direct control, e.g. the plug is under the worker's observation and control. If the employee performing the work may be interrupted during the task, then the plug must be secured by a locked plug cover.

*Circuit Breakers*:
Where the machine is supplied power from an electrical panel and *CIRCUIT BREAKER*, determine the correct breaker and switch it to the OFF position and;

- Lockout the individual circuit breaker.
- If the individual breaker is not lockable, close the front door and apply your lock to the hasp. Method may only be used where:
  a) A main breaker or disconnect is still accessible to kill all power to the locked panel should this be necessary while the panel is locked.
  b) The worker who does the original lockout is the only employee required to lockout.
  c) The door is "see-through" permitting subsequent workers to observe the position of the circuit breakers before they apply their locks.

*Disconnect Switch:* Where the machine is supplied power from a *DISCONNECT SWITCH*, determine the correct disconnect and switch it to the OFF position. Apply your multiple lock hasp in the approved location. Apply your own lock to the multiple lock hasp.

**NOTE:** Use left hand and turn your face away from the switch when opening or closing it.

**Pneumatic**

Where the machine/equipment is supplied with *COMPRESSED AIR* from a compressed air system, locate the main shut-off valve to the machine, turn it off and secure it in the closed position. Gate or ball valve lock adapters may be used for this purpose. You may have to secure certain parts of the machine with chains, blocks, slings, or pins to prevent movement once the air pressure is bleed off. Bleed any air tanks or remaining air in the system.

**Hydraulic**

- Where the machine/equipment is supplied *HYDRAULIC POWER*, or has its own built in hydraulic system, press the start/stop button for the hydraulics. Bleed off any other energy

storing devices such as accumulators. Find the disconnect switch, breaker and control power. Turn them off and lock them out. Press the start/stop button to check that the machine will not start. Check also that there is no hydraulic pressure on the gauge.

- Once all the sources of hazard have been isolated from the work area as described above, means must be taken to prevent that isolation procedure from being removed or deactivated by someone else. This can be accomplished by placing a key operated lock (not combination locks) securing the isolation device or process. Using a lock is particularly suited for locking electrical junction boxes and valves, but is not practical for most blocking, and blanking applications.
- After applying your locks, test the effectiveness of the lockout. Make certain everyone stands clear then have the controls (push buttons, switches, etc.) operated to ensure that the machine/equipment will not move. Ensure the equipment controls are returned to the off or neutral position immediately after the test.
- Relieve or restrain any residual or stored energy and ground electrical energy stored in capacitors. Test with appropriate test equipment and/or visually check to determine energy sources have been neutralized.

**IMPORTANT – steps must be taken to ensure that the lockout:**

- Procedures cannot be circumvented and/or bypassed (accomplished by the use of locks).
- Will prevent the machinery or equipment from being started, re-engaged or moved while work is in progress.

When more than one person is involved in the installation, repair or maintenance process on equipment or machinery that is locked out by means of a lock, each person must place their own personal lock at every point of lockout that is being used. A multiple lock hasp is to be used for this purpose. In the event that a previously locked out switch or panel does not have a multiple lock hasp, contact the person whose name appears on the lock. Both workers will together apply a multiple lock hasp and then (re)apply their personal locks to the hasp.

- Only the person who has placed the lockout device at the point of lockout is allowed to remove. When a worker is unable to remove their own lockout device, the superintendent may remove it, but only after every effort has been made to contact the worker. The superintendent then takes full responsibility for the removal of the lockout device. This task may not be delegated.
- A clearly visible tag must be affixed which indicates that the machinery or equipment is being locked out. The tag will state that there is danger to the personnel who are working on the machinery or equipment if it is restarted, re-engaged or moved.
- All locks and tags are to remain on the equipment or machinery while it is being worked on. As personnel finish their work, they are to remove their own lock and tag.
- When all work has been completed ensure:
  - That all tools or repair equipment are removed from the process before reactivating the equipment or machinery.
  - Any defective guards or safety devices are repaired or replaced.
  - All components are properly installed including guards and safety devices.
  - The equipment or process is free of incomplete work, obstructions and other unnecessary items.
  - You know the sequence for lock removal and start-up, particularly if you are the employee removing the last lock(s).
  - Everyone is clean and remains clear of danger during start-up.

- On completion of the work, remove your personal lock, (and multiple lock hasp where applicable) and restore power to the machine or equipment.
- In the event of a shift change appropriate communication must occur between workers on the various shifts. Locks are to be changed out for new workers personal locks prior to work commencing. Incoming worker must place their lock prior to the outgoing worker removing theirs.

### 4.6.4 Lockout Exceptions

It may be necessary for some work that part or all of the equipment to be energized or in operation during the work process. Whenever this is necessary, written work procedures will be developed and followed. In addition to the written work procedures, these general rules will be adhered to:

- Only that part of the equipment that is vital to the process will be energized. All other parts are to be de-energized, restrained, etc. and securely locked out.
- Workers engaged in such operations will be fully trained in the safe work procedures and authorized to carry out the work.

**NOTE**: Other methods/practices may be used to ensure workers are protected from energy sources provided; prior approval is received from WorkSafeBC. In these instances it will be the responsibility of the Site Superintendent to arrange for WorkSafeBC approval through consultations with the local WorkSafeBC Officer.

### 4.6.5 LOCKOUT CHECKLIST

The following checklist is provided to assist in ensuring compliance with lockout requirements:

- ❑ Lockout procedures and policy have been developed and are assessable on site.
- ❑ Site specific written lockout procedures have been developed on site.
- ❑ Lockout procedures where electrical, mechanical, hydraulic, pneumatic, thermal or other energy sources are to be isolated.
- ❑ Project personnel have been trained in the lockout policy and procedure for each particular job.
- ❑ Locks have been issued to personnel with responsibilities for lockout.
- ❑ Materials on conveyances that may pose a hazard to workers are removed as part of the lockout process.
- ❑ A system is in place to notify personnel about changes in lockout policy and procedures.
- ❑ Locks are issued to personnel and each lock is marked to identify the owner.
- ❑ Only assigned locks are used for lockout.
- ❑ All energy sources are isolated prior to work commencing.
- ❑ Every person working on the isolated equipment has placed their own locks on the lockout point(s).
- ❑ Lockout is performed in accordance with policy and procedure and WorkSafeBC OHS Regulation.
- ❑ There is an orderly and planned transfer of lockout between in-coming and out-going personnel at shift change.
- ❑ Supervisors only remove locks is the provisions outlines in the policy, procedures and WorkSafeBC OHS Regulation are met.

## 4.7 MUSCULOSKELETAL INJURY (MSI) PREVENTION AND ERGONOMICS

Musculoskeletal injuries (MSI) are the result of an aggravation of the muscles, tendons, ligaments, joints, nerves, blood vessels and related soft tissue and includes sprains, strains and inflammation. All employees will be trained in Ergonomics in order to prevent musculoskeletal injuries from occurring. All workers are provided with and trained how to use equipment that helps to reduce the risk of MSI.

All managers, supervisors and workers will be trained to recognize MSI hazards. Quolus will ensure a communication process for workers to report problems that could lead to MSI type injuries. Workers are encouraged to report problems that could lead to MSIs.
A hazard assessment must be performed before manually lifting and handling a load. All workers will be informed of MSI hazards related to their work and how to avoid them.

### 4.7.1 How to avoid MSIs

Most problems associated with manual handling can be avoided by adopting a strategy that will "improve the fit" between the demands of the work tasks and the capabilities of the workers (ergonomics). This means recognizing that workers' abilities to perform tasks vary due to differences in age, physical condition, strength, gender, dexterity, and other factors.
Various studies have shown that the main risk factors, or conditions, associated with the development of injuries in manual material handling tasks include:
Awkward postures – bending, twisting
Repetitive motions – frequent reaching, lifting, carrying
Forceful exertions – carrying or lifting heavy loads
Pressure points – grasping (or contact from) loads, leaning against parts or surfaces that are hard or have sharp edges
Static postures – maintaining fixed positions for a long time.

Repeated or continual exposure to one or more of these factors initially may lead to fatigue and discomfort. Over time, injury to the back, shoulders, hands, wrists, or other parts of the body may occur. MSI injuries include damage to muscles, tendons, ligaments, nerves, and blood vessels. In addition, poor environmental conditions, such as extreme heat, cold, noise, and poor lighting, may increase workers' chances of developing other types of problems.

**Force**

Force refers to the amount of effort made by the muscles, and the amount of pressure on body parts as a result of different job demands. All work tasks require workers to use their muscles to exert some level of force. However, when a task requires them to exert a level of force that is too high for any particular muscle, it can damage the muscle or the related tendons, joints and other soft tissue. This damage can occur from a single movement or action that requires the muscles to generate a very high level of force. However, more commonly, the damage results when muscles generate moderate to high levels of force repeatedly, for a long duration, and/or while the body is in an awkward posture.
With force, it is important to consider not only how much force is involved but also:
how long workers need to keep exerting the force
how many times the force is exerted in a given period of time
the posture used when exerting the force.

**Fixed or Awkward Postures**

Posture is another name for the position of various parts of the body during any activity. For most joints, a good or “neutral” posture means that the joints are being used near the middle of the full range of motion.

The farther a joint moves towards either end of its range of motion, or the farther away from the neutral posture, the more awkward or poor the posture becomes, and the more strain is put on the muscles, tendons and ligaments around the joint. For example, when arms are fully stretched out, the elbow and shoulder joints are at the end of their range of motion. If the worker pulls or lifts repeatedly in this position, there is a higher risk of injury.

With fixed or awkward postures, it is important to consider:
- how long workers need to hold a specific posture (fixed posture)
- how many times an awkward posture is used in a given period of time
- the amount of force being exerted when an awkward posture is used

**Repetition**

The risk of developing an MSI increases when the same parts of the body are used repeatedly, with few breaks or chances for rest. Highly repetitive tasks can lead to fatigue, tissue damage, and, eventually, pain and discomfort. This can occur even if the level of force is low and the work postures are not very awkward.

With repetitive tasks, it is not only important to consider how repetitive the task is but also:
- how long workers perform the task
- the posture required
- the amount of force being used.

### 4.7.2 Types of ergonomic improvements

In general, there are two types of ergonomic improvements or changes:
- Engineered improvements
- These include rearranging, modifying, redesigning, providing or replacing tools, equipment, workstations, packaging, parts, processes, or systems.
- Administrative improvements
- Alternate heavy tasks with light tasks.
- Provide variety in jobs to eliminate or reduce repetition (reducing overuse of the same muscle groups).
- Adjust work schedules, work pace, or work practices.
- Provide recovery time (multiple short rest breaks).
- Modify work practices so that workers perform work within their power zone (above the knees, below the shoulders, and close to the body) and provide training on these techniques.
- Rotate workers through jobs that use different muscles, body parts, or postures.

**Manual Lifting**

Lift heavy objects with your legs, not your back. Bend your knees, keep your back straight and avoid twisting.

Plan before you lift – consider weight, size, shape, path of travel, and set down location. Get help if indicated or needed.

**Material Storage, Unloading Vehicles**

Always
Ensure proper weight capacity is recognized before storing materials on shelving, landings, etc.
Make sure trucks and tools are rated for the load you are lifting.
Secure all materials when handling or storing.
Use proper operating/lifting procedures when using powered industrial trucks.
Always get assistance for lifting heavy material or hard to handle materials. This may require getting the proper tool such as a pallet jack, a-frame hoist, etc.

Housekeeping
Be aware of and remove all tripping hazards from the work place.
Always ensure there is no debris left unattended near any gap or opening.
Keep tools and equipment properly secured when not in use.
Never step on a covered opening if you are unsure of the rating of the cover.
Never store materials in such a way that it can cause an additional hazard.

## 4.8 OVERHEAD POWER LINES AND ELECTRICAL SAFETY

**Note:** The following rules are intended as guidelines only. Refer to Specific Safe Work Procedures.

**Supervision**

Supervisors must make sure that workers under their direction and control are aware of the dangers associated with their task and are fully trained to perform their work safely.

**Workers**

Workers must be familiar with the work that they are to perform and the safety precautions required for the work is to be carried out. Know your job and how to do it safely. If you don't know, ask!

No employee shall be employed, no material shall be stored or handled, and no equipment or machinery shall be operated within the following minimum distances, from any energized high voltage electrical conductor (WorkSafeBC Table 19-1):

Work on ladders shall be for a short duration only. Longer duration work over 10 feet or above hazardous surroundings will require the usage of fall protection equipment.

### 4.8.1 Voltage Limits of Approach

| Voltage (phase to phase) | Minimum Distance | |
|---|---|---|
| | (feet) | (meters) |
| 751 V to &% kV | 10 | 3 |
| Over 75 kV to 250 kV | 15 | 4.5 |
| Over 250 kV to 550 kV | 20 | 6 |

The above table starts at 751 volts. It must be emphasized that work on 31 to 750 volts can also be dangerous. Work shall be performed in a manner to prevent contact by any worker with the energized conductors.

**EXCEPTIONS:** The only exceptions to the above requirements shall be for qualified persons using safe work procedures acceptable to the Workers' Compensation Board of BC or to workers under qualified supervision as per the Occupational Health and Safety Regulations. A Letter of Authorization (WorkSafeBC Form 30M33) shall be obtained from BC Hydro or the WorkSafeBC prior to work commencing on or near energized conductors. This form must be completed by the Superintendent.

### 4.8.2 Guarding

When energized electrical conductors are GUARDED, special precautions must be taken. A qualified safety watcher must be posted and positioned so that both the equipment and the load and the equipment operator can be seen.
When the minimum distance cannot be maintained safely due to the circumstances of the work, the types of tools used or due to unplanned movement of a worker or equipment brings them within the minimum distance allowable:

- Stop all associated work.
- Call BC Hydro, arrange for a meeting at the worksite to decide whether the energized conductors can be:
  - de-energized;
  - effectively guarded;
  - displaced or re-routed.

Get assurance in writing which of these actions will be taken and when. This Letter of Assurance must be signed by the person controlling the electrical system (WorkSafeBC Form 30M33). Ensure the written assurance is available on site and communicated to all persons in the area where people, tools or equipment when moved or stored, can come within the minimum allowable distance. The safety watcher must signal stop to the equipment operator whenever the equipment or load is likely to contact the flagged warning line.

Workers, equipment and loads must not touch or handle the flagged warning lines.

Only persons qualified to work with high voltage electricity are allowed to touch or handle the electrical guarding.

### 4.8.3 If Contact Occurs

**Ripple Effect:**

If anything makes contact with a high voltage power line, such as a tree or an un-insulated boom on a truck, or if a broken power line falls to the ground or lands on a vehicle, electricity will flow to the ground and spread out in concentric circles like the ripples in a pool of water.
Voltage is very high at the point where electricity makes contact with the ground. The level of intensity decreases as the distance increases from the point of contact. Zero voltage is approximately 10 meters/33 feet from the point of contact.

**Step Potential:**

Due to the difference in voltage as one moved towards or away from the source of electricity it is possible to "step" between high and low voltage differences. The human body is usually a better conductor of electricity than the ground. The electricity can flow between the feet through the body with sometimes devastating results. This is referred to as "step potential".

### 4.8.4 Temporary Power Guidelines

Only qualified persons will be permitted to enter an electrical vault/ substation that contains energized equipment.

Only qualified persons will work on or repair electrical systems, or tools. All temporary wiring must be installed and maintained in accordance with all applicable codes.

Temporary electrical cords must be covered or elevated and be kept clear of hallways and other locations where they may present a tripping hazard.

Splices in electrical cords must retain the mechanical and electrical integrity of the original. Electrical tape splices are not permitted.

Energized wiring in junction boxes, circuit breaker panels, etc. must be protected from accidental contact whenever it is left unattended.
Temporary lighting lamps that are broken or burned out must be replaced as soon as possible. Bulbs must not be removed from other areas to provide lighting.

Do not work on any circuits when standing on metal or in water.

The electrical foreman on site shall be responsible for ensuring that proper site specific written procedures for electrical lock out are provided and used and must ensure that this information is dispersed to all on site.

All flexible power tool cords and extension cords must be inspected, tested, marked, and documented. All electrical extension cords, tools and equipment must have a ground plug or be double-insulated.

Ground fault circuit interrupters must be used with all electrical and temporary lighting when used outdoors or in wet, damp locations.

Damaged or defective electrical tools must be tagged "Out of Service" and handed to the supervisor for repair.

## 4.9 PERSONAL PROTECTIVE EQUIPMENT (PPE)

### 4.9.1 GENERAL PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Personal Protective Equipment (PPE)**

- Eye protection is required on your person 100% of the time.
- Hard-toe electrical hazard shoes/boots must be worn 100% of the time.
- Gloves shall be on your person at all times and on your hands when performing work.

- Choose the right gloves for the task.
- Use the proper PPE for the task; use your JHA, the Safety Manual and contact your Supervisor or Safety Manager for any exceptions.
- Inspect your PPE for fit and serviceability; get new equipment whenever you need it. Your supervisor and QUOLUS are responsible for providing you with the proper PPE.

**WHEN IN DOUBT, CONTACT YOUR SUPERVISOR OR YOUR SAFETY MANAGER.**

General PPE is described by WorkSafeBC to be hard hat, protective footwear and general-purpose work gloves. All employees are required to provide their own general PPE.

Personal protective equipment does nothing to minimize or eliminate the actual hazard. At best PPE, when properly fitted and used, will reduce the severity of an injury. The direct cause of an accident should be investigated more so than the fact as to whether or not the worker used the PPE effectively and properly.

Quolus appointed supervisors shall ensure that workers are in possession of and understand the use of PPE's. In addition, supervisors must be willing to take the time, when necessary, to observe and instruct in the safe usage of the equipment. Management must ensure that the designated supervisor is capable of performing the above adequately.

***Note:*** *No one is exempt from wearing safety headgear and safety footwear on a construction site except in designated entrances and site offices.*

Employees in the finishing trades must wear their hard hats and work boots to and from their work areas, such as finished rooms, and then switch to clothing appropriate for the work.

**Head protection**

- Safety headgear shall be worn by all employees in all designated and non-designated work areas in which a potential hazard to the head exists from falling, flying, thrown objects, other harmful contacts, or in others as determined by the General Contractor.
- Plastic hard hats more than 5 years old must be replaced, as exposure to UV light breaks down the strength of plastic.
- Metal hard hats and Stetson style hardhats shall not be permitted.
- Chin straps or other effective means of retention must be used on safety head gear when workers are climbing on, working from a height exceeding 10 feet or are exposed to high winds or other conditions that may cause loss of the head gear.

***Note:*** *Hard hats must not be altered in any way which affects their protective value.*

When exposed to high winds or other conditions that could cause loss of the headgear — for example, during traffic control

If there's a potential for head injury, workers must wear safety headgear that meets an applicable standard. For more information, see Part 8 of the Regulation.

**Hearing protection**

Noise-induced hearing loss is the most common work-related disease. Though it typically happens gradually, damage is permanent. Workers can suffer from hearing loss by being exposed to a single loud noise or by repeated exposure to a consistent noise.
Regular exposure to sounds louder than 85 decibels (c1BA) can cause permanent noise-induced hearing loss. Excessive noise damages sensitive structures in the inner ear that can't be repaired. This results in irreversible hearing loss.

Select hearing protection that supports the hearing conservation program. Some factors to consider include noise levels, work activities, and user preference for fit.

It's important for workers to wear hearing protection when exposed to noise from loud equipment. This includes pneumatic nail guns, saws, routers, impact drivers, drills, jackhammers, chipping guns, grinders, and other power tools.

Employers should also make sure workers have their "hearing test card." Workers should carry their cards at work.

### 4.9.2 Potential noise hazards in construction

| Work activity | Noise exposure levels (dBA) Eight-hour (or equivalent) exposures |
|---|---|
| Carpenter/framer | 91 |
| Concrete worker | 92 |
| Crane operator | 90 |
| Drywaller | 89 |
| Electrician | 89 |
| Ironworker | 93 |
| Jackhammer operator | 97 |
| Labourer | 93 |
| Mobile equipment operator | 91 |
| Roofer | 95 |
| Truck driver | 88 |
| Welder | 92 |

If a worker is or may be exposed to potentially harmful levels of noise, or if information indicates that a worker may be exposed to more than 82 dBA Lex, the employer must measure the noise exposure.

Construction workers are often exposed to noise that can permanently damage hearing. If workers are exposed to noise that goes over noise exposure limits, employer requirements include the following:

- Develop and implement an effective noise control and hearing conservation program.
- Investigate options for engineered noise control. Implement one or more of those options to reduce noise exposure to or below the exposure limits.
- Post warning signs for noisy areas.
- Provide hearing protection. Make sure it fits each worker and can be worn effectively. Typically, you'll need to provide a variety of hearing protection devices.
- Ensure that workers wear hearing protection as required.
- Make sure workers are provided with an initial hearing test within the first six months and at least once a year after the initial test.

If workers are exposed to noise that exceeds noise exposure limits, the employer must ensure they have their hearing tested every year to monitor the effectiveness of hearing protection. You can find a list of authorized industrial audiometric (hearing test) facilities at worksafebc.com.

**Safety Footwear**

The following requirements apply to safety footwear:

- It must be designed, constructed, and made of material that is appropriate for the protection required.
- It must allow the worker to work safely.
- It must meet an applicable standard, as required by the Regulation — for example, safety footwear with a CSA Group green-triangle symbol.

When workers are required to wear safety footwear, it must meet an applicable standard, as required by the Regulation. It must be of an appropriate design, construction, and material so the worker can work safely.

**General**

- Where the workers' job activity or work environment has a danger of injury to the toes, metatarsal area (top of the foot), or soles of the feet, the footwear must be adequate to protect the worker from such hazards. In general, workers will be required to wear work boots with ankle protection which meet CSA Standard CAN/CSA-Z195-M92 and will be Grade 1 (CSA green tag).
- Steel-toed running shoes, or other such casual shoes are not acceptable as safety footwear.
- The soles of safety footwear worn by employees whose work takes them to areas of uneven, slippery or otherwise hazardous footing, will be of a treaded design acceptable to the WorkSafeBC and the tread will be maintained in an effective condition.
- Employees working in areas that are consistently free of foot injury hazards, such as office work environments, and casual visitors who will not be engaged in activities or job site inspections which may present a hazard to the feet will be exempted from the safety footwear requirements (see below).
- Inspectors and persons touring work sites going into an area designated as hazardous to workers shall be required to wear adequate safety shoes or boots.

**Exemptions to Safety Footwear**

Some job activities may involve procedures in which the above footwear requirements may endanger the worker or damage the work environment. At the discretion of the Superintendent, the following exemptions will be allowed during the specific work process indicated:

- Roofers applying asphalt shingles or other similar materials which can be damaged by heavy work boots are permitted to wear light, soft- soled footwear.
- Carpet layers and workers installing similar finishing are constantly kneeling and generally do not wear safety footwear.
- For workers climbing or walking steel, safety footwear is not required. However, they must wear substantial footwear having leather uppers reaching past the ankle.
- Workers with medical reasons for not wearing safety footwear must apply to the Director of Field Operations Department at the Workers' Compensation Board. Such a worker will only be permitted in an area where the risk of injury is comparatively minor.

***NOTE:*** *In situations as listed in terms 1 to 3, safety footwear must be worn until the worker reaches his/her direct work location (i.e. base of ladder to the roof, entry to the suite being worked on, base of structural steel to be climbed).*

## 4.9.3 SPECIALIZED PERSONAL PROTECTIVE EQUIPMENT (PPE)

Specialized PPE is all PPE other than general PPE. Examples of specialized PPE are (but not limited to) the following:

**Fall Protection Equipment**

Examples of fall protection equipment are but not limited to: Full body harness, shock absorbing lanyard, life line, rope grab. (See Fall Protection Program, Page 36).

**Limb and Body Protection**

Examples of limb and body protection are but not limited to: fire resistant clothing for welding and other hot works; chaps for chain saw operation.

Whenever workers are directed to perform any work that may expose them to any limb or torso injuries, they must be supplied with and wear appropriate personal protective equipment.

**Eye and Face Protection**

Properly fitted goggles, face shields, other eye protective equipment (or a combination thereof), appropriate to the work being done, shall be worn by all employees who:

- are handling or are exposed to any material which is likely to injure or irritate the eyes.
- are engaged in any work in which there is a hazard of eye injury.
- have severely limited vision in one eye.
- are so directed by management or the General Contractor.

No employee will wear contact lenses where gases, vapors, or other materials may be present which, when absorbed by the contact lens, may harm the eyes, or where dusts or other materials

may be present which may harm the eyes or cause distraction which may expose the person to other injury.

***NOTE:*** *At the determination of the General contractor, a construction site may be designated as an eye protection area and all persons entering must wear approved eye protection.*

**Inspection and testing of PPE**
Protective equipment is to be maintained in a safe, reliable condition per the manufacturer's recommendations. Safety and protective equipment and tools shall be visually inspected for damage and defects before each use and immediately following any incident that can reasonably be suspected of having caused damage.

**Worker responsibilities**

Workers are responsible for providing their own hard hats, safety footwear, general-purpose gloves, and clothing necessary for protection against the natural elements. However, if specialized gloves are necessary to protect against hand injuries — for example, when using hazardous substances — the employer must provide them.
If there is a risk of contact with moving parts of machinery, equipment, or tools, workers must follow these requirements:

- Wear clothing that fits closely to the body. Don't wear loose-fitting or frayed clothing.
- Remove accessories, such as rings, dangling neckwear, loose-fitting bracelets, or watches.
- Tie back long hair, including facial hair.

**Eye and face protection**
Workers must wear eye and possibly face protection where hazards involving the eyes or face exist or are created as a result of conditions or activities in the area. Face protection protects the full face from injury. It's considered a secondary safeguard to protective eyewear. Where face protection is required, workers must wear it over eye protection.
Employers are responsible for providing eye and face protection.

When there are eye hazards, workers must wear properly fitting safety eyewear that is supplied

**Respiratory protection**
In some workplaces, workers may be at risk of breathing in airborne contaminants, such as crystalline silica, asbestos, isocyanates, lead, or nuisance dusts. Employers must assess the workplace for breathing hazards and control worker exposure to these hazards.

If elimination isn't practicable, follow the remaining steps in the hierarchy of controls: substitution, engineering controls, administrative controls, and PPE. In many cases, you'll need to use a combination of these controls to keep worker exposures as low as reasonably achievable. See "Hazard identification and risk control," pages 12-14.

If you can't reduce dangerous air contaminants to safe levels, you must provide your workers with training and appropriate respiratory protection. You must also ensure they use it as they were trained. Respirators must meet and be used in accordance with the requirements of a standard acceptable to WorkSafeBC and the employer's respiratory protection program.

Employers must ensure that workers have a fit test performed before first using the respirator and then at least once a year.

Workers required to wear respirators must be clean shaven where the respirator seals with the face. They must also perform a positive- or negative-pressure user seal check in accordance with the requirements of a standard, as specified in the Regulation.

## 4.10 RESPIRATOR PROGRAM

***Note***: *the following rules are intended as guidelines only. Refer to Specific Safe Work Procedures when required.*

This respirator program is designed to ensure that respirators used by employees of Quolus provide effective protection against airborne contaminants to which they may be exposed.

The program is limited in its application to work environments which are not considered to be IMMEDIATELY DANGEROUS TO LIFE OR HEALTH
(IDLH). Quolus employees must not enter into any IDLH work environment. These environments include:
Toxic contaminate at IDLH concentrations;
Oxygen deficient atmosphere (less than 19.5% oxygen); Untested, unventilated confined space;
Atmospheres containing flammable gases greater than 10% of the lower explosive level (LEL), or as per site specifications; and;
Atmospheres identified by site-specific hazard assessment to be IDLH.

### 4.10.1 Responsibilities

All employees must follow the General Contractors respirator program.
These responsibilities include:

- implementing training and instruction programs;
- administrating the overall program, including keeping records at Head Office

Designated supervisors in consultation with the site safety representative are responsible for:

- assessing the type and amount of exposure
- selecting and ensuring that proper respirators are available as needed;
- ensuring that employees wear proper respirators as required; inspection of respirators on a regular schedule.

Site Safety Coordinator/Officers (or Superintendent) are responsible for:

- ensuring that a program for training and instruction is implemented on site;
- obtaining the required respirators and filters in appropriate quantities;
- ensuring that fit tests and inspections of respirator equipment are performed as required; maintaining the appropriate records at the site and forwarding copies to Head Office.

Every employee is responsible for:

- Using the respirator supplied to him/her in a proper manner in accordance with instructions and training.

- Cleaning, disinfecting, inspecting and storing his/her respirator.
- Reporting a respirator malfunction to the Safety Coordinator/ Officer, Superintendent or supervisor.

***Note:*** *All Quolus employees who are required to perform a task by their supervisor which requires respiratory protection for their work must review the General Contractors written Respiratory Protection Program.*

### 4.10.2 Respiratory Selection

The selection of respirators must be appropriate to the contaminant(s), their concentrations, the wearers comfort, and the level of protection provided by the respirator. material Safety Data Sheets are the primary guides for respirator selection and must be available on site in current and complete condition.

Only respirators bearing CSA and/or NIOSH/MSHA approval, or other respirators acceptable to the Workers' Compensation Board of B.C., will be provided to employees.

CSA Standard must be complied with for use and care of respirators and for the testing and recording of fit tests.

### 4.10.3 Fit Testing

To fit properly and provide adequate protection, respirators that are designed to fit the face shall have an effective seal. Employees using respirators must be clean-shaven in the area where the respirator seals with the face (i.e. no visible stubble), and must receive a fit test once a year.*

The company will arrange fit testing and keep records of the results of this test.
*EXCEPTION: Fit testing for workers grinding concrete shall be a mechanical performance test which consists of:

Negative Pressure Test - Consists of closing off the inlet by covering with the palms over the cartridge or by squeezing the respirator breathing tubes so that air cannot pass; inhaling gently as the face piece remains slightly collapsed and no inwards leakage is detected, the respirator fit is adequate.
Positive Pressure Test - is conducted by closing off the exhalation valve and exhaling gently into the face piece. The fit considered satisfactory if a slight positive pressure can be maintained without any evident outward leakage.

The mechanical performance test will be used each time a worker puts on a respirator and is adequate for fit testing when following concrete grinding procedures. Workers should ensure that when doing this test the respirator is not so tight that it is uncomfortable to wear.

For other respirator usage, additional testing such as a "Qualitative Testing" and "Quantitative Testing" using an approved scent device may be required. Contact the site safety representative or WorkSafeBC prior to workers using respirators on other chemical or atmospheres.

### 4.10.4 Training

Every employee who must wear a respirator will be trained in their proper use. The training will include:

- Description of the type and amount of exposure. (Refer to SDS)
- Description of the respirator. (Refer to manufacturer's instructions)
- The intended use and limitations of the respirator.
- Proper wearing, adjustment, and fit testing.
- Cleaning and storage methods.
- Inspection and maintenance procedures. This training will be completed annually, to ensure that employees remain familiar with the proper use of the respirators. A record will be kept of this training. Fit Testing records should include:
    - The name and signature of the worker tested, and date and time of test
    - The specific make, model, style and size of respirator
    - The type of fit testing used
    - The results of the fit testing
- Comments on test difficulties, interference by clothing, other protective equipment that needs to be worn, personal fitting problems, e.g. eyeglasses, dentures, unusual facial features or facial hair
- Name of person giving the test

### 4.10.5 Use of Respirators

Corrective eye wear or other equipment must not interfere with the seal of the respirator.
No covering may be used which passes between the respirator face piece and the wearer's face.
Respirators must be inspected before and after every use, checking straps, valves, cartridges, etc., as well as general cleanliness. See the particular respirator manual for instructions.

The correct cartridge must be selected for the specific airborne contaminant. Cartridges must be marked and dated when put into service. In no situation shall a cartridge be used if dated more than 3 months after installation.

High contaminant levels and other factors such as high humidity may affect the filter or cartridge. Employees noting a resistance to breathing or the smell or taste of chemicals within the respirator, or irritation, will leave the work area immediately and report to his/her supervisor. An investigation must be completed to ascertain the nature of the problem.

When wearing a respirator, employees experiencing any of the following will leave the contaminated area: nausea, dizziness, eye irritation, unusual odor or taste, excessive fatigue or a general difficulty breathing.

Quolus management will determine whether or not an employee may be allowed to wear a respirator.

Where there is any doubt, by either Quolus or the employee, about the ability to wear a respirator, the employee is to be examined by a physician. Certain medical conditions, such as lung and heart disease, and psychological conditions, such as claustrophobia or anxiety, may affect the

employee's ability to wear a respirator. Medical assessments for respirator use is required for workers on return to work following major surgery or prolonged illness.

### 4.10.6 Cleaning, Maintenance and Storage of Respirators

Respirators will be maintained and cleaned according to manufacturer's specifications and instructions.
Where respirators are shared, they will be cleaned and sanitized after each use.
Manufacturer's recommendations for sanitizing must be followed.
Defective respirators must not be used.
A supply of replacement parts, filters, cartridges, etc. will be available.

## 4.11 SILICA DUST

Silica exposure in the construction industry is now getting more attention from WorkSafeBC and permissible exposure levels have dropped considerably. Silica is called the silent killer; however, many employers and workers still regard silica dust exposure as part of the job. Crystalline Silica can cause silicosis (formation of nodules deep in the lung) and lung cancer. After an extremely high level of exposure for one to three years, silicosis can be fatal. Usually there is a gradual decrease in lung function and for many persons no noticeable change, however with silicosis there is greater susceptibility to lung infections and similarly there is a greater risk of lung cancer.

**4.11.1 Construction activities** that produce dust containing respirable crystalline silica include:

- **Abrasive blasting**: Exposures to crystalline silica can be very high. This is particularly true when silica sand is used as the abrasive (sandblasting), although blasting of concrete or stone surfaces may produce crystalline silica exposures regardless of the blasting agent. Abrasive blasting often occurs prior to bridge and tank paining, as well as other steel structure work (either new construction or maintenance)
- **Masonry, bricklaying, block laying, and/or stone setting**: Masonry contains crystalline silica in varying amounts. If any of these materials are sawed, hammered, or ground without dust control, there will be very high dust concentrations. Mixing of sand for mortar may add to the exposure
- **Demolition and repair of concrete or masonry structures**: Demolition of buildings, highways, and bridges, and repair of roads and highways can generate ample quantities of dust containing crystalline silica. Whenever a concrete or masonry structure such as a highway is sawed, drilled, or jack-hammered, there is potential for high exposure
- **Concrete finishing work**: After a concrete foundation, wall, or floor has been poured, workers may grind, drill, or saw the surface of the concrete. These operations often smooth or shape the concrete prior to the application of a finish surface or finish appliances. Sometimes this work is done with hand-held grinders, drills, or saws that are used without dust collection or water spray
- **Rock drilling**: Drilling in rock prior to blasting for highway construction, or for other reasons such as site preparation, water well drilling, or pipeline installation, is basically the same in the construction industry as in past surface mining.

The key to preventing silicosis is keeping dust out of the air. Quolus Construction Services managers and supervisors will need to recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Dust controls can be as simple as a water

hose to wet the dust before it becomes airborne. Air monitoring is needed to measure worker exposures to respirable crystalline silica, to select appropriate engineering controls and respiratory protection and to measure the effectiveness of controls.

### 4.11.2 Known Health Effects of Silica Exposure

The long term health effects from exposure to airborne silica is a condition called silicosis. Silicosis is a scarring of the lungs which in turn causes breathlessness. This is at first only noticeable on exertion, but as the disease progresses the worker may be breathless even at rest. Persons with silicosis run an increased risk of contracting tuberculosis as well as other lung infections. Silicosis of the lungs puts an increased strain on the heart, which may develop into heart failure.

Particles with diameters less than 1 micrometer and freshly cleaved particles (for example, those produced by sandblasting) are considered most hazardous. Several reliable studies have found silicosis in employees with exposure to considerably less than 1 mg/m$^3$ reparable silica dust. WorkSafeBC has set a permissible exposure level of 0.1mg/m for eight hours and lists silica as a suspected human carcinogen and an ALARA substance.

Silica dust can accumulate in the lungs. Inhaled particles are deposited at various locations within the respiratory tract, depending on their shape, mass, aerodynamic characteristics and other physical properties. Most, but not all, silica is cleared from the lungs after inhalation and deposition. The elimination of silica continues for many years after the last exposure. Silica is slightly absorbed into the body. Absorbed silica is deposited mainly in the liver, spleen and regional lymph nodes. Silica acid absorbed into the blood stream is excreted through the kidneys.

Once a worker has developed silicosis, no improvement is expected even though the worker is withdrawn from further exposure. There is a tendency for the disease to progress in spite of no further exposure to silica. Cases of silicosis have been reported which have developed several years after exposure to silica had ceased. High concentrations of dust may cause coughing and mild, temporary irritation following a short-term exposure. Evidence of silicosis can normally be seen on an x-ray. Inhalation of silica has also been associated with a number of other, less well characterized, harmful effects including effects on the kidney (glomerulonephritis), the liver, the spleen and immune system disorders (progressive systemic sclerosis, scleroderma or rheumatoid arthritis).

Silica dust is not expected to be irritating to the skin, however foreign-body reactions (granulomas) have been observed after crystalline silica accidentally got under the skin as result of an injury. Often the effects are delayed for periods ranging from weeks up to more than 50 years. Silica dust is not expected to be irritating to the eyes except as a “foreign object”. Some tearing, blinking and mild temporary pain may occur as the solid material is rinsed from the eye by tears. One unconfirmed case is described in which foundry workers with silicosis experienced deterioration in eyesight due to corneal opacities and there was evidence of abnormally high silicon content in the cornea.

Silica is probably not toxic following short-term ingestion. There is no human or animal information available. Ingestion is not a typical route of occupational exposure.

### 4.11.3 Controlling Silica Exposures

Engineering methods to control hazardous conditions are preferred. Methods can include local exhaust ventilation, process or personnel enclosure, control of process conditions, and process modification or substitution of a less hazardous material, although most of these methods are not practical for construction. Because of the high potential hazard associated with this substance, stringent control measures such as enclosure or isolation may be necessary. This is often encountered for abrasive blasting operations in construction.

The most common engineering control methods to be used on Quolus Construction Services projects will consist of the use of:

- Dust extraction systems attached tools and equipment
- HEPA vacuums/extraction systems
- Wet methods for chipping and grinding concrete
- Dust suppressing agents.

The use of administrative controls are relatively limited for controlling silica exposures. It is limited to implementing the safe work practices for use of engineering controls and protective equipment, and training. Every worker who may be exposed to silica dust will receive training in:

- The hazards of silica dust exposure.
- The written work procedures to be followed.
- The correct operation of use of any required engineering controls and personal protective equipment.
- Personal hygiene and decontamination procedures.
- The purpose and significance of any health monitoring.

Engineering and administrative controls are not always effective or practical in controlling exposure to silica in construction. Often workers will be required to wear suitable personal protective equipment including approved respiratory protection and protective coveralls. Allowing silica dust to accumulate on clothing will not be permitted as even the smallest amount workers are exposed to when removing their clothing may be above the permissible exposure limit. (*see also Respiratory Protection in this section).*

In addition, Quolus Construction Services will control exposure to silica as follows:

- Quolus Construction Services will develop and implement an exposure control plan on job-sites where workers are or may be exposed to silica in excess of 50% of the exposure limits, or if exposure through any route of entry could result in elevated silica body burdens.
- If there is a potential for hazardous exposure to airborne silica dust in a construction project, Quolus Construction Services ensure that air monitoring is conducted as required to ensure that controls are effective and respiratory protection is adequate. **Note:** Air monitoring is used to ensure containment structures, ventilation and other control measures have effectively accounted for risk factors such as variability of silica dust content in material and abatement methods.
- Warning signs will be posted at the boundary of any work area where hazardous silica dust exposures could occur.
- If exposure to fine silica dust or silica dust compounds results in the contamination of exposed skin or work clothing, Quolus Construction Services will comply with the following additional requirements for personal hygiene:
    - Supply appropriate protective clothing such as Tyvek coveralls.

- Dispose of the protective clothing on a regular basis, according to the hazard.
- Provide adequate wash facilities.
- Allow time for washing before each work break.

- Workers will:
  - Wear the supplied protective clothing.
  - Wash effectively before each work break and the end of the work shift.
- All surfaces in the work area must be kept as free as practicable from accumulations of silica dust.
- Removal of silica dust must be done by a means that prevents the dispersal of finely divided silica dust into any work area.
- Proper housekeeping practices are very important in minimizing silica dust exposures. Dry sweeping or the use of compressed air to clean a silica dust contaminated area can create a serious problem, as fine dry dust becomes suspended in air where it can easily be inhaled

- by personnel. Dust can also become suspended in air if a regular vacuum cleaner is used to clean an area. Only a vacuum with high efficiency (HEPA) filters is recommended for cleaning silica dust contaminated areas. An alternative to this equipment is the use of wet cleaning methods or dust suppressing materials.

## 4.12 WHMIS

Workplace Hazardous Materials Information System (WHMIS) provides the worker with vital information about hazardous materials or substances.

The key elements are:
- Labels
- Safety Data Sheets (SDS)
- Worker Education

Always take time to read the WHMIS INSTRUCTION labels. The labels tell a person
- Material and supplier information
- Hazard symbols
- Risks
- Precautionary measures
- First Aid Measures

Quolus is committed to the efficient application of a Workplace Hazardous Materials Information System (WHMIS) program and to ensuring that all employees receive the fullest knowledge and protection in handling products which may be harmful to their health. All Quolus employees will be trained in WHMIS.

### 4.12.1 Exposure Control Plan

An Exposure Control Plan must be done for each site which reflects the requirements of the WorkSafeBC.

**Management**

Quolus will ensure that no person is exposed to harmful levels of hazardous materials through its operations.

Quolus will ensure that all controlled products used by Quolus Employees in all workplaces will have proper labels and identifying symbols attached to each container and that material Safety Data Sheets (SDS) are available for the controlled products.

Management, supervisors, foremen, and first aid attendants/safety personnel must ensure that no SDS is older than 3 years since it was last published.

In addition, site superintendents will ensure that all workers are adequately trained in WHMIS.

**Supervisors/Foremen**

Supervisors/foremen will conduct walkthrough surveys to assess the potential for overexposure to any hazardous materials and implement controls if there is a risk of exposure to a harmful sub-stance.

Supervisors/foremen will ensure that employees who handle or use controlled products are properly trained to identify labels and understand risk phrases.

Employees must be able to read and understand appropriate sections of the SDS and be trained in safe work procedures for the hazardous products in the workplace, the proper use of Personal Protective Equipment (PPE) and in emergency procedures that might be required as well as generally understand the problems associated with the handling of products which could be harmful to their health.

**Workers**

Workers must follow established procedures for the use and handling of controlled products. These procedures may include the wearing of Proper Personal Protective Equipment (PPE).

Workers must know where the SDS are located and request to review them prior to using any new product.

**First Aid Attendants**

First Aid Attendants will keep copies of all SDS and be fully aware of the emergency treatment of workers who have been exposed to harmful amounts of a controlled product.

It is good practice to highlight the Product Name, First Aid and the Preparation Date sections on the material Safety Data Sheet (SDS).

### 4.12.2 Training and Instruction of Employees

Proper instruction of employees in the safe performance of their work is a primary responsibility of every company. Quolus recognizes its responsibility to make training available to its employees on an ongoing basis. For example, WHMIS training will be given on a formal basis, including testing and refreshers through tool box talks. Formal fall protection training will be held with regular refresher training updates as necessary.

Supervisors have the responsibility to ensure that workers under their direction are taught and use safe work methods. All workers are responsible for knowing and utilizing safe work methods.

All employees will receive instruction in the safe efficient performance of their work. Records of this training and competencies attained will be maintained.

Re-familiarization with safe work procedures will be made available to those requiring it on an individual basis. Refresher training will also be made to those employees performing work tasks which are identified as benefitting from familiarization on either a regular or occasional basis.

### 4.12.3 WHMIS 2015/GHS

The Workplace Hazardous Management Information System (WHMIS 2015/GHS) is designed to inform and protect workers who work with or near controlled products and hazardous materials. Supervisors must understand and implement all WHMIS 2015/GHS requirements.

Quolus will ensure that the following essentials of WHMIS 2015/GHS are provided and readily available:

- Worker education on controlled products;
- Workplace labeling and identification; and
- A material Safety Data Sheet (SDS) for all controlled products.

**WHMIS 2015/GHS Pictograms**

WHMIS 2015/GHS pictograms all have a red triangle border around them except for one. Each name of the pictogram describes the hazard, each has a hazard classes and categories. Below is a sample of the new pictograms.

| | | | | | |
|---|---|---|---|---|---|
|  | **Exploding bomb** (for explosion or reactivity hazards) |  | **Flame** (for fire hazards) |  | **Flame over circle** (for oxidizing hazards) |
|  | **Gas cylinder** (for gases under pressure) |  | **Corrosion** (for corrosive damage to metals, as well as skin, eyes) |  | **Skull and Crossbones** (can cause death or toxicity with short exposure to small amounts) |
|  | **Health hazard** (may cause or suspected of causing serious health effects) |  | **Exclamation mark** (may cause less serious health effects or damage the ozone layer*) |  | **Environment*** (may cause damage to the aquatic environment) |
|  | **Biohazardous Infectious Materials** (for organisms or toxins that can cause diseases in people or animals) | | | | |

* The GHS system also defines an Environmental hazards group. This group (and its classes) was not adopted in WHMIS 2015. However, you may see the environmental classes listed on labels and Safety Data Sheets (SDSs). Including information about environmental hazards is allowed by WHMIS 2015.

**Supplier Label**

Supplier labels must be affixed to the original containers of controlled products. The Supplier Label will contain the following information:

- Product identification;
- Hazard symbols representing the classes and divisions into which the product falls
- Risk phrases;
- Precautionary statements;
- First aid measures;
- A statement advising that a material Safety Data Sheet (SDS) is available;
- Supplier identification.


The hatched bored that was required under the WHMIS 1998 is not required under WHMIS 2015, however it is also not forbidden to use the hatched border, so you may see it on a WHMIS 2015 label.

**Workplace Label**

If a controlled product is transferred from a larger container into a workplace container or, a label will be supplied for the workplace container. If labels are missing or illegible, they should be replaced with workplace labels.
The workplace label will state:

- Product identification;
- Information for safe handling
- A Safety Data Sheet (SDS) is available.

**Safety Data Sheets**

Safety Data Sheets (SDS) must accompany all hazardous products. The data sheets will provide in-depth information about hazardous products, give advice about safety precautions and what to do in an emergency. WHMIS 2015/GHS requires a 16 section Safety Data Sheet (SDS), 12 sections are mandatory and 4 are optional.

**SDS Guidelines**

The SDS can be available in paper form or accessible through the internet or database. If computer access is utilized, all employees shall be trained on the process to access the required information.

All controlled products shall have a (material) safety data sheet SDS readily available to all employees including on jobsites.

An up-to-date SDS must accompany each shipment of a controlled product to a workplace. SDS is updated and sent to the users as products are modified by the Supplier.

On a Multi-Employer job site, the constructor/general contractor generally coordinates the flow of information (e.g. SDS) from all trades.

**WHMIS 2015/GHS Responsibilities**

Quolus will make information concerning hazardous/controlled products that are supplied available to workers. This information will include the Manufacturer's Safety Data Sheet and appropriate methods and safeguards for dealing with the product.

We will ensure that workers are trained in:

- What WHMIS 2015/GHS hazardous products they are working with
- How to protect themselves
- What to do in the event of an exposure
- Where to go for First Aid
- How to clean up the spilled material
- Washing equipment is readily available in case of possible employee contamination.

Supervisors will ensure that all hazardous products used within their area are properly labeled and stored. They will also ensure that the appropriate Safety Data Sheets are available at all worksite locations. Supervisors will ensure that all employees who handle hazardous or controlled products are properly trained to recognize and understand the hazardous labels.

Supervisors will ensure that written safe work procedures and emergency procedures for all hazardous materials are available and that workers are properly trained in these procedures. Supervisors will provide the Proper Personal Protective Equipment and ensure that its use is understood. Other necessary materials such as spill kits will also be provided.

Workers are responsible for following these safe work procedures and for reporting any containers that may lack labels or have unreadable labels.

### 4.12.4 Potential hazardous materials or substances in construction

| Work activity | Hazardous materials or substances |
|---|---|
| Demolition and renovation | Asbestos, lead, mercury, mould, PCBs (polychlorinated biphenyls), animal droppings, hypodermic needles, and other hazardous chemicals (e.g., in fuel tanks or paint cans) |
| Drilling, chipping, cutting, and finishing concrete | Crystalline silica |
| Sanding drywall<br><br>Installing spray foam insulation or parkade coatings, and using two-part epoxy products | Crystalline silica and<br><br>nuisance dusts Isocyanates |
| Installing waterproofing<br><br>membrane Installing roofing | Sensitizers<br><br>Volatile organic compounds |
| Discharging sewage | Hydrogen sulfide and biohazards |
| Operating heaters or internal combustion engines indoors | Carbon monoxide, diesel-fuel particulates, and other fugitive emissions |

### 4.12.5 Waste Management Act (WMA)

Quolus Construction Services personnel will not knowingly assign any worker to a location or task where there is hazardous waste contaminant without providing the worker(s) with adequate instruction and direction regarding the hazard and appropriate protection.

Any hazardous wastes produced on site must be properly identified, stored and disposed.

Workers will be informed of the hazards and proper precautions to take should any hazardous material be identified.

## INDEX

## 5.1 SAFETY RULES AND PRACTICES

One of the important points to keep in mind is the necessity for working safely and following the safety rules that apply to each operation. A single violation of a safety rule might place the safety of many employees in jeopardy. All safety policies shall be followed by both the company and its employees in order to safeguard every employee's well-being.
It is the policy of Quolus to comply with all standards, codes, rules, and regulations. Everyone is responsible for upholding of the Quolus Health and Safety Program and provincial/territory Occupational Health & Safety Regulations & Acts. Non-compliance may result in progressive discipline.

### 5.1.1 GENERAL RULES

Quolus Construction Services will enforce the following general safety rules at all times:

- The use of drugs (including cannabis) or alcoholic beverages on project sites is prohibited. Prescription and non-prescription drugs ***may*** be permitted as long as they do not interfere with the ability to perform work related duties.
- Worker's must wear appropriate PPE at all times on sites
- If you have any questions regarding the safety of a job procedure, talk with the appropriate Supervisory Personnel before proceeding with the task.
- All injuries, no matter how slight, must be reported.
- All hazardous conditions must be immediately corrected and/or reported.
- Only authorized persons may operate company vehicles and powered mobile equipment.
- Seatbelts must be worn while operating moving equipment or vehicles.
- Heed all safety guards, barriers, signs, and tags. Never render safety devices inoperable.
- Always use the safety access/egress routes provided to the workplace.
- Always report any unsafe behavior or conditions on a job site, whether it is from a fellow employee, visitor or subcontractor.
- Be familiar with the WorkSafeBC Regulation and feel free to discuss them with WorkSafeBC officers when they are on site.
- Never work alone in isolated areas unless arrangements have been made for periodic checks with another person.
- The use of Personal Entertainment Devices is not allowed on worksites during working hours. This includes but is not limited to earbuds/phones and cell phones.
- Defective or broken equipment must be tagged or locked out immediately.

### 5.1.2 SPECIFIC RULES

**Clothing**

- Workers must wear clothing that provides protection from the environment and job-related hazards. Long sleeved shirts and long pants are the minimum required.
- Where clothing may come into contact with moving parts or equipment, tools or machinery, it must not be loose fitting, torn or ragged and pants must not have cuffs.
- No sweat pants allowed on sites.
- Hair must be kept tidy. Long hair should be tied back or under a hat to avoid entanglement.
- Do not wear any dangling jewelry.

**Contact Lenses**

- Workers wearing contact lenses must inform their supervisor so that the lenses can be removed in the event of an accident.
- Do not wear contact lenses where gases, vapors, flying objects, dust or other materials are present that may harm the eyes or be absorbed by the lenses.

**Correction of Unsafe Conditions**

- If you identify an unsafe condition or practice that is easily correctible you are expected to correct the hazard. If the hazard is of a serious nature you must report it to your supervisor.
- If the unsafe condition is not easily remedied, report it to your supervisor immediately.

**Falling Objects**

- Do not drop or throw any objects from a height.
- Never throw a piece of material, tool or equipment.

**Flammable Substances**

- When using flammable substances ensure appropriate PPE is used.
- Ensure proper grounding is used when transferring flammable liquids from one container to another.
- Ensure all possible sources of ignition have been eliminated.
- Ensure all workers in the area are aware of the hazards associated with the flammable substance.
- Ensure air concentration is kept below LEL (see site-specific hazard assessments).
- Ensure flammable substances are stored safely away from sources of ignition or other hazards.

**Hearing Tests**

- All workers are required to have annual hearing tests and have current hearing test certificates

**Housekeeping**

- As far as is practicable keep work areas free from obstructions at all times.
- Keep areas free of slipping/tripping hazards.
- All ramps, ladders, stairs, platforms and walkways must be kept in good condition and maintained clear of debris or materials that may cause a tripping or slipping hazards.
- Spilled toxic, flammable or corrosive materials must be cleaned up immediately using the method described in the appropriate Safety Data Sheet (SDS).
- Put garbage in designated containers.
- Materials, tools and equipment must not be stored in a manner that impedes access or egress routes.
- All material must be properly stacked and secured to prevent sliding, falling or collapsing. Stock should be stored in racks, stacked or blocked.
- Always tidy your work area at the end of a shift.
- Broken glass or other sharps must be disposed of in designated trash containers.

### 5.1.3 Impairment

All supervisory personnel are responsible for and will be held accountable for taking immediate and appropriate action should they become aware that either alcoholic beverages or drugs (including cannabis) are stored or consumed within the confines of job-sites, on company property or in company vehicles.

The following instructions apply to all employees:

- Possession or consumption of alcohol or drugs (including cannabis) on company projects, on or in company property, is not permitted and will result in an immediate suspension, at minimum.
- Operation of company vehicles while under the influence of alcohol or drugs (including cannabis) will result in an immediate suspension, at minimum.
- When it becomes apparent that an employee's substance abuse is influencing work performance, the employee will be approached by their supervisor along with a Worker representative, confronted with the issue and suspended for the remainder of the work day. The employee will be given the opportunity to voluntarily seek assistance. If the problem persists, the employee will be suspended.
- Workers must inform their immediate supervisor if they are using prescription medications while on the job. Employees using prescription medication must discuss the potential side effects of medication with their physician and with their supervisor and/or site medical personnel prior to being assigned work.
- Employees deemed unfit to perform their assigned duties safely, by reason of influence of medication, may be subject to reassignment to a less hazardous job or to a temporary medical leave.

**Quolus Construction Services reserves the right to terminate employment for safety infractions or concerns related to drug and alcohol and/or prescription medication use.**

### 5.1.4 Improper Conduct

- Engaging in horseplay, worker to worker violence, practical joking, unnecessary running or jumping and other similar conduct is forbidden and may result in disciplinary action.
- Knowingly or intentionally engaging in hazardous behavior is forbidden and will result in disciplinary action.
- Violence or Making threats of violence is strictly prohibited and will be subject to disciplinary action.

### 5.1.5 Personal Protective Equipment

- All personal protective equipment must meet applicable standards acceptable to WorkSafeBC.
- Hearing protection (Muffs and/or plugs) is required in any work location where there is noise of 85 dBA or greater and where your supervisor determines hearing protection is necessary.
- Hard hats must be worn at all times on sites unless the employee is:
  - Inside a vehicle
  - Operating equipment that is equipped with overhead protection.
  - Welding
- Hard hats must be CSA approved and have a properly adjusted suspension.

- All employees are required to wear appropriate footwear to protect them from injury. Workers on job sites must wear CSA or ANSI approved above the ankle footwear that provides toe protection and sole puncture protection.
- Eye protection must be worn while grinding, cutting, welding, burning, drilling or whenever exposure to an eye or face injury is present. Non-Safety prescription glasses require additional protection.
- Fall protection must be used in areas where it is possible to fall 10 ft or more or where there is an injury hazard greater than the hazard of hitting the ground (e.g. Above exposed rebar)
- Personal floatation devices with at least 200 $cm^2$ of white or silver retro reflective material fitted on surfaces normally above the water's surface must be worn, properly zippered, buckled or tied on where a drowning hazard exists.
- Workers must wear hand/arm protection when handling materials likely to puncture, abrade or irritate hands and arms, unless the use of this equipment poses a greater hazard.
- Additional PPE may be required for specific tasks.

### 5.1.6 Manual Handling and Lifting of Materials

- Do not attempt to lift an object of any sort that is obviously too heavy or bulky for one person; Get assistance.
- Ensure you have a firm grip on the object before lifting it, and ensure your hands and body are in the clear.
- Watch out for burrs, slivers, nails and sharp ends when handling objects. If possible, these should be removed from the object before lifting.
- Ensure that you have a clear view of your route when carrying materials
- When lifting, keep your back as nearly upright as possible, use leg muscles instead of back or stomach muscles, avoid twisting motions.
- Ensure all stacked material is secured from falling or shifting.
- If materials are dropped or passed through an opening ensure workers below are aware of the hazard and ensure the area is clear before proceeding. Use a spotter or barricade off the area below.

### 5.1.7 Technical Pitfalls

Any suspected fault in technical equipment, however slight, must be reported immediately to the supervisor. The operator of the equipment should insist that the problems be resolved before continuing. In case of difficult or unusual construction, there should be available on site a complete set of instructions and drawings, setting out the method of operation. Theses are available for the review of all employees involved with the operation described. Procedures and any unusual hazards will be explained to you by Supervisory Personnel, or the engineer who developed the design. If for some reason this does not happen prior to your involvement with the aforementioned operation, make sure you ask to have the proper explanation provided.

### 5.1.8 Vehicles and Equipment

- All drivers of company vehicles and mobile equipment must possess the appropriate valid license or certificates.
- Do not start or operate any machinery or equipment without first checking to ensure that no person will be injured by its operation.
- Workers must not operate company vehicles or equipment while impaired by alcohol, fatigue, sickness or drugs.

- Seatbelts must be worn when on moving equipment.
- Operators must use running lamps or illuminated headlamps during daytime hours.
- Workers must not operate mobile equipment unless they are authorized to do so.
- Unauthorized workers must not be on any part of powered mobile equipment while the equipment is in motion.
- Drive at safe speeds with due regard for the weather, road and traffic conditions.
- When an operator has reason to believe that the equipment or the load is hazardous, the operator must report it to the Supervisory Personnel.
- Operators must obey all signs governing the movement, operating or parking of vehicles on any workplace or public or private road.
- Workers must not get on or off a moving vehicle except in an emergency.
- Operators must not leave the controls unless the equipment or vehicle has been secured against movement by setting parking brakes and transmissions locks, lowering, any brakes and transmission locks, lowering any blades, buckets or forks to the ground and checking and choking wheels when necessary.
- Operators must keep the cab, floor or deck of mobile equipment free of material, tools, or other objects that could create a tripping hazard, interfere with the operation controls or interfere with exiting the vehicle.
- Tools and equipment carried in any part of a vehicle or piece of mobile equipment where workers are riding must be placed or secured to prevent injury to workers.
- Mobile equipment used for lifting or hoisting must not be operated if the safe working load limit has been exceeded.
- Workers must not ride with any part of their bodies outside the vehicle or equipment.
- Check loads periodically for condition of blocking, hold-downs, and lashings.
- When refueling equipment ensure proper grounding is in place.

### 5.1.9 Equipment

- Tools and equipment used must be inspected prior to use.
- Do not use any tools/equipment if to do so causes undue hazard to another worker. Ensure all workers in the vicinity are aware of any hazards created.
- Only use tools and equipment intended for the purpose. DO NOT improvise and use an unsuitable tool.
- If a piece of equipment or tool is broken or unsafe tag it and send it back to head office. OR throw it away. DO NOT use an unsafe tool/equipment.
- Do not modify a tool of piece of equipment. Modifications must be done by the manufacturer or in accordance with their instructions only.
- Do not override or remove safeguards. Safeguards will meet the requirements of CSA standard Z432-94
- Do not use equipment/tools with guards missing or removed.
- Repaired equipment/tools must be inspected by a qualified person prior to reuse.
- Do not use any rotating or grinding device without guarding in place.

### 5.1.10 Drugs and Alcohol

Consumption of alcohol and illegal drugs, and drug abuse by our employees imposes serious health and safety risks. Quolus Construction Services and its employees must be vigilant to ensure that no worker attends at work while impaired, nor consumes alcohol and/or illegal drugs, or abuses other pharmacological agents at any time in association with working hours. (Refer to Quolus Construction Services Drug and Alcohol**.**

Accordingly, Quolus Construction Services has a zero-tolerance policy in relation to impairment from and the consumption of drugs and alcohol in association with working hours as follows:

- Employees shall not start their shift if they are impaired from alcohol, drugs which are illegal to possess under the Canadian Criminal Code, or prescription drugs (including but not limited to narcotics).
- Employees shall not consume or be in possession of, at any time during a work period, including any periods allotted for breaks and meals:
  - alcohol;
  - illegal drugs as described above,
  - Narcotics, prescription drugs and other pharmacological substances being used for non-therapeutic purposes, or consumed, or being consumed in quantities, without a medical doctor's approval.

Upon a reasonable assumption by Quolus Construction Services, that an employee has violated any of the above policies, it may send an employee to a clinic to be tested, at the expense of Quolus Construction Services, including paying the employee for their time spent in testing. Drug testing will be completed as per specific work site requirements or after an incident. For further information please see the Drug and Alcohol. The penalty for violating any of the above policies concerning drugs and alcohol may result in Progressive Discipline, up to and including termination.

## 5.2 DISCIPLINARY ACTION POLICY

It is Quolus' philosophy that all employees be trained in proper safety procedures and employees are expected to follow and adhere to all aspects of the Health and Safety program. The close observance of all Provincial, local and Quolus rules and regulations will be monitored at all times. Progressive Disciplinary Action

This policy applies to all employees of Quolus Construction Services and pertains to the fair and equitable management of violation of the Company's safety policies and procedures.

Degrees of discipline shall be used in relation to the severity of the violation. Depending on the nature and severity of the violation, Quolus Construction Services, reserves the right to advance discipline to a higher level.

Violations shall be considered as current and the basis for further disciplinary action for a period of twelve (12) months. Violations that occur more than twelve (12) months prior to the most recent violation shall not be considered for purposes of the next progressive disciplinary step. Discipline shall be based only upon violations that have occurred during the immediately preceding twelve (12) month time frame.

Quolus Construction Services reserves the right to modify this policy in whole or in part, at any time.

If there is an infraction of these rules, regulations or the Quolus Health and Safety Program, the following disciplinary action will be taken:

### 1. Minor Infraction

Definition: Any infraction of government regulations or corporate rules that does not have the potential to cause immediate serious damage or injury.

1st offense - verbal warning (to be noted by CSO/Superintendent)
2nd offense - verbal warning and letter to personnel file
3rd offense - removal from the worksite for at least one day
4th offense - worker is dismissed and immediate supervisor disciplined

**2. Major Infraction**

Definition: Any infraction of government, corporate, or client rules or legislation that does have the potential to cause serious damage or injury.
1st offense - time off without pay or dismissal; warning letter to personnel file
2nd offense - dismissal and immediate supervisor disciplined

Any worker removed from a jobsite must provide a written assurance from him/herself and the immediate supervisor that this action will not occur again.

*Quolus Construction Services reserves the right to terminate employment without prior warnings for any violation they deem to be serious enough in nature. (For example, but not limited to; Violence against other employees, Endangering themselves or others, attending work intoxicated.)*

## 5.3 REFUSAL OF UNSAFE WORK

A worker has the right to refuse work that they feel will put their lives or the lives of others (workers or the public) in danger. No worker must carry out or cause to be carried out any work process, or operate or cause to be operated, any tool, appliance or equipment that would create an undue hazard to the worker\s health or safety or the health or safety of any other worker.

*(Undue hazard means: a danger that is not normal for that occupation or a danger under which a person engaged in that occupation would not normally carry out the work).*

Workers will not be disciplined for exercising this right.

Workers who exercise this right to refuse unsafe work must immediately report the problem to their supervisor, company safety representative and employer.

The immediate supervisor must then evaluate and make a decision for or against the work procedure and must attempt to redress the situation to the satisfaction of the worker. If that is not possible, he must contact the Site Safety Representative so that the latter may give his opinion with regards to the application of safety regulations and the Quolus Occupational Health & Safety Program.

If there is no resolution at this point among all the parties, the safety officer will contact the general superintendent and, if necessary, the WorkSafeBC representative, to advise him that there is a refusal to work and the reasons behind it.

The safety officer must complete an Accident/Incident Investigation Report, giving as much detail as possible regarding the type of work in question.

It must be noted that the worker(s) in question may be temporarily assigned to other tasks always in view of the requirements of laws governing their work industry at no loss in pay until the matter is resolved.

The employee and the employer must keep records of the incident.

**RECORD OF SAFETY RELATED DISCIPLINARY ACTION**

Job Site: _____

Worker Name: _____

Position: _____

Date of Action: _____

Action:

☐ Verbal warning, no disciplinary action taken, noted in personnel file

☐ Written notice, no further action, noted in personnel file

☐ Written warning, worker suspended for _____ days, noted in personnel file

☐ Final written notice, worker employment cancelled

Comments (Rule or Regulation violated):

_____

_____

_____

_____

_____

_____

_____

Supervisor: _____

Signature: _____

Date: _____

**Copies to:** Site File, Worker, Head Office

**INDEX**

## 6.1 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING PROGRAM

Personal protective equipment and clothing (PPE) will be considered the last line of defense against injuries and occupational illnesses on Quolus Construction Services construction projects. Since all hazards cannot be completely controlled by engineering and administrative controls, the consistent use of PPE is imperative to minimize exposure to these hazards. Using PPE will reduce the risk of injury, such as:

- Cuts, abrasions, and burns (gloves, chain saw pants, long sleeve shirts, etc.)
- Drowning (personal floatation devices)
- Eye and face injuries (glasses, goggles, face shields, etc.)
- Foot injuries (foot protection)
- Falls (fall protection devices)
- Hearing loss (ear muffs and/or plugs)
- Respiratory ailments (respirators)
- Skin irritations and disease (barrier creams, gloves, protective clothing, etc.).

Quolus Construction Services' personnel will be required to use the following PPE and clothing:

- On all construction sites:
  - Hard hat
  - Construction grade work-boots (CSA green triangle)
  - Hi-visibility clothing or vest.
- Fall protection equipment in accordance with Quolus Construction Services's fall protection program.
- Respiratory protection in accordance with Quolus Construction Services's respiratory protection program.
- Coveralls when required for protection from contaminants such as asbestos or silica.
- Flame resistant clothing may be required and will be supplied by Quolus Construction Services.
- Buoyancy equipment if working adjacent to or over water.
- Eye protection when chipping, cutting or grinding and when welding.

The Supervisor is responsible for determining the specific protective equipment and clothing requirements for their project.

**Maintenance**

Quolus Construction Services's employees are required to maintain in good condition all PPE and clothing. PPE and clothing will wear-out and will need to be replaced; however, good maintenance practices will extend the life of the PPE and clothing. Proper PPE maintenance practices will consist of:

- Storing in a clean, dry, well ventilated place when not in use
- Inspecting the before use for damage and replacing when required
- Cleaning after each use, particularly respirators
- Repairing or replacing broken or damaged PPE.

**Training**

Superintendents are responsible for ensuring that personnel are properly trained to use PPE and clothing. This will include:

- Superintendents being informed about how to properly use and care for PPE

- Employees knowing why, when and how to use and care for PPE
- Superintendents verifying that the PPE is being used properly.

Supervisors are also responsible to set a good example by properly wearing and maintaining their own PPE and clothing.

**Program Review**
The PPE requirements shall be reviewed at least annually as part of the program review process. Deficiencies will be noted and corrections implemented to ensure the PPE Program remains effective.

## 6.2 GENERAL PERSONAL PROTECTIVE EQUIPMENT (PPE)

General PPE is described by WorkSafeBC to be hard hat, protective footwear and general-purpose work gloves. All employees are required to provide their own general PPE.

Personal protective equipment does nothing to minimize or eliminate the actual hazard. At best PPE, when properly fitted and used, will reduce the severity of an injury. The direct cause of an accident should be investigated more so than the fact as to whether or not the worker used the PPE effectively and properly.

Quolus appointed supervisors shall ensure that workers are in possession of and understand the use of PPE's. In addition, supervisors must be willing to take the time, when necessary, to observe and instruct in the safe usage of the equipment. Management must ensure that the designated supervisor is capable of performing the above adequately.

***Note:*** *No one is exempt from wearing safety headgear and safety footwear on a construction site except in designated entrances and site offices.*

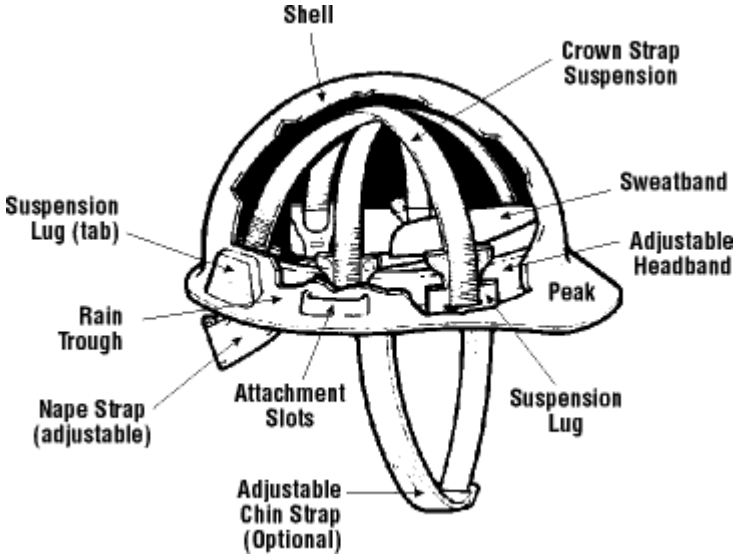
Employees in the finishing trades must wear their hard hats and work boots to and from their work areas, such as finished rooms, and then switch to clothing appropriate for the work.

### 6.2.1 HEAD PROTECTION

If you are at risk for head injury at your workplace, you should wear the appropriate head protection.

Classes of headwear can include:

Class G: General Usage (non-conducting)
Class E: Electrical Trades (non-conducting)
Class C: Conducting




Headwear consists of a shell and the suspension. These work together as a system and both need regular inspection and maintenance.

- Do not transport headwear in rear windows of vehicles.
- Inspect headwear before each use.
- Do not draw the chin strap over the brim or peak of the headwear.
- Do not wear headwear backwards (the peak should always face forwards).

The hat is rigid and light, and is shaped to deflect falling objects. Correct maintenance is important.

**DO**:

- Inspect and replace a hat that shows signs of wear, scratches or gouges. Hats exposed to heat, sunlight and chemicals can become stiff or brittle. A visible pattern of tiny cracks may develop. Over time, weathered hats can become dull in colour or have a chalky appearance.
- Replace headwear when hairline cracks start to appear.
- Replace headwear that has been struck, even if no damage is visible.
- Remove and destroy any headwear if its protective abilities are in doubt.

**DO NOT:**

- Do not drill holes, alter or modify the hat. Alterations may reduce the protection provided by the headwear.
- Do not paint the plastic. Paint solvents can make plastic headwear brittle and more susceptible to cracks. Paint can also hide cracks that may develop. Instead, use reflective marking tape to make numbers or symbols for identification purposes. Metal headwear may be painted.
- Do not use winter liners that contain metal or electrically conductive material under Class G or E headwear.

- Do not use metal labels on Class G or E headwear.

The suspension system is as important as the shell. It holds the shell away from the head and acts as a shock-absorber. It also holds the shell in place on the head and allows air to flow freely.

- Adjust headband size so that headwear will stay on when the wearer is bending over, but not so tight that it leaves a mark on the forehead.
- Ensure that the suspension is in good condition. The main purpose of the suspension is to absorb energy.
- Look closely for cracked or torn adjustment slots, frayed material or other signs of wear.
- Check the suspension lugs carefully. Long periods of normal use can damage the suspension. Perspiration and hair oils can speed up the deterioration of suspension materials.
- Replace the suspension if it has torn or broken threads.

Do not put anything between the suspension and the shell. There must be a clearance inside the headwear while it is being worn. In case of a blow to the head, that space helps absorb the shock.

### 6.2.2 STEEL-TOED SAFETY FOOTWEAR

All Quolus employees working on construction sites must wear Steel Toe Safety Footwear. Safety footwear is designed to protect against foot hazards in the workplace. It protects against compression, puncture injuries, and impact. Safety footwear is divided into three grades, which are indicated by colored tags and symbols. Tag color tells the amount of resistance the toe will supply to different weights dropped from different heights. The tag symbol indicates the strength of the sole.

#### General

Where the workers' job activity or work environment has a danger of injury to the toes, metatarsal area (top of the foot), or soles of the feet, the footwear must be adequate to protect the worker from such hazards. In general, workers will be required to wear work boots with ankle protection which meet CSA Standard CAN/CSA-Z195-M92 and will be Grade 1 (CSA green tag).

- Steel-toed running shoes, or other such casual shoes are not acceptable as safety footwear.
- The soles of safety footwear worn by employees whose work takes them to areas of uneven, slippery or otherwise hazardous footing, will be of a treaded design acceptable to the WorkSafeBC and the tread will be maintained in an effective condition.
- Employees working in areas that are consistently free of foot injury hazards, such as office work environments, and casual visitors who will not be engaged in activities or job site inspections which may present a hazard to the feet will be exempted from the safety footwear requirements (see below).
- Inspectors and persons touring work sites going into an area designated as hazardous to workers shall be required to wear adequate safety shoes or boots.

**Exemptions to Safety Footwear**

Some job activities may involve procedures in which the above footwear requirements may endanger the worker or damage the work environment. At the discretion of the Superintendent, the following exemptions will be allowed during the specific work process indicated:

- Roofers applying asphalt shingles or other similar materials which can be damaged by heavy work boots are permitted to wear light, soft- soled footwear.
- Carpet layers and workers installing similar finishing are constantly kneeling and generally do not wear safety footwear.
- For workers climbing or walking steel, safety footwear is not required. However, they must wear substantial footwear having leather uppers reaching past the ankle.
- Workers with medical reasons for not wearing safety footwear must apply to the Director of Field Operations Department at the Workers' Compensation Board. Such a worker will only be permitted in an area where the risk of injury is comparatively minor.

*NOTE: In situations as listed in terms 1 to 3, safety footwear must be worn until the worker reaches his/her direct work location (i.e. base of ladder to the roof, entry to the suite being worked on, base of structural steel to be climbed).*

### 6.2.3 EYE AND FACE PROTECTION

Employees exposed to eye hazards must wear eye protection. This PPE is designed to protect the worker from such hazards as flying objects & particles, molten metals, splashing liquids and ultraviolet, infrared & visible radiation (welding). Properly fitting goggles, face shields or other approved eye protective equipment shall be worn by workers who:

- Are handling or are exposed to any material which is likely to injure or irritate the eyes.
- Are engaged in any work in which there is a hazard of eye injury.

There are two types of eye and face protection. The first type "basic eye protection" includes eyecup goggles and mono frame goggles & spectacles with or without side shields. The second type "face protection" includes metal mesh face shields for radiant heat or hot & humid conditions, chemical and impact resistant (plastic) face shields, welder's shields or helmets with specified cover and filter plates and lens.

Eye protectors shall meet the requirements of CSA Z94.3 "Eye Protectors" and any other Provincial standards.
Safety glasses should meet the following requirements:

- All safety glasses must have side shields.
- Only approved over the glass safety eyewear is to be used.
- Additional eye and face protection, including face shields and goggles, will be worn during grinding and chipping. Eye protection must accommodate any other PPE required by the task i.e. Respirator etc.

**Prescription Safety Eyewear**

Prescription safety eyewear must meet the requirements of *CSA Standard CAN/CSA-Z94.3-92, Industrial Eye and Face Protectors* and any other Provincial standards.
Only prescription safety glasses approved by Quolus are to be used.

**Contact Lenses**

Contact lenses are <u>not</u> an acceptable substitute for proper eye protection.

It is not recommended that workers wear contact lenses where:

- Gases, vapors, or other materials are present which, when absorbed by contact lenses, may harm the eyes.
- Dusts or other materials are present which may harm the eyes or cause distraction, which may expose the worker to other injury.
-

Remember, hard contact lenses may break into the eye when hit.

### 6.2.4 Limb and Body Protection

If there is a danger that a worker's hand, arm, leg or torso may be injured, Quolus will ensure that the worker wears properly fitting hand, arm, leg or body protective equipment that is appropriate to the work, the work site and the hazards identified. An assessment must be completed when situations or this nature come up in the field.

**Skin Protection**

Quolus will ensure that a worker's skin is protected from a harmful substance that may injure the skin on contact or may adversely affect a worker's health if it is absorbed through the skin.

**Hand Protection**

Quolus employees must use gloves when handling objects that could injure the hands. Choose hand PPE that will protect against the job hazard for the task being performed. Gloves should fit well and have dexterity. Different types of hand PPE must protect against chemicals, scrapes, abrasions, heat and cold, punctures and electrical shocks.

PPE for the hands come in many forms, each designed to protect against certain hazards. Gloves most commonly used in the industry are made from leather, cotton, rubber, synthetic rubbers and other man-made materials, or combinations of materials. Vinyl coated or leather gloves are good for providing protection while handling wood or metal objects. When selecting hand PPE, keep the following in mind:

- All hand protection selected and provided to employees shall properly guard against the identified hazard.
- All employees handling chemicals shall wear appropriate hand protection as recommended by the chemical manufacturer's material safety data sheet ((M)SDS).
- All employees working with glass, knives, or other sharp objects shall wear gloves that guard against cuts.
- All employees who provide medical services (first aid or emergency), or who may come in contact with body fluids shall wear gloves that guard against the transmittal or blood-borne pathogens.

## 6.3 SPECIALIZED PERSONAL AND PROTECTIVE EQUIPMENT (PPE)

Specialized PPE is all PPE other than general PPE. Examples of specialized PPE are (but not limited to) the following:

### 6.3.1 Fall Protection Equipment

Examples of fall protection equipment are but not limited to: Full body harness, shock absorbing lanyard, life line, rope grab. (See Fall Protection Program, Page 36).

Hearing Protection (See Hearing Protection Page 44)

Respirators (See Respiratory Program Page 57)

## 6.3.2 HEARING PROTECTION

### 6.3.2.a Responsibilities

All employees and contractors exposed to steady state and/or impact noise levels which exceed permissible exposure levels must wear hearing protection meeting regulatory requirements and which are acceptable to Quolus. The manager shall ensure that adequate hearing protection is available and worn by the worker. Where a noise hazard is determined to exist, adequate signage shall be posted. Maangers shall ensure that workers under their control have adequate hearing protection.

### 6.3.2.b Hearing Protection Program

- Quolus will ensure an annual Noise Protection and Hearing Conversation Program review is conducted.
- All new Quolus employees will have their hearing tested within 6 months of commencing employment.
- All Quolus employees will have their hearing tested annually. These hearing tests will be arranged by Quolus or the General contractor, with results to be kept on file.
- All aforementioned personnel shall have a valid hearing test card readily available.

***NOTE:*** *Audiometric tests shall be conducted by an approved Audiometric Technician.*

### 6.3.2.c Noise and Hearing Protection

It is our policy to protect all personnel from hearing loss resulting from occupational noise exposure through a continuing, effective, and comprehensive hearing conservation program.

Noise is a common occupational health hazard found in many workplaces. Therefore, controls must be in place to ensure the health of workers in this industry.

### 6.3.2.d Health Effects

Hearing loss is the most common effect of exposure to excessive noise levels. Such hearing loss is both permanent and irreversible and will continue to worsen if the worker

remains exposed. Other non-auditory health effects workers may experience includes potential stresses on the cardiovascular systems and safety concerns. For example, workers with hearing loss may be at an increased risk for safety related incidents since they may not be able to hear warning alarms or may not be able to communicate effectively with other workers.

### 6.3.2.e Legislative Requirements

When noise hazards are suspected, the first course of action is to measure the noise levels to identify the risk to worker's health.

Where levels exceed the criteria for permissible noise exposures, controls must be implemented to decrease the noise to acceptable levels.

Where it is not practicable (for example, when using air tools) other control measures such as personal protective equipment or Hearing Protection must be used in accordance with CSA Z94.2 “Hearing Protection Devices Performances, Selection, Care and Use”.

Where noise levels cannot be decreased and continue to exceed the permissible levels, a hearing conservation program which includes annual audiograms for over-exposed workers must be developed and implemented.

### 6.3.2.f Noise Definition

Noise is “sound that is unwanted by the listener” because it is unpleasant. The effects of noise on humans include the following:

- Psychological effects (noise can startle, annoy, disrupt concentration, sleep and relaxation),
- Interference with verbal communication and thus possible interference with job performance and safety, and/or
- Physiological effects (temporary and permanent noise-induced loss of hearing or aural pain when exposure is severe).

**Noise Hazard**

Occupational noise is a frequently encountered on-the-job health hazard. The hazard is not always obvious at the time; however, if the ear is subjected to hazardous levels of noise for a sufficient period of time, loss of hearing may occur.

### 6.3.2.g Risk Assessment

Risk assessment determines if there is a risk of worker exposure to noise in the work environment. This process identifies if a noise problem exists and how much risk noise poses to workers.

Risk assessment includes:
- a review of the facility,
- measurement and analysis of sound levels across the facility, and
- consideration of worker movements and tasks.

The severity of exposure ranges from acceptable noise levels less than 85db (i.e., less than legislated limits) to noise levels that will cause immediate trauma to the ears.

The probability of exposure is based on the likelihood that a worker may be in the area and exposed to those levels of noise.

All areas of the facility (inside and outside), all noise sources when they are operational, and the effectiveness of the existing engineering controls that are in place should be evaluated. Noise risk is unacceptable when workers are likely to be exposed to noise levels above the legislated limits.

### 6.3.2.h Risk Control

If the noise risk assessment confirms that noise risk is unacceptable, an HCP should be developed and implemented to ensure that risk is controlled. A copy of the program description should be available for reference by workers.

**Hearing Conservation Program**

The primary purpose of an HCP is the prevention of Noise Induced Hearing Loss (NIHL) for employees exposed to occupational noise. The main components of an HCP are:
- Noise monitoring,
- Noise exposure control (engineering, administrative controls and PPE),
- Worker education and training,
- Hearing (audiometric) testing, and
- Annual program review and record keeping.

**Noise Exposure Control**

If worker noise exposure exceeds the Occupational Exposure Limit (OEL) or if there is the potential for acoustic trauma, engineering and/or administrative controls must be considered, developed and implemented. Where engineering or administrative controls are not feasible, a personal protective equipment (PPE) program must be implemented.

**Engineering Controls:** Examples of engineering controls include installation of enclosures, barriers, insulation and dampening materials. When considering engineering controls, priority should be given to high risk areas; where noise levels exceed legislated limits in areas where employees work for significant periods of time.

**Administrative Controls:** Administrative controls generally consist of reducing the time a worker spends in a high noise area or implementing procedures that otherwise reduce noise exposure (e.g., Restriction of access to high risk areas is an administrative control). Areas where noise levels exceed legislated limits must have signage that warns of noise hazards and/or specifies the hearing protection required for entry to the area. Refer to applicable legislation for signage requirements.

**Personal Hearing Protection:** Ear plugs and muffs, as part of a PPE program.

### 6.3.2.i Hearing Protection

Hearing protection is designed to reduce the level of sound energy reaching the inner ear. The “Rule of Thumb” for hearing protection is:

- Use hearing protection when you can’t carry on a conversation at a normal volume of voice when you are three (3) feet apart.

Remember, this is only a rule of thumb. Any personnel working in noisy areas or with noisy equipment that are exposed to noise levels exceeding provincial legislation standard (such as above 85 dBA in most jurisdictions and 90dB(A) in Quebec) MUST wear hearing protection. Other examples where hearing protection should be worn are:

- While operating any power tools
- While working with five (5) feet of others operating power tools
- Anytime an employee cannot speak to another person at a comfortable distance three (3) feet, without raising his/her voice
- If intermittent impact noise is expected from employees or other trades
- If an employee is sensitive to a particular sound, protection shall be worn during exposure to that sound.

Quolus employees, in any area where the work in progress exceeds the following decibel levels, must wear hearing protection:

| Unprotected Exposure Guide | |
|---|---|
| Daily exposure (8-hour shift) | 85 dBA* |
| 4-hour shift | 93 dBA |
| 2-hour shift | 95 dBA |
| 1-hour shift | 99 dBA |
| Half hour shift | 102 dBA |
| 15 minutes | 105 dBA |
| Peak sound level (impact noise) | 135 dBA |

Hearing Protection Types

*Disposable ear plugs (Class C or B)* – Made of pliable material, one size fits all, but can only be used once
*Permanent plugs (Class C or B)* – Must be fitted to provide a good seal, but can be washed and reused

*Earmuffs (Class A)* – When properly fitted and worn, these generally provide more protections than earplugs.

The most common types of hearing protection in the construction industry are earplugs and earmuffs.

It is important to have different styles of hearing protection available as this allows workers a better chance of a good fit. One style may not fit every member of your crew. If hearing PPE does not fit properly or is painful to use, the person will likely not use it. If the hearing protection is not properly fitted, it will not supply the level of protection it was designed to deliver.

Workers shall not wear muff type hearing protectors or headsets that have been designed or modified to accept AM or FM radio or other music sources. The worker is responsible for wearing hair and personal apparel in such a manner that the muff maintains an effective seal around the ears.

If, for some medical reason, an individual should not wear hearing protective devices, the employer, after being advised of this situation, will notify the appropriate provincial authorities of the medical reason involved and shall follow the directions they provide.

### 6.3.2.j Hearing Protection Program

Where workers are exposed to high levels of noise, Quolus will establish and maintain a Hearing Protection Program designed to minimize the effect of noise on workers. This Program will include the monitoring and labeling of high noise areas.

In areas of high-level noise, Quolus will post warning signs and will provide the necessary hearing protection. Wherever possible, Quolus will control noise at it's' source.

Due to the ever-changing workforce, Quolus makes classes "C" and "B" disposable earplugs available to all employees when their use is required. Where decibel levels exceed 105 dBA, and cannot be effectively controlled, Class "A" earmuffs will be provided.

Where it is found that workers will be exposed to potentially harmful levels of noise or when information indicates that a worker may be exposed above 85 dBA, Quolus will measure the noise exposure and a record kept of the noise measurement results. The results of any noise measurements taken will be posted at the site office and the areas involved will have signs posted warning of the hazard.

All hearing protection supplied will meet Canadian Standards Association Standard Z94.2-94-Hearing Protectors.

| Maximum Equivalent Noise Level | Recommended Class of Hearing Protector |
|---|---|

| | |
|---|---|
| less than 85 dBA | No Protection Required |
| up to 89 dBA | Class C |
| up to 95 dBA | Class B |
| up to 105 dBA | Class A |
| up to 110 dBA | Class A plug and Class A or B muff * |
| more than 110 dBA | Class A plug and Class A or Class B Muff * and limited exposure |

* both plug and muff must be worn.

## 6.4 RESPIRATORY PROTECTION POLICY

### 6.4.1 Policy

It is the policy of Quolus Construction Services to prevent occupational exposure to air contaminants through the development and implementation of proper controls, work procedures, education and training of workers and, when necessary, respiratory protection.

**Scope**

This program applies to all Quolus Construction Services workers and visitors, including contractors, who may be exposed to air contaminants, particularly asbestos fibers. It also establishes safe practices for the use of respiratory protective devices.

### 6.4.2 Definitions

(For purposes of this program)

| | |
|---|---|
| Air Purifying Respirator - | A respirator with an air purifying filter, cartridge, or canister that removes specified air contaminants by passing ambient air through the air-purifying element. |
| Canister or Cartridge - | A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air, passed through the container. |
| Fit Check - | A positive and negative pressure check of a respirator's fit, performed by the user prior to use. |
| Fit Test - | A procedure to qualitatively or quantitatively evaluate the fit of a respirator on an individual. |
| High Efficiency Particulate Air (HEPA) Filter – | A filter that is at least 99.97 percent efficient in removing air borne particles of 0.3 micrometers in diameter. |
| Immediately Dangerous to | An atmosphere containing a substance at a known |

| | |
|---|---|
| Life or Health (IDLH) - | concentration, or an unknown concentration, that may pose an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere. |
| Qualitative Fit Test - | A pass/fail fit test to assess the adequacy of respirator fit that relies on the wearer's ability to smell a test agent such as isoamyl acetate (banana oil) or a patent product such as Bitrex. |

### 6.4.3 Responsibilities

Quolus Construction Services is responsible to institute and maintain a respiratory protection program. Quolus Construction Services can designate one or more persons to administer the respiratory protection program. The respiratory protection program will include:

- Workplace evaluation of airborne contaminants
- An exposure control plan
- Training of workers
- Maintenance of respirators
- Annual review of the program.
- Records maintenance

**Staff Responsibilities**

Quolus Construction Services is responsible for the provision of all equipment and material for compliance with this program.

All supervisors will ensure the provisions of this procedure are adhered to and enforce the application and use of the PPE as designated.

All workers shall ensure they follow the provisions of this program.

### 6.4.4 Risk Assessment

The Project Manager or designate will ensure that a risk assessment is complete. The risk assessment will take into consideration the consequences of exposure, the probability of exposure and the extent of exposure of workers at the workplace where the risk of exposure to air contaminants exists.

Control measures must be used to reduce the risk to workers whenever possible. Quolus Construction Services will, whenever possible:

- Institute engineering controls
- Institute administrative controls

- Require the use of PPE.

### 6.4.5 Dust Control

This procedure is to ensure that workers who may be exposed to air contaminants during operations are protected. The control of dust in the construction zone is difficult due to the fact that it is unknown if dust is present. Therefore all persons undertaking this activity must wear, as a minimum, a half mask air purifying respirator at all times while in the area where contaminants may be present. This respirator will meet the requirements of WorkSafeBC and ACGIH.

The respirator will be used in accordance with the requirements outlined below:

- Fans will be installed in on the floor where the grinding is taking place and will ventilate the area on a constant basis during grinding.
- The dust will be controlled by spraying with water and damping down the area. Regardless of this, respirators will still be worn by all workers working in the area where contaminants may be present.

### 6.4.6 Requirements for Respirator Use

Workers who:

- Are exposed to air contaminants of unknown concentration must wear appropriate respirators
- Are exposed to an air contaminant in excess of the exposure limit must wear respirators
- Are at risk of accidental exposure due to process upset, must have access to the proper respirator and know how to wear it if required.

Quolus Construction Services workers will not be exposed to any situations where there is an IDLH atmosphere.

**Use of Respirators**

- Corrective eye wear or other equipment must not interfere with the seal of the respirator.
- No covering may be used which passes between the respirator face piece and the wearer's face.
- Respirators must be inspected before and after every use, checking straps, valves, cartridges, etc., as well as general cleanliness. See the particular respirator manual for instructions.
- The correct cartridge must be selected for the specific airborne contaminant. Cartridges must be marked and dated when put into service. In no situation shall a cartridge be used if dated more than 3 months after installation.
- High contaminant levels and other factors such as high humidity may affect the filter or cartridge. Employees noting a resistance to breathing or the smell or taste of chemicals within the respirator, or irritation, will leave the work area immediately and report to his/her supervisor. An investigation must be completed to ascertain the nature of the problem.
- When wearing a respirator, employees experiencing any of the following will leave the contaminated area: nausea, dizziness, eye irritation, unusual odor or taste, excessive fatigue or a general difficulty breathing.

Quolus management will determine whether or not an employee may be allowed to wear a respirator.

Where there is any doubt, by either Quolus or the employee, about the ability to wear a respirator, the employee is to be examined by a physician. Certain medical conditions, such as lung and heart disease, and psychological conditions, such as claustrophobia or anxiety, may affect the employee's ability to wear a respirator. Medical assessments for respirator use is required for workers on return to work following major surgery or prolonged illness.

### 6.4.7 Training

Every employee who must wear a respirator will be trained in their proper use. The training will include:

- Description of the type and amount of exposure. (Refer to MSDS)
- Description of the respirator. (Refer to manufacturer's instructions)
- The intended use and limitations of the respirator.
- Proper wearing, adjustment, and fit testing.
- Cleaning and storage methods.

Inspection and maintenance procedures. This training will be completed annually, to ensure that employees remain familiar with the proper use of the respirators. A record will be kept of this training. Fit Testing records should include:

- The name and signature of the worker tested, and date and time of test
- The specific make, model, style and size of respirator
- The type of fit testing used
- The results of the fit testing

Comments on test difficulties, interference by clothing, other protective equipment that needs to be worn, personal fitting problems, e.g. eyeglasses, dentures, unusual facial features or facial hair

Name of person giving the test

### 6.4.8 Fit Testing

A face seal dependent respirator can only protect the wearer from air contaminants when the respirator fits properly on the face. This statement is true for both half-face and full-face respirators. It is not true for hood type respirators or bite type escape respirators.

Workers will not be issued with a respirator that requires an effective seal until they have successfully passed a fit test.

**Fit Check**

Checking the fit of the respirator is part of the procedure that is used to ensure that each worker who is relying on a face seal dependent respirator can achieve a face seal prior to using the respirator.

**Facial Hair**

Workers who are required to wear a face seal dependent respirator must be clean-shaven where the respirator seals with the face. Beards, side burns, mustaches, or even a few days growth of stubble can prevent a good seal.

**Eyeglasses**

Eyeglasses with temple bars or straps that pass between the sealing surface of a full-face respirator and the worker's face will prevent a good seal.

Workers who wear eyeglasses and who must wear a full-face respirator will be provided with special corrective lenses that can be mounted inside the respirator.

**Fit Check - Negative Pressure**

Have the worker close off the air inlet to the respirator so that it will not allow the passage of air. Plastic wrap may be used over the cartridges on an air-purifying respirator to close the air inlets.

Have the worker inhale gently and hold the breath for at least 10 seconds.

Do not have the worker inhale so strongly that the face piece will be distorted.

If the face piece collapses slightly and there is no inward leakage of air into the face piece it can be assumed that the respirator face seal is satisfactory.

**Fit Check - Positive Pressure**

Have the worker close off the exhalation valve so that it will not allow the passage of air.

Have the worker exhale gently.

If a slight positive pressure can be built up the inside the face piece without detection of any outward leakage, it can be assumed that the respirator face seal is satisfactory.

**Respirator Selection**

| Type of Respirators | Description | Advantages | Disadvantages |
|---|---|---|---|
| Single use respirators | Particulate respirator for protection from nuisance dust. | No fit test or training required unless required by manufacturer. | Significant leakage is possible. Protection factor of 5. |
| Non-powered Particulate air purifying half face respirators | Particulate respirator removes particles from air with filter powered by worker's breathing action. | Simple system. Filters may be easily replaced. May protect against combination of particulate. Protection factor of 10. | No protection against gas or vapor. No protection against oxygen deficient atmosphere. May cause discomfort due to air resistance. |

### 6.4.9 Maintenance and Storage

Prior to each use, workers must inspect their respirators to ensure there is no damage that will result in respirator malfunction. Procedures must be followed to ensure that all of the respirator components are functioning properly.

**Respirator Cleaning**

Each respirator manufacturer has a schedule for cleaning the respirator. A dirty respirator may not function properly, as the valves may not seal correctly.

Respirators must be cleaned if they are exposed to significant levels of contamination, or are used in an area heavily contaminated by dust.

Respirators must also be cleaned if they are used in high humidity areas where sweat is a problem, or during very physical tasks that result in excessive sweating. Each worker who wears a respirator must be knowledgeable in how to clean, rinse, and dry the respirator.

**Respirator Storage**

Each respirator has a storage container to protect it against dust, sunlight, chemicals, oils and grease. Workers must ensure that the respirator is stored in its storage container.

If the respirator is being stored with the cartridge or canister attached, it must be placed in a re-sealable plastic bag so that the cartridges will not continue to absorb material while they are being stored. Respirators must not be stored with tools or other heavy objects that can deform the respirator. Over time this deformation can become permanent.

Respirators must be positioned in the storage container so that the face piece, hoses, and head straps are not bent or stretched. Respirators must not be stored in direct sunlight, or near a heat source. Respirators must not be exposed to excessive cold when being stored. This can cause damage to the respirator. If the respirator will be exposed to excessive moisture it must be placed in a sealed plastic bag inside of its storage container.

### 6.4.10 Respirator Fit Test Log

## Qualitative Fit Test (QLFT) Form

| | |
|---|---|
| Employee Name | Date of Birth |
| Company | Supervisor Name |

**A respirator fit test must be completed by an individual trained in respiratory fit testing procedures.**
**This fit test is required annually.**

Does employee wear prescription glasses? _____ YES _____ NO

Does employee have facial hair or other attributes that may prevent a proper fit? _____ YES _____ NO

**Knowledge Checklist : ☐ Respirator Selection ☐ Limitations ☐ Storage and Maintenance**
**☐ Cartridge Selection ☐ Cartridge Limitations**

| **Respirator Type**<br><br>**(Make & Model)** | | | **North 7700 Half Mask** | **NOSH P100** |
|---|---|---|---|---|
| **Testing Media** | **Irritant Smoke** | | | |
| | **Isoamyl Acetate** | | | |
| **Compatible with eye glasses?** | | | ___YES ___NO | ___YES ___NO |
| Positive pressure fit check | | | ___PASS ____FAIL | ___PASS ____FAIL |
| Negative pressure fit check | | | ___PASS ____FAIL | ___PASS ____FAIL |
| **Sensitivity Test (Does individual react to testing media?)** | | | ____YES ____NO | ____YES ____NO |
| **Respirator Fit Test Result** | | | ___PASS ____FAIL | ___PASS ____FAIL |

Person Administering Test _____Signature_____ Date_____

Employee's Statement: I understand that my use of this respirator must be in accordance with company work rules, manufacturer instructions and applicable WCB Regulations and Standards. I also confirm the above test results as recorded by the tester and that I am familiar with the usage, limitations and maintenance of a respirator in a work environment. I also confirm that I have received an additional safety document with information regarding care, maintenance, and proper usage.

Signature of Employee_____ Date_____

## 6.5 FALL PROTECTION SYSTEMS

The Occupational Health and Safety Regulation requires workers to use a fall protection system where they could fall at least 3 m (10 ft.) or where a fall from a lesser height may result in serious injury. This information is an introduction to the proper use of personal fall protection equipment.

Do not use this information as a substitute for the Occupational Health and Safety Regulation concerning fall protection, or for the manufacturer's instructions specific to the equipment you are using. In addition, workers must be trained thoroughly in the safe use and limitations of personal fall protection equipment, including harnesses, lanyards, lifelines and anchors.

### 6.5.1 Fall restraint or fall arrest?

Fall restraint systems prevent you from falling. Examples include:
- Work-positioning systems using full body harnesses that attach you to an anchor and leave both your hands free to work
- Travel-restriction systems of guardrails or personal fall protection equipment used to prevent you from travelling to an edge from where you may fall.

Fall arrest systems protect you after you fall by stopping the fall before you hit the surface below. Examples include:
- Full body harnesses connected by lanyards or lifelines to secure anchors
- Safety nets

In choosing a fall protection system, you should first consider installing guardrails or barriers. They provide a high degree of protection once installed properly. However, installing guardrails or barriers at a work site is not always practical — that is when you may need personal fall protection equipment.

### 6.5.2 Fall Protection System Components

**Full body harnesses**

**When to use a full body harness?**
When using personal fall protection equipment, wear a full body harness if you are at risk of falling. A full body harness consists of straps passed over the shoulders, across the chest, and around the legs. In a fall, a full body harness protects you more than a safety belt, because it distributes the force of impact over a greater area of your body.

**Using the right full body harness**
A full body harness designed to arrest falls should have:
- A back-mounted D-ring located between the shoulder blades
- The letter "A" stenciled on each shoulder strap below the D-ring
- An arrow stenciled above each letter "A" pointing up at the D-ring
- The arrows on the shoulder straps point to the only D-ring on the harness designed to safely arrest a fall.

**Note:** that the D-ring is located between the shoulder blades.

**Inspecting your full body harness**

The following criteria will be utilized to maintain all equipment in good working condition. Defective equipment must be removed from duty immediately.

***Full Body Harnesses*** - Inspect before each use.

- Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
- Verify there are no torn, frayed, broken fibers, pulled stitches, or frayed edges anywhere on the harness.
- Examine D-ring for excessive wear, pits, deterioration, or cracks.
- Verify that buckles are not deformed, cracked, and will operate correctly.
- Check to see that all grommets (if present) are secure and not deformed from abuse or a fall.
- Harness should never have additional punched holes
- All rivets should be tight, not deformed.
- Check tongue/straps for excessive wear from repeated buckling.

***Snaphooks*** - Inspect before each use.

- Inspect snaphook for any hook and eye distortions.
- Verify there are no cracks, pitted surfaces, and eye distortions.
- The keeper latch should not be bent, distorted, or obstructed.
- Verify that the keeper latch seats into the nose without binding.
- Verify that the keeper spring securely closes the keeper latch.
- Test the locking mechanism to verify that the keeper latch locks properly.

**Self-Retracting Lanyards - Inspect before each use**.

- Visually inspect the body to ensure there is no physical damage to the body.
- Make sure all back nuts or rivets are tight.
- Make sure the entire length of the nylon strap is free of any cuts, burns, abrasions, kinks, knots, broken stitches, and excessive wear and retracts freely.
- Test the unit by pulling sharply on the lanyard to verify that the locking mechanism is operating correctly.
- If manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.

**Buckles**

Many full body harnesses have interlocking buckles called friction buckles. Look for bent, cracked, or nicked buckles. Test the buckles to make sure the coupling is secure.

**Webbing**

Look for frayed, cracked, cut, burned, or damaged webbing, and loose or broken stitching.
D-rings

Look for bent, cracked, nicked, or gouged rings.

**Lanyards and Anchors**

A lanyard is a flexible line of webbing or a synthetic or wire rope used to secure a safety belt or full body harness to a lifeline or anchor.

**Using the right lanyard**

A lanyard must meet the requirements of CSA Z259.1. Keep lanyards as short as possible to reduce the distance you could fall. Try to arrange the lanyard to limit a free fall to no more than 1.2 m (4 ft.) in a fall arrest situation.

**Inspecting your lanyard**

Inspect the lanyard before each use. Check the rope or webbing, the snap hooks, and the manufacturer's label for additional user information.

**Rope or webbing**

Inspect along the length of the lanyard and the eye splices. If you have a three-strand rope lanyard, carefully twist the rope open to look for worn, broken, or cut fibers. Do not over twist, or you could permanently deform the rope. Web lanyards should be discarded if the webbing has cuts or holes, is worn or frayed, or if the load-bearing stitches are damaged. If you find any signs of deterioration, burns, or broken or damaged strands, or if you have any reason to suspect the lanyard, do not use it.

**Snap hooks**

CSA Standard Z259.1 requires snap hooks to be self-locking to prevent accidental roll-out. Roll-out can occur when small D-rings, or other attachment hardware, cause the snap-hook gate to push open in a twisting action — thus separating the two components.

**Personal shock absorbers**

A shock absorber slows and cushions the fall, reducing the force of stopping the fall. Personal shock absorbers are often made of "tear webbing." In a fall, specific stitch patterns in the webbing absorb the force of impact and progressively tear apart. Warning: The shock absorber may increase the length of the lanyard by as much as 1.2 m (4 ft.) during a fall. Refer to the label on the shock-absorbing unit to determine the maximum elongation. Allow for this extra fall distance when you include a shock absorber in your personal fall protection system. *Note: A personal shock absorber that meets CSA Standard Z259.11 is acceptable for fall protection.*

**Manufacturer's label**

The manufacturer's label on a CSA-approved lanyard will contain the following information:

- Manufacturer or vendor identification
- Length and diameter (if applicable) of the lanyard
- Material the lanyard is made of

- Date the lanyard was manufactured
- Model number

"Warning — any unit that has been exposed to a fall arrest "shock load" should not be used again for Fall protection

**Carabiners**

A carabiner is an oblong-shaped connecting device used to attach different components of a personal fall protection system. A carabiner meeting the requirements of CSA Z259.12. A carabiner should:

- Have gates that are both self-closing and self-locking
- Have a breaking strength of at least 22 kN (5,000 lb.)
- Have the manufacturer's identity and load capacity clearly marked on it

Inspect your carabiner before each use. Make sure it is free of damage, deformities, or excessive wear.

**Anchors**

An anchor — what you connect your lanyard or lifeline to — is a key element of any personal fall protection system. An anchor may consist of a load-rated strap or sling wrapped around a substantial structural member on a building. An anchor may also be a manufactured component that permanently or temporarily attaches to a structure.

**Selecting an anchor**

The selection of a suitable anchor depends on whether you want to restrain or arrest a fall. If you want to prevent or restrain yourself from falling, your anchor must be capable of supporting at least 3.5 kN (800 lb.) or, alternatively, the equivalent of four times the weight of the worker. If you need to arrest a fall, your anchor must be capable of supporting at least 22 kN (5,000 lb.). Alternatively, when the potential arrest forces are known, an anchor that is capable of supporting the equivalent of two times the maximum arrest force generated by a falling worker is acceptable, with a maximum of 1800 lbs. of arresting force. For example, the manufacturer will specify the maximum arrest force on personal energy-absorbing devices in the fall arrest system. *Note: The anchor values above do not apply to horizontal lifeline systems, as the potential forces imposed on the anchors of a horizontal lifeline can be much greater than those for personal fall restraint and arrest systems.*

**Lifelines**

A lifeline is a length of synthetic fiber or steel wire rope attached to an independent point of anchorage. A lifeline is typically used in conjunction with a fall arrest device, such as a rope grab.

**Vertical Lifelines**

The rope used as a vertical lifeline in a personal fall arrest system requires a minimum breaking strength of 26.7 kN (6,000 lb.). The reason for a breaking strength greater than that of the anchor is to allow for eye splices and knots tied in the rope at the anchor end. Splices and knots will weaken a rope; so, additional capacity of the lifeline is required. The following is good industry practice for the safe use of a vertical lifeline:

- No knots or splices in the lifeline except at the termination points
- Attach each lifeline to an independent point of anchorage
- Only one worker connected to a vertical lifeline
- The lifeline should extend to within 1.2 m (4 ft.) of the ground or safe lower landing, and
- If the suspended length of a lifeline exceeds 91 m (300 ft.), lanyard length, and the effects of wind, rope construction, and strength must be taken into account

**Inspecting a vertical lifeline**

Exposure to sunlight causes most synthetic fiber ropes to deteriorate over time. Before each use, carefully inspect your lifeline to make sure it is in good condition. Look for signs of chafing or abrasion, cuts in the yarns or strands, or any visible deformities that would weaken the rope or interfere with the free movement of the rope grab. If you have any doubts about the condition of the lifeline, do not use it.

**Rope grabs**

A rope grab is a device that travels along a lifeline and will lock onto it in the event of a fall. Rope used with all rope grabs must be the diameter specified by the manufacturer. Ensure the rope grab is installed on the rope in the correct orientation so the top of the device is installed pointing toward the anchor. The two most commons types of mechanical rope grabs are automatic and manual. An automatic (or mobile) rope grab moves freely along the lifeline with you. If you fall, it locks automatically and stops you after a short distance. If you are using an automatic rope grab, it is recommended that you limit your lanyard to 0.6 m (2 ft.) in length. An automatic rope grab meeting the requirements of CSA Standard Z259.2.1 is acceptable.
A manual rope grab does not move freely with you. It is always in a locked position on the lifeline and must be re-positioned by hand. Manual rope grabs are best suited for use in fall restraint systems. The Canadian Standards Association (CSA) considers manual rope grabs to be “rope adjusting implements.” They are not covered by a CSA Standard, but are acceptable for use when operated in accordance with the manufacturer’s instructions.

**Swing-fall hazard**

Be careful not to tie off to an anchor in such a way that if you fall, you’ll swing into an obstruction. This is called a swing-fall hazard. A swing fall can be as harmful as falling to the ground.

**Retractable lifelines**

A retractable lifeline is a specific type of vertical lifeline that works somewhat like the seat-belt of a car. The lifeline is coiled inside a protective housing. As you move up or down, the lifeline extends or retracts. The line is under constant tension and leaves no slack. The moment you fall, the lifeline locks and stops your fall after a short distance. Many retractable lifelines have fall indicators on their protective housings. Do not use the lifeline if the indicator shows that a fall has occurred. After a fall, the manufacturer or the manufacturer’s authorized agent must inspect the lifeline and approve it for continued use. Do not use a retractable life line unless the provider has tested the equipment and the regulation accepted it. Always use a retractable lifeline block in the vertical position, unless specifically allowed for by the manufacturer. A retractable lifeline cannot be used unless the anchor point is above the shoulder.

**Horizontal lifelines**

A horizontal lifeline consists of a synthetic or wire rope, or fixed rail, rigged between two substantial anchor points. These lifeline systems allow the worker to move horizontally along the work surface while being connected to the lifeline. Horizontal lifelines and their anchors may be subject to extreme force in the event of a fall. Therefore, all permanently installed horizontal lifeline systems must be certified by a professional engineer. Temporary horizontal lifeline systems are acceptable if they are:

- Manufactured for commercial distribution, and installed and used according to the written instructions provided
- Installed and used according to the written instructions of a professional engineer, or
- Installed and used according to each of the following requirements:
  - The horizontal lifeline is a minimum 12 mm diameter wire rope having a breaking strength specified by the manufacturer of at least 89 kN (20,000 lb.)
  - The horizontal lifeline is free of splices except at the terminations
  - Connecting hardware, such as shackles and turnbuckles, has an ultimate load capacity of at least 71 kN (16,000 lb.)
  - The span is at least 6 m (20 ft.) and not more than 18 m (60 ft.)
  - End anchors have an ultimate load capacity of at least 71 kN (16,000 lb.)
  - The horizontal lifeline has an unloaded sag of approximately the span length divided by 60
  - The elevation of the line at any point is at least 1 m (39 in.) above the working surface
  - The free fall distance is limited to 1.2 m (4 ft.)
  - A minimum of 3.5 m (12 ft.) of unobstructed clearance is available below the working surface
  - No more than three (3) workers are secured to the horizontal lifeline
  - The horizontal lifeline is positioned so it does not impede the safe movement of workers

### 6.5.3 More on Inspections and Maintenance

Equipment used in a fall protection system must be:

- Inspected by a competent person before use on each work-shift;
- Kept free from substances and conditions that could contribute to its deterioration;
- Maintained in good working order.

Inspection results must be documented.

Some types of fall protection equipment, such as self-retracting lifelines, require periodic re-certification by the manufacturer at scheduled intervals. The Competent Person must be familiar with these requirements and have a documented re-certification performed, as required.

**Inspection Markings**

Fall protection equipment, which has been satisfactorily inspected, shall be marked and/or color-coded with vinyl tape or some other secure means to designate current inspection.
Care should be used not to cover any equipment feature/component vital to inspection or performance, such as stitching, grommets, adjusting mechanisms, labels, etc., with the tape or marking means.

Removal from Service

After a fall protection system has arrested the fall of a worker, it must:

- Be removed from service, and
- Not be returned to service until it has been inspected and recertified as safe for use by the manufacturer or its authorized agent, or by a professional engineer.

Equipment found to be defective during inspection or at any other time must be immediately removed from service, tagged as defective and repaired, or destroyed and replaced.

### 6.5.4 Putting on a full body harness

Adjust all hardware and straps so the harness fits snugly, but still lets you move freely. Tuck in all loose straps so they don't snag or cause you to trip. Hook on to the harness D-ring (marked "A") designed to arrest falls.

### 6.5.5 Equipment Storage

Fall protection equipment must be stored in a clean dry location away from exposure to abrasive materials, cutting tools, equipment or materials, excessive heat, direct sunlight, and chemicals. Full-body harnesses should be hung by the D-ring for storage.

## INDEX

## 7.1 Preventative Maintenance Policy

It is the policy of Quolus that all tools and equipment will be properly maintained to reduce the risk of injury and/or property damage. Quolus requires all workers, supervisors and managers to ensure that our established Preventative Maintenance Programs are completed to the required schedules. Any safety concerns regarding any equipment will be reported as soon as it is practical to do so.

Supervisors shall ensure that all preventive maintenance is carried out by qualified personnel based on required maintenance schedules and that records are maintained.

All employees are responsible for checking their tools and equipment they are working with. Tools or equipment that pose a hazard due to a need for repair shall be immediately tagged to avoid their accidental usage and removed from service.

All equipment brought onto worksites will meet or exceed Provincial OH&S Regulations, Acts and/or Standards.

### 7.1.1 Equipment Inventory

Quolus will be responsible for maintaining an accurate inventory list of all tools and equipment.

The list may include but not limited to the make, model and serial number of each item as well as the quantity and location. An internal identification number may be necessary for some equipment.

### 7.1.2 Tools, Equipment, PPE, Machinery Inspection Process

Each item on the inventory list must be inspected regularly. A preventative maintenance schedule is established based on manufacturer requirements and industry standards. The equipment manufacturer's recommendations as stated in its operating manual will determine the frequency of inspection. Inspections may be daily, weekly, monthly or at any frequency deemed necessary by the manufacturers. All inspections will be documented on the required inspection sheets where required. Frequency of inspection, if not specified by the manufacturers, will be determined by its classification as either major or non-major equipment and will have regularly scheduled inspections.

Major equipment is any item subject to the following:

- Frequent usage
- Frequent part failure
- High probability of worker injury
- Significant potential for loss due to part failure
- Major equipment could include, but is not exclusive to:
- Mobile Equipment (i.e. forklifts)
- Hoists (i.e. chainfalls)
- Specialized PPE
- Fall Protection Equipment

Non-critical equipment must be recorded on an inventory list, but may not require regular inspection. However, all other maintenance requirements as outlined in this section still apply to non-critical equipment.

The monitoring functions in a preventative maintenance program fall into two areas.
1. The individual responsible for operating and/or maintaining equipment must monitor the equipment that is being used to ensure its safe operation.
2. Management should monitor the entire program for the branch to ensure that it is functioning in accordance with manufacturers, regulations and/or standards.

Inspections may also be conducted prior to being issued, prior to each use (if required) and upon being returned or specified by the specific site policy and employee concerns.
Inspections may be sub-contracted out to non-Quolus personnel, as in the case of hoisting equipment or fire extinguisher annual maintenance. Any contractual maintenance performed must be recorded and documentation must be retained with other maintenance records.

Only qualified and trained personnel must perform all inspections, maintenance and corrective measures.

### 7.1.3 Rented Equipment

When equipment rented by Quolus Elevator Canada comes on to the job, it is the responsibility of the Supervisor and/or foreman for the jobsite to check for the equipment logbook (if required) and also do a visual inspection of that equipment.
**NOTE:** Where equipment certification is required prior to commencement of work, this will be done.

**Operator Pre-Use Inspections**

All mobile equipment must be formally inspected by the operator prior to each use. These are to be documented in the machine's logbook.

### 7.1.4 Equipment Maintenance Schedules

All tools and equipment must be informally inspected on a daily basis to ensure that it is in good condition. This is to be done by the end user of the equipment immediately before it is used. Any equipment that is found to be defective is to be dealt with according to the "Removal of defective tools, equipment and machinery" procedure.
In certain circumstances tools, PPE and equipment also require a formal documented inspection in addition to the informal inspection.

### 7.1.5 Records

Any inspection or maintenance performed on equipment must be recorded on a standardized form.

Inspection forms must specify, as a minimum the following:
- Critical parts of the equipment to be inspected
- Identified problems with any component of the equipment
- Date of the inspection
- Name/Signature of the person performing the inspection

Any service performed on major or non-major equipment must be recorded on a standardized form, which includes as a minimum, the following:
- Service Company name
- Name and Serial Number or Identification Numbers of the equipment serviced

- Part of equipment serviced
- Action taken
- Date maintenance was or is being completed
- Name/Signature of person who performed the maintenance

## 7.2 Defective Tools and Equipment

If a tool or piece of tool or equipment is found to be defective, an "Out of Service" tag must be immediately affixed to that tool or piece of equipment.

Tools, equipment and machinery will be considered defective if:
- The unit has been damaged or modified so that it is not to manufacturer's design specifications; or
- The unit does not comply with regulations and/or standards.

An Out of Service Tag **MAY NOT** be removed from tools or equipment by anyone except supervisor or maintenance personnel.

This procedure is to be used by all employees when they identify a defective tool, equipment or machine:
- All power sources are to be disconnected or isolated (i.e.: unplugged).
- Immediately tag defective tool, equipment or machine with a Client Out of Service Tag. The tag will remain until the unit is properly repaired;

All PPE that has been removed from service will be tagged "OUT OF SERVICE." Any PPE tagged "OUT OF SERVICE" will not be returned to service until repaired and inspected by a qualified/certified person.

Whenever possible, remove the defective item from the working area as soon as possible.

Repairs are to be performed by a competent trained repair technician.

No tools, equipment, or machinery are to be used until all repairs are complete

Each Quolus worksite must have "Lock-Out Procedures" in place for electrically energized equipment or machinery found to be defective.

### 7.2.1 Procedures for Unsafe Equipment

Any equipment found to be operating unsafely is to be taken OUT OF SERVICE immediately and not returned to service until the unsafe condition is eliminated.

If repairs cannot be made readily, the equipment is to be shut down at the mainline disconnect. Lock-out the disconnect and tag with warning tag that states "DANGER - UNSAFE CONDITION". This tag shall also have the mechanics contact information.

Contact Supervisor for instructions. The Supervisor will take steps to facilitate repairs as soon as possible.

Enter into unit logbook stating that the equipment has been turned off, and why than initiate the repair process.

While repairs are being made, and before the equipment is returned to service, extreme care should be taken to ensure the equipment is not accessible to passengers (i.e., barricades, signs, prevent doors from opening, etc.).

The system must ensure that, under no circumstances can a locked-out piece of equipment or machinery be engaged.

### 7.2.2 Qualifications of Maintenance Personnel

All individuals who perform maintenance work must receive regular training to ensure they have the appropriate skills, accreditation and/or certification. This certification must apply to both company employees and to contracted maintenance services.

In addition to inspection, certain equipment requires regularly scheduled maintenance. Manufacturer's instructions and instructions from the rental company (if applicable) must also be complied with. Each site is to keep a maintenance file or binder. All maintenance records and receipts are to be retained for audit purposes.

### 7.2.3 Fleet Maintenance

Employees who are eligible to participate in the Quolus Elevator (Canada) Limited fleet program are entitled to a safe, properly equipped vehicle suitable to conduct their business. Quolus depends on the operators to assist in keeping the vehicle in a way that ensures that the vehicle is in a safe operating condition.

**Care of Fleet Vehicle:**

The employee is to keep the vehicle interior and exterior as clean as practical, considering the demands of business and the weather conditions. The vehicle must be maintained in proper working condition. Employees must follow all schedules and rules regarding maintenance and repair as determined by Quolus and/or the vehicle leasing company. The driver is responsible to be alert to the need for mechanical repairs in addition to scheduled maintenance. Failure to exercise reasonable care may result in the required return of the vehicle to Quolus and the employee may be held personally responsible for damages caused by failure to adhere to proper maintenance and repair schedules and requirements.

**Vehicle Maintenance**

Vehicle maintenance can take the form of these distinct programs; preventive/scheduled maintenance, non-scheduled maintenance, and emergency maintenance. While all three types have their role in the Quolus Vehicle Safety Program, the most cost-effective control is preventive maintenance. The groundwork for a good preventive maintenance program starts with management. A review of manufacturer's specifications and recommendations for periodic preventive maintenance should be integrated with the actual experience of the vehicles.

**Preventive and scheduled maintenance (PM)** is performed on a mileage or time basis. Typical

PM includes oil/filter changes, lubrication, tightening belts and components, engine tune-ups, brake work, tire rotation, hose inspection/replacement and radiator maintenance.

**Non-scheduled maintenance** is performed only when the need arises. Some vehicle parts are replaced only when they actually fail. These include light bulbs, window glass, gauges, wiring, air lines, etc. Other items involve vehicle components that are worn based on information from the vehicle condition report. These include tires, engines, transmission, universal joints, bushings, batteries, etc. Since these situations are identified through periodic vehicle inspection, they are then reclassified within the PM program to be schedule for repair.

**Emergency maintenance** involves a vehicle breakdown while on the road. While situations of this type may happen regardless of the quality of the PM program, it is an expensive alternative to not having an effective preventive maintenance program at all. Emergency maintenance situations should be minimized through proper PM procedures. Prior to incurring major or unreasonable expenses to tow or repair your assigned vehicle, even after business hours, TKE management pre-approval is required.

**Preventive Fleet Maintenance:**

We place priority on effective preventive maintenance. The manufacturers do not warrant any item that can be traced to damage or lack of maintenance. Generally speaking, oil changes should be performed as per manufacturer's instructions. Depending on the type of vehicle you drive, there may be a dashboard indicator or oil life monitoring system to indicate when the vehicle requires the next oil change. In addition, the service card provider will provide a reminder to branch management when approx. km has passed since your last oil change.

## 7.3 Operator Qualifications and Training

All individuals who operate and/or maintain Quolus Elevator (Canada) Limited mobile equipment, vehicles, etc. will have the appropriate skills, accreditation and/or certification. This applies to both company employees and contracted equipment services.
The approval process includes the following:

- Possession of a valid license appropriate to the type of equipment.
- Successful completion of a practical operating exam administered by competent and authorized trainers.

## INDEX

## 8.1 EDUCATION AND TRAINING POLICY

Quolus Construction Services acknowledges that training and education of workers is not only a production issue, it is a vital part of any health and safety program. Our employees are hired because they have the knowledge and skills to do their work in a safe manner, however we will provide safety instruction to all workers as necessary and workers are required to comply with these instructions.

In an effort to abide by the commitment outlined in the Corporate Health and Safety Policy, Quolus will provide training and communicate all health and safety issues to our employees.

Education and training are a vital component of accident prevention, legislation and any effective and efficient safety program. Quolus will do all that is reasonably practicable to ensure all employees are competent for the task assigned. All training will be recorded and kept on file for future reference and organization of refresher training.

Our program of worker education and training will consist of:
- Conducting worker orientations for ‘young’ and ‘new’ workers and site specific orientations.
- Conducting training sessions on a regular basis.
- Developing safe job procedures and instructing workers in these procedures.
- Monitoring ongoing requirements for health and safety instruction.
- Delivering specialized training for employees as may be required.

At minimum, all employees, where applicable will receive, and fully participate in:
- Safety orientations for newly-hired personnel;
- Job-specific training;
- Safety training for management;
- Task-specific training and participate in safety meetings;
- Specialized safety and related training; and
- Refresher and update training.

All training will be documented and a copy retained on file.

Example job-specific and specialized training includes:
- Supervisors, Foremen, and members of the Safety Committee with specialized training (Accident Investigation, Accident Costing, Safety Committee Responsibilities, etc.) whenever the need for such training exists.
- Required level of First Aid Certification as per Provincial Legislation.
- WHMIS courses (as required) to ensure that all employees maintain the knowledge and skill levels to work effectively with hazardous materials that they may come in contact with during normal course of their employment.
- Training of all employees in the proper usage and the correct fitting of respirators.

### 8.1.1 New and Young Workers

It is recognized that new and young workers suffer a higher than average workplace injury frequency. The combination of hazards from elevator industry activities and the relative inexperience and occasional indifference to safety of new and young workers increases the risk factors associated with injury.

A mentoring system will be implemented to provide guidance to new and young workers and assist with their development. A mentor may only be assigned to one crew that includes a new or young worker, and he/she must remain on site with them.

**New Workers**

Is a worker 25 years or older who has been on the job less than six months or has been reassigned to a new job. New workers can include:

- New to the workplace (less than 6 months experience with Quolus in his/her present role);
- Returning to a workplace where the hazards in that workplace have changed during the worker's absence;
- Affected by a change in the hazards of a workplace;
- Relocated to a new workplace if the hazards in that workplace are different from the hazards in the worker's previous workplace.

The method used to identify new workers will be communicated to the appropriate parties. New workers will be monitored for compliance with OH&S policies and procedures and may not work alone. Once the new worker has demonstrated competency and compliance with OH&S policies and procedures, they may remove the identifier.

**Young Workers**

A young worker refers to any worker who is under 25 years of age. It is the policy of Quolus to ensure and enhance the workplace safety of young workers, who are recognized as having a higher risk for workplace injury than other worker classifications.
Quolus will not employ workers under the age of 18 unless:

- They are enrolled in a registered apprentice program and over 16 years of age.
- They are attending a technical high school and intend to work in the construction field, and are over 16 years of age.
- They are intending to graduate high school and enroll in construction related post-secondary education, and are over the age of 16
- Individuals aged 16 – 18 years may be employed in an office environment or in a construction site office. Should they require access to the actual construction site for any reason a competent worker or supervisor shall accompany them.
- Workers under the age of 16 are not permitted on any site, under any circumstance. This includes sub-contractors and family members.
- Visitors to construction sites under the age of 18 must be pre-approved by management PRIOR to visiting the site
- Where they are identified, sub-trades employing workers under the age of 18 must present a safety plan before such persons commence work, as to how they will protect these workers from injury, including work activities, experience, supervision, and training. Such workers may be refused work on the site based on lack of a plan, or lack of compliance to their plan.

## 8.2 WORKER ORIENTATIONS

All employees of Quolus Construction Services will receive safety orientation prior to commencing work.
Safety Orientation will include general health and safety program requirements as well as any known site specific and emergency procedures.

### 8.2.1 New Worker/Young Worker Orientation

Quolus will ensure that all new and young workers will be given proper health and safety orientation are aware of workplace hazards and are competent to perform the work they are assigned to.
Employee's charged with the orientation of a young or new worker will utilize the Quolus orientation acknowledgement form, which must be completed prior to be allowed on any jobsites. A copy of the acknowledgement form must be sent into HR upon completion for records retention.

Quolus Construction Services is committed to ensuring all new and Young workers receive a new worker orientation that includes:

- Reviewing their job description and expectations for health and safety.
- Discussing special instructions/training required during particular operations.
- Conducting a question and answer period to provide workers with additional information.

### 8.2.2 Site Specific Safety Orientation

Quolus Construction Services will ensure all employees receive site specific safety orientation on the first day they report to work at any site. The orientation should include safety information specific to the site/project and the expected duties the worker will perform. The site specific safety orientation includes, but is not necessarily limited to, the following:

- A review of any Labour, Health & Safety requirements.
- The identification of worksite hazards, and the safe procedures for dealing with these hazards.
- How to report hazards, injuries, accidents and near misses and who to report to.
- Information regarding any site-specific safe work procedures in use.
- The requirement for personal protective equipment to be used generally on site, and for specific tasks.
- Written safe work procedures
- The Quolus Construction Services Health & Safety Manual
- Safety Data Sheets (SDS)
- WorkSafeBC Occupational Health & Safety Regulation (OH&S)
- The locations of first aid facility(s), services and emergency equipment.
- The means of summoning first aid.
- Names of their supervisor and how to contact them.
- Names of safety committee members and how to contact them.
- Emergency procedures

A record of this orientation will be retained at head office to confirm orientations have been completed. The Health & Safety Orientation Checklist will be used for this purpose.

## 8.3 Supervision of Young and New Workers

In ensuring the continued safety of all new and young workers Quolus will adhere to the following procedures as further effort to increase a safe working environment for young and new workers:

- Following successful completion of orientation, all young or new workers shall be assigned to an experienced worker who will work alongside the new or young employee in order to supervise and provide guidance.
- All new or young employees will complete job specific training before any work is assigned.

- All employees who are tasked with the responsibility of supervising a new or young employee shall be fully trained in the risks and control measures pertaining to young and new workers.
- All supervisors and employees in general shall lead by example and follow all necessary safety precautions at all times.

## 8.4 Training

### 8.4.1 Job Specific Training

Each job is required to assess its own task specific and project specific training needs. This will be done as part of the Pre-Job Hazard Assessment, Job Hazard Analysis and Field Level Hazard Assessments (FLHA). Training needs may also change in response to new tasks, job conditions, new tools or safety trends. There may also be project specific training required by the client.

The manager will arrange for the required training and will keep an up to date training log. The log is to be kept electronically if the project has the capability.

Workers, Managers, Supervisors may be required to complete other training which could include, but not limited to the following:

- Review specific safety rules, policies, and procedures that are applicable and that are described in the Safety Manual and other reference materials.
- If the employee was laid-off more than 6 months, or is coming from another company, new employee safety training shall be conducted.

### 8.4.2 Supervisor and Manager Training

In this section “Manager” refers to Project Managers, Supervisors, and Foremen.
In order to ensure that Quolus managers understand their Health and Safety and Environmental responsibilities; any new Supervisors/Managers shall participate in field safety training conducted in their branch which will include an overview of the Health, Safety and Environmental Manual in a timely manner.

New Supervisors hired by the company will be issued a copy of the Corporate Health and Safety Manual, Safety Bag and referred to relevant legislation for future reference.

### 8.4.3 Non-Field Employees

All non-field employees shall receive safety training and any additional safety training that shall address the hazards associated with their job. If at any point a non-field employee must visit a job site, enter a machine room, or participate in any activity that could pose a risk, that employee must be trained on the safety procedures involved in the activities attended.

### 8.4.4 Safety Refresher Training

Employees shall be retrained on safety rules, policies and procedures, and when changes are made to the Safety Manual. Individual employees shall be retrained after the occurrence of a work-related injury (which is deemed high risk), after receiving a citation (of a severe nature), or when a Supervisor observes employees displaying unsafe acts, practices, or behaviors. Safety issues shall be reviewed and documented as required.

## 8.5 TOOLBOX MEETINGS

Toolbox meetings shall be held a minimum of once per month with all workers for discussion of health and safety matters; identifying, prevention and correction of unsafe conditions; and maintaining interest in the safety of the work force. Each employer shall conduct Toolbox meetings with its employees. They are not intended to take the place of formal OHS safety training for workers, but to supplement it.

Toolbox safety talks are one of the most effective ways for supervisors or foremen to exhibit their own and the company's commitment to safety. Toolbox talks should be conducted with a specific topic for discussion, such as a new safety rule or procedure or a recent accident. Company rules will be reviewed with employees.

Toolbox safety talks should be held minimum once per week at a set time and when commencing new work activities, or as required for specific upcoming potential hazards.
All workers must attend.

### 8.5.1 Meeting Checklist

1. **Choose a safety topic**
   - Choose a topic relevant to the work that is being performed

2. **Be Prepared**
   - Inspect the jobsite for hazards related to your topic
   - Read over the material you plan to cover
   - Make sure you are familiar with any regulations, guidelines and company rules related to the day's topic.
   - Review reports of recent accidents on the site, including "near misses"
   - Review the company rules

3. **Get the crew actively involved in the meeting**
   - Choose a real-life example (case study) to talk about.
   - Invite the crew to ask questions and make suggestions related to the topic.
   - Respond to questions that you can answer and offer to find answers you don't know.
   - Allow time at the end of the meeting for questions and suggestions on any safety issue.
   - Ask the crew for feedback on the meeting.
   - Involve the crew in preparing for and/or leading future safety meetings.

4. **Follow up**
   - Look into complaints, concerns, and suggestions that the crew brought up.
   - Report back to the crew to let them know what will be done.

5. **Records**
   - Use the Toolbox Meeting Record form to document the workers attending, the topics discussed, safe work practices, potential hazards, any suggestions and/or unanswered questions for later comment, and any corrective actions recommended or taken.

**Here are a few other tips to keep in mind when conducting a toolbox talks with workers*:***

- Try to hold the toolbox talk in an area that is free of noise and other distractions. If the workers cannot hear you talking, or are distracted by other activities in the area, it will be difficult for them to focus.
- Speak clearly and directly. Mumbling or reading too fast makes it difficult for the workers to understand you. Just take a deep breath, and then speak clearly and at a natural pace.
- Use a prop when possible to help you keep the workers attention. If you are giving a toolbox talk on setting up a portable step ladder, have one set up nearby so you can point out things as you read the toolbox talk. To really drive home a point, have an unlabeled container you found on the jobsite available when giving a toolbox talk on OHS's hazard communication standards about labeling requirements.
- Always give workers an opportunity to ask questions at the end of the toolbox talk. Don't make snide remarks to employees who do ask a question, as this will discourage others from asking questions later.
- Always document toolbox talks. Even if certain OHS standards do not require documentation of safety training, it can't hurt to have the information about the topic, the trainer, the date, and names of the workers on file.
- Last but not least, practice what you preach. Nothing makes a trainer lose credibility faster than to have a worker see them doing something that violates the safety precautions that were covered in a previous toolbox talk. Always set a good example.

### 8.5.2 On-Going Training and Education

Initial orientation training will be followed-up with further training of workers when any of the following conditions exist:

- The work to be conducted has not been done before and new or modified work procedures are required.
- There is an obvious skills and/or knowledge gap that prevents the worker from completing tasks as required.
- A worker requests training for work activities with which they are not familiar.
- WorkSafeBC directs that training is required.

## 8.6 SUPERVISION AND DUE DILIGENCE POLICY

Quolus Construction Services is committed to taking all reasonable steps to ensure the health and safety of our workers is protected. Achieving this goal of due diligence is a major responsibility of all employees.

To assist you in attaining due diligence expectations, Quolus Construction Services will:

- Ensure supervisory personnel receive instruction in:
  - Health and safety responsibilities.
  - Training, instructing and motivating workers to work safely through the use of worker orientations, toolbox talks and one-on-one discussions.
  - Supervising workers, monitoring worker safety performance, correcting unsafe behavior and enforcing program requirements.
  - Recognizing and controlling hazards.
  - Performing safety inspections.
  - Performing incident investigations.

- Ensure that supervisory personnel have demonstrated abilities in:

- Effective communication
- Leadership and safe organization of work
- Problem solving
- Compatibility with company philosophy.

- Provide supervisory personnel with achievable safety objectives and feedback on their safety performance.
- Provide materials to assist supervisors in developing and maintaining worker interest in health and safety.
- Provide record keeping formats.

### 8.6.1 Supervision

In the event of a serious accident or non-compliance with the WorkSafeBC OHS Regulation, WorkSafeBC inspectors will investigate to determine root causes and determine:

- What training did the supervisor receive?
- What was the supervision?

Well-trained supervisors that perform their duties conscientiously and effectively are essential for ensuring a safe and healthy workplace. Supervisors have the responsibility for worker safety and training according to the WorkSafeBC OHS Regulation. They are responsible for and accountable for workplace conditions, worker safety and ensuring training and compliance with the WorkSafeBC OHS Regulation. Here are some of the duties that supervisors are expected to carry out on a regular or as needed basis.

Supervisors will:

- Ensure all new employees complete the Quolus Construction Services orientation training program and that a record is kept of that training.
- Ensure that all employees working under their direction are given specific on-the-job instruction and training and that the training is documented.
- Communicate safety and health information to employees.
- Enforce compliance with Quolus Construction Services rules, policies and procedures and the WorkSafeBC OHS Regulation.
- Enforce the wearing of personal protective equipment and clothing.
- Conduct regular ongoing workplace inspections for their work areas to ensure hazards are identified and corrected.
- Report accidents and serious near misses (incidents) to the Company they are currently assigned to and to Quolus Construction Services without delay and ensure written investigations are conducted and submitted within 24 hours.
- Respond to and keep a record of safety and health issues brought forth by employees and ensure that such issues are resolved in a reasonable period of time.
- Be a role model for safety.
- Attend all required training.

### 8.6.2 Promoting Health and Safety

Supervisors must take an active role in promoting workplace safety and health. To help ensure that Quolus Construction Services rules, policies and procedures and WorkSafeBC OHS Regulation are enforced, supervisors will use three important techniques:

- Modeling
- Rewarding
- Correcting

**Modeling** refers to any means used to demonstrate the proper way to perform a task. It also refers to behaving in a manner that people will imitate. Supervisors will model appropriate behavior for the promotion of safety and health. In other words, set a good example! This includes:

- Using the correct work procedures.
- Wearing the required PPE (head protection, eyewear, footwear, hearing protection, hi-visibility clothing, etc.).
- Using the correct technique, tools, equipment and/or machinery when performing or demonstrating a task.
- Operating machinery only if the guards, safety switches, etc. are in place and working properly.
- Locking-out machinery and equipment before performing maintenance or repairs.
- Recognizing when a job or task is performed properly, e.g. using correct procedures, equipment, etc.
- Providing verbal (positive feedback) acknowledgement and reinforcement of the correct behavior.

Supervisors are encouraged to intentionally look for safe behaviors and let employees know they appreciate the effort that goes into doing a job the right way.

### 8.6.3 Due Diligence Considerations

If a serious accident does unfortunately occur at a Quolus Construction Services site, it will be necessary to be able to prove to WorkSafeBC that our company has done everything reasonable to prevent the accident. This is the due diligence defense and it consists of proof that management

- Have communicated safety and health responsibilities and objectives
- Put systems in place to identify and control hazards
- Supervised and trained employees adequately
- Ensured trainers are qualified to train
- Corrected unsafe conditions and acts (including using disciplinary actions when warranted)
- Implemented a viable safety program that is supported by the management and employees.

The burden of proof with regard to due diligence is with Quolus Construction Services. Written records are the only way to prove that events have taken place; therefore, supervisors (and management) must ensure employees are competent and enforce safety standards.
Supervisors and management need to work together to ensure the following is recorded and the records can be made accessible to WorkSafeBC upon request:

- Orientation and training records
- Disciplinary actions
- Inspection reports
- Hazard correction, e.g. Supervisor’s Daily Journal
- Incident investigation reports.

Remember, if it is not written down it did not happen!

### 8.6.4 Subcontractor Compliance Program

Quolus Construction Services are responsible for:

Ensuring that the workers of all sub-trade are informed of the:

- Hazards or site conditions.
- Hazard controls in place.
- Checking periodically for sub-contractor compliance with health & safety requirements.

Ensure all Quolus Construction Services Worker's are aware of the subcontractor's work areas and hazards created by sub-trade activity in addition to controls in place.

### 8.6.5 Sub Contractors and Service Providers

During the subcontractor selection process, potential subcontractors and vendors will be informed of their safety obligations. Subcontractors will provide evidence of their safety program and will be provided with a copy of Quolus Construction Services' Health and Safety Program manual prior to commencing work if they request one.

The Subcontractor safety program will be evaluated by Quolus Construction Services's Safety Coordinator.

As part of the subcontract agreement, subcontractors are required to sign a document stating that they have studied the Safety Program, understand its objectives, procedures, assignment of responsibilities, and agree to comply with all its requirements.

Quolus Construction Services will monitor subcontractors and/or service providers for compliance and will take corrective action in accordance with the Occupational Health and Safety Act and this manual. Subcontractors are obliged by contract to comply with the Safety Program while on Quolus Construction Services work sites.

**Subcontractors are responsible and accountable for:**

- Maintaining full WorkSafeBC coverage while working for Quolus Construction Services and providing proof of coverage.
- Complying with the Health and Safety program and WorkSafeBC Regulation.
- Meeting with the job Supervisory Personnel to receive instructions on any special safety precautions to be taken on a particular site or shop.
- Immediately correcting any unsafe act or conditions reported or observed in their area.
- Providing a copy of their Health and Safety Program manual to management if required.

**Post Job Review**

All subcontractors will be reviewed upon completion of the job and assessed on safety performance. Site Superintendants will be interviewed, safety records reviewed and any reported safety infractions taken into account. Any subcontractor with less than perfect safety performance will be expected to submit a detailed explanation of controls now in place to avoid future infractions and re-submit their safety program for review.

## 8.7 Behavioral Based Safety (BBS) Program

**General**

Behavior Based Safety refers to the use of applied behavior analysis models to achieve continuous improvement in safety performance by finding out what works and what does not. Quolus BBS program allows for and requires participation at all levels. There is a system of accountability in place that defines roles, ensures knowledge to fulfill the roles every level from employee to senior management, and measure role fulfillment.
The Quolus BBS Program is based on the below 5 Safety Behavioral Traps:

1. Lack of Awareness
2. Fear Factor
3. Unintentional Pressures
4. Lack of Concentration
5. Diminishing Risk

.

**Lack of Awareness**

**What:** Lack of Awareness can cause accidents when you perform repetitive tasks
**Why:** We create a false sense of safety when we are in familiar situation and surroundings
**How to Stop:** Become hyper-aware of your surroundings, here is how:

- Don't depend on the assessment of others, trust your eyes
- Debate yourself to ensure all possibilities are considered
- Ask all the questions
- Don't rush

**Fear Factor**

**What:** Fear makes us do things we know we should not do
**Why:** We worry about what others think and don't want to let anyone down
**How to Stop:** Face the fear, admit it's an issue and talk openly about fear.

**Unintentional Pressure**

**What:** Unintentional pressure can cause a team to rush through the project
**Why:** People are unaware of how their actions impact the team's actions
**How to Stop:** Remain approachable and clearly explain why you need the information.

**Lack of Concentration**

**What:** Lack of concentration causes our minds to drift off at any moment
**Why:** When we are use to a routine, we can get easily distracted with internal reminders
**How to Stop:** Train the mind not to disturb you. Quickly hear the internal reminder and say to yourself, not now, I am busy.

**Diminishing Risk**

**What:** Diminishing the hazard by making a mental excuse
**Why:** So we can do it the way we perceive will be easier and take less time
**How to Stop:** Listen for these words:

- The chance is very slim
- I'll be extra careful
- It won't happen to me
- It will only take a few minutes

The Quolus BBS Program will:

1. Define the 5 Safety Behavioural traps.
2. Ensure each person clearly understands required behaviors and how not to fall into these safety behavioral traps.
3. Accurately identify and measure the presence of behaviors through observation.
4. Reinforce appropriate safety behavior.
5. Provide improvements based on analysis from documented observations.

**Job Observations**

Supervisors and/or workers will perform job observations to identify unsafe behaviors and provide direct, measurable information on employees' work practices. Because the work site and job requirements are always changing for Quolus employees, job observations will take place where possible or practicable when supervisors are conducting jobsite audits.
Job observations will be conducted using the applicable department safety audit form. All employees will be provided training on job observations. Training will include how to conduct an observation, and how to provide effective feedback on observed behaviors.

**Feedback and Response to Job Observations**

Upon completion of an observation, the observer is expected to have a discussion with the employee he/she observed. The observer will review the results with the observed employee, reinforce safe behaviors observed, describe unsafe behaviors observed, obtain feedback from the employee on why the work was performed that way, and emphasize that the purpose of observations is help employees perform their jobs safely, not to punish or discipline.

**Documentation and Analyzing**

Job observations must be documented on the applicable department safety audit form. Records of observations will be kept on file whether hard or soft copy at the branch offices.
Management and the Health and Safety Committee will analyze results to identify trends and enhancements that can be made to make work activities safer.

## 8.8 HEALTH & SAFETY ORIENTATION CHECKLIST

**Quolus Construction Services' Responsibilities:**

During the initial registration and orientation process, workers will be advised of the following:

- Where to access the Occupational Health & Safety Program Manual.
- The name and contact information of the Supervisor and Health and Safety Committee Representative.
- Proper use and location of personal protective equipment (i.e. eye protection, respiratory protection, gloves, hearing protective devices, etc.).
- How to obtain first aid services and where they are located.
- Procedures to follow to report a work related injury or health or safety concern.
- Working Alone and Respect in the Workplace.
- Worker rights and responsibilities.
- Safe Work Practices and Safe Job Procedures that apply to the work being undertaken,

**Client's Responsibilities**

When starting a new job, all Quolus Construction Services employees must attend a site specific orientation on the first day. During this orientation, Quolus Construction Services employees should review, understand and be made aware of the following:

- Safe work procedures specific to the job and Company Rules.
- How to obtain first aid services and where they are located.
- Procedures to follow to report a work related injury.
- What hazards may exist and how to report hazardous conditions and practices.
- Evacuation procedures and emergency procedures.

**ATTENDEES:**

_____ HR: _____

_____ Date: _____

_____ Time: _____

_____

_____

## INDEX

## 9,1 INSPECTIONS

Policy

Inspections are important to ensure hazardous conditions are not permitted to develop or continue on work sites. Quolus Construction Services management is committed to ensuring inspections occur on worksites.

The inspection process at the work-site is not to be limited to formalized inspections conducted by the project team. The expectation is that there will be other active inspection processes in place.

The required inspections, who will conduct them and the frequency of the inspection is summarized as follows:

| Inspection | Inspected by | Frequency | Reporting Requirements |
|---|---|---|---|
| Operator's Daily Inspections | Equipment operators | Daily before start-up | Daily log book – report defects & repairs required |
| Daily Informal | All personnel | On-going | Informal – ensure hazard corrected |
| Formal | Supervisor | Monthly – Major on-going sites<br>Monthly – Smaller sites | Document inspection on Inspection Report Form - Control any hazards found and discuss with Crew |

### 9.1.1 Operator's Daily Inspections

Pre-use inspections will be conducted by all personnel prior to operating machinery, equipment, or power tools. Hand tools will also be inspected prior to use. Any defective equipment, tools, etc. will be removed from service until such time as they can be repaired. The person using the tools or equipment is responsible for its safe operating condition.

All inspections of power tools, equipment and machinery contribute to the on-going maintenance program. Pre-use inspections will help to ensure tools and equipment are maintained in accordance with applicable standards. These standards include the manufacturer's specifications, standards organizations (CSA, ANSI, etc.) and WorkSafeBC Requirements.

Mobile equipment operators (crane, backhoe, excavator, etc.) are also required to maintain an equipment log book in accordance with OHS Requirements (ref. OHS 4.9). It is important that log book entries detail what was inspected and the conditions found, e.g. details of the pre-use check – fluid levels, operating controls, etc.) Log books must be kept with the equipment and be readily available should an inspector ask to look at the log book.

### 9.1.2 Daily Informal Inspections

All Quolus Construction Services personnel will operate in such a way as to be constantly aware of the need to correct hazards that may be present. The Supervisor will conduct informal inspections as part of this regular activity. All workers will help in the on-going process of hazard identification and control.

The following guidelines are provided to assist personnel in conducting daily informal inspections:
Know about items that require special attention. This can be done by reviewing the inspection checklist in this section, previous inspection records and thorough knowledge of the job.
Use your eyes, ears and other senses to identify actual or potential problems as you go about your other daily activities. Correct hazards as you find them whenever you can. Report hazards to the Supervisor, both the ones that have been corrected and the ones still requiring correction.

### 9.1.3 Work Site General Inspections

Periodic, unscheduled inspections will occur. A representative will attend the site without planning ahead and record findings on an Inspection Report form. The purpose of these inspections is to identify any hazards that are overlooked or any procedure or rule diversions that are occurring in the field. Any problems will be addressed with the supervisor onsite and recorded on the Inspection Report.

**Site managers/supervisors must conduct and document at least one inspection at each of their assigned locations monthly.**

### 9.1.4 Special Inspections

Special inspections may be required either by legal requirements or due to circumstances. Special inspections are required if there is a report of a failure, malfunction or accident/incident. These may quickly turn into an investigation if it involved a near miss or injury. This requirement comes from the WorkSafeBC OHS Regulation Section 3.7. Special inspections in response to incidents, accidents or mechanical breakdowns will be done by the most qualified person(s) available.

The following guidelines are provided to assist personnel in conducted special inspections:

### 9.1.5 Pre-Inspection

Review previous inspection reports, if any, for the area to be inspected.

### 9.1.6 During Inspection

Take copies of previous inspection reports along and note whether the hazards listed were corrected as required.

Look for the off-the-floor and out-of-the-way items. Look for things that you think would be missed in the on-going informal inspection process.

Systematically cover the whole area. Pay particular attention to specific equipment, machinery, jobs, etc. that have been associated with accident trends or severe loss potential.

When unsafe conditions requiring immediate attention are found, corrective action must be undertaken without delay. Defective tools, equipment and machinery must be removed from service until the defect has been corrected. All unsafe conditions and defective items must be recorded describing the items and their locations clearly.

Classify items according to their potential for injury or damage. This will lead to a systematic approach toward corrective action and follow-up.

Look for root causes of sub-standard conditions, practices and procedures – not just the symptoms.

During inspections, every effort will be made to communicate with workers in the area to ensure identification of safety concerns.

### 9.1.7 Post Inspection

Complete an Inspection Report Form

Copy all items from previous reports that have not been remedied, noting initial detection date

Ensure all sections of the Inspection Report are completed and writing is legible

Forward the Inspection Report to the office. Keep a copy of the report at the site for future reference as well as for WorkSafeBC Officer access.

### 9.1.8 Renting or Leasing Equipment

Equipment supplies are required to provide the equipment in good (safe) operating condition with adequate instructions to operate the equipment in a safe manner (ref. WorkSafeBC s.120). When renting or leasing equipment, the Quolus Construction Services team will check with the supplier to verify that the equipment is provided in good operating condition in accordance with the manufacturer's specifications. Evidence for proper maintenance of equipment is provided by documentation.

All inspections of power tools, equipment and machinery contribute to the on-going maintenance program. Pre-use inspections will help to ensure tools and equipment are maintained in accordance with applicable standards. These standards include the manufacturer's specifications, standards organizations (CSA, ANSI, etc.) and WorkSafeBC Requirements.

**INDEX**

## 10.1 INCIDENT REPORTING AND INVESTIGATION INTRODUCTION

Quolus Construction Services strongly believes that an incident that is not investigated is an opportunity lost to prevent similar incidents from happening again. A properly investigated incident will provide key information for educating others who may encounter a similar situation.

**The aim of conducting incident investigations is to prevent a re-occurrence!**

### 10.1.1 Incident Reporting and Investigation Policy

Quolus Construction Services employees are required to immediately report to head office all incidents that result in injury or property damage and all incidents (close calls) that had the potential for serious injury or property damage.

Immediately or whenever practicable,
Call the Company at: (604) 943-1434

Management will, as required by regulation, immediately report to WorkSafeBC all incidents that:
- Resulted in serious injury to a worker or a death.
- Involved a structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system or excavation.
- Involved the major release of toxic or hazardous substances.
- Involved blasting or underwater diving.

An investigation will be initiated and the completed investigation report will be forwarded to WorkSafeBC (if requested) for all:
- Incidents required to be immediately reported to WorkSafeBC (see above).
- Incidents that result in injury requiring medical treatment by a medical practitioner.
- Near miss incidents that had the potential for causing serious injury.

In addition, the following occurrences will be investigated and a record of the investigation will be maintained for all:
- Incident trends indicated by accident and incident statistics.
- Incidents involving property damage that result in a loss greater than $1000.
- Near miss incidents that had the potential for causing property damage in excess of $1000.
- Occupational illness reports.

Investigations will begin at the earliest practical opportunity and will generally be conducted by a supervisor or manager along with, where practicable, a worker representative. The purpose of investigations will be to:
- Identify the root cause(s) of the incident.
- Identify the corrective action(s) required to eliminate the cause(s).

Establish when corrective action(s) will be taken and by whom.

In accordance with WorkSafeBC requirements, copies of all investigation reports will be maintained by Quolus Construction Services for a minimum of ten years.

### 10.1.2 Incident v/s Accident

To reflect the recent changes to the WorkSafeBC Act, the term “incident” will be used in this document with the following definitions kept in mind:

- **Accident** – an event that resulted in an injury and/or property damage.
- **Near Miss** – an event that under slightly different circumstances could have resulted in an injury.
- **Incident** – an event that is either an accident or near miss.

### 10.1.3 Reporting

All project personnel are required to report all incidents to their immediate supervisor. This includes all incidents that result in injury, illness, or property damage and all incidents that had the potential for serious injury or property damage (near misses). Once reported, the appropriate form must be completed as follows:

| | |
|---|---|
| Injury/Health Complaint | - WSBC Form 52E40- Employer Incident Investigation Report (EIIR) (R16/01) for both preliminary and final reports |
| Near Miss | - Internal Report Form |
| Incident/Accident | - Investigation Report Form |

Serious incidents must be reported to WorkSafeBC immediately. They must also be reported to Occupational Safety without delay.

### 10.1.4 Importance of Reporting and Investigation Near Miss Incidents

The importance of reporting and investigating near miss incidents cannot be understated. It is a key accident prevention tool. Through this process it is possible to identify situations that may result in an accident, prior to an actual accident occurring.

In a 1969 accident/incident study out of Stanford University involving 3 billion exposure hours, a ratio of near misses, property damage, minor injuries and serious or disabling injuries was found.

**Accident Ratio Study**

Study shows that for every 600 near misses, there are:
- 30 cases involving property damage
- 10 first aid cases
- 1 serious or disabling injury.

**The overwhelming conclusion is that if we can reduce the near misses, then there will be a corresponding reduction in property damage, minor injuries, and serious injuries!**

### 10.1.5 Investigator’s Qualifications

A worker and management representative will be assigned to investigate most incidents. There may also be occasions when safety personnel assigned to the project conduct investigations. Personnel assigned the responsibility for conducting investigations must be:
- Familiar with the work processes involved in the incident.
- Trained in investigation techniques.

- Knowledgeable about incident prevention principles.

Investigation teams may be assigned to investigate incidents where no one person has all the required qualifications. In these instances the team, as a whole, will have the required qualifications, e.g. a supervisor and worker with excellent knowledge of work processes and a trained safety professional with expertise in investigations and incident prevention.

## 10.2 Investigation Procedures

**Special Considerations Prior to Starting the Investigation:**

***Timely response to the incident scene is critical. The longer that the investigation is delayed, the less likely the investigator(s) are likely to find out exactly what happened.***

### 10.2.1 Preserving the Scene

Steps must be taken to preserve the incident scene for two reasons:
- Any incident required to be reported to WorkSafeBC must be preserved until permission has been granted by a WorkSafeBC officer to release the scene. This is required, as they may want to conduct their own investigation.
- Investigators will want as clear a picture as possible of what happened. Disturbing the scene has the potential to distort the facts.

The scene may be disturbed as may be necessary for rescue work and securing the scene for the prevention of further damage or injury. Photographs and sketches should be taken as soon as possible if the scene is to be disturbed.

### 10.2.2 Investigating

The first obligation of the investigation team is to their personal safety. Investigators must only enter the incident scene if it is safe to do so. Once their personal safety is assured, the investigation can start.

Incidents can be broken down into three stages that must be considered by the investigator:

- **Pre-occurrence stage** – the factors that permitted the sequence of events leading to the incident. These may include contract characteristics (trade, size, safety program, supervision, equipment maintenance, meeting minutes, etc.) and/or worker characteristics (age, occupations, health, experience, training, disciplinary records, etc.)

- **Occurrence stage** – the immediate factors in the incident. These factors may include the activities of persons, involved (task, specific activity, posture, location, etc.), materials and equipment directly involved (type, brand, size, guarding, condition, etc.), actions and movements that led to the incident (fall, trip, slip, etc.), and environmental characteristics (weather, lighting, noise, temperature, vapors, ventilation, etc.)

- **Post-occurrence stage** – the factors occurring after the actual incident or that minimized or increased the seriousness. These may include the response time of emergency personnel, first aid available on site, location and condition of emergency equipment, emergency plans, personal protective equipment worn or unused.

### 10.2.3 Process

- Visit the incident location. Make yourself thoroughly familiar with the areas, task, machinery and equipment involved.
- Gather the necessary date (photos, measurements, notes, drawings, witness names, etc.).
- Record the information to be gathered as required on the Incident Investigation Report form. Use additional pages as may be necessary to record all of the information. Ensure that the information includes details on:
  - Equipment, machinery, tools or materials involved
  - Site conditions
  - Environment conditions
  - Unsafe work practices and/or conditions involved
  - Quality of the worksite supervision
  - Involved individual(s), occupation(s) and experience
  - Protective equipment required and used
  - Worker/supervisor/job previous incident records
  - Similar occurrences
  - Implementation status of the health and safety program.

- Interview personnel who saw the incident and other persons who have details about the incident. Interviews require you to be fair and open minded. Look for facts. **DO NOT** look for someone to blame! During each interview you should:
  - Put the individual at ease.
  - Keep the interview private (interview personnel separately).
  - Advise each individual of the purpose of the interview, e.g. to establish the facts, not to place blame.
  - Obtain the individual's version of how and why the incident occurred. Don't look for confirmation of your own opinion and never argue with the interviewee. Ask open-ended questions that require more than a "yes" or "no" answer.
  - Ask each interviewee for corrective action suggestions.
  - Let the individual know by what date the report will be complete.
  - End the interview on a positive note by thanking the person for their assistance.
- Gather and review any available written information that pertains to the incident such as safe job procedures, drawings, manufacturers' information, etc.
- Review involved supervisors' and workers' personnel files and incident reports. Investigators should know about their experience, education, training, previous incident or injuries, etc., which could be connected to the incident cause.

### 10.2.4 Recommendations & Follow-Up

- **Review and analyze the information gathered;** This is where the skill of the investigator really comes into play. The information gathered may be contradictory and/or missing important data. None-the-less the investigator must make a decision on the cause(s) and base their recommendations for correction on the analysis.

- **Determine the cause(s);** When an incident occurs, unsafe conditions and unsafe practices are usually discovered. It is crucial to know that these are symptoms, not causes! Why did the workers use an unsafe practice? ; asking why gets at the causes, e.g. a worker was not wearing a hard hat and is struck on the head; the issue isn't that the worker was not wearing a hard hat as much as **why** the worker wasn't wearing one?

Usually there are four or five root causes or factors that contribute to an incident. When considering contributing factors, ask the following questions:

- What can management do to prevent the incident from reoccurring?
- What can the supervisor do to prevent a recurrence?
- What can the worker do?

Examples of causes or factors that contribute to an incident are:

*Mechanical and material causes – Management Control*

- Unsafe or defective equipment
- Improper/unsafe working conditions
- Poor housekeeping
- Physical hazards
- Improper planning

*Causes – Supervisor Control*

- Inadequate instruction
- Poor enforcement of compliance
- Lack of application of disciplinary procedures
- Unsafe work practices

*Causes – Personal Factor*

- Mental condition/fatigue
- Physically unfit
- Lack of skills and training
- Negative attitude

- **Make recommendations;** The recommendation for prevention must be based on sound incident prevention principals. Assigning blame is NOT one of these principles! Effective recommendations must be **measurable**. There must be a way of determining if a recommendation makes any difference. The resulting action must fix the problem and not add to it. Effective recommendations must also be **tangible**. If recommendations are to be general, or vague, they will not be implemented. Recommendations must also be reasonable. If recommendations are too expensive, or not feasible, they will not be implemented.

Recommendations must also be prioritized for action/implementation. The **first priority** is to provide recommendations that will prevent a similar incident from occurring. In other words, remove the events or change the sequence of events, so that the cause(s) of the incident cannot occur again.

The **second priority** is to provide recommendations that will prevent injuries if a similar incident does occur. It is not always possible to be 100% certain that a similar incident will not occur. If it does, what steps can be taken to ensure there are no injuries?

The **third set** of recommendations should address how the injury severity can be reduced. If we fail to prevent the incident and injuries result, what needs to be in place to ensure that the severity of the injuries are minimized, e.g. effective emergency services.

- **Complete the Incident Investigation Report;** The report is a key document in the process. It will include the information on which the investigators base their conclusions and

recommendations. It is the working document for making change and preventing a reoccurrence.

- **Distribute the Report;** As a minimum, copies of the completed report are to be distributed as follows:
  - Site office
  - Head Office
  - Site Joint H & S Committee
  - Local WorkSafeBC Office
  - Investigation team.

- **Follow-up;** The follow-up is critical for ensuring that the recommendations are implemented. The Joint H & S Committee's review and comments will also help in the follow-up process. If no change takes place as a result of an investigation, then it has been a waste of time. Recommendations should be assigned to an individual or group, to help ensure they are implemented. This will help to avoid confusion as to who will carry out a recommendation. Care must be taken when assigning responsibility. The individual or group must be capable of carrying out a

- **Recommendation**, e.g. they must have the required skills, qualifications, experience, resources and authority.

***Keep in mind that the whole exercise of investigating an incident has been a waste of time if effective means to prevent similar incidents from occurring are not implemented!***

### 10.2.5 Investigation by Outside Agencies

Investigations may be conducted by outside agencies such as WorkSafeBC, The Police or Coroner's Office. Quolus Construction Services investigation results may also be reviewed by these agencies. Copies of WorkSafeBC accident investigation reports will be released to the police on request. Reports concerning fatalities will be released to the District Coroner concerned and to the Chief Coroner. No other organizations or individuals will receive copies of the reports unless there are extenuating circumstances. The disclosure restrictions are outlined in the Freedom of Information and Protection of Privacy Act.

Fatal accidents and the most serious accidents are investigated by WorkSafeBC. WorkSafeBC also reviews Quolus Construction Services incident investigation reports to check for completion and compliance with WorkSafeBC and the OH&S Regulation. WorkSafeBC is primarily concerned with prevention of a re-occurrence, but can, and will, take actions that may result in fines, workplace closures and/or prosecution.

Recently WorkSafeBC has been much more willing to prosecute individuals for failing to comply with WorkSafeBC and OHS Regulation, therefore, the following guidelines must be observed by Quolus Construction Services employees and contractors if there is a serious accident, or major violation of the OHS Regulation.

- Cooperate with WorkSafeBC in their investigation including disclosure of all information you may have but do not answer unasked questions:
- Avoid statements of guilt or incrimination. Stick to the facts, as you know them. Do not provide statements with conjecture or speculation about what has or has not happened:

- If it appears that WorkSafeBC is investigating Quolus Construction Services personnel, then the following actions must take place:
  - Ask the WorkSafeBC Officer, "Is this a formal investigation?"
  - If the answer is "Yes" then ask, "May I retain legal council before answering any more questions?"
  - If the answer is No:
    - Tell the WorkSafeBC officer that this fact is being noted
    - Write down the date, time, place, persons in attendance, and the matter in question
    - If possible, get the officer to sign a statement that they are not allowing council to be present during questioning
    - Ask if you may (tape) record the session and if this is denied, note this as well
    - Ask to review the WorkSafeBC Officer's notes afterwards to ensure that the statements that you provided are correct.
- If the WorkSafeBC officer is (taping) recording the session, make "a formal request" for a copy of the tape.

**Other Agencies**

Various government agencies are authorized to investigate certain accidents in the workplace. Quolus Construction Services personnel will cooperate in these investigations but will avoid statements of guilt or incrimination. The other agencies that may need to be contacted and which may conduct an investigation are as follows:

| Accident Involved: | Agencies to be contacted: |
|---|---|
| Elevating device | Director of Elevating Devices Safety Act |
| Fatality | Local RCMP, Coroner's Office |
| Fire | Local Fire Department or Fire Commissioner |
| Motor vehicle | ICBC, local Police |
| Power line contact | Local power authority, e.g. BC Hydro |
| Gas | Local gas utility or BC Gas Safety Branch |
| Release of hazardous material | Provincial and/or Federal Environment agencies |
| Transportation of dangerous goods | Local police, TDG Directorate |

### 10.2.6 Record Retention

Records of any incident, involving a worker that causes injury requiring medical attention but does not disable the worker from performing his or her usual work are to be kept permanently within the employer's records.

These records shall include,
nature and circumstances of the incident, and the injury sustained by the worker;
the time and place of the incident;
the name and address of the injured worker;
the steps taken to prevent a recurrence; and

Records of these incidents shall be made available to any provincial government authority.

## 10.3 WSBC Investigation Completion Procedures

### 10.3.1 Which Reports to Complete

Depending on the incident, you may be required to complete up to four separate reports. Each report represents the status of the investigation at a specific point in the investigation process.

| Report Type | When | Template Sections |
|---|---|---|
| Preliminary Investigation | Complete within 48 hours | 1 to 14 |
| Interim Corrective Actions | As soon as possible | 1, 9, and 12 |
| Full Investigation | Complete within 39 days | 1 to 19 |
| Full Corrective Actions | As soon as possible | 1, 9, and 17 |

### 10.3.2 When an investigation is required

Employers are required to immediately investigate any incident that involves the following:

- Serious injury to or death of a worker
- A major structural failure or collapse
- A major release of a hazardous substance
- Fire or explosion with potential for serious injury
- A blasting accident causing personal injury
- Dangerous incident involving explosives, whether or not there is personal injury
- A diving incident, as defined by the Occupational Health and Safety Regulation
- Minor injury or no injury but had potential for causing serious injury
- Injury requiring medical treatment beyond first aid

**Note:** For the first six types of incidents, you must also notify WorkSafeBC immediately. Call toll-free 1.888.621.7233. After hours call 1.866.922.4357.

If the incident is not one of the types listed above (for example, it was a minor incident and there was no risk of serious injury), you are not required to investigate it, but it's good practice.

**What to do following a workplace incident**
* Provide to the joint health and safety committee or worker health and safety representative, as applicable. If there is no joint committee or worker representative, post the report in the workplace.

### 10.3.3 Step 1: Preliminary investigation report

When an incident occurs, you must conduct a preliminary investigation to identify any unsafe conditions, acts, or procedures—as much as possible—to identify and manage hazards in the workplace. This helps ensure that work can be done safely during the interim period between the incident and the conclusion of the full investigation.

When the preliminary investigation is complete, open the EIIR template and enter the incident details in sections 1 to 14. Save the file as a Microsoft Word or PDF

file, indicating the date of the incident, the injured worker's name, and the type of report (preliminary investigation). Complete this report within 48 hours.

Preliminary investigation reports must be initiated immediately and must contain all information specified by policy. Do not submit your preliminary investigation report to WorkSafeBC unless you have been directed to do so by an officer.

**Section 1: Employer information**
Provide the employer's legal name, operating name or trade name, address, contact number, email address, WorkSafeBC account number, and operating location number.

**Section 2: Injured persons**
Provide the names and job titles of individuals injured or killed in the incident, even if they don't work for the employer.

**Section 3: Place, date, and time of incident** For incidents in remote locations or away from the employer's mailing address, include whatever identifying information is available. This may include GPS coordinates, mile markers, or street intersections.

**Section 4: Type of occurrence**
Use this section to indicate the type of incident you are investigating. You are legally obligated to investigate and report certain types of incidents. If it is a first aid-only injury and there was no risk of serious injury, you are not required to investigate it.
You are not required to investigate a vehicle accident occurring on a public street or highway.

**Section 5: Report type**
Indicate whether this is a preliminary investigation, interim corrective action, full investigation, or full corrective action report. If you are using the EIIR template for multiple reporting obligations, select all the report types that apply. For example, if you have completed the preliminary investigation and identified and taken corrective action, select the "Preliminary investigation report" box and the "Interim corrective action report" box.

Indicate if this is a revision to a previously documented report. If this is a preliminary investigation report requested by an officer, note the officer's name.

**Section 6: Witnesses**
Provide the names and job titles of any witnesses to the incident, including workers or members of the public.

**Section 7: Other persons whose presence might be necessary for a proper investigation**

Provide the names, job titles, and contact information of anyone who is needed to conduct the investigation. This may include workers who were on shift before the incident, someone who maintained equipment involved in the incident, or third-party consultants.

**Section 8: Sequence of events that preceded the incident**

Identify significant events that led up to the incident. You can also include relevant events that followed the incident, such as first aid. Include dates and times, if possible. Arrange the events in chronological order, from first to last. Do not include things that should have happened but did not (for example, "worker did not use guard").

**Section 9: Unsafe conditions, acts, or procedures that significantly contributed to the incident**

Analyze the sequence of events. Ask why each event happened. Describe any unsafe conditions, acts, or procedures (for example, poor housekeeping or failure to follow safety procedures). Avoid stopping at personal factors, such as "worker was careless." Consider possible problems with factors such as training, equipment maintenance, standard work procedures, and environmental conditions.

**Section 10: Nature of serious injury**

You may use this section to indicate the nature of the injury, if applicable. A serious injury "is any injury that can reasonably be expected at the time of the incident to endanger life or cause permanent injury." Serious injuries include traumatic injuries such as fractures of the arms or legs, major cuts, burns and crush injuries.

**Section 11: Brief description of the incident** Summarize what happened based on the information in sections 8, 9, and 10.

**Section 12: Corrective actions identified and taken to prevent recurrence of similar incidents**

Describe the corrective actions you have identified to prevent similar incidents. Include the action, the name and job title of the person responsible for it, and the completion date or anticipated completion date.

**Section 13: Explanation of blank areas on this preliminary report, if any**

You are expected to take reasonable steps to investigate the incident and identify unsafe conditions, acts, or procedures as much as possible. Circumstances outside an employer's control may restrict the investigation — for example, not being able to access the incident scene because of an ongoing police investigation. If you can't complete the preliminary investigation you should still provide any information you have available.

**Section 14: Persons who carried out or participated in the preliminary investigation** Include the name and job title of anyone who took part in the employer's incident investigation.

### 10.3.4 Step 2: Interim corrective action report

Interim corrective action reports must address the findings of the preliminary investigation. If all interim corrective action was completed when the preliminary report was written, you have already completed the corrective action report and

can check both boxes in section 5 (preliminary investigation report and interim corrective action report).

If some actions still need to be done, open the preliminary investigation report and rename the file to indicate that this is the interim corrective action report. Update the information in sections 9 and 12 with any new actions or dates. If some actions still have not been done at the end of the full investigation, ensure they are included in your full corrective action report.

The information you provide in sections 1 to 14 is sufficient to satisfy your legal obligation to prepare both a preliminary incident investigation report and interim corrective action report. You must provide these reports to your JOHS Committee. If there is no JOHS Committee or worker representative, the reports must be posted in the workplace. Don't send these reports to WorkSafeBC unless an officer asks for t hem.

### 10.3.5 Step 3: Full investigation report

In the full investigation, you must determine the causes of the incident. These causes could include underlying problems with supervision, training, preventative maintenance, or other management systems.

When you have completed the full investigation, open the interim corrective action report and rename it (full investigation report). Check the box in section 5. Add information to sections 15 to 19. Submit the report to WorkSafeBC within 30 days of the incident. Don't submit attachments to the report, such as photos, videos, and drawings. Instead, keep them at the workplace.

**Section 15: Determination of causes of incident**
Analyze the facts and circumstances of the incident to identify the underlying factors that led to it. What underlying factors made the unsafe conditions, acts, or procedures possible? Identify health and safety deficiencies.

**Section 16: Full description of the incident** Use the brief description from the preliminary report as a starting point. Expand on it, as necessary.

**Section 17: Additional corrective actions necessary to prevent recurrence of similar incidents**
Provide information about the corrective actions you have identified to prevent similar incidents. Include the action, the name and job title of the person responsible for it, and the completion date or anticipated completion date.

**Note:** If all the corrective actions have been completed by the time you write the full report, this report can also serve as the full corrective action report. In this case, remember to check both boxes in section 5.

**Section 18: Persons who carried out or participated in the full investigation** Include the names and job titles of those who took part in the employer's incident investigation.

**Section 19: Other relevant workplace parties** Depending on the nature of your workplace, there may be other people, such as prime contractors or property owners, who have duties or responsibilities for workplace safety. Identify any other person actively involved in the incident, and include the name and contact information for these other workplace parties, if applicable.

The information you provide in sections 1 to 19 is sufficient to satisfy your legal obligation to prepare a full incident investigation report. You must provide this report to your joint occupational health and safety committee (or worker health and safety representative, if applicable). If there is no joint committee or worker representative, the reports must be posted in the workplace.

### 10.3.6 Step 4: Full corrective action report

If there are still outstanding, incomplete corrective actions when you write the full investigation report, then you may be unable to complete the full corrective action report at that time. When all the corrective actions have been completed, open the full investigation report and rename it (full corrective action report). Add the completion dates in section 17 (and section 9, if any).

You must provide this report to your joint occupational health and safety committee (or worker safety representative, if applicable). If there is no joint committee or worker representative, you must post the report in your workplace. Don't send this report to WorkSafeBC unless an officer asks for it.

**What are the timelines?**

You must initiate the preliminary investigation immediately and complete a preliminary investigation report within 48 hours of the incident. You must also initiate the full investigation and submit the full investigation report to WorkSafeBC within 30 days of the incident, unless WorkSafeBC grants an extension.

Depending on the complexity of the incident, you might be able to complete your full investigation report within 48 hours. (See "Can I combine reports?")

The 48-hour period can be extended if it expires on a Sunday or other holiday, or it expires on a day you are not normally open.

You must provide the corrective action report to your joint occupational health and safety committee (or worker safety representative, if applicable) as soon as possible after the corrective action occurs.

**When can I combine reports?**

Depending on the complexity of the incident investigation, it may be possible to complete the full investigation report and resulting corrective action within 48 hours. In this situation, you may combine one or more reports as long as you meet all the requirements and complete the reports within the required time.

**Who needs to conduct the investigation?**

Your incident investigation must be carried out by people who are knowledgeable about the type of work involved. The employer, or a representative of the employer, and a worker representative must participate if they are reasonably available. That means each investigation will be carried out by at least two people, maybe more for complex investigations. For guidance on how to determine whether a worker representative is "reasonably available" to participate in an employer incident investigation consult.

Participation in the investigation will include:

- Viewing the scene of the incident with those carrying out the investigation
- Providing advice to the people carrying out the investigation
- Any other activities prescribed by WorkSafeBC

People participating in the investigation must have adequate training to be able to fulfill their responsibilities. They should understand the investigation process and be able to analyze the sequence of events to find all factors contributing to the incident.

**INDEX**

## 11.1 FIRST AID POLICY

Quolus Construction Services is committed to ensuring that appropriate first aid is provided as quickly as possible for any injured company employee. We will ensure the provision of a first aid program for job related injuries illnesses that meets WorkSafeBC regulatory requirements.

Workers who sustain a job related injury or illnesses, regardless of seriousness, are required to immediately report it to the first aid attendant on whatever contract they are on for treatment and/or recording.

The first aid attendant will be in complete charge of all first aid treatment until medical aid is available. Supervisory personnel cannot attempt to overrule the attendant's decisions relating to first aid or emergency transportation.

Injuries that arise as a result of employment with the company will be reported to the WorkSafeBC by submitting the Form 52E40 – Employer Incident Investigation Report without delay if any of the following conditions occur:

- The worker is transported to or directed to go for medical treatment.
- The worker states that they intend to seek medical attention.
- The worker has received medical treatment for the injury.
- The worker is unable or claims to be unable to return to their usual job, as a result of job inducted injury, on any workday subsequent to the day of injury.
- The accident results in or is claimed to have resulted in the breakage of eyeglasses, dentures, hearing aids or prosthetic devices.
- WorkSafeBC or the worker requests that a Form 52E40 – Employer Incident Investigation Report be submitted to WorkSafeBC.

First aid records and statistics will be kept for at least ten years and will be regularly reviewed by management to determine trends and recommend corrective actions.

First aid assessments will be conducted on a site specific basis and will be reviewed annually.

All first aid assessments and procedures will be available on work sites.

### 11.1.1 Tables to Determine First Aid Requirements

Quolus Construction Services has been classified as a High Hazard Risk Category. As such, the following tables are used to assess each site's first aid requirements.

Table 5: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a high risk of injury and that is **more than 20 minutes** surface travel time away from a hospital.

| Item | Column 1 Number of workers per shift | Column 2 Supplies, equipment, and facility | Column 3 Level of first aid certificate for attendant | Column 4 Transportation |
|---|---|---|---|---|
| 1 | 1 | Personal first aid kit | | |
| 2 | 2-5 | Level 1 first aid kit | Level 1 certificate | |
| 3 | 6-10 | Level 1 first aid kit<br>ETV equipment | Level 1 certificate with Transportation Endorsement | ETV |
| 4 | 11-30 | Level 3 first aid kit<br>Dressing station<br>ETV equipment | Level 3 certificate | ETV |
| 5 | 31-50 | Level 3 first aid kit<br>First aid room<br>ETV equipment | Level 3 certificate | ETV |
| 6 | 51-200 | Level 3 first aid kit<br>First aid room<br>Industrial ambulance equipment | Level 3 certificate | Industrial ambulance |
| 7 | 201 or more | Level 3 first aid kit<br>First aid room<br>Industrial ambulance equipment | 2 attendants, each with Level 3 certificates | Industrial ambulance |

Table 6: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a high risk of injury and that is **20 minutes or less** surface travel time away from a hospital.

| Item | Column 1 Number of workers per shift | Column 2 Supplies, equipment, and facility | Column 3 Level of first aid certificate for attendant | Column 4 Transportation |
|---|---|---|---|---|
| 1 | 1 | Personal first aid kit | | |
| 2 | 2-15 | Level 1 first aid kit | Level 1 certificate | |
| 3 | 16-30 | Level 2 first aid kit<br>Dressing station | * Level 2 certificate | |
| 4 | 31-300 | Level 2 first aid kit<br>First aid room | * Level 2 certificate | |
| 5 | 301 or more | Level 2 first aid kit<br>First aid room | * 2 attendants, each with Level 2 certificates | |

**Footnotes for Tables to Determine First Aid Requirements**

The company must provide and pay for the immediate transportation of an injured worker to the nearest hospital, physician or qualified practitioner for the required treatment.

A workplace requiring a Level 2 certificate must have the first aid attendant requirement upgraded to a Level 3 certificate and be provided with a Level 3 kit and ETV equipment when:
There is an obstruction on the access route to the workplace or other barrier likely to delay the arrival of an ambulance service to more than twenty minutes after it is dispatched.
There are areas in the workplace which are not safely accessible to the ambulance service and for which workers at the workplace are trained, equipped and capable of effecting rescue.
There is rough terrain or other similar circumstances that will prevent the ambulance service vehicle from accessing the workplace, in which case an ETV must also be available.

## 11.2 FIRST AID ATTENDANT RESPONSIBILITIES

The first aid attendant shall assist in the ongoing safety efforts in the workplace through efforts in promoting safety amongst all employees and subcontractors. This basic responsibility includes, but is not limited to the following:

- Assisting the site superintendent, management and/or the supervisor in implementing and maintaining our Company Health and Safety Program.
- Ensuring adequate first aid equipment is available; the first aid room is neat, clean, properly stocked and meets all WorkSafeBC requirements
- Providing a general safety induction and orientation to new workers.
- Reporting hazards to the site superintendent, your immediate supervisor or management.
- Ensuring workers who use controlled products have received general training regarding the Workplace Hazardous Materials Information System (WHMIS) as well as workplace specific instruction in safely storing; handling, using and disposing of WHMIS controlled products.
- Ensure workers who wear respirators are fit tested and trained in the proper usage, care and maintenance of their respirators.
- Ensure all accidents, incidents and injuries are documented and the accident treatment book is filled out fully.
- Keep current Safety Data Sheets (SDS) and WHMIS information at the workplace.
- Check and document workers who hold current and valid first aid certificates.
- Ensure regular site safety meetings are conducted, documented and posted.
- Maintain a personal journal to record safety incidents. Include verbal directions or instructions, individuals, companies involved, dates, times and follow up measures.
- Use all resources available to you if you are uncertain of any safety issues, concerns, or work practices. I.e. site superintendent and supervisors, Quolus management or WorkSafeBC.
- Setting and leading by personal example!

Responsibilities of the first aid attendant with the injured worker

- Continue to administer first aid, if required
- Ensure an injury package is taken (containing a Functional Abilities Form or Physician Report Form, Material Safety Data Sheets (if necessary) to the medical facility.
- Maintain contact with the company providing updates when the worker has reached their destination (hospital, doctor’s office or the worker’s home)

- Return to the company to provide additional follow-up and assist in the completion of the injury/incident documentation
- Additional duties may be added based on each individual circumstance

The first aid attendant will report all injuries/illnesses on the first aid report form.

**The Worker must ensure:**

- Seek first aid immediately.
- Report your injury or illness to your Manager/Supervisor.
- Should the injury cause you to seek medical care from a doctor, nurse, chiropractor, physiotherapist, hospital, or walk in clinic, contact your Supervisor & Manager and the Safety Department as a WSBC form will need to be completed.
- Co-operate in the health care treatment.
- Co-operate in the return to work program.
- Informed of the requirement to report all injuries/illnesses to their Supervisor immediately and to report for first aid treatment immediately. If medical attention is required, an Injury Management/Return to Work Program form must be provided to the worker. The worker must get the form completed by the doctor and returned to the Supervisor that same day, or if occurring at the end of their shift, on their next scheduled shift (injury circumstances will be taken into account). When appropriate, modified duties will be made available

### 11.2.1 First Aid Kit Requirements

First aid kits must not contain anything besides material required for first aid emergencies. First aid kits will:

- contain simple and clear instructions to be followed;
- be kept under the charge of a responsible person (i.e. First Aid Attendant) and;
- be regularly inspected and kept properly stocked.

### 11.2.2 First Aid Records

First Aid Records shall contain the following information:

- The full name of the injured worker;
- The date and time of injury or report of illness;
- The date and time the injury or illness was reported to the employer or the employer's representative;
- The name of witnesses and a contact phone number if possible;
- A description of how the injury or illness occurred;
- A description of the nature of injury or illness;
- A description of the treatment given and any arrangements made relating to the injured worker;
- A description of any subsequent treatment given for the same injury or illness; and
- The signature of the attendant or person giving first aid, and where possible, the signature of the worker receiving treatment.

### 11.2.3 Training

AED & CPR training will be made available to all those needing to take the first aid courses. The first aid training must be provided by an approved provider in first aid training and course content will be in compliance with provincial legislations.

Training must be completed every three years in order to maintain a valid first aid certificate.

Each employee who completes the first-aid course will receive a first aid certificate from the approved training provider. A copy of the certificate is to be posted on the safety board to identify certified first aiders. The Safety Department is to receive a copy of this certificate in order to maintain the training records and can arrange for refreshers.

## 11.3 First Aid Treatments

First aid is the one-time treatment or care and any follow-up visit(s) for observation purposes only. Basic first aid concentrates on breathing, bleeding, and burns.

### 11.3.1 Breathing

If the casualty is unconscious, check for breathing. Listen at the mouth and nose. Watch and feel for chest movement.

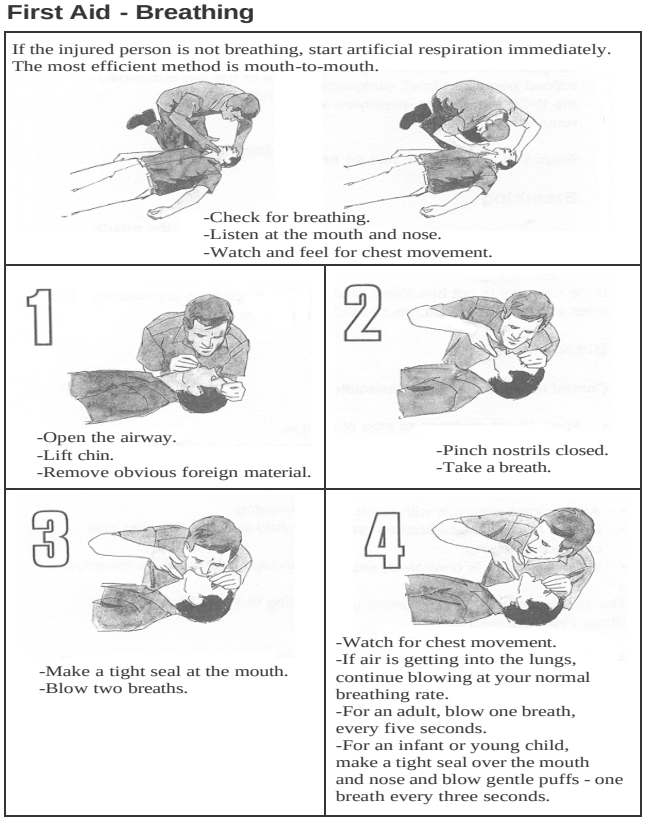



*Figure 4*

### 11.3.2 Bleeding

- Control external bleeding immediately.
- Apply direct pressure to stop blood flow.
- Place casualty in comfortable position and elevate affected part.
- Rest to slow circulation.

- Apply direct pressure with hand over dressing.
- Do not remove blood-soaked dressing. Add another dressing and continue pressing.
- When bleeding is controlled, secure bandage and maintain elevation.

The simple formula for the control of bleeding is Rest, Elevate, and Direct Pressure. -R.E.D.

A deep wound in the palm of the hand usually results in severe bleeding. You should control bleeding from a wound across the palm of the hand with direct pressure, elevation, and rest.

- Make a fist and apply pressure to the wound; at the same time, elevate the hand.
- Seat the casualty.
- Place a wad of gauze dressings over the wound and close the fingers around the wad to maintain pressure.
- Elevate the hand again to a higher position.

For a crushed hand, the treatment is different.

- Steady and support the injured hand.
- Place a pad of dressings in the palm of the hand to keep it in the positions of function.
- Remove any jewelry before swelling occurs.
- Transfer the hand to a padded splint extending from mid-forearm to fingertips and elevate slightly.
- Place non-stick dressings between the fingers and between the index finger and thumb.
- Cover the injured hand with sterile dressings or a clean cloth.
- Starting at the fingertips, apply a roller bandage to secure the hand to the splint.
- Apply an arm sling. Transport the casualty to medical aid.

### 11.3.3 Burns

Immediately immerse the burned part in ice water or immediately apply ice or clean cloths socked in cool water.

Cool will:

- Reduce the temperature of the burned area and prevent further damage
- Reduce swelling and blistering
- Relieve pain.

### 11.3.4 Medical Alert

Valuable information about the history of a casualty can often be found on a **Medical Alert** device (bracelet, necklace, or pocket card). This warning alerts first aiders and medical personnel to the fact that the casualty has a medical condition requiring special treatment, or is allergic to certain substances.

### 11.3.5 Severed Tissue

Completely or partially severed parts must be preserved, regardless of their condition, and taken to the medical facility with the casualty.

### 11.3.6 Partially severed part should be:

- Kept as near as possible to its normal position
- Covered with sterile gauze dressings, bandages, and supported
- Kept cool with an ice bag or cold compress outside the bandage.

### 11.3.7 Completely severed part should be:

- Wrapped in sterile gauze moistened with clean water, placed in a clean watertight plastic bag and sealed, and a record made of the time this was done,
- Placed in another plastic bag or container partially filled with crushed ice,
- Transported with the casualty to a medical facility.


Do not attempt to clean severed parts and do not use antiseptic solutions.

If possible, notify medical faculty that casualty is being transported with partially or completely severed parts.

### 11.3.8 Immersion Foot

Caused by wet heating of the feet, over an extended period, at temperatures above freezing. It is most prevalent in persons who spend long periods with their feet in cold water or mud.

Immersion foot can be prevented by keeping the feet dry. Carry spare socks in a warm place, such as inside the jacket, and change them often to help prevent this condition.

Initially the feet are cold, swollen, and waxy, and may be numb. After warming, they may become red, swollen, and hot, and blisters may occur.

In advanced stages of immersion foot, gangrene may develop:
- Remove wet footwear and warm cold areas.
- Get medical aid.

### 11.3.9 Embedded Object

- Do not attempt to pull out objects embedded in a wound. Pulling nails, splinters, or pieces of glass from wound will cause more damage and will increase bleeding.
- Cover lightly with dressing without pressure on the object.
- Apply pressure around the wound and away from the embedded object.
- Get medical help as soon as possible.

### 11.3.10 Eye Injuries

- Do not attempt to remove particles on the pupil or stuck to the eyeball.
- Remove loose particles with care using the moistened corner of tissue.
- If that fails, cover the eye lightly with a dressing to prevent movement and transport to a medical facility.

- Avoid rubbing the injured eye and causing further injury.
- Unconsciousness
- Loss of consciousness may threaten life if the casualty is face-up and the tongue has dropped to the back of the throat, blocking the airway.
- Make certain that the person is breathing before looking for the cause of unconsciousness.
- If injuries permit, place the casualty in the recovery position (Figure 5) with the neck extended.
- Never give anything by mouth to an unconscious casualty.

### 11.3.11 Fractures

- A fracture is a break or a crack in a bone.
- Steady and support the injury. Do not move the victim.
- Dress the wound and control any bleeding.
- If casualty must be moved for safety, secure the limb with padded splints.
- Check the pulse. If none, get medical aid immediately.
- Reassure and keep warm to prevent shock until help arrives.

## 11.4 Bloodborne Pathogens

This written Policy is designed to eliminate any on the job exposure to potentially infectious body fluids that may cause disease. Very seldom will exposure incidents cause the disease. All employees shall be required to have a basic understanding of the Policy and follow the required safe working practices as dictated by Quolus and WSBC Occupational Health and Safety Regulation.

Quolus employees are not in an “at risk” position for exposure to bloodborne pathogens simply due to the nature of their work. All employees trained in first aid do not render first aid as a primary job, and first aid rendering is done as a collateral duty. This does not eliminate the possibility of exposure due to an unforeseen accident while at work.

**Safe Work Practices**

- Be alert in high risk areas where syringes and sharps may be used.
- Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials.
- Under circumstances in which differentiation between body fluid types is difficult or impossible to identify, all body fluids shall be considered potentially infectious materials.
- Work sites shall be maintained in a clean and sanitary condition. All broken glass and potentially sharp instruments shall be cleaned up using a broom and dustpan. DO NOT touch these materials with your hands.
- When there is reason to believe that a surface has been contaminated with a blood or other potentially infectious material, it shall ONLY be cleaned by a third party. Leave the work area and inform your Supervisor and General contractor, Owner and/or Property Management.
- When the third party is not available, the contaminated area shall be avoided until a qualified person using the proper barriers and cleaning solvents have decontaminated it.
- All accidents shall be reported to the Supervisor. During this reporting process, indicate whether blood was or was not present and if a potential exposure did occur.

**NOTE:** IF AN ACTUAL EXPOSURE INCIDENT AS DEFINED ABOVE HAS OCCURRED, SPECIAL REQUIREMENTS SHALL BE FOLLOWED. IMMEDIATELY FOLLOWING AN

EXPOSURE INCIDENT, CONTACT YOUR DISTRICT MANAGER AND SAFETY CANADA FOR THE PROPER PROCEDURES.

**NOTE:** IF SURFACES HAVE BEEN CONTAMINATED WITH URINE OR OTHER NON-BLOOD CONTAINING BODILY FLUIDS, NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT CONTACT WITH CONTAMINATED MATERIALS.

## 11.5 EMERGENCY PREPAREDNESS

**Overview**

An emergency can develop despite accident prevention programs and safe-work procedures. An Emergency Response Plan is essential to minimize confusion and delay in handling the emergency.

Quolus will conduct a risk assessment in any workplace in which a need to rescue or evacuate workers may arise. Each workplace will have a written emergency plan, appropriate to the hazards of the workplace. The plan will address emergency conditions which may arise from within the workplace and from adjacent workplaces. Employees will receive emergency response training prior to commencing work.

### 11.5.1 Emergency Response Plan (ERP)

To be effective, an ERP must be tailor made for the site it is intended for. ERP needs should be discussed during the initial project hazard analysis. Items that should be considered include:

- Legislated requirements for first aid training and facilities
- Distance of the site from an advanced medical care facility
- Availability of first aid and emergency resources (provider could be prime contractor)
- Availability of company owned vehicles for transportation
- Location and availability of professional emergency services (fire, ambulance, police)
- Special situations that may be encountered (e.g. confined space rescue, high angle rescue)
- Hazards specific to the work site (e.g. product releases at petrochemical facilities)
- Methods of internal (on site) communication available (e.g. radio, horn, cell phone, alarm etc.)
- Methods of external (off site) communications (radio, land line, cell phone etc.)
- Internal fire-fighting capability (typically 20lb ABC fire extinguishers)
- Emergency Response Procedures including evacuation muster points
- Requirements for Environmental Spills (spill kits, absorbent)
- Contact numbers for Federal and Provincial reporting (OH&S, Environmental incident)

### 11.5.2 Means of Egress

Unobstructed and safe exit route shall be maintained for all employees, and the exit route shall be communicated and marked so all employees can safely exit their work area in the event of an emergency. In every building or structure, “exits” shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed.

This section contains general requirements essential to providing a safe means of egress from fire and like emergencies. These requirements are not intended to apply to exits from vehicles, vessels, or other mobile structures.

**Exits**

Emergency Exits shall be provided, in sufficient number, and be readily accessible as to ensure the adequate evacuation of all occupied spaces.

- Emergency Exits shall be clearly marked at all times.
- Each emergency exit shall have dedicated markings.
- Letters must be clearly legible, no less than six (6) inches high and 3/4 inch stroke width.
- Directional arrows must be clear as to their meaning.
- Exit signs must be illuminated during an emergency by a reliable light source of not less than five (5) foot candles.
- Exits shall never be locked or fastened as to prevent the free escape during an emergency.
- Exits shall not be decorated, concealed, or disguised in any way that may confuse their purpose.
- Mirrors shall not be placed near or on any emergency exit.
- Exits must be at least 28 inches wide.

**Exit Routes**

- Exit routes must be safe for all occupants of the building (i.e., no exit routes requiring occupants to use ledges, edges, or other paths of travel not normally used).
- Exit route must not go through a more hazardous area.
- Means of egress must be the safe and the most direct route to the nearest exit.
- Means of egress must be clearly marked during an emergency.
- If a means of egress requires occupants to pass through a door, that door cannot be locked or fastened when the space is occupied.
- Means of egress must be adequate to allow for the safe egress of all occupants.
- The identified means of egress must be kept clear of all obstructions at all times and maintained in good repair.
- Egress routes must be no less than 42 inches wide.

**Exterior Exit Routes**

- Must be smooth, solid, and level.
- Guardrails must be used on open sides, above ground level.
- Must be covered by a roof, if there is a chance for snow or ice accumulation.
- Must be permanent and reasonably straight.
- No dead ends longer than 20 feet.
- Exit routes must have a minimum ceiling height of seven (7) feet six (6) inches, with any projections from ceiling (lights, sprinklers, etc.), reducing overhead height to no less than six (6) feet eight (8) inches.
- Any significant changes in elevation must have stairs or ramps to navigate that change.

**Muster Point Areas**

- Means of egress and emergency exits must discharge into a yard, street, or space large enough to accommodate all occupants, and allow them safe exit from the building area.
- If the means of egress continues beyond the planned Muster Point area, then that route must be blocked, locked, or otherwise prohibit occupants from continuing on that route.
- Means of egress and emergency exit Muster Point areas must be safe and free from other hazards such as chemical, environmental, or physical hazards.

**Marking Non-Exits and Non-Egress Routes**

- Any door, hallway, passageway, dead-end, staircase, or other means of travel that does not lead to an emergency exit, must be clearly marked as such.
- The sign must be readily seen with letters no less than six (6) inches high and 3⁄4 inch stroke width.
- The sign must read “NOT AN EXIT” or some other words that clearly communicates that message.

**Special Considerations for Construction Sites**

- Construction sites change on a daily basis. It is the site Supervisor’s responsibility to ensure that all planned emergency exits, egress routes, and Muster Point areas are still relevant and meet this standard.
- Emergency exits, means of egress, and Muster Point areas must be planned and communicated to all employees prior to beginning work on the job site.
- If conditions exist that prohibit the safe egress, exit, and Muster Point from a construction site, then the site shall not be occupied until such time that those conditions no longer present the hazard.

## 11.6 EMERGENCY RESPONSE PROCEDURES

**Guidelines**

In general, Quolus employees must report an emergency event immediately to their site CSO and their Quolus Manager.

Once the emergency has been ascertained, response/assessment teams will be the first to respond to the incident. They will assess the severity of the emergency and communicate immediately with assigned groups as appropriate. Response/assessment teams are composed of at least one person per department to coordinate and instruct co-workers. These teams will coordinate emergency and/or evacuation efforts within their areas of responsibility.

Not all emergencies will require the same level of response. Appropriate responses will be dictated by the severity of the event and its effect on the health and safety of employees, visitors, and property.

**Emergency Procedures on Construction Jobsite**

- As soon as the incident is noticed, STOP the work.
- Sound alarm or initiate evacuation order.

- Alarms will be different for each construction site; some sites may follow the below type of alarm sounds:
- Medical Aid: example. One (1) short horn blast.
- Evacuation: example. Three (3) long horn blasts.
- Notify appropriate emergency services (911) if required and the Supervisor.
- Evacuate the building or work site. If it is safe to do so, remove injured from danger if necessary and attend to them, otherwise wait for emergency workers. Take all possible safety precautions including the use of protective equipment as required.
- All employees will assemble in the designated area (Muster Point) and will remain there until ordered to move by the Floor Wardens, Supervisors or emergency services. Foreman of each trade should count employees and immediately notify appropriate authorities of any missing personnel.
- Some employees may elect to use emergency equipment to control and/or extinguish flames, spill, etc. but at no time is any employee to remain in the building or work site, if further exposure shall increase the risk hazard to the employees.
- No employee shall enter the workplace until a return to the building or work site has been authorized by the Supervisor and emergency services personnel.
- Cordon off the incident area.
- Ensure site is safe and cleaned prior to resuming work.
- Perform a thorough Incident Investigation as soon as possible.
- Produce an incident report and forward to Regional Safety Manager and Safety Canada within 24 hours.
- Review incident findings with workers during next safety meeting.

**Office Staff**

All office staff will regularly take part in Emergency Evacuation training including fire drills and use of fire extinguishers, earthquake, bomb threats and natural gas leaks.

**Accident Involving Elevating Devices**

In the event of a serious accident involving an elevating device (e.g. a “cherry picker” or scissors lift), the Elevating Devices Safety Branch of the Ministry of Municipal Affairs must be contacted via WorkSafeBC.

### 11.6.2 Fire and/or Smoke

The primary purpose of the Fire Procedure is to provide a course of action for all personnel to follow in the event of a fire or smoke emergency.

- Rescue anyone in immediate danger.
- Alert employees of the fire and its location. Activate the nearest fire alarm. Contact the local fire department by calling 911 and follow any and all instructions. Assign someone to guide the response personnel directly to the fire.
- Contain the fire if it is relatively safe to do so. Close all doors, fire doors, and windows near the fire. Shut off all fans, ventilators, and air conditioners.
- Extinguish the fire if it is small. Obtain the nearest fire extinguisher and pull out the safety pin. Aim the fire extinguisher nozzle low, at the base of the fire, depress the trigger, and move nozzle move slowly upward with a sweeping motion.
- Do not aim nozzle at the middle or the top of the flames.
- If fire cannot be extinguished, evacuate the building immediately.

- Keep low to the floor to avoid inhaling smoke.
- If the fire cannot be safely extinguished using available fire extinguishers, evacuate the premises immediately using the nearest and safest exit.
- Close all doors behind you as you leave.
- Report to the designated "Emergency Evacuation Area" (insert location).
- Immediately report any employee(s), customer (s), visitor(s), contractor(s) or individual(s) who have remained in the building or refused to leave.

Do not return until it has been declared safe to do so by the Fire Department.

See also Fire Prevention section of manual.

### 11.6.3 Bomb Threats

In the unlikely event of a bomb threat, it is impossible to discern valid threats from hoaxes. Therefore, all threats will be treated as real in order to protect lives and property, and the premises shall be evacuated immediately.

# WHEN A BOMB THREAT IS RECEIVED

Get the message **exactly**. Try to learn **where** the bomb is, **when** it will go off, **when** it was placed, **why** it was placed, and **what type** of bomb it is.

**DO NOT INTERRUPT, answer "Yes" or "No"**

Time: _____ Date: _____

Message: _____

_____

_____

Is the caller: ❑ Male ❑ Female ❑ Young ❑ Middle-aged ❑ Old Age: _____

Does the caller have an accent? ❑ Yes ❑ No Type: _____ _____

Did the caller mispronounce words? ❑ Yes ❑ No List Words: _____

_____ _____

| Was the Caller: | Laughing | ❑ Yes | ❑ No | Angry | ❑ Yes | ❑ No |
|---|---|---|---|---|---|---|
| | Drunk | ❑ Yes | ❑ No | Excited | ❑ Yes | ❑ No |

Did you hear background Noises, e.g. traffic, machinery, music, talking? _____

_____

Other comments: _____

If possible, ask the following questions, but only after the caller gives his message:

Where is the bomb located? _____

What time will the bomb explode? _____

What does the bomb look like? _____

When was the bomb placed? _____

Why was the bomb placed? _____

What type of bomb is it? _____

**Bomb Notification**

Is it necessary to notify the neighbors of the situation? If the risk extends beyond the property boundaries the neighbors should be notified.

### 11.6.4 Spills

Spill – an unintentional release of any material out of its container including oil and fuel, chemicals, and gases.

- Ensure there is no danger.
- If safe to do so, stop the flow of product, plug, turn off open valve, upright the container.
- Put all required safety equipment on.
- Use spill kit products to contain the spill.
- Pick up all product and place into spill storage container, then seal container and notify safety department to arrange for appropriate disposal as per environmental standards.

**Safety Data Sheets (SDS)**

In the event of a chemical product spill, MSDS are available to provide you with more information on the spilled substance. SDS's are available in the site safety book.

### 11.6.5 Natural Gas Leak

In the event of a natural gas leak or contact with a gas line while excavating, the Supervisor shall be responsible for the following time permitting:

Major Leak
- Evacuate all employees from the immediate area
- If safe and able to do so, isolate the main gas line
- Contact Fire Department
- Contact Fortis BC
- Contact WorkSafeBC.

### 11.6.6 Flammable and Combustible Substances

Quolus employees will ensure that when a flammable gas or a flammable liquid is handled, used, or stored, all sources of ignition will be eliminated or adequately controlled. Sources of ignition include open flame, spark-producing mechanical equipment, welding and cutting processes, smoking, static discharge and any electrical equipment or installation that is not approved for hazardous locations. Flammable and combustible substances will always be stored separately from ignition sources and other substance they might react with.

Metallic or conductive containers used to transfer flammable liquids must be electrically bonded to each other or electrically grounded while their contents are being transferred from one container to the other.
If it is not practicable to maintain the airborne concentration of a flammable gas or vapour below the applicable exposure limit, for example, in a temporary situation or an emergency, only the

minimum number of workers necessary for the work may be exposed, and the concentration of the flammable gas or vapour must not exceed 20% of the lower explosive limit (LEL).

These practices will be strictly adhered to by all Quolus employees working with or near flammable and combustible substances.

**Critical Steps**

- If safe to do so, isolate the fuel source; close the gas valves to stop leakage
- All affected personnel who are not needed for emergency help are to be evacuated
- First Aid Attendants will set up a central place for treating any injured personnel
- Determine if the natural gas leak is a government reportable spill incident requiring immediate government notification.
- Recognize pipe lines containing residual gas have potential for major explosion.

### 11.6.7 Earthquake

In the event of an earthquake while on site the following should be adhered to:

- Equipment operators should lower any suspended loads, set brakes and shut down the equipment.
- Ensure there is no fire hazard.
- Level equipment as much as possible, inspect spill containment system for leaks.
- Follow fire and spill procedures, if appropriate.
- Immediately get out of any excavation and stand well away from the edge.
- If you are outside move away from buildings, power-lines, cranes and other potential falling objects. Do not attempt to enter buildings.

### 11.6.8 Power-line Contact

Quolus Construction Services will endeavor to have power-lines in the work area either re-routed or de-energized prior to commencement of work. Maintaining a safe distance from all electrical conductors is the best way to prevent power-line accidents. (See also in this manual Section 13 – Activity Specific Requirements, Power-lines). If for some unseen circumstance, contact with an energized conductor occurs:

- If you are in mobile equipment, remain inside the cab and don't panic; you are safe where you are.
- Alert other personnel to what has happened and instruct them to keep their distance from any machine, load, lines or ground affected by the power-lines. The machine, load, lines and the ground will carry electrical current.
- Try to remove the contact; move the equipment away from the line in the reverse direction to that which caused the contact, e.g. if you swung left into the wire swing right to break the contact.

***Caution:*** Once an arc has been struck, it can draw out a considerable distance before it breaks. Keep moving away from the line until the arc breaks and then continue moving until you are at least 3 to 4.5 m (10 to 15 feet) away from the line.

***Caution:*** If a crane's ropes (Crane may be any lifting apparatus being used) appear to be welded to the power-line do not move away from the line as it may snap and whip. Stay where you are until help arrives.

- If mobile equipment cannot be moved away or disengaged from the contact, remain inside the mobile equipment until the electrical authorities de-energize the circuit and confirm that conditions are safe.
- Report every incident involving contact with a live line to your supervisor who will in turn notify the electrical utility so that inspections and repairs can be made to prevent damaged power-lines from failing at a later date. WorkSafeBC must also be notified by the supervisor.
- If it is necessary for the operator to leave mobile equipment while it is still in contact with the electrical conductor, they must jump clear. They must never step down allowing part of their body to be in contact with the ground while any other part is touching the machine.
- Because of the hazardous voltage differential in the ground the operator should jump with his feet together, maintain balance and shuffle or hop slowly across the affected area. Do not take large steps because it is possible for one foot to be in a high voltage area and the other to be in a lower voltage area. The difference between the two can kill.
- Completely inspect equipment that has contacted a power-line for possible damage caused by the electrical contact. Affected sections of wire rope should be replaced if it touched a line since the arc is usually of sufficient power to weld, melt or badly pit the rope.

### 11.6.9 Power Outage/Utility Disruptions

The purpose of this procedure is to inform employees or visitors of precautions to be taken in the event of a structural failure.

In the event of a power outage, gather flashlights and other needed supplies. Check on all employees and visitors to ensure their safety. Ensure all backup or emergency lighting is fully operational. If the power outage is prolonged, consult with managers to consider dismissing employees for the remainder of the day.
In the case of water, heat, or other utility disruptions, all attempts will be made to determine the cause of the disruption and the probable length of shutdown. Where required, the local utility provider shall be contacted to assess and resolve the situation. If the shutdown is prolonged, consult with management to consider dismissing employees for the day.

Emergency Response Procedures for Gas/Power Utility Line Hit

- Walk away from hole/area.
- Turn off all ignition sources.
- Evacuate immediate area and meet at the designated muster point.
- Notify 911, Site Superintendent and appropriate utility company.
- Turn off / remove all potential ignition sources in next closest areas, building heaters, thermostats, best to hit main breaker for building if applicable.
- Proceed with site specific EPR Plan.

### 11.6.10 Trench of Excavation Cave-in

In the event of an excavation collapse do not react by impulse and jump into the excavation to the aid of an injured or buried worker. There is a 50% potential for re-occurrence in all failed excavations and you could become a victim too. Instead, do the following:

- Phone 911 for assistance if there is an injured person.
- Size up the situation consider a safe approach if one is possible. If it is possible to safely assist the injured or trapped person do so.
- Secure the following areas:
- Upper edge, turn off all equipment – Equipment on the edge of excavations are at an extreme risk of falling in should the slope fail.
- Remove debris and if safe to do so remove equipment from around excavation.
- Fire/rescue arrives and rescue/recovery begins. Be sure to stay away from the area during the rescue/recovery and keep your fellow workers back to allow plenty of working room for the rescuers.
- Secure the area to your best ability. Do NOT allow access for media, public, and other.
- Assist the appropriate people in the investigation process by relating what you saw and any details you remember.

### 11.6.11 Confined Space/Restricted Access Rescue Procedures

- In the event the attendant cannot make contact with entrant or suspects and an incident has occurred, the attendant shall immediately notify 911 if injuries are suspected to be life threatening.
- Notify the Site Supervisor.
- If adequately trained and it is safe to do so, remove injured from danger by using required rescue equipment and attend to them, otherwise wait for emergency workers. Take all possible safety precautions including the use of protective equipment as required.
- Proceed with site specific ERP.

Confined Space/Restricted Access Rescue Equipment

Man-lift, Access Tools, Fire Extinguisher, Stretcher, Restraints, PPE as required according to the safe work procedure, Entry Permit and/or pre-job hazard assessment.

### 11.6.12 Work at Heights Evacuation

- If incident is life threatening, notify 911 and Site Supervisor immediately.
- If adequately trained and it is safe to do so, remove injured worker from danger by using appropriate rescue equipment and attend to them, otherwise wait for emergency workers. Take all possible safety precautions including the use of protective equipment as required.
- Prep injured worker for transport by stretcher or backer board by qualified first aid attendant.
- Lower injured worker by ropes attached to stretcher as directed by First Aid Attendant following all appropriate safety procedures for tie offs. Ensure the safety of both the injured and non-injured workers.
- Proceed with site specific ERP.

**Work at Heights Evacuation Rescue Equipment**

PPE, Fall Protection, Scaffolding, Man- lifts, Stretcher, Restraints as required according to the safe work procedure and pre-job hazard assessment.

### 11.6.13 Natural Disaster or Severe Weather

The primary purpose of the Natural Disaster/Severe Weather Procedure is to inform employees and visitors of any serious weather conditions that warrant their attention. A “weather watch” means that conditions are favorable for severe weather to develop. A “weather warning” means that severe weather has been sighted in the vicinity.

- Account for all employees and visitors, ensuring that everyone is inside the facility. Close all windows and close all curtains and/or blinds.
- Close all windows, curtains and blinds and instruct all employees and visitors to move away from windows.
- If necessary, gather employees and visitors into the basement, or, if no basement is available, into bathrooms or other enclosed area.
- Listen to all weather reports for updates. Do not leave the basement or enclosed area until the weather warning has been lifted.
- Stay calm. Encourage others to stay calm also.
- Have portable radios available, along with extra batteries.
- Be prepared for isolation at the premises. Ensure that emergency equipment and supplies are available or can be readily obtained.

### 11.6.14 Chemical, Biological, or Radiological

The purpose of the Chemical, Biological, or Radiological Procedure is to inform employees and visitors of the steps that should be taken in the event that a contaminant, virus, or other harmful agent poses an immediate threat.

- Call 911 and report the situation and follow any instructions given.
- Notify Supervisors, Regional Health and Safety Manager, and Human Resources immediately.
- Commence evacuation procedures.

**Employee/Visitor Evacuation Procedure**

In the event that Quolus declares that an evacuation of the premises is necessary in response to an emergency situation, employees/visitors are required to follow the steps below:

- Stop working and shut down any equipment in use.
- Proceed to posted emergency exit, following posted evacuation route(s).
- Touch doorknobs/door handles carefully to check for heat.
- Proceed to designated meeting area (unless otherwise instructed).

## 11.7 Posted Emergency Information

The following information must be posted and displayed in a common area visible to all employees:

A floor plan of the Quolus branch will be posted in at least one common area. The map will highlight all emergency exits, fire extinguisher, first aid kit locations and fixed structures as well as the muster point or meeting area.Brief but specific instruction with the appropriate emergency contact numbers will be posted in a common area. The numbers must include as a minimum:

- Fire/Ambulance/Police
- Hazardous Materials

- Workplace Health & Safety
- Nearest Hospital
- Poison Control Center
- Gas Company
- Water Company
- Power Company

Fire extinguishers have written procedures posted for steps to follow in the event of a fire.

## 11.8 Training and Communication

- All Quolus employees shall be trained on how to safely exit their assigned workspace using planned routes, exits, and muster areas.
- Training must be conducted, no less than annually, for non-construction locations or more frequently if there are changes to the egress route, exit, or muster point area.
- There must be a diagram posted in all work areas that shows the planned emergency exit routes out of that space and location of fire extinguishers.
- Training for emergencies on construction sites must occur before beginning work and then updated as the site changes during construction progress. This will fall under the responsibility of the General Contractor.
- All training must be documented and available for review.

New employees must be able to demonstrate proficiency at:

- Identifying and reporting an emergency.
- Understanding and competence in their individual role and responsibilities within that role.
- Identifying alarms (visual/audio).
- Reading and understanding evacuation route placards.
- Demonstrating a proper evacuation to a designated Muster Point area.
- Knowledge of who to report to following a successful evacuation.

**EMERGENCY TRAINING**

Employees will be trained in site-specific emergency procedures during a site-specific Prime Contractor orientation. Training will include but not be limited to emergency first aid summoning procedures, fire and evacuation procedures, and emergency response for workers who will be part of the first response team on site. Workers who are performing leading edge work will be trained to properly report and respond to a suspended worker during fall protection training. Details of suspended worker rescue will be developed at the site level with supervisors and emergency response members. Recommended emergency response and rescue procedures for earthquake, suspended workers and electrical emergencies are found in the Quolus OHS program.

## 11.9 Post Traumatic Incident -“Do’s & Don’ts”

If you have been involved in or have witnessed a serious incident you will find yourself with some residual effects. Even after a near miss incident where there were no injuries you may be shaken and upset. Sometimes the reaction is delayed and may take several hours to take effect. The following table lists a few of the do’s and don’ts regarding posttraumatic incident stress:

| DO | DON’T |
|---|---|

| | |
|---|---|
| Expect the incident to bother you. | Drink alcohol excessively, or use other substances to numb post-trauma consequences. |
| Maintain a good diet, and exercise | Automatically stay away from work, lying on your couch eating junk food. |
| Spend time with family, friends and coworkers | Withdraw from family, friends and coworkers. |
| Remind yourself that post-traumatic consequences are normal. | Have unrealistic expectations for recovery. |
| Learn as much as possible about Critical Incident Stress | Use off duty time immediately after the accident for training or reading up on post traumatic stress. |
| Take time for leisure activities. | Look for easy answers to explain the reasons for the incident. |
| Get extra help if necessary. | Think you are “crazy”. |

## 11.10 FIRE PREVENTION/PROTECTION

The risk and cost of fire can be extremely high in economic and human terms. Accordingly, the following rules and procedures are established but are not limited to the following:

The best means of fighting fires is to prevent them. All employees are responsible for doing everything they can to prevent fires. If you observe a potential fire hazard, please report it to the appropriate supervisor so that the hazard can be eliminated or fire protection equipment can be issued and maintained at the hazard location.

Before work is performed, supervisory personnel and employees must check for fire hazards. If there is any doubt regarding hazards, contact your supervisor. Some of the more common hazards are paper, scrap lumber, aluminum shavings, flammable liquids and oily or chemical soiled rags.

$CO_2$, foam or dry chemical type fire extinguishers must be available and be strategically located where the risk of fire exists, particularly near fuel storage and refueling locations and storage buildings. Workers should be aware of the locations and types of fire extinguishers in your work area. Extinguishers must be recharged immediately after use. Regular periodic inspection and service of extinguishers must be carried out.

Gasoline, propane, oil, grease and other flammable fluids must be stored in safe locations, clear of work areas and not in any building or locations where workers are likely to gather. **NO SMOKING** signs must be prominently placed in such storage areas and the **NO SMOKING** rules enforced. Gasoline and other flammables must be transported in appropriate safety containers (Safety Cans) and must be closed.

All Fire prevention regulations established by management must be observed. The **NO SMOKING** rules and postings must be observed. Smoking is permitted only in designated smoking areas.

Worker(s) assigned to firefighting duties must be trained in fire- fighting procedures. Be aware of the locations of fire extinguishers in your work area. If a fire occurs, try to extinguish it, if necessary summon the assistance of fellow workers. If there is any indication that the fire will not be contained and extinguished quickly and simply, then an alarm must be raised and evacuation procedures implemented.

Fire equipment must always be accessible and in good working condition. Tampering with fire protection equipment is a serious offense and is prohibited and may result in immediate dismissal.

Housekeeping must be maintained and ensure aisles, passage ways, doorways and stairways are kept clear and unobstructed.

Flammable and combustible materials must be clearly identified and stored in proper containers and sheds. Storage sheds should be located in a safe distance away from the main building.

### 11.10.1 Fire Procedures

If you can safely and effectively extinguish the fire using available fire-fighting equipment you should do so and then immediately notify your supervisor.

If you are unable to extinguish the fire, sound the air horn, go to the emergency meeting area and direct the fire crew to the scene of the fire.

Any time the emergency alarm sounds, all personnel must go to the emergency meeting area.

The First Aid Attendant is to determine the location and status of the alarm.

Employees may be delegated responsibility for salvage and overhaul, crowd control, escorting city fire and rescue.

Normal operations will resume when the “all clear” has been signaled.

Any time the Fire Department is called to the site, the Safety Coordinator must be notified

### 11.10.2 Fire Protection Devices

Workers must know of the locations and types of fire extinguishers in their work area. There are four general classes of fires and each requires an extinguishing agent. Portable fire extinguishers are labeled as to the types or classes of fires on which they should be used. Employees are instructed annually on the proper use of fire extinguishers, types available and locations of equipment. Fire extinguishers have written procedures posted for steps to follow in the event of a fire.

**Fire Extinguisher Classifications**

**Class "A"** - for ordinary combustibles such as rags, wood, cloth or paper.
**Class "B"** - for flammable liquids such as oil, gas, grease, etc.
**Class "C"** - for energized electrical equipment such as motors, wiring, switch plates, computers, etc.
**Class "D"** - for combustible metal including, chips, shavings, etc.


**Fire Protection Service Requirements**

**Monthly Inspections**

Qualified worker such as JHSC Representative will inspect the operation of all emergency lighting, the presence of fully charged fire extinguishers at fire extinguisher stations for equipment under the responsibility of Quolus. The **monthly inspection** of all fire extinguishers is to be documented on the monthly inspection form.

**Annual Tests**

Annual tests require a qualified person such as, Local Fire Prevention Officer, to carry out extensive testing of the entire fire alarm system; the sprinklers, standpipe, and fire extinguishers. All fire extinguishers are inspected and recharged if necessary.

**Fire Evacuation**

In the event of a fire, there must be clearly defined instructions and responsibilities to evacuate all the employees from the facility. This encompasses all employees, visitors, and contractors at this facility. A fire response plan with the evacuation route and what to do in the event of a fire will be posted at the Quolus head office.

**Evacuation Procedure**

At the sound of the alarm, leave the building by the shortest safest route available to you. Once you are clear of the building, go to your assembly area so the fire wardens can confirm everyone is out of danger. If you have visitors, assist them when evacuating. If visitors are alone in the building, you must make them aware of the emergency exits and assembly area.

## INDEX

## 12.1 RECORDS AND STATISTICS

### 12.1.1 Policy

Records and statistics, pertinent to safety shall be compiled and retained. These records and statistics shall be used to identify and monitor problem areas, review the effectiveness of our Health & Safety Program and provide data to the supervisors to assist them in their endeavors of providing a safe and healthy work place.

Records of accidents, accident reports, site inspections and minutes of the Tool Box Safety Meetings shall be filed and available for review and circulation.

## 12.2 RECORDS

### 12.2.1 Inspections of Vehicles and Machinery

Where applicable, records shall be kept on the maintenance and repair of each unit. Maintenance and repair records shall be kept on file. Such records shall be readily available upon request to WorkSafeBC Officers.

### 12.2.2 Investigation of Incidents and Accidents

Reports of incidents/accidents and near miss incidents involving Quolus Construction Services Ltd. shall be documented and kept on file and be available as per the WorkSafeBC Regulations.

### 12.2.3 Safety Committee Meeting Minutes

When required by the Prime Contractor, Minutes of Company Safety Meetings shall be recorded and submitted to the site office, filed at Head Office and made available as per the WorkSafeBC Regulations

### 12.2.4 Accident Forms (WSBC Forms 6 & 7)

Accident Report Forms shall be completed and filed in accordance with the WorkSafeBC Regulations.

### 12.2.5 Toolbox Safety Meetings

Toolbox safety meetings must be recorded and copies kept on file and available upon request by WorkSafeBC Officers.

### 12.2.6 Inspection Records

Where required, Inspection Reports shall be completed for all inspections and a copy kept on file.

### 12.2.7 First Aid Records

When applicable, the company First Aid Treatment Records shall be maintained and kept on file.

Each record of entry shall be signed by the First Aid Attendant or the person rendering first aid and, where possible, the worker receiving the treatment.

First Aid Records shall be kept on file for 3 years.

### 12.2.8 WorkSafeBC Inspection Reports

WorkSafeBC reports will be kept on file and used when auditing our Health and Safety Program.

### 12.2.9 Hearing Test Records

Records of hearing test results will be filed for future reference.

### 12.2.10 Safety Data Sheets (SDS)

Safety Data Sheets will be kept on file and reviewed annually to make sure they are current.

### 12.2.11 Accident Statistics

Accident statistics will be counted and recorded to monitor accident and incident trends.

### 12.2.12 Medical Certification/Examination/Testing

When required, medical certification, examinations, and testing will be maintained by management or supervisors and kept on file with results issued to the appropriate personnel ad upon request, be available to WorkSafeBC for review. Copies will be kept with the employees personnel file.

### 12.2.13 Respirator Fit Test Records

Annual respirator training and fit testing will be performed and the results of the training will be documented, filed and be available upon request by WorkSafeBC inspectors.

### 12.2.14 Training Records

Training records must be maintained and kept in the personnel files for review by the WorkSafeBC Officer

## 12.3 STATISTICS

### 12.3.1 Definitions

**Lost Time Injury (LTI)** – A “lost time” claim is created when a worker suffers a work-related injury that results in being off work past the day of accident, a loss of wages/earnings, or a permanent disability/impairment.

**Lost Time Injury Frequency (LTIF)** – measures the number of lost time injuries in the exposure period as a percentage of the workforce.

**Severity Rate** – Year-to-Date Days lost regardless of the accident dates divided by the full time equivalent worker multiplied by 100.

**Performance Index** – Calculated at the firm-rate level. A comparison between the firm-rates' cost record and the expected costs. If the costs are higher (lower) than expected, a surcharge (refund) is calculated.

**Recordable Incident Frequency Rate** – Calculation on the number of allowed recordable injury/illness claims multiplied by 200,000 divided by the derived hours worked.

**Lagging Indicators** – Is in regard to measuring "after the loss" type of measurement such as accident and injury rates, incidents. Lagging indicators can include:
- Recordable Injury Frequency Rate
- Workers Compensation Costs
- WSBC Inspection Orders

**Leading Indicators –** Measures that can be effective in predicting future safety performance. They assess results of actions taken before incidents occur. Examples of leading indicators are:
- Health and Safety audits
- Percent of internal inspections conducted as scheduled
- Near Miss Reporting

### 12.3.2 Reporting Guidelines for Injuries/Illnesses

Statistics must be tracked to help determine how well Quolus is achieving their health & safety goals. Frequency, severity and average days-lost rates can be used as indicators of the level of success of Quolus health and safety program. They show the rate and duration of work-related lost time injuries and illnesses. The following guidelines are provided for producing the required statistics:

- Work-related injuries and illnesses to be included in calculations are those which require treatment by a physician, with prescribed absence from work beyond the day of illness or injury occurrence.
- Illness and injury frequency, severity and average days lost rates will be determined each quarter:
- Below are formulas that are industry accepted methods for calculating work-related lost time illness and injury frequency, severity and average days lost rates.

### 12.3.3 Injury Rate Calculations

Any cut, fracture, sprain, amputation, etc. which results from a work incident or from an exposure involving a single event (or a number of linked events close together in time) in the work environment.

Injuries are caused by essentially INSTANTANEOUS events. Note that conditions resulting from one-time exposures to chemicals are considered to be injuries. Work-related events, including overexertion, that aggravate a pre-existing condition are deemed to be injuries.

**Incident Rate(s) Uses**

Incident rates, of various types, are used throughout the industry. Rates are indications only of past performance (lagging indicators) and are not indications of what will happen in the future performance of the company (leading indicators).

**Lost Time Injuries (LTI)**

Lost time injuries include fatalities, permanent total disabilities, and permanent partial disabilities and lost workday cases resulting from work-related injuries. A lost time injury is any work-related injury which renders the injured person temporarily unable to perform any regular job or modified work activity on any normally scheduled workday after the day on which the injury occurred. In cases where employment is terminated, this would include any previously scheduled workdays lost that were planned prior to the event, or an estimate of workdays that would be lost after termination. A single incident can give rise to several lost workday cases, depending on the number of people injured as a result of that incident.

**Lost Time Injury Frequency (LTIF)**

Is calculated by multiplying the number of lost time injuries (LTI) by 200,000 and dividing by the exposure hours worked during the period.

$$\textbf{LTIF} = \frac{\text{\# of LTI's x 200,000}}{\text{\# of Hours Worked}}$$

**Lost Workdays**

The number of lost workdays is the total number of scheduled workdays on which the injured person was temporarily unable to work as a result of a lost time injury. The lost workdays does not include the day of the injury. In cases of a fatality lost workdays are capped at 180 days.

**Recordable Incident Frequency Rate**

Is calculated by multiplying the number of recordable cases by 200,000, and then dividing that number by the of branch employee labour hours worked.

$$\textbf{IR} = \frac{\text{\# of Recordable Cases X 200,000}}{\text{\# of Hours worked}}$$

**12.3.4 Medical Treatment (Medical Aid)**

A medical treatment case is any injury that involves treatment by a physician or other medical professional.

Medical treatment does not include first aid treatment (whereby the worker only saw a first aid attendant and no doctor visit was required for additional treatment).

The following examples are generally considered to be medical treatment:

- treatment of infection
- application of antiseptics during a second or subsequent visit to medical personnel
- treatment of second or third degree burns
- removal of foreign bodies embedded in the eye
- removal of foreign bodies from a wound, if the procedure is complicated due to depth of embedment, size or location
- use of prescription medications (other than pain control medication)
- use of hot or cold soaking therapy during a second or subsequent visit to medical personnel
- application of hot or cold compresses during a second or subsequent visit to medical personnel
- cutting away dead skin (surgical debridement)

- application of heat therapy during a second or subsequent visit to medical personnel
- use of whirlpool bath therapy during a second or subsequent visit to medical personnel
- admission to a hospital or equivalent medical facility for treatment

Administration of tetanus shots or booster shots is not considered medical treatment. Diagnostic procedures such as X-rays or laboratory analysis are not considered medical treatment unless they lead to further treatment.

If a worker loses consciousness as the result of a work-related exposure or injury, the case is at minimum a medical treatment case regardless of what type of treatment was provided.

#### 12.3.5 Review of Statistics

Records and statistics shall be reviewed by management and, where necessary, action will be taken to correct safety problems identified during a review.

## 12.4 Health and Safety Trends

Senior Management will review Quolus' health and safety trends on an annual basis. Management will review the patterns and take corrective action.

The Health and Safety Manager in conjunction with the Joint (Occupational) Health and Safety Committee will prepare the trends review.

The following documentation will be reviewed when developing the Safety trends review:
- Injury/illness causes
- Workplace inspections
- Injury/Incident Investigations
- Hazard Reports
- Work Refusal reports
- Health and Safety recommendations from the Joint Health and Safety Committee
- WSBC Quolus and Industry Injury/Illness summary reports.

The Health and Safety Manager will create the summary of all injuries and near misses and review patterns of occurrence. The report will take into consideration the following patterns: by department, by injury type, and by type of equipment.

Suggested categories for the Trends Review are:
- The number of work accident fatalities,
- The number of lost workdays,
- The number of recordables without lost workdays,
- The incidence of occupational illnesses.

## 12.5 Record and Statistic Retention

Records and statistics will be kept for the below durations:

#### 12.5.1 Five-Year Retention

Joint (Occupational) Health and Safety committee meeting minutes

### 12.5.2 Ten-Year Retention

- WSBC Notice of Projects
- Planned inspection reports
- Informal inspection reports
- Tool box meeting records
- Records of workers suggestions
- Project safety committee meeting minutes
- Subcontractor orientation record
- Records of subcontractor safety violations
- WSBC inspection reports, compliance reports, assessments
- Emergency Preparedness Documented Drills
- Injury reports – near misses, first aid, medical aid, and lost time accidents

### 12.5.3 Twenty-Year Retention

- Monthly injury records
- WSBC claim cost statements
- First Aid treatment reports
- Incident and Accident investigations
- First aid reports
- WSBC accident investigation reports
- Records of emergencies

### 12.5.4 Permanent Retention

- Worker orientation records
- Worker safe practice training records
- Records of employee safety violations
- Records resulting from employee refusal to work
- First Aid training and certification records
- Monitoring data and worker exposure records
- Medical surveillance records
- Corrective action records

### 12.5.5 Miscellaneous

Equipment records - Life of equipment plus 5 years.

Supervisors will review statistics related to their areas of responsibility, Safety Committee minutes and recommendations. Where necessary they will take action to correct safety problems identified.

INDEX

## 13.1 Legislative Responsibilities in the Workplace

All personnel must make every reasonable effort to protect the safety, health and welfare of themselves and others. All work is to be conducted in accordance with the minimum standards outlined in the Workers' Compensation Act and WorkSafeBC Occupational Health and Safety (OHS)regulations.

Management, supervisors, safety representatives and employees will be informed of their legal dutiesand responsibilities and are expected to participate and apply safe work practices in accordance withapplicable legislation.

A copy of the Workers' Compensation Act, WorkSafeBC OHS regulations and applicable standards will be readily available at all workplaces and a notice indicating how these can be obtained will be posted where it is easily seen by workers. A copy of our Health, Safety and Environment (HSE) manual will also be readily available at all workplaces.

During all job planning, relevant legislation will be reviewed and referred to assist in successful job coordination, conducting of site hazard assessments and the development of project safety plans.

The rights and responsibilities of all employees – including how to exercise these rights and responsibilities – must be communicated to all employees at the time of hire. Before being assignedadditional responsibilities and job duties beyond that which the employee was originally hired for, alladditional rights and responsibilities must be reviewed with that employee.

## 13.2 Workers Compensation Act – Duties of Parties

Division 4 — General Duties of Employers, Workers and Others

### 13.2.1 General duties of employers

21 (1)Every employer must

(a)ensure the health and safety of
(i) all workers working for that employer, and
(ii) any other workers present at a workplace at which that employer's work is being carried out, and
(b)comply with the OHS provisions, the regulations and any applicable orders.

(2) Without limiting subsection (1), an employer must
(a) remedy any workplace conditions that are hazardous to the health or safety of the employer's workers,
(b) ensure that the employer's workers
(i) are made aware of all known or reasonably foreseeable health or safety hazards to which they are likely to be exposed by their work,
(ii) comply with the OHS provisions, the regulations and any applicable orders, and
(iii) are made aware of their rights and duties under the OHS provisions and the regulations,
(c)establish occupational health and safety policies and programs in accordance with the regulations,
(d) provide and maintain in good condition protective equipment, devices and clothing as required by regulation and ensure that these are used by the employer's workers,

(e) provide to the employer's workers the information, instruction, training and supervision necessary to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace,
(f) make a copy of this Act and the regulations readily available for review by the employer's workers and, at each workplace where workers of the employer are regularly employed, post and keep posted a notice advising where the copy is available for review,
(g) consult and cooperate with the joint committees and worker health and safety representatives for workplaces of the employer, and
(h) cooperate with the Board, officers of the Board and any other person carrying out a duty under the OHS provisions or the regulations.

### 13.2.2 General duties of workers

22 (1) Every worker must
(a) take reasonable care to protect the worker's health and safety and the health and safety of other persons who may be affected by the worker's acts or omissions at work, and
(b) comply with the OHS provisions, the regulations and any applicable orders.
(2) Without limiting subsection (1), a worker must
(a) carry out the worker's work in accordance with established safe work procedures as required by the OHS provisions and the regulations,
(b) use or wear protective equipment, devices and clothing as required by the regulations,
(c) not engage in horseplay or similar conduct that may endanger the worker or any other person,
(d) ensure that the worker's ability to work without risk to that worker's health or safety, or to the health or safety of any other person, is not impaired by alcohol, drugs or other causes,
(e) report to the supervisor or employer
(i) any contravention of the OHS provisions, the regulations or an applicable order of which the worker is aware, and
(ii) the absence of or defect in any protective equipment, device or clothing, or the existence of any other hazard, that the worker considers is likely to endanger the worker or any other person,
(f) cooperate with the joint committee or worker health and safety representative for the workplace, and
(g) cooperate with the Board, officers of the Board and any other person carrying out a duty under the OHS provisions or the regulations.

### 13.2.3 General duties of supervisors

23 (1) Every supervisor must
(a) ensure the health and safety of all workers under the direct supervision of the supervisor,
(b) be knowledgeable about the OHS provisions and those regulations applicable to the work being supervised, and
(c) comply with the OHS provisions, the regulations and any applicable orders.
(2) Without limiting subsection (1), a supervisor must
(a) ensure that the workers under the supervisor's direct supervision
(i) are made aware of all known or reasonably foreseeable health or safety hazards in the area where they work, and
(ii) comply with the OHS provisions, the regulations and any applicable orders,
(b) consult and cooperate with the joint committee or worker health and safety representative for the workplace, and

(c) cooperate with the Board, officers of the Board and any other person carrying out a duty under the OHS provisions or the regulations.

### 13.2.4 Coordination at multiple-employer workplaces

24 (1) The prime contractor of a multiple-employer workplace must
- (a) ensure that the activities of employers, workers and other persons at the workplace relating to occupational health and safety are coordinated, and
- (b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the OHS provisions and the regulations in respect of the workplace.

(2) Each employer of workers at a multiple-employer workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer's workers at that workplace.

### 13.2.5 General duties of owners

25 Every owner of a workplace must
- (a) provide and maintain the owner's land and premises that are being used as a workplace in a manner that ensures the health and safety of persons at or near the workplace,
- (b) give to the employer or prime contractor at the workplace the information known to the owner that is necessary to identify and eliminate or control hazards to the health or safety of persons at the workplace, and
- (c) comply with the OHS provisions, the regulations and any applicable orders.

### 13.2.6 General duties of suppliers

26 Every supplier must
- (a) ensure that any tool, equipment, machine or device, or any biological, chemical or physical agent, supplied by the supplier is safe when used in accordance with the directions provided by the supplier and complies with the OHS provisions and the regulations,
- (b) provide directions respecting the safe use of any tool, equipment, machine or device, or any biological, chemical or physical agent, that is obtained from the supplier to be used at a workplace by workers,
- (c) ensure that any biological, chemical or physical agent supplied by the supplier is labelled in accordance with the applicable federal and provincial enactments,
- (d) if the supplier has responsibility under a leasing agreement to maintain any tool, equipment, machine, device or other thing, maintain it in safe condition and in compliance with the OHS provisions, the regulations and any applicable orders, and
- (e) comply with the OHS provisions, the regulations and any applicable orders.

### 13.2.7 Duties of directors and officers of a corporation

27 Every director and every officer of a corporation must ensure that the corporation complies with the OHS provisions, the regulations and any applicable orders.

## 13.3 Workers' Rights

***Workers' Rights***

Every employee both supervisor and worker have legislated rights in the workplace and must be provided training in those rights and any procedures required to implement them. Those rights are asfollows:

***Right to Know*** – every worker has the right to know about the hazards in their workplace and the controls being put in place to abate these hazards.

***Right to Participate*** – every worker has the right to participate in the Health and Safety Program in place at their workplace. The primary way a worker can do this is to help identify hazards in the workplace and ideally correct them immediately. If the worker is unable to correct them immediately,they are to report these hazards to their supervisor as soon as practicable and warranted by the severity of the hazard.

Workers are also encouraged to actively promote health and safety in the workplace.

***Right to Refuse Unsafe Work*** – every worker has the right to refuse work if they have reasonable and probable grounds to believe that there exists an undue hazard/imminent danger to their wellbeing. In fact, they have a responsibility to refuse to perform such tasks. Work must stop, and may not resume, until the unsafe work concern has been addressed. All work refusal occurrences shall be documented for lessons learned and corrective measures to be put into place. The procedurefor resolving right to refuse situations is as follows:

- If you exercise your right to refuse unsafe work, you must immediately report the problem toyour supervisor or employer.
- Your supervisor will immediately investigate and either correct the problem without delay orinform you that in their opinion the report was not valid.
- If there is no resolution at this point, the supervisor or employer must re-investigate in the presence of the worker who made the report and your selected alternative – JOHS committeemember, union steward or other selected and reasonably available worker.
- If there is no resolution at this point, the supervisor or employer and the worker must notify a WorkSafeBC officer. The WorkSafeBC officer must investigate the matter without undue delayand issue whatever orders are deemed necessary.
- You may be temporarily assigned to alternative work at no loss in pay until the matter isresolved.

No Worker shall be disciplined or subject to discriminatory action as defined in section 150, Part 3 of the Worker's Compensation Act for exercising the right to refuse unsafe work or expressing an OHSconcern.

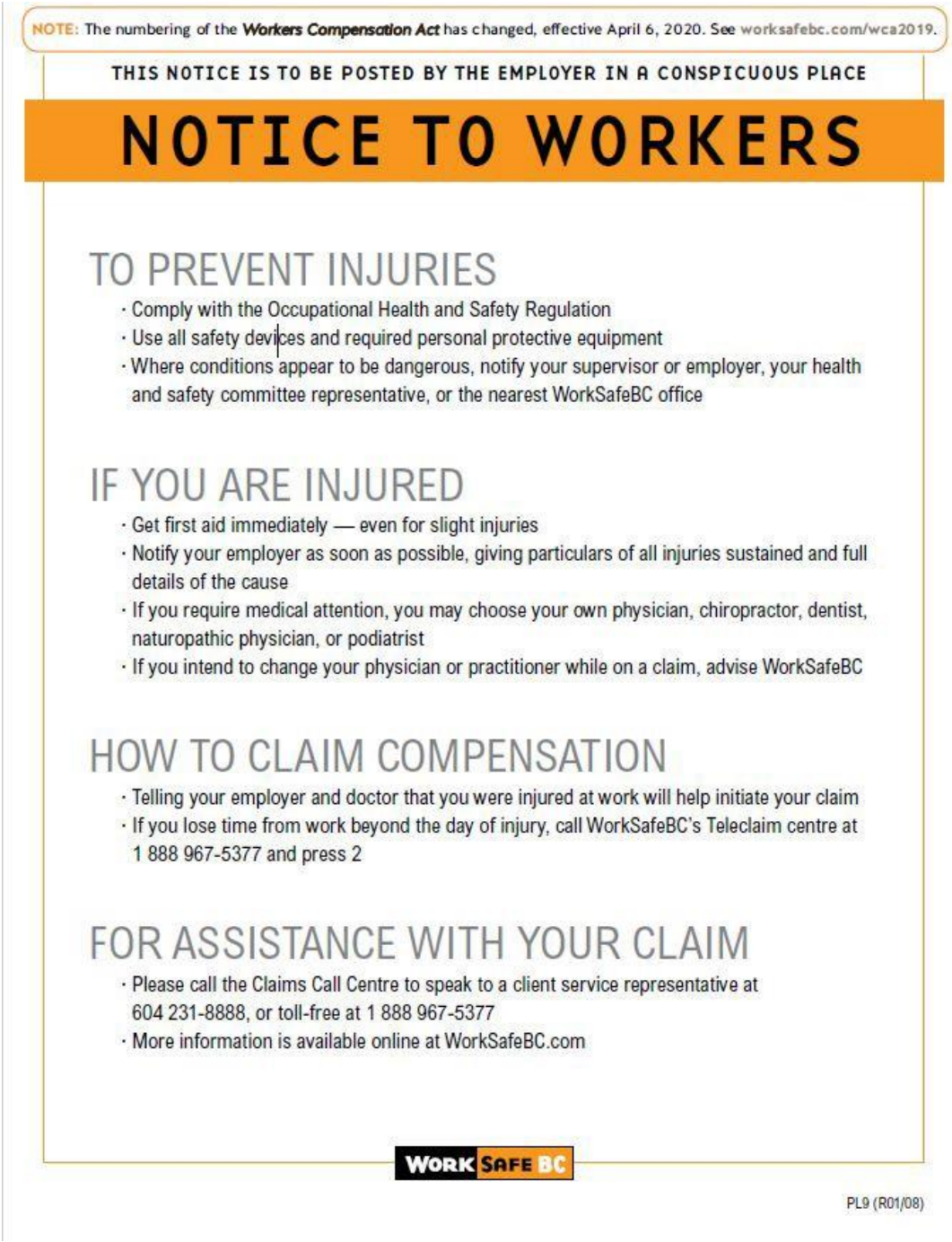
Some additional responsibilities not included in the Worker's Compensation Act include:

- Get treatment quickly should an injury happen on the job and report this immediately to yourSupervisor or other company representative – e.g. First Aid Attendant.
- Follow the treatment advice of health care providers.

- Return to work safely after an injury by modifying your duties and not immediately starting withyour full, regular responsibilities as directed by the First Aid Attendant or health care provider.

## 13.4 WSBC Posters

### 13.4.1 WSBC Poster PL9 – To Be Posted for Worker Review



NOTE: The numbering of the ***Workers Compensation Act*** has changed, effective April 6, 2020. See worksafebc.com/wca2019.

THIS NOTICE IS TO BE POSTED BY THE EMPLOYER IN A CONSPICUOUS PLACE

# NOTICE TO WORKERS

## TO PREVENT INJURIES

- Comply with the Occupational Health and Safety Regulation
- Use all safety devices and required personal protective equipment
- Where conditions appear to be dangerous, notify your supervisor or employer, your health and safety committee representative, or the nearest WorkSafeBC office

## IF YOU ARE INJURED

- Get first aid immediately — even for slight injuries
- Notify your employer as soon as possible, giving particulars of all injuries sustained and full details of the cause
- If you require medical attention, you may choose your own physician, chiropractor, dentist, naturopathic physician, or podiatrist
- If you intend to change your physician or practitioner while on a claim, advise WorkSafeBC

## HOW TO CLAIM COMPENSATION

- Telling your employer and doctor that you were injured at work will help initiate your claim
- If you lose time from work beyond the day of injury, call WorkSafeBC's Teleclaim centre at 1 888 967-5377 and press 2

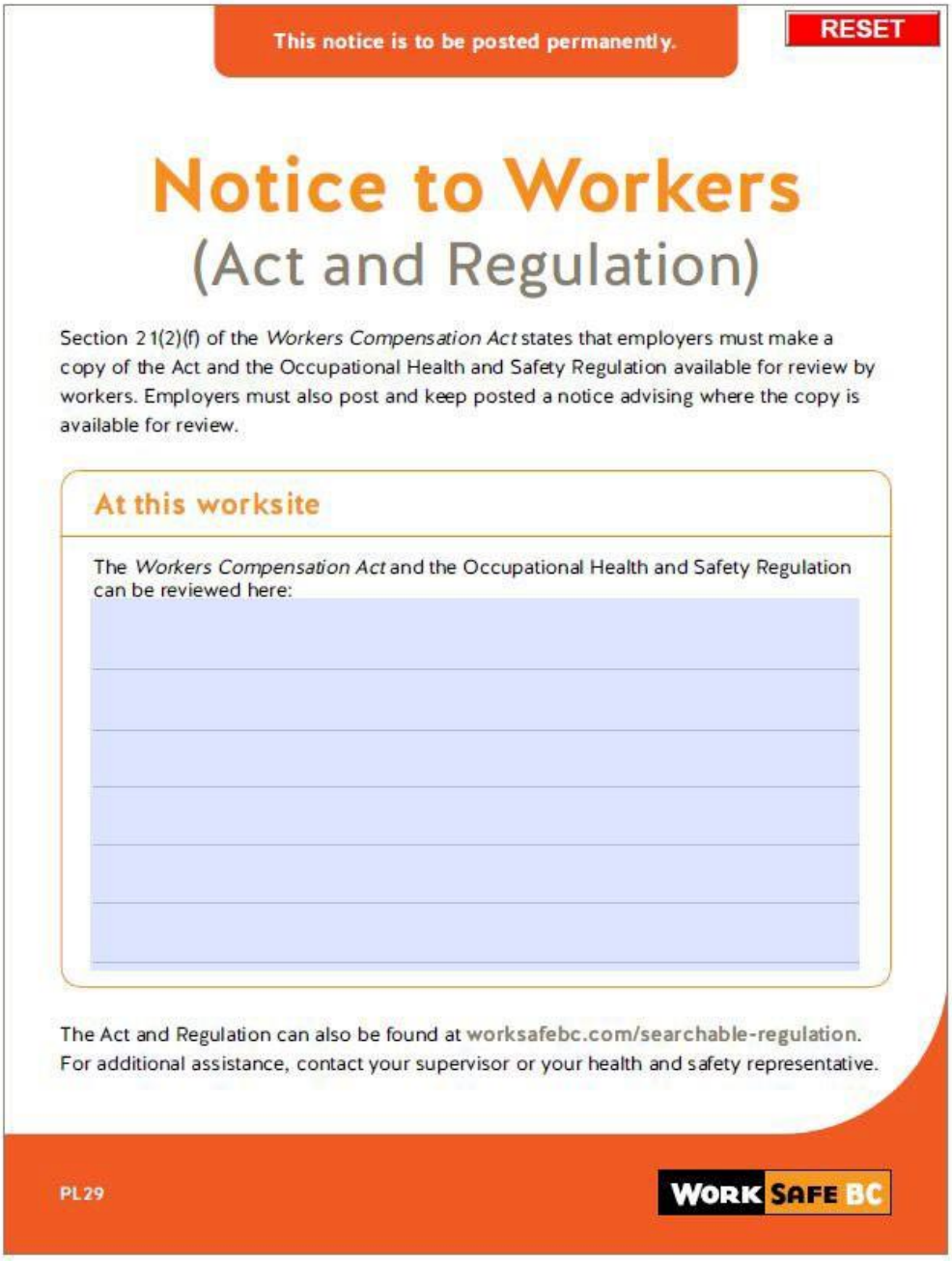
## FOR ASSISTANCE WITH YOUR CLAIM

- Please call the Claims Call Centre to speak to a client service representative at 604 231-8888, or toll-free at 1 888 967-5377
- More information is available online at WorkSafeBC.com

WORK SAFE BC

PL9 (R01/08)

### 13.4.2 WSBC Poster PL29 – To Be Posted for Worker Review



This notice is to be posted permanently.

RESET

# Notice to Workers
## (Act and Regulation)

Section 21(2)(f) of the *Workers Compensation Act* states that employers must make a copy of the Act and the Occupational Health and Safety Regulation available for review by workers. Employers must also post and keep posted a notice advising where the copy is available for review.

**At this worksite**

The *Workers Compensation Act* and the Occupational Health and Safety Regulation can be reviewed here:

The Act and Regulation can also be found at worksafebc.com/searchable-regulation. For additional assistance, contact your supervisor or your health and safety representative.

PL29

WORK SAFE BC

## INDEX

## 14.1 Joint Occupational Health & Safety (H&S) Committee Policy

Quolus Construction Services recognizes the importance of having an effective Joint Occupational Health & Safety Committee (Joint H & S Committee). Establishment of a Joint H & S Committee is also a legal requirement that must be met. The structure of the company having only temporary labour usually staying a maximum of 3 months makes it difficult to monitor safety on work sites.

Quolus Construction Services will hold monthly Joint H & S Committee meetings. The meeting will be used to discuss and resolve any health and safety concerns. The concerns raised will have corrective actions and the person responsible for the corrections assigned during the meeting. Quolus Construction Services will keep minutes of the meeting that include the concerns raised, recommended corrective actions, persons assigned responsibility for corrections and a record of all persons in attendance.

### 14.1.1 Guidelines for Operations of a Joint H & S Committee

The Joint H & S Committee's purpose is to assist in creating and maintaining a safe place of work. This is accomplished through recommending actions for improving the effectiveness of the health & safety program and promoting compliance with the program and regulatory requirements. The Joint H & S Committee consists of management and worker representatives who are directly involved in site operations. The Joint H & S Committee acts in an advisory capacity and will make recommendations to management.

## 14.2 Duties of the Joint Occupational Health and Safety Committee

The Joint (Occupational) Health & Safety Committee has the following duties and responsibilities:

- to consult with workers and the employer on issues related to occupational health and safety and the occupational environment;
- to advise Quolus Construction Services on proposed changes to the workplace or the work processes that may affect the health or safety of workers;
- to identify situations that may be unhealthy or unsafe for workers and advise on effective systems for responding to those situations.
- to consider and expeditiously deal with complaints relating to the health and safety of workers.
- to make recommendations to the employer and the workers for the improvement of the occupational health and safety and occupational environment of workers.
- to make recommendations to the employer on compliance with WorkSafeBC OHS Regulation and monitor their effectiveness.
- to advise the employer on proposed changes to the workplace or the work processes that may affect the health or safety of workers.
- to ensure that incident investigations and regular inspections are carried out as required by WorkSafeBC OHS Regulation.
- to make recommendations to Quolus Construction Services on educational programs promoting the health and safety of workers and compliance with the Provincial Occupational Health & Safety Regulations and to monitor their effectiveness;

- to participate in inspections, investigations and inquiries as provided in the regulations;
- to participate in resolving workplace refusals and work stoppages.
- to carry out any other duties and functions prescribed by regulation.
- to hold monthly (or more frequent) meetings to review:
  - Reports of current incidents or occupational diseases, their causes & means of prevention.
  - Action taken or required by reports of investigations and inspections.
  - Any other health and safety matters.
- to record proceedings of meetings and forward minutes to:
  - Head office
  - Committee Members
  - Supervisors for discussion with workers.

### 14.2.1 Selecting Committee Members

Worker representatives of the Joint H & S Committee are to be selected from workers at the workplace who do not exercise managerial functions.

The selection of worker representatives must follow the following requirements (ref. *BC Workers Compensation Act* section 128).

- If none of the workers are represented by a union, the worker representatives are to be elected by secret ballot (management or a worker may request WorkSafeBC to provide direction as to how an election is to be conducted).
- If some of the workers are represented by one or more unions and some are not represented by a union, the worker representatives are to be selected in accordance with paragraphs above in equitable proportion to their relative numbers and relative risks to health and safety. (Management, a union, or a worker at a workplace may request WorkSafeBC to provide direction as to how the requirements are to be applied in the workplace).
- If the workers do not make their own selection after being given the opportunity under paragraphs above, management must seek out and assign persons to act as worker representatives.
- Management representatives of the Joint H & S Committee are to be selected by management from among persons who exercise managerial functions at the workplace for which the Joint H & S Committee is established.

**Substitutes**

Each Joint H & S Committee will decide whether or not to use member substitutes and whether to grant them the full rights and authority of the members they replace. Vacation, sick leave, time away from work due to injury and jobsite and personal commitments are good reasons to allow substitute members.

### 14.2.2 Selection & Duties of Co-Chairs

The committee must elect two co-chairs from its members with management representing one position and a worker representing the other. The management co-chair is to be selected by

the Joint H & S Committee management members and the worker co-chair from the worker members.
The co-chairs have the following duties:

- Planning the meeting topics and preparing a meeting agenda.
- Controlling the direction of the meeting but not the discussion.
- Working to obtain agreement in order to bring issues to a conclusion.
- Ensuring that every item on the agenda receives attention. Conclusion should be reached on each item; this may mean referring a matter for further consideration.
- Keeping the meeting on track by quickly ending any irrelevant discussions.
- Bringing to a close any discussion that is not getting anywhere and move to the next item, deferring the discussion to the next meeting if necessary or referring the matter to another forum for resolution
- Preventing confrontations between members; this may entail calling a brief recess during which mediation should be attempted.
- Preparing, posting and distributing meeting notices and minutes and maintaining meeting records.
- Compiling materials for meeting discussion.
- Notifying members of time and place of meetings.

### 14.2.3 Education of Committee Members

The previous experience and training that Joint H & S Committee members bring to the Committee will be varied. In some instances the experience will be extensive and the Joint H & S Committee will function effectively. There may be other instances where committee members feel that further education in the duties and functions of a Joint H & S Committee would be beneficial. In these instances, management is required to provide the Committee members the opportunity for up to eight paid hours of Joint H & S Committee education from a recognized agency, e.g. WorkSafeBC.

It is required that members be adequately trained in health and safety in order for them to contribute fully to all committee activities. It is required that new HS Committee members receive a minimum of 8 hours if initial training on the committee Responsibilities and duties. It is also required that each existing member of the HS Committee receive 8 hours of annual Safety Committee training/education. All training must be documented. Items in such training should include:

- Committee responsibilities/authority.
- Occupational health and safety law.
- Principles of accident causation.
- Hazard recognition.
- Job safety analysis.
- Industrial hygiene.
- Methods of raising safety awareness.
- Inspections.
- Accident investigation.
- Effective oral communication.
- Documentation of Training

Any time an employee received training, it shall be documented by filling out the Record of Training Form or other approved documentation shall be used. The form shall also be placed in the Employee's Safety File. **If it isn't documented; it didn't happen.**

### 14.2.4 Agenda

- Role call (record members present, absent and guests).
- The revision (if necessary) and adoption of previous meeting minutes. Minutes should be read prior to the meeting and members prepared to advise the secretary of any errors or omissions that require correction.
- Discussion of old or unfinished business.
- Review of recent incidents, investigations and corrective actions.
- Discussion of health and safety related concerns and suggestions.
- Reports on special assignments.
- Reports on inspections with recommendations.
- Training and education of committee members.
- Discussion of any other new business.
- Schedule next meeting.
- Adjournment.

### 14.2.5 Conducting the Meeting

- At the first meeting, members are to elect the Co-chairs and prepare and issue the Joint H & S Committee Terms of Reference provided in this section of the manual. The members are to adopt the Terms of Reference as is, or make amendments.
- Members should prepare for the meeting by being aware of, and prepared for, what is on the agenda.
- Committee meetings should work by consensus to recommend solutions rather than deciding matters by majority vote.
- Committee meetings are not required to follow Robert's Rules of Order or other formal meeting structures requiring motions, amendments and votes on each motion. None the less, meetings must be conducted in an orderly manner with a means to bring issues to resolution. The Joint H & S Committee meetings should generally proceed as follows:
- An agenda item is presented.
- A discussion follows to ensure all members understand the issue.
- Members discuss solutions in an effort to find the best solution.
- The co-chair running the meeting states the consensus of the committee and summarizes recommendations, decisions and assignments.
- Meetings should start on time without waiting for late arrivals.
- The agenda should be followed and each issue dealt with in a timely manner.
- The meeting should adjourn on a positive note.

### 14.2.6 Posting of Information

At each office where workers of an employer are regularly employed, the employer will post and keep posted:

- the names and work locations of the joint committee members,
- the meeting minutes of the three most recent joint committee meetings

## 14.3 JOINT HEALTH AND SAFETY COMMITTEE TERMS OF REFERENCE

These Joint H & S Committee Terms of Reference are to be entitled "draft" until such time as they are approved and accepted by the Committee.

### 14.3.1 Constituency

The committee will consist of:

- A minimum of 2 Management and 2 Worker representatives, with the management representatives not exceeding the number of worker representatives.
- Substitute members to temporarily replace absent members. Substitute members are to be granted the same rights as a regular committee member.

### 14.3.2 Records

The committee will keep minutes of all meetings. The minutes will include records of all relevant matters that come before it. The Joint H & S Committee Meeting Minutes can be used for this purpose.

### 14.3.3 Meetings

- The committee will meet as agreed on each site.
- Special meetings may be held at the co-chair's request.

### 14.3.4 Minutes & Agendas

- The co-chairs will prepare an agenda.
- Minutes will be prepared promptly after the meeting and will be distributed to all members and posted on the construction site bulletin boards.
- Copies of minutes and reports will be kept on file at the site for the duration of the project.

### 14.3.5 Committee Officers

- The committee will elect two co-chairs from its members with management representing one position and worker representing the other. The management co-chair is to be selected by the Joint H & S Committee management members and the worker co-chair from the worker members.
- The co-chairs will share the responsibility for keeping records of meetings and preparing and distributing agendas and minutes.

### 14.3.6 Education

Joint H & S Committee members are entitled to receive educational leave of up to eight instructional hours each year for training in the duties and functions of the Joint H & S Committee.

### 14.3.7 Recommendations

The Joint H & S Committee can make written recommendations to management for the correction of health and safety concerns. The written recommendations can include a request for a written response, which management must/respond to within 21 days of the request being submitted.

### 14.3.8 Amendments

The terms of reference may be amended by consensus or by majority vote of committee members.

## 14.4 PROGRAM REVIEW POLICY

Quolus Construction Services' management will monitor the company health and safety program on an ongoing basis and will ensure an annual review if performed. Personnel involved in the program review will be qualified to do so. The review will examine all the elements of the program to ensure that the program continues to meet WorkSafeBC and company requirements.

As required by WSBC legislation, the JOHS Committee Co-Chairs will conduct and document a JOHSC Self-Evaluation utilizing the WSBC audit template contained at the end of this Section of this manual. Upon completion of the written report, Quolus Construction Services' will:

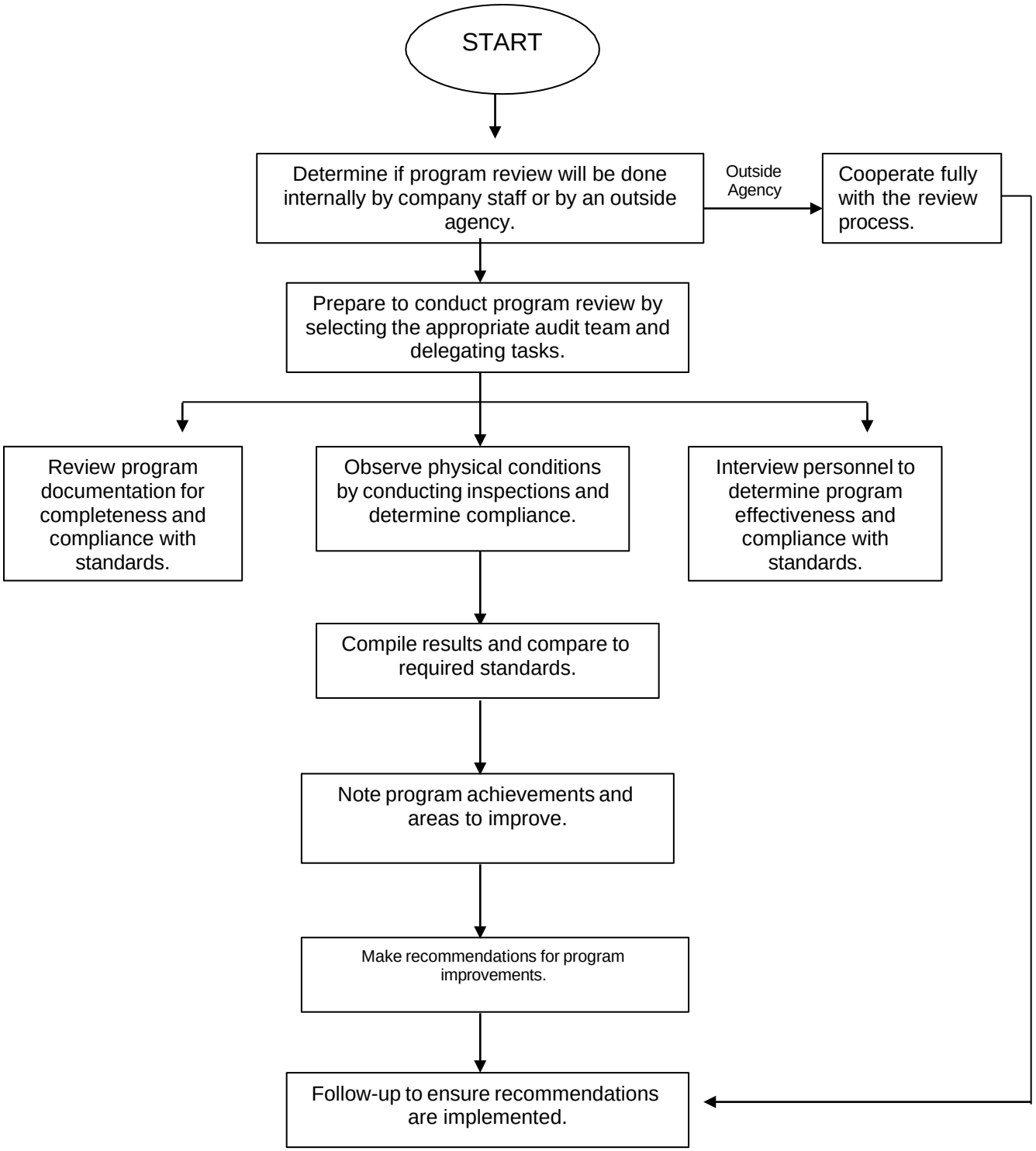
- Develop an action plan to implement practicable recommended revisions.
- Implement the plan.
- Check the implementation of the action plan.

### 14.4.1 Annual Program Objectives

Program objectives will be set annually by the Safety Coordinator and Senior Management. Goals for the upcoming year will include injury frequency, severity, claims costs and Inspection Orders and will be maintained by the Safety Coordinator as well as posted on the "safety notices" board.

Goals should be achievable rather than consistently striving for zero accidents and costs and based on continual improvement from the previous years numbers.

## 14.4.2 OHS PROGRAM REVIEW FLOW CHART



**14.4.3**

# Joint Health and Safety Committee Evaluation Tool

This document was generated using a modifiable template that is owned by the Workers' Compensation Board ("WorkSafeBC") and published on worksafebc.com. The template is for information purposes only and may be used for non-commercial, personal, or educational purposes to help promote occupational health and safety, including as part of a health and safety program.

Use of WorkSafeBC's template does not constitute an endorsement, express or implied, of any person, service provider, service, or product.

Use of WorkSafeBC's template is at your own risk. WorkSafeBC does not warrant the quality, accuracy, or completeness of any information contained in the template, which is provided "as is" without warranty or condition of any kind.

Template publication date: August 2022

## Joint Health and Safety Committee
### Evaluation Tool

Please refer to the Guide to completing a Joint Health and Safety Committee Evaluation Tool for assistance in completing the evaluation process and this form.

| |
|---|
| Employer's name (legal name and trade name) |
| Joint committee name and location:<br><br>(Name and location of the workplace or part of the workplace represented by the committee) |
| Date evaluation complete:<br><br>(If the evaluation was completed over several days, include the date it was finalized.) |

Committee evaluators:

(The evaluators may be the committee co-chairs or designate(s), the employer, or a person retained by the employer. The evaluators should be knowledgeable about the duties, functions, and effective administration of a committee.)

| Name | Job title | Committee position |
|---|---|---|
| | | |
| | | |
| | | |

# Part 1: Assessment of legal obligations

## 1.1 Committee selection, membership and procedures

(Refer to sections 33, 34, 35, 36, and 37 of the *Workers Compensation Act*.)

| | Yes | No |
|---|---|---|
| Does the committee have at least four members? | ☐ | ☐ |
| Does the committee have worker representatives and employer representatives as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have worker representatives as at least half the membership, as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have two co-chairs, one selected by worker representatives and one selected by employer representatives, as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have worker representatives selected according to the procedures specified in section 34 of the Act? | ☐ | ☐ |
| Does the committee have employer representatives selected as required by the section 35 of the Act? | ☐ | ☐ |
| Does the committee meet at least once a month (unless otherwise permitted)? | ☐ | ☐ |
| Does the committee prepare a report of the meeting (meeting minutes) and provide a copy to the employer? | ☐ | ☐ |
| Does the committee have rules of procedure (terms of reference)? | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on committee selection, membership, and procedures.

## 1.2 Support for the committee

(Refer to sections 40, 42, 44 and 51 of the Act.)

| | Yes | No |
|---|---|---|
| Did committee members attend meetings during paid working hours? | ☐ | ☐ |
| Did members receive paid time off work that is reasonably necessary to prepare for meetings and fulfill other duties and functions? | ☐ | ☐ |
| Did the employer provide equipment, premises, and clerical personnel necessary for the carrying out of the committee's duties and functions? | ☐ | ☐ |
| Did the employer provide information requested by the committee, including information on health and safety hazards? | ☐ | ☐ |
| Has the employer posted and kept posted:<br>The names and work locations of committee members | ☐ | ☐ |
| The reports (minutes) of at least the three most recent committee meetings | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on the support provided to the committee.

Training and education of committee members

(Refer to sections 40 and 41 of the Act and the requirements of section 3.27 of the Regulation.)

| | Yes | No |
|---|---|---|
| Did new members as of April 3, 2017 receive the minimum of eight hours of instruction and training that is required within six months of becoming a committee member? | ☐ | ☐ |
| Did all committee members receive the annual educational leave totalling eight hours to which they are entitled, in order to attend occupational health and safety training courses? | ☐ | ☐ |
| Did committee members receive educational leave without loss of pay or other benefits? | ☐ | ☐ |
| Did the employer pay for, or reimburse committee members for, the costs of the training course and the reasonable costs of attending? | ☐ | ☐ |
| Did a committee member designate another member as being entitled to take all or part of the member's educational leave? | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information about committee member training and education.

### 1.3 Committee recommendations

(Refer to sections 36 and 39 of the Act.)

The committee has a duty to make recommendations to the employer about the improvement of workplace health and safety, as well as recommendations on educational programs promoting the health and safety of workers and compliance with the Act and the Regulation. These recommendations may take a variety of forms, including formal and informal, oral, or written.

Do the committee's rules of procedure (terms of reference) include provisions for how to make recommendations to the employer?

☐ Yes ☐ No

Within the past 12 months, has the committee sent written recommendations to the employer with a request for a response from the employer?

☐ Yes ☐ No

| | Yes | No | n/a |
|---|---|---|---|
| Were the committee's recommendations described clearly? | ☐ | ☐ | ☐ |
| Were recommendations directly related to workplace health and safety? | ☐ | ☐ | ☐ |
| Were recommendations made in accordance with the committee's rules of procedure? | ☐ | ☐ | ☐ |
| Did the employer respond in writing within 21 days? If the employer did not respond within that timeframe, did they explain the delay and indicate when a response would be provided? | ☐ | ☐ | ☐ |
| If the employer did not respond within 21 days, did they explain the delay? | ☐ | ☐ | ☐ |

| | Yes | No | n/a |
|---|---|---|---|
| Where the employer did not accept the committee's recommendations, did the employer provide written reasons for not accepting the recommendations? | ☐ | ☐ | ☐ |
| Where the employer did not accept the recommendations, did the employer provide alternatives? | ☐ | ☐ | ☐ |
| If the employer did not accept the committee's recommendations, did the committee ask WorkSafeBC to investigate and attempt to resolve the matter? | ☐ | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information about committee recommendations to the employer.

### 1.4 Duties and functions of the committee

(Refer to section 36 of the Act and the requirements of section 3.12 of the Regulation.)

The following questions are intended to assess whether or not the committee has fulfilled each of its duties and functions. It may be helpful to refer to relevant records and documents when determining whether or not the committee fulfilled each of its duties and functions. Copies of these documents may be included with this evaluation for reference purposes.

| Over the past 12 months, the committee has | Yes | No |
|---|---|---|
| Identified situations that may be unhealthy or unsafe for workers — this may include reviewing incident and near miss reports to look for accident trends, or reviewing the effectiveness of a risk assessment | ☐ | ☐ |
| Advised on effective systems for responding to situations that may be unhealthy or unsafe | ☐ | ☐ |
| Considered and expeditiously dealt with complaints related to the health and safety of workers | ☐ | ☐ |
| Consulted with workers and the employer on issues related to workplace health and safety and the work environment | ☐ | ☐ |
| Made recommendations to the employer and workers about the improvement of the workplace health and safety and work environment | ☐ | ☐ |
| Made recommendations to the employer on educational programs promoting the health and safety of workers and compliance with the Act and the Regulation, and monitored their effectiveness | ☐ | ☐ |
| Advised the employer on programs and policies required under the Regulation and monitored their effectiveness | ☐ | ☐ |
| Advised the employer on proposed changes to the workplace, including significant proposed changes to equipment and machinery, or the work processes that may affect the health or safety of workers | ☐ | ☐ |
| Ensured that accident investigations are carried out as required by the Act and the Regulation | ☐ | ☐ |
| Ensured that regular inspections are carried out as required by the Act and the Regulation | ☐ | ☐ |
| Participated in inspections, investigations, risk assessments, and inquiries as provided in the Act and the Regulation | ☐ | ☐ |
| Participated in the procedure for resolving refusals of unsafe work | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on how the committee fulfilled each of its duties and functions under section 36 of the Act.

## Part 2: Evaluation of effectiveness

The following questions are intended to measure the effectiveness of committee procedures, participation, and record-keeping.

### 2.1 Rules of procedure (Terms of reference)

The following are characteristics of an effective committee's rules of procedure:

- Committee members know the role of the committee and the extent of its authority.
- Committee members actively contribute to a set of regularly reviewed objectives.
- Rules of procedure meet the minimum legal requirements of section 37 of the Act.
- Rules of procedure include provision for:
  - Committee composition and selection of members
  - Duties and functions
  - Record keeping
  - Roles of guests
  - Decision-making procedures
  - Informal and formal committee recommendations
  - Resolution of action items
  - Education and training for committee members
  - Committee evaluation
  - Defining quorum
  - Conflict resolution
  - Other relevant matters
- Rules are developed collaboratively, with the participation of committee members.
- Rules are reviewed periodically and reflect the committee's current process and mandate.

With these criteria in mind, how effective is your committee in relation to rules of procedure?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's rules of procedure might be improved.

## 2.2 Meeting attendance and participation

The following are characteristics of an effective committee's meeting attendance and participation:

- Agenda is distributed prior to meetings.
- Agenda is used at meetings to guide discussion and keep the meeting on time.
- Relevant documents (reports, etc.) are distributed and reviewed prior to meetings.
- Committee members are given time that is reasonably necessary to prepare for committee meetings (per section 40 of the Act).
- Committee members regularly attend meetings.
- Alternates are selected in case of member absence.
- Employer and worker co-chairs take turns running the meeting.
- Committee members are engaged and participate in discussions.
- Employer and worker representatives participate equally, with no one group dominating discussions.
- Regular attendance is supported by the employer. This includes removing barriers such as scheduling, and back up coverage.

With these criteria in mind, how effective is your committee in relation to meeting attendance and participation?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's meeting attendance and participation might be improved.

## 2.3 Report of the meeting (Meeting minutes)

The following are characteristics of an effective committee's meeting minutes:

- Meeting minutes provide a full and accurate record of the meeting, and include:
  - Who attended the meeting
  - The issues that were discussed
  - Reports, statistics, and other documents reviewed
  - Any action required, the name of the person assigned to complete the action, its priority, and the expected completion date
- Outstanding action items are tracked and monitored to completion
- Minutes are circulated to members promptly
- Minutes are adopted at the next meeting

With these criteria in mind, how effective is your committee in relation to meeting reports?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's meeting reports might be improved.

### 2.4 Committee response to refusals of unsafe work

(Refer to section 3.12(4) of the Regulation.)

Has the committee been aware of any refusals of unsafe work at your workplace in the past 12 months?

☐ Yes ☐ No

Is the committee informed of work refusals even when the matter is resolved by the worker and the supervisor?

☐ Yes ☐ No

Has there been a refusal of unsafe work at your workplace that could not be resolved between the worker and employer or supervisor?

☐ Yes ☐ No

Are committee members trained in their role in the procedure for refusal of unsafe work?

☐ Yes ☐ No

If there has not been a refusal of unsafe work, consider the nature of your industry and the hazards inherent in the work you do. Are there any:

☐ Barriers that may be making workers reluctant to exercise their right to refuse unsafe work?

☐ Hazards that are being overlooked or trivialized because they are seen as "part of the job"?

☐ Other reasons workers might not feel they are able to refuse unsafe work:

How effectively is the committee participating in the procedure for responding to refusals of unsafe work?

| ☐ | ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|---|
| Very ineffective | Somewhat ineffective | Moderately effective | Somewhat effective | Very effective |

Comment further on how effectively your committee is participating in refusals of unsafe work and any recommendations the committee might make to the employer on this issue.

### 2.5 Overall effectiveness

Considering your responses to all of the previous questions in Part 1 and Part 2, how effective is the committee overall?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee might improve its overall effectiveness. Consider compliance with legal obligations as well as how effectively the committee is performing its duties and functions. You may wish to consider the focus areas included in this evaluation tool to help identify opportunities for committee member growth and development, and ideas for building committee effectiveness.

## Part 3: Focus Areas — Encouraging committee growth and development

An effective committee provides a way for workers and employer to work together to identify and find solutions for health and safety problems in the workplace. Generally, your first objective will be to ensure your committee complies with the minimum legal requirements. Once you are satisfied that your committee is compliant, committee members should develop a plan for continual improvement.

Your committee may wish to choose one of the following areas to focus on improving each year:

Focus Area A — Communication
Focus Area B — Workplace inspections, hazard identification, risk assessment and control
Focus Area C — Incident investigation

The questions here are intended to help your committee identify strengths and areas of improvement. For each item, consider the characteristics of an effective committee, as well as the legal requirements. Then, use the rating scale to assess how effectively your committee performs.

Finally, consider what positive steps you can take to improve your committee effectiveness in this focus area. Steps for improvement will vary for every workplace, and may include training for committee members, discussions at safety meetings, or changes in policies or procedures.

### Focus Area A — Communication

Effective communication ensures that everyone at the workplace is aware of the work of the committee in promoting workplace health and safety, and encourages people to contribute ideas and be more involved.

#### A.1 Committee meetings and communication

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Does the committee seek out and explore different opinions to ensure issues and concerns are fully considered? | ☐ | ☐ | ☐ | ☐ |
| Where there are differences of opinion within the committee, can the committee generally resolve the matter? | ☐ | ☐ | ☐ | ☐ |
| Is the committee regularly divided on occupational health and safety issues, often along management and labour lines? | ☐ | ☐ | ☐ | ☐ |

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Is the committee generally able to reach agreement on matters relating to health and safety relating to workers? | ☐ | ☐ | ☐ | ☐ |
| Do the co-chairs demonstrate effective communication, conflict resolution, and facilitation skills? | ☐ | ☐ | ☐ | ☐ |
| Does the committee regularly follow up on the implementation of decisions and recommendations? | ☐ | ☐ | ☐ | ☐ |
| Does the committee composition reflect the composition of the workplace? | ☐ | ☐ | ☐ | ☐ |
| Does the committee proactively identify possible barriers to the implementation of health and safety decisions and recommendations, and propose solutions? | ☐ | ☐ | ☐ | ☐ |

General comments on committee meetings and communication, and suggestions for improvement:

## A.2 Communication with workers

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Do workers regularly approach committee members to make suggestions or to discuss health and safety matters? | ☐ | ☐ | ☐ | ☐ |
| Is there effective communication between the committee and workers? | ☐ | ☐ | ☐ | ☐ |
| Does the committee regularly interact with a cross-section of workers (including part-time, dispatched, and shift workers, and workers at other job sites) about relevant health and safety matters? | ☐ | ☐ | ☐ | ☐ |

General comments on communication with workers, and suggestions for improvement:

## A.3 Communication with the employer

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Is the employer representative on the committee someone with decision-making authority? | ☐ | ☐ | ☐ | ☐ |
| Does the employer regularly seek out the opinions of the committee on existing and potential workplace health and safety issues, including proposed changes to the workplace? | ☐ | ☐ | ☐ | ☐ |
| Does the employer share health and safety information with the committee? (This may include industrial hygiene testing results, WorkSafeBC reports or statistics, other occupational and safety health reports, etc.) | ☐ | ☐ | ☐ | ☐ |

Were all matters resolved at the committee level, or did the committee feel reluctant to make recommendations? Include any suggestions around how the committee recommendations could be made more effective.

General comments on communication with the employer, and suggestions for improvement:

### Focus Area B – Workplace inspections, hazard identification, risk assessment and control

Regular workplace inspections can help to improve communication around workplace health and safety, identify unsafe conditions and procedures, and better understand the work and the work environment. (Refer to section 3.5 of the Regulation.)

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Does the committee confirm that workers who conduct workplace inspections are trained to do so? | ☐ | ☐ | ☐ | ☐ |
| Do committee members interact with a representative sample of workers when conducting workplace inspections? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ask workers and supervisors about their workplace health and safety concerns? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure that workers with first-hand knowledge about and experience with the day-to-day operations are engaged in the inspection process? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure a cross-section of equipment, work methods, and work practices are inspected? | ☐ | ☐ | ☐ | ☐ |
| Are inspections tailored to look at workplace-specific hazards? | ☐ | ☐ | ☐ | ☐ |
| After hazards are identified, does the committee participate in assessing the risks and implementing effective controls? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure implemented controls are communicated effectively to workers and monitored to verify the risk remains controlled? | ☐ | ☐ | ☐ | ☐ |
| Are workplace inspections done at various times and without advance notice? | ☐ | ☐ | ☐ | ☐ |
| When hazards are identified and controls implemented, are they reviewed periodically? | ☐ | ☐ | ☐ | ☐ |
| Is information from workplace inspection reports reviewed by committee members to identify any trends that may be developing? | ☐ | ☐ | ☐ | ☐ |

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| | | | | |

Comment further on how effectively your committee is participating in workplace inspections. Include suggestions on how your committee might improve the effectiveness of workplace inspections and identify unhealthy and unsafe situations in the workplace.

What are the most significant risks to worker health and safety in your workplace? Who might be harmed, and how?

Have controls been put in place, and are they effective at reducing the risks?

### Focus Area C — Incident investigation

Employers must conduct investigations of any workplace incidents resulting in an injury to a worker or near misses with the potential for worker injury, as well as major structural failures, release of hazardous substances, and other circumstances. Refer to Part 2 Division 10 of the Act and section 3.28 of the Regulation.

| | Yes | No |
|---|---|---|
| Have worker and employer representatives received appropriate training on incident investigation methodology? | ☐ | ☐ |
| Do committee members understand the purpose of preliminary and full investigation reports, including the statement of sequence of events? | ☐ | ☐ |

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Does the committee ensure that incidents are investigated in accordance with sections 69 to 72 of the Act? | ☐ | ☐ | ☐ | ☐ |
| Do committee members explain the purpose of preliminary and full investigation reports, including the statement of sequence of events? | ☐ | ☐ | ☐ | ☐ |
| Are incident investigations focused on improving workplace health and safety? | ☐ | ☐ | ☐ | ☐ |
| Do worker representatives actively participate in incident investigations, and is that participation reflected in the investigation reports? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of preliminary investigations in a timely manner? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of preliminary corrective actions taken? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of full investigations in a timely | ☐ | ☐ | ☐ | ☐ |

| | | | Yes | No |
|---|---|---|---|---|
| manner? | | | | |
| Does the committee receive reports of corrective actions taken as a result of full investigations? | ☐ | ☐ | ☐ | ☐ |
| Is information from incident investigation reports reviewed by committee members to identify any trends that may be developing? | ☐ | ☐ | ☐ | ☐ |

Comment further on how effectively your committee is participating in incident investigations. Include suggestions on how your committee might better participate in incident investigations.

## Part 4: Committee response to the evaluation

(Refer to section 3.26 (4),(5), and (6) of the Regulation.)

If the evaluation is not performed by the committee co-chairs, the person who conducts the evaluation must obtain and consider the input of the co-chairs, or designates. Describe how the evaluators consulted the co-chairs (or designates) in the evaluation.

Co-chair signatures:

_____

_____

Employer's signature:

_____

**After the completion of the report, did the committee:**

| | Yes | No |
|---|---|---|
| Ensure the employer received and signed a copy of the evaluation? | ☐ | ☐ |
| Discuss the evaluation at its next meeting? | ☐ | ☐ |
| Ensure the evaluation and a summary of the discussion were included in the report of that meeting (meeting minutes)? | ☐ | ☐ |

Include any general comments from the committee in response to the evaluation. This may include areas where the worker and employer representatives may have disagreed on the evaluation results.

## INDEX

## 15.1 HEARING CONSERVATION / NOISE EXPOSURE

Quolus Construction Services recognizes that noise is a serious problem in the construction workplace. Over time, if noise from machinery, processes or equipment is too loud, it can cause permanent hearing loss. WorkSafeBC OHS Regulation set maximum allowable limits for noise exposure at 85 dBA Lex, (85 dBA average noise exposure over an eight hour period) and a peak noise level of 140 dBA. In the construction industry, equipment and power tools operators and workers in proximity to the equipment may be exposed to noise greater than the allowable limits for unprotected hearing. As a result of the noise levels inherent in our industry, Quolus Construction Services has implemented a hearing conservation program in compliance with regulatory requirements.

Where noise above acceptable levels is present, supervisory staff are responsible for determining whether there are any “engineering controls” that can be practicably applied.

Where engineering controls are impracticable, operators of equipment that produce noise in excess of exposure limits, workers in proximity to such equipment and workers exposed to other job site noise in excess of the limits are required to wear CSA approved hearing protection appropriate for the noise level. This will be provided by the company. Noise hazard areas under Quolus Construction Services’ control will be identified with warning signs.

Our workforce will be provided hearing conservation educational materials, an opportunity to discuss hearing conservation, and ready access to hearing protection as part of our program. Educational materials, which will be presented through supervisor instructions and Toolbox Talks, will address: effects of noise on hearing, the purpose of annual hearing testing and proper use and maintenance of hearing protection.

Workers exposed to noise in excess of allowable limits are required to have annual hearing tests to monitor their hearing. Quolus Construction Services employees are provided the opportunity to have their hearing tested on sites when available. Hearing testing records will be treated as confidential and maintained for the duration of the worker’s employment with the company.

Quolus Construction Services’ Hearing Conservation Program will be reviewed on an annual basis to ensure its on-going effectiveness, however as most workers are not with Quolus Construction Services for more than a few months, hearing tests are not normally conducted.

### 15.1.1 Recognizing Hearing Loss

One quarter of all workers in BC are exposed to noise in the workplace loud enough to damage their hearing. Noise is the most common hazard in industry. Hearing loss can occur so gradually that you may not even know it is happening, until it is too late. Noise induced hearing loss is permanent; it can’t be cured or improved.

Excessive noise damages the sensory cells deep inside your ears. The first danger sign of occupational hearing loss is the inability to hear high-pitched sounds. As the damage continues, the loss will affect your ability to understand speech. Noise can also cause ringing in your ears.

### 15.1.2 Noise Limits

There are maximum limits for worker exposure to noise in the workplace, both for loudness and duration.

A simple way to test the noise level is to stand at arm's length from someone and talk to them. If you must raise your voice to be heard, the noise in the vicinity is probably too loud (or the person you are speaking to has hearing loss).

The length of time that you are exposed to noise is as critical as the volume of the noise. Exposure to continuous noise for 8 hours is far more damaging than 8 hours of noise exposure spread over a few days.

If your ears ring, or sounds seem muffled after the noise stops, your hearing has been affected, at least temporarily. A continuous noise level greater than 85 decibels over an eight hour period can damage hearing.

### 15.1.3 Noise Control

The most desirable way to reduce noise is to control it at its source e.g. proper maintenance and lubrication of a noisy piece of equipment makes it quieter, or the noise source can be housed in a noise muffling enclosure. These noise control activities are called engineered controls.

Another noise control method is called administrative control. Administrative controls include decreasing time in noisy areas through job rotation or scheduling equipment operation when most workers are off shift. The remaining noise control solution is wearing appropriate hearing protection. This is the most common solution for construction industry workers as their employer frequently has little or no ability to control the source of the noise e.g. the client's equipment in a construction location.

### 15.1.4 Hearing Protection Devices

Hearing protection devices (HPDs) reduce the level of noise reaching the ear. The two main types of protection are earplugs and earmuffs. Earplugs may be inserted into the ear canal or placed over the ear canal (the latter plugs are called canal caps). Earmuffs consist of two dome-shaped cups that cover the entire ear and are held in place by a headband.

### 15.1.5 Earplugs

Earplugs work by blocking the ear canal. Canal caps are a variation of earplugs. Unlike earplugs, which block the ear canal by being inserted into it, canal caps seal the opening of the ear canal by being placed over it.

Workers must be instructed in how to insert earplugs. Instruction is best done at the time of the annual hearing test. Properly inserted earplugs are not painful. The most common problems with earplugs is that they are not sealed deeply enough in the ear canals. Partial insertion results in poor noise reduction, poor retention, and discomfort. When plugs are properly inserted, there will be a slight sensation of pressure, and the wearer's voice will sound louder and more resonant. There will also be some resistance when the user pulls gently on the earplug. Supervisors should be able to recognize the appearance of an improperly seated plug and how to counsel the worker on the correct way to insert it.

Compressible earplugs are usually made of compressible foam. The plugs are rolled between the fingers to compress then and then inserted into the ear canal where the foam expands to fill the canal. For proper insertion, the ear canal must be first straightened by pulling on the outer ear with your other hand; if this is not done, the plug will stick out too much and will not be effective. One size fits most workers, however, if ear canals are too small for a comfortable fit, the plug won't say in place. Some compressible plugs come in several sizes. Alternatively, reusable or custom molded plugs could be selected.

Reusable plugs are generally made of plastic with single, double, or triple ridges that help seal the ear canal. Many brands come in different sizes. These plugs are suitable for workers whose hands may become soiled at work since the ear canal portion of the plug need not be touched. (Compressible plugs rolled between the fingers can become dirty). For proper insertion, the ear canal must be straightened and the plug inserted with a slight twisting motion. When properly inserted, the plug should not fall out. Some resistance should be felt when the plug is gently tugged. The wearer should not be able to pull it out easily.

Custom molded plugs are custom made by taking an impression of a worker's ear, making a mold of it and casting the plug. It is vital that a proper impression of the ear be taken or the finished plugs won't fit well. The plugs must fit the contours of the ear snugly to provide proper noise reduction. Since these plugs can be difficult to insert due to their unusual shape, workers must be shown how to insert them properly. New earplugs will need to be made if the external ear and ear canal change shape with age or extreme weight gain or loss.

Canal caps are held in place be a headband worn either over the head, behind the head, or under the chin, depending on the manufacturer. The cap of "pod" does not insert into the ear, but fits over the opening of the ear canal. The size of ear canal is not as important in fitting these devices. Canal caps are widely used by workers with intermittent or interrupted exposure to noise.

### 15.1.6 Earmuffs

Earmuffs consist of four parts: domes (ear cups), dome liners, cuffs (ear cushions) and headband assembly. Domes are usually made of plastic. Liners are made of foam and/or ear "down". Liners reduce noise reverberation inside the dome. Cuffs may be foam, liquid, or combination foam/liquid filled. The liquid filled cuffs reduce more low frequency sound and make the wearing of safety glasses more comfortable. Foam cuffs are lighter weight. Headband assemblies may be made of plastic, metal, or a combination of both.

Depending on their design, earmuff headbands may be worn over the head, behind the head, under the chin, or the muffs may be mounted on a hard hat. Hard hat mounted earmuffs have less pressure exerted against the side of the head, and are more comfortable than muffs with headbands. The attachment for a hard hat may be fitted into slots on the hard hat, or clipped onto the brim with an adapter. The proper size adapter must be selected, and may vary according to the brand of hard hat.

Some earmuffs are manufactured for one and two way radio or speech communication. The sound transmitted to the ear from these communication devices should not be able to exceed 85 dBA. If the devices transmit sound above 85 dBA they become a potential noise hazard. Workers are not permitted to wear protection designed or modified to accept AM/FM music transmission, or other such systems.

The effectiveness of an earmuff is determined by the headband tension and fit of the domes over the ears. If headband tension decreases either by routine usage or by deliberate modification by the wearer, noise reduction decreases.

The domes must fit over the entire external ear to provide a proper seal. Modification to domes, such as drilling holes, is not permitted. Wearing safety glasses, caps, or facial hair may interfere with the seal of the dome. Hair should be pushed behind the ears or pinned up out of the way. Thin frames for glasses are preferred to thick ones. Temple pads are available to improve the seal and decrease discomfort caused by the pressure of the dome against glasses. Wearing thick cloth caps should be not permitted if the headband of the earmuffs must fit over the cap. Using earmuffs with a swiveling band will help with this problem.

Jaw size and head shape also pose a fitting problem; some muffs may not fit properly against the side of the head. Workers should try earplugs in such cases. Some earmuffs are made to be worn a certain way to obtain a proper fit. There may be a top and bottom designated, either by the shape of the muffs, or by the manufacturer's instructions.

As with earplugs, individual fitting of muffs at the time of the annual hearing test will help ensure the worker is properly instructed in earmuff use. Workers should bring their hearing protection to their annual hearing re-test so that the fit can be assessed yearly.

The wearing of earmuffs is easy to monitor by supervisors, but supervisors should watch out for improperly worn muffs, particularly the hard hat mounted one in the "snap-out" position. This position reduces the pressure off the cuff on the ear and is designed for use for very short periods of time only.

### 15.1.7 Choosing Ear Protection

Selecting appropriate hearing protection is not difficult. The class of protection should be based on the worker's eight hour noise exposure, not a spot measurement of noise in a given area or near a particular machine. For example, an equipment operator's machine may produce noise levels of 99 dBA, but a typical operator's eight hour noise exposure ($L_{ex}$) is 91 dBA because the worker does not have the equipment running for eight hours continuously. There will be breaks for lunch, coffee, walking outside the machine, and so forth.

The class of hearing protection (A, B or C) is based on the attention (noise reduction) provided by the protector at certain pitches or frequencies. Earplugs and earmuffs alike may be classed as A, B or C. Class A provides roughly 30 dB of attenuation, Class B, 20 dB and Class C, 10 dB. The attenuation figures are supplied by the manufacturer.

For noise exposures less than 85 dBA averaged over 8 hours, no protection is required. Above 85 dBA, the recommended class of hearing protection increases with noise level. For example, Class C protection is recommended for driving a heavy truck (89 dBA). Class A is recommended for operating a pile driver (104 dBA). For extremely high noise levels, wearing double protection (earplugs and earmuffs) is recommended.

### 15.1.8 Choosing Hearing Protection Devices

Hearing protection devices should be selecting in accordance with the following table:

| Noise Level (dBA) | Class of hearing protector required |
|---|---|
| Less than 85 | No protection required |
| Up to 89 | Class B |
| Up to 95 | Class C |
| Up to 105 | Class A |
| Up to 110 | Class A plug + Class A or B muff |
| More than 110 | Class A plug + Class A or B muff & limited exposure |

The effectiveness of a hearing protector is not determined by its noise-reducing ability alone. If a protector is uncomfortable or if a worker cannot communicate with co-workers, the protector is more likely to be removed by the wearer. Class A protectors are not “the best”; they simply have the most attenuation. Class A protection is not recommended for workers whose noise exposure is less than 95 dBA. Hearing impaired workers in particular resist wearing Class A protection because it makes them unable to hear warning signals or speech. For such workers, Class B protection is often more acceptable and, therefore, more likely to be consistently worn.

Workers with normal or near normal hearing can wear any class of protector. Hearing impaired workers may find hearing protection that greatly reduces noise levels unacceptable. Reduced ability to hear warning sounds, equipment sounds, or verbal instruction may make it difficult for these workers to perform their jobs efficiently or safely.

Where verbal communication is frequently required, hearing protection that greatly reduces noise levels is undesirable, because it will make speech hard to understand.

Many workers who must wear hearing protection also wear other personal protective devices. The resulting combination of protective equipment must be comfortable for the worker. For example, workers wearing respirators, hard hats, and safety glasses may prefer earplugs to earmuffs. Earmuffs are often worn in low temperatures. Earplugs may be preferred in high temperatures or high humidity.

Some workers may have ear canals that are too small for earplugs or ears that are too large for earmuffs. Workers with chronic external ear infections should wear earmuffs, those with skin problems such as dermatitis or eczema surrounding the ear should wear earplugs. For workers who must do a lot of bending over and straightening, or maneuvering in small places, earplugs may be better than earmuffs.

If employers are concerned about monitoring the use of hearing protection by workers, earmuffs are more easily visible. The choice of an all plastic earmuff or earplug may be necessary where possible contact with an electrical hazard is present.

### 15.1.9 Maintaining Hearing Protection

Hearing protection is not usually designed to be repaired. Damaged earplugs must be replaced. New parts are available for earmuffs if domes, cuffs or liners are damage. Employers are required to supply enough hearing protection or replacement parts to ensure only well maintained hearing

protection is worn. Proper cleaning of hearing protection will maximize its life span. Advice on caring for hearing protection is provided as follows:

- Compressible earplugs can be washed and reused when dry, although usually they are disregarded at the end of the day.
- Reusable, custom molded plugs and canal caps should be washed at least once a week to remove wax build-up, which may reduce attenuation. Washing should be done at the end of the workday to allow complete drying. Use hand soap and warm water for washing. Do not use harsh solvents or alcohol, they will damage the plug. Most ear plugs come with a carrying case for storage between use. Reusable plugs should last six months to one year and custom molded plugs should last two to five years.
- The hard plastic domes of earmuffs generally need more than wiping with a damp cloth. The domes should last approximately two years. Skin oil, perspiration and some hair preparations have adverse effects on the cuffs. After continual use, the soft and compliant cuffs become hard and can even shrink. Ozone emissions from generators and some welding operations can cause the foam material in the domes to disintegrate and can also harden the seals. Most earmuffs have replaceable cuffs available. Cuff replacement is recommended every six months. Liquid filled cuffs should be checked often to see if the liquid is still present. Cuffs that have leaked should be replaced. The liner material inside the dome should be kept clean. If the liner is discolored, hardened, extremely soiled or mildewed, it should be replaced.
- Earmuffs must be sufficiently tight to form a good seal. Headbands should be adjusted or replaced as required to maintain adequate pressure. When stored, earmuffs should not be thrown into a tool box or truck bed where the domes can crack, cuffs can rip, and headbands can bend. Earmuffs should not be left outdoors. Bees, wasps, and spiders may make homes inside earmuff domes. Earmuffs mounted on a hard hat should not be stored with the cuffs pressing against the hat. The constant pressure on the cuffs leads to rapid flattening of the cuffs. Instead, the earmuffs should be kept raised off the hat or snapped out when not in use.

### 15.1.10 Hearing Testing

The only way to ensure that the hearing conservation program is effective is by periodically measuring the hearing of workers. Hearing tests are required for most construction trades workers. Hearing tests are vital because they identify the beginning of noise induced hearing loss long before workers notice it. As part of the test, workers are individually counseled about the results, the follow-up required and when a repeat test will occur. Workers are also counseled about the type of hearing protection to use.
Hearing tests are conducted annually to effectively monitor the hearing of noise exposed workers. The hearing test, including counseling, takes approximately 15 to 20 minutes.

During a hearing test, a worker is seated in a sound proof booth with a window and a set of earphones are placed over the ears. When the worker is ready, the audiometric technician sends a series of tones through the earphones to one ear, and then the other. The worker signals the technician as the tones are heard. The worker's responses are recorded for each ear. Then the results are graphed on a chart called an audiogram.

The audiogram shows how loud a tone must be to be barely heard by the worker, at a number of different pitches or frequencies. In the early stages of noise induced hearing loss, the audiogram will show some hearing loss for high pitched sounds. As hearing loss advances, the audiogram shows hearing loss for many pitches. Workers with more advanced hearing loss will notice the sounds of speech and surrounding sounds becoming muffled.

As part of the hearing test, workers are counseled about the necessary use, maintenance and replacement of hearing protection. Hearing testing and counseling must be performed by authorized technicians. The first hearing test a worker has is called the baseline test. The results are categorized as:

- *Normal* – test is normal or near normal
- *Early Warning* – test shows the start of noise induced hearing loss
- *Abnormal* – test shows significant hearing loss requiring medical follow-up.

Repeat tests are called periodic tests. They are categorized as:

- *Normal Change* – test shows no significant change from previous test; hearing has remained stable
- *Early Warning Change* – test shows there has been high frequency deterioration in hearing, likely due to noise exposure
- *Abnormal Change* – test shows significant change from the previous test requiring medical follow-up.

The technician is not qualified to determine the cause of abnormal or abnormal change hearing tests.

Records of hearing tests are maintained as long as the worker is employed by the company.

## 15.2 FALL PROTECTION

In accordance with The B.C. WorkSafeBC OHS Regulation and Quolus Construction Services Safety Policies, the following basic Fall Protection Program has been developed to provide all employees who work at heights over 10 feet with appropriate protection from the hazard of falling or where a fall from a lesser height involves an unusual risk of injury.

This policy must be read and understood by all workers employed by Quolus Construction Services.

This policy should be read in conjunction with the Quolus Construction Services Safety Program.

Quolus Construction Services will ensure that during the erection of buildings or structures, workers shall be protected from injury through falling from unguarded portions of a structure at all elevations 10 feet (3 m) or more above grade or where the fall from a lesser height involves an unusual risk of injury.

Such protection shall be provided by (but not limited to):
- Barriers
- Guardrails
- 5 Point Safety Harness (complete with shock absorbing system and lanyard and static safety lines)
- Elevated work platforms if able
- Any other effective means.

### 15.2.1 Training

Before a worker is allowed into an area where a risk of falling exists, supervisors must ensure that a specific procedure is in place and that the worker is properly instructed in the fall protection plan for the area, and in the procedures to be followed. In addition, the worker shall be instructed in the procedures to:

- assemble,
- maintain,
- inspect,
- use and
- disassemble the fall prevention system(s) used.

### 15.2.2 Hierarchy of fall protection

Guardrails are the preferred method of fall protection

- If guardrails are not practicable, then fall restraint is the next priority
- If fall restraint is not practicable, then fall arrest must be used
- If fall arrest is not practicable, then control zones or control zone and a safety monitor must be used.

### 15.2.3 Access to Work Points

Access to and from work points shall be achieved by one or more, or any combination of the following means, and reviewed on a daily basis with the supervisor/foreman before commencing work.

Vertical Access

- Access stairway(s).
- Fixed ladders or access towers
- Ladders also should be used for access between different levels of the structure and they must be secured against slipping or falling.
- Aerial/elevating work-platform.
- Stair towers.

### 16.2.4 Pre-Use Inspection

All fall prevention equipment including but not limited to 5-point safety harnesses, lanyards, chokers, lifelines and similar devices must be inspected by a qualified person before use on each shift for evidence of cuts, loose stitching and abrasions which may affect the intended use. Any of the equipment found to have evidence of deterioration must be immediately discarded and replaced.

All equipment must be used in accordance with the CSA Standards.

In the event of a fall, the harness and lanyard must be removed from service and re-certified by the manufacturer. The shock absorber must not be re-used.
All fall protection equipment must be kept free from substances and/or conditions that could contribute to their deterioration and must be kept in good working order.

All anchors used for fall arrest must have a load capacity of minimum 5000 Lbs.

### 15.2.5 Site Specific Procedures

On any project the method of fall protection will be by harness and lanyard connected to either a horizontal or vertical lifeline, and/or the use of fixed or suspended work platforms.

During leading edge work employees are to utilize the protection systems and are not to work free unless it is absolutely impractical to do the work any other way.

The first method of completing work at the leading edge is to seek a method of securing workers and preventing them from falling. Only after it has been categorically ascertained that this cannot be done can the leading edge procedure be implemented.

If necessary to do this the supervisor will instruct all workers on the method of ensuring safety. Only qualified, experienced competent persons will be employed in this practice.

### 15.2.6 Enforcement Policy

When actions of employees violate the established rules, immediate corrective action will be taken by the supervisor to enforce the rules so that the safety of all employees will be maintained.

### 15.2.7 Rescue

Rescue procedures shall be developed in accordance with the requirements of each work location. When necessary, emergency response personnel from local high angle fire rescue and provincial emergency programs will be contracted and utilized.

### 15.2.8 Fall protection Plan (Site Specific)

If there is a risk of a worker falling 25 feet (7.5 meters) or more on site a written fall protection plan must be in place on a site specific basis. This plan will include hazards present, controls used and the method of fall restraint/arrest used.

### 16.2.9 Responsibility

Management is responsible for the provision of adequate resources and equipment to ensure compliance with the requirements of the Occupational Safety Regulation of B.C. and to ensure compliance with corporate policies and procedures.

Supervisors on this project are responsible for ensuring compliance with this procedure and for ensuring all employees receive instruction in its use.

Supervisors are also responsible for ensuring workers are wearing suitable P.P.E. at all times when they are working at a height where they can fall 10 ft or more or when a fall from a lesser height is likely to present a significant risk of injury.

Employees are responsible for knowing the requirements as they relate to fall protection and for using all personal protective equipment including fall protection equipment when required. Quolus Construction Services will provide training where appropriate.

The use of fall protection is mandatory and any worker found not using a fall protection system when required will be subject to immediate termination. There is a zero tolerance enforcement procedure for fall protection in the company. If any part of these fall protection requirements are not clear, contact your supervisor before commencing work.

## 15.3 MUSCULOSKELETAL INJURY (MSI)

### 15.3.1 Policy

As we are committed to the health and safety of our employees, it is our policy to ensure that the risk factors of MSI are identified and all that the risks area assessed and eliminated or minimized as far as is practicable.

Supervisors and workers will receive training and periodic retraining (as needed) to identify and ensure awareness of the risks and contributing factors associated with MSI

### 15.3.2 Recognition

Workers must be able to recognize and assess the risk of MSI which include, but are not limited to:

The physical demands of work activities,
- force required
- repetition
- duration
- work posture

Layout of the workplace or workstation,
- working heights
- floor surfaces
- reaching
- seating

Characteristics of objects handled,
- load condition and weight distribution
- size and shape

Characteristics of the organization of work
- work-recovery cycles
- task variability
- work rate
- environmental conditions

### 15.3.3 Evaluation

When the MSI risks have been recognized and assessed, the company will eliminate or as far as is practicable minimize the risks. After the risks have been eliminated or minimized, there will be regular monitoring of the workplace and workers to ensure the risks are controlled. The inspection reports will be recorded and filed and be reviewed at least annually.

### 15.3.4 Control

In order to effectively control the MSI risks the company will ensure:

- review of past accident and incidents to identify the causes and contributing factors and assess and correct them as soon as practicable to prevent recurrence.
- regular ongoing monitoring of the workplace and workers are maintained.
- worker education and training is provided and maintained; investigations of injuries are investigated, assessed and the causes of the injury are corrected as soon as possible to prevent recurrence.

### 15.3.5 Training

Quolus Construction Services Ltd., as part of our health and safety program, will ensure all workers are adequately trained. The training and verification of each worker will be documented and kept on file. Contractors and supervisors will ensure that each worker and new worker is adequately trained and performs their duties safely and without risk.

Good safety performance is achieved, in large part, through initial and ongoing training and education which develops safety skills and promotes safety awareness. Accordingly:

General safety awareness training will be proved to all workers whenever the need for such training is required.

MSI/Ergonomics training, where applicable, shall be provided to all workers employed within the company. The effectiveness of this training, as well as any upgrading of this training shall be done annually or more often as required. This training will ensure that workers are:

- educated in risk identification related to their work
- able to recognize the early signs and symptoms of MSI
- trained in the work procedures, and,
- trained to properly use personal protective equipment.

## 15.4 INFECTIOUS DISEASE EXPOSURE CONTROL

### 15.4.1 Introduction

The emergence of AIDS during the 1980s raised awareness of bloodborne diseases. Most people now cannot imagine handling blood without wearing appropriate gloves. The SARS crisis of 2003 heightened the need to address other infectious diseases in workplace health and safety programs.

Changes to the Occupational Health and Safety Regulation (the Regulation) in British Columbia have expanded the regulatory requirements for infectious diseases beyond blood and body fluids. Preventive action is now required for any infectious disease that is found in the workplace and may pose a risk to workers.

Workers in healthcare are at greater risk of exposure to infectious diseases; however, the information in this publication is relevant to every industry in B.C., including:

- Law enforcement and corrections
- Dentistry
- Funeral homes

- Hospitality
- Schools
- Animal hospitals
- Construction
- Food processing

This program:
- Describes common infectious diseases and how they are spread
- Explains how to protect workers from exposure to infectious diseases
- Explains the requirements of the Regulation that relate to infectious diseases

This program contains three appendices:
- Appendix 1: Common terms
- Appendix 2: Sample exposure control plan for pandemic influenza
- Appendix 3: Biological agents

Although this program summarizes the requirements related to infectious diseases, always refer to the relevant sections of the OHS Regulation when determining your legal responsibilities.

### 15.4.2 Employer and worker responsibilities

Employers are required by law to ensure that work is being conducted safely, and to protect their workers from all work-related hazards, including exposure to infectious diseases. Section 115 of the Workers Compensation Act specifies that employers are not only responsible for their own workers, but also for any other workers who may be present at their workplace.

Employer requirements for protecting workers

Employers must do the following:

- Identify infectious diseases that are, or may be, in the workplace.
- Develop and implement an exposure control plan, when required
- Inform workers about how they may be exposed to infectious diseases in the workplace.
- Educate, train, and supervise workers on safe work procedures, including hand washing and the proper use of personal protective equipment (PPE).
- Offer vaccinations as recommended in the BC Centre for Disease Control's Communicable Disease Control Manual, without cost to workers who are at risk of occupational exposure.
- Purchase safety-engineered medical devices, where appropriate.
- Tell workers to seek medical attention, as required.

Employers should also encourage reporting of exposures, including needle-stick injuries.

What can workers do to protect themselves?

Workers have responsibilities to help reduce their risk of exposure to infectious pathogens, including the following:
- Attend education and training sessions.
- Follow safe work procedures, including hand washing and wearing PPE, if applicable.
- Seek immediate first aid and medical attention after an occupational exposure.
- Report exposure incidents to supervisors or managers.

- Refuse work that they have reasonable cause to believe will put themselves or others at risk.
- Workers should also keep a record of personal vaccinations and ensure that their vaccinations are up to date.

### 15.4.3 Bloodborne Diseases

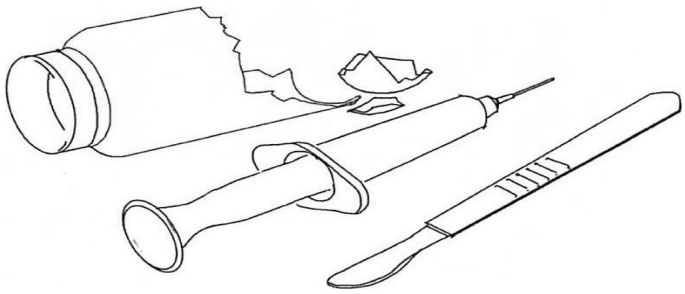
Generally, workers are most concerned about possible exposure to bloodborne diseases, infectious diseases that are transmitted through contact with infected blood or certain body fluids. Three bloodborne diseases that pose the greatest risk to workers are caused by three different viruses.

| Virus | Disease |
|---|---|
| human immunodeficiency virus (HIV) | acquired immune deficiency syndrome (AIDS) |
| hepatitis B virus | hepatitis B |
| hepatitis C virus | hepatitis C |

**How are bloodborne diseases spread?**

HIV and the hepatitis B and C viruses can be spread by direct contact with infected blood and certain other infected body fluids. To cause infection, the blood or body fluids containing the virus must gain entry into the bloodstream. The highest-risk exposures are from sharps injuries (puncture wounds from needles or cuts from scalpels) or splashes to a worker's mucous membranes (especially the eyes and mouth). Splashes of blood on intact skin are considered extremely low risk for infection because intact skin is an effective barrier that prevents the virus from gaining entry.

The following sections describe how these bloodborne diseases are transmitted, what to expect during the course of disease, who is at risk, and how to prevent exposure.



Injuries caused by sharps such as needles, scalpels, and broken glass specimen tubes can put workers at higher risk of exposure to bloodborne diseases, which must gain entry into the bloodstream to cause infection.

### 15.4.4 HIV/AIDS

HIV is a virus that attacks the immune system and can lead to AIDS.

Transmission

A person can become HIV infected through direct contact with HIV infected blood, certain internal body fluids (fluid around the heart, lungs, joints, or brain), semen, or vaginal secretions. Workers can be infected if they are stuck by a needle or other sharp object that contains HIV-infected blood or if blood splashes in their eyes or mouth. It is also possible for HIV to enter through breaks in the skin, especially if workers do not wear gloves when they have non-intact skin (for example, a cut or sore on their hands).

HIV/AIDS is not transmitted through casual contact (for example, shaking hands). If it was, many more of us would be HIV infected because many workers have either knowingly or unknowingly been in close contact with HIV-infected people.
Course of disease
HIV destroys the body's ability to fight off germs. In the early stages most, people feel fine. Some have a brief flu-like illness for a few days or weeks when the virus enters their body. HIV-infected people look perfectly healthy. No matter what stage the disease is in, HIV-infected people are always considered infectious.

AIDS is the end stage of HIV infection. It is diagnosed once the virus has damaged the immune system to the point where the infected person cannot fight off other germs and becomes sick with a variety of illnesses. Without treatment, a person with AIDS may eventually die from overwhelming infections (such as pneumonia or tuberculosis) or cancer.

### 15.4.5 Hepatitis B and C

The term hepatitis describes any inflammation of the liver. It is generally caused by a virus, but alcohol or certain drugs can damage the liver and cause hepatitis.

The various hepatitis viruses are completely unrelated to one another, but they all attack and damage only the liver. Hepatitis B and C are the two hepatitis viruses that are of concern to healthcare workers because they are spread through blood and can cause long-term complications.

Hepatitis A

Hepatitis A is generally less serious than hepatitis B and C because it causes only temporary liver damage. As the infected person develops antibodies, the virus is eliminated, and the liver returns to normal with no long-term effects. Many people have very few noticeable symptoms, although people over 40 will usually have more severe symptoms.

Hepatitis A is of particular concern for food handlers and childcare workers. The virus is shed into feces, and then spread when contaminated food or water is ingested — this is called the fecal-oral route. The virus can survive on surfaces for up to three months. A hepatitis A vaccine is available.

Transmission (hepatitis B)

The hepatitis B virus is transmitted in much the same way as HIV (the AIDS virus), but hepatitis B is much easier to catch. A drop of blood infected with hepatitis B contains enough of the virus to infect someone. Like HIV, the hepatitis B virus must gain entry into the bloodstream to cause infection.

Course of disease (hepatitis B)

Many people have very few noticeable symptoms. The symptoms are similar to a flu-like illness: low fever, tiredness, nausea, stomach pain, and loss of appetite. A few weeks later, some may notice jaundice. People over 40 will usually have more severe illness. One concern with hepatitis B is the possibility of becoming a chronic carrier and developing long-term complications. People who become chronic carriers are always infectious, even though they feel fine.

Hepatitis B vaccine

Hepatitis B vaccine in a three-dose series gives lifelong immunity to hepatitis B. Employers must offer the hepatitis B vaccine, at no cost, to all workers who have or may have occupational exposure to the hepatitis B virus (see section 6.39 of the Regulation).

Transmission (hepatitis C)

Hepatitis C is most commonly transmitted through exposure to infected blood. Outside of the workplace, intravenous drug users who share needles are at great risk. Unlike HIV and hepatitis B, sexual transmission of hepatitis C is rare.

Course of disease (hepatitis C)

Most people with hepatitis C do not have any symptoms of the infection, and do not know that they are infected. A small percentage will have symptoms many weeks or even months after the initial infection. Feeling sick is not the main issue with hepatitis C. Becoming a carrier and developing long-term complications are the real problems. Long-term liver damage from chronic hepatitis C infection can lead to death.

Who is at risk?
Any worker who comes in contact with any of the body fluids that can spread bloodborne disease is at risk. Exposures can occur through needle sticks or other sharps injuries, or blood splashes. Some occupations have higher risks due to the client population and the types of procedures being performed. These include surgeons, nurses, operating and emergency room staff, lab workers, paramedics, fire fighters, police, staff in hemodialysis units, dentists, dental hygienists, and occupational first aid attendants.

Fortunately, it is rare to contract a disease from occupational exposure to bloodborne pathogens. However, contracting one of these diseases has significant consequences and long-lasting health implications, and could result in serious illness or even death.

**15.4.6 Preventing exposure to bloodborne diseases**

The good news is that the transmission of bloodborne pathogens is preventable, and preventing transmission is the same for all bloodborne diseases.

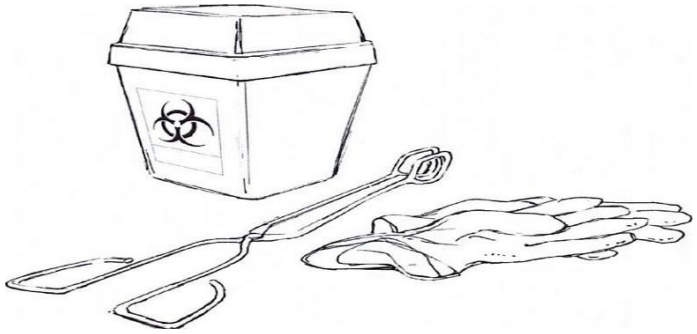
Treat all blood as potentially infectious

As explained earlier in this section, many people who are carriers of HIV, hepatitis B, and hepatitis C have no symptoms and do not know that they are infected. In order to protect yourself from possible exposure to bloodborne pathogens, consider all blood to be potentially infectious, and use appropriate precautions for all contact with blood and body fluids.

Prevention tips

A good way to start identifying potential exposures is to look at workplace inspections, staff feedback, incident investigations, first aid records, and claims records. Once potential exposures have been identified, consider the following prevention methods:

- Follow proper hand washing procedure (see page 45). Hand washing is the simplest, most effective means of controlling the spread of infectious disease
- Follow routine practices whenever there is any possibility of exposure to blood or other body fluids. Routine practices include hand hygiene, safe work practices, and the use of PPE such as gloves, eye protection, and gowns.
- Replace conventional sharps with needleless systems or devices that have safety-engineered features (for 'example, retractable needles, blunt-tip suture needles, and shielded scalpels).
- Develop safe work procedures that encourage immediate disposal after using a sharp, prohibit recapping of sharps, and make use of "hands-free" (or neutral zone) methods of passing instruments.
- Educate staff about safe work practices, the availability of a hepatitis B vaccine, the importance of reporting incidents and near misses, and their responsibilities for creating a safe workplace.
- Ensure that waste collection includes the separation and isolation of sharps and biomedical waste. Workers should not compress garbage bags by hand. Garbage bags should be held away from the body to avoid scratches from sharps inadvertently left in the bags. Sharps disposal containers should be puncture resistant.
- Identify laundry that is soiled with blood, and follow routine practices when handling it, including wearing gloves and gowns.
- Make sharps containers readily available wherever sharps may be used, including at bedsides, in a client's home, in the operating room, or in an area known to have discarded needles.
- Use break- and leak-resistant sample collection containers.
- Develop general cleaning and blood-spill cleanup procedures that include disinfection of surfaces contaminated by blood. For small drops of blood, use a solution of 1-part household bleach to 50 parts water, mixed fresh daily. For large spills of blood, use 1-part household bleach to 10 parts water, mixed fresh daily
- Refer anyone who suffers a possible occupational exposure to a bloodborne pathogen to the nearest appropriate medical facility. Someone who suffers a needle-stick injury should be assessed by a physician within two hours of the injury. Provide workers with psychological support after exposures.
- Investigate all exposures to help prevent recurrence.



If workers may encounter sharps, they should be trained in safe disposal procedures, and have access to sharps containers, gloves, and tongs.

### 15.4.7 Contact diseases

Contact diseases are infectious diseases transmitted through direct or indirect contact with bacteria or viruses.

Direct contact includes physical contact with an infected person, including contact with blood and body fluids. Outside of the workplace, direct contact includes sexual transmission.

Indirect contact involves touching something in the environment that has been contaminated by an infected person, usually an object or surface area (for example, telephones, computers, doorknobs, elevator buttons, used tissues, or contaminated medical equipment). The contaminated hands then deposit the bacteria or virus on the next object or person that they touch. Disease transmission through indirect contact includes transmission through contaminated food or water.

The diseases transmitted by direct or indirect contact that are covered in this section usually have temporary acute symptoms for workers but may have serious consequences for clients and patients who are frail or immune-compromised.

### 15.4.8 Norovirus

Norovirus, which includes the Norwalk virus, is the general name used to identify several small viruses that cause diarrhea and vomiting in all ages, especially adults. The virus group is named after an outbreak of diarrheal disease in Norwalk, Ohio, in 1968.
Norovirus is extremely common. In the past few years, hundreds of outbreaks have been recorded in B.C. Next to the common cold, people get norovirus more than any other viral infection. Doctors usually refer to it as viral gastroenteritis.

<u>Transmission</u>

Norovirus spreads quickly through the fecal-oral route, from an infected person with unwashed hands to a susceptible person. Norovirus is spread by eating foods or drinking liquids that are contaminated with the virus, or by touching contaminated surfaces and then touching your own mouth. The virus is sturdy it can live for days on surfaces if it is not disinfected. The good news is that Norovirus does not multiply in food like salmonella does; the virus is easily destroyed by thorough cooking.

Outbreaks commonly occur in long-term care facilities, acute-care hospitals, schools, daycare centres, summer camps, restaurants, and vacation settings, including cruise ships. Many food items have been implicated in restaurant outbreaks: oysters, salads, sandwiches, cakes, frosting, raspberries, drinking water, and ice.

Large outbreaks in hospitals have been traced to just one patient who had come into the hospital with diarrhea. The close living quarters on ships make it easy for person-to-person transmission to occur. A passenger or crewmember may bring the virus on board, and a single infected crew member can be responsible for a large outbreak as new susceptible passengers get on board every few weeks.

<u>Course of disease</u>

Symptoms come on suddenly—about 24 to 48 hours after ingesting the virus. The illness often starts with sudden episodes of vomiting and diarrhea. Other symptoms include abdominal cramps, tiredness, headache, and muscle aches. The illness usually lasts about two to three days.

Prevention

Wash your hands after using the toilet, changing diapers, and before preparing and eating food. If running water is not available, use an alcohol-based hand rub. Anyone suffering from diarrhea should not prepare food until three days after recovery.

Regular prevention

- Wash hands with soap and water, or alcohol-based hand run
  - Disinfect all contaminated surfaces with a solution of 1-part household bleach to 50 parts water, mixed fresh daily.
- Prevention during an outbreak
  - Workers with diarrhea should stay home until 48 hours after recovery.
  - The elderly, very young children, and anyone with underlying medical conditions should not visit residents and patients in healthcare facilities.

### 15.4.9 Methicillin-resistant Staphylococcus aureus (MRSA)

Staphylococcus aureus (S. aureus) are bacteria normally found in the nose or on the skin in up to 30% of healthy people. S. aureus can cause a variety of infections, ranging from localized skin lesions such as impetigo, boils, or wound infections, to serious invasive disease. Methicillin-resistant Staphylococcus aureus (MRSA) are strains of S. aureus that have developed resistance to many antibiotics.

Transmission

In the past, most MRSA infections have occurred in healthcare facilities, and infected patients continue to be the main source of MRSA. Healthcare workers who care for patients with MRSA may pick it up on their hands, or from contaminated surfaces, including bed rails, patient care equipment, and over-bed tables.

Community-associated MRSA (CA-MRSA)

Strains of community-associated MRSA (CA-MRSA) have emerged in recent years. CA-MRSA infections are those acquired by people who have not been hospitalized or undergone a medical procedure (for example, dialysis, surgery, or catheter insertion) within the past year. CA-MRSA is more virulent than hospital-acquired MRSA and usually causes a mild skin infection that is often misdiagnosed as a boil or spider bite. In rare cases, the infection can cause severe invasive disease in otherwise healthy people.

Prevention

- Wash hands with soap and water, or alcohol-based hand rubs.
- Disinfect all contaminated surfaces with a solution of 1-part household bleach to 50 parts water, mixed fresh daily.

### 15.4.10 Vancomycin-resistant enterococci (VRE)

Who is at risk of MRSA and VRE? A worker who provides direct patient care can be susceptible to acquiring or carrying any virus or bacteria that can be transmitted by contact. However, it is rare for MRSA or VRE to cause disease in healthy workers. MRSA and VRE pose a greater risk to clients and patients who are elderly, weak, or immunocompromised, and to those who are exposed to the unwashed hands of care providers.

Enterococci are bacteria that are commonly found in the gastrointestinal tract of 95% of healthy individuals. Vancomycin-resistant enterococci (VRE) have developed resistance to the antibiotic drug vancomycin.

Transmission

Human feces contain enterococci, which makes the fecal-oral route the most common route of transmission. VRE can be transmitted directly from patient to patient, or by a healthcare worker's hands to patients. It can be transmitted indirectly by contaminated medical devices (such as electronic thermometers) or contaminated environmental surfaces. The surfaces in rooms of patients infected with VRE are covered with VRE. The VRE bacteria can survive on inanimate surfaces for up to seven days.

Course of disease

VRE rarely causes illness in healthy people. Occasionally, enterococci can cause invasive disease, particularly in severely immune-compromised patients.

Prevention

- Good hand hygiene and cleaning procedures are key parts of infection control in institutions. Thorough, daily disinfection of surfaces helps reduce the amount of bacterial contamination in the rooms of patients with VRE. Rooms of patients who have diarrhea or are incontinent can be heavily contaminated.

### 15.4.11 Clostridium difficile (C. difficile)

Clostridium difficile (C. difficile) is a bacterium that causes diarrhea and more serious intestinal conditions such as colitis. It is the most common cause of infectious diarrhea among patients in hospitals and long-term care facilities.

Transmission

People with C. difficile infections carry the bacteria in their intestines, and it is shed in their feces. The bacteria can be passed from person to person through direct or indirect contact. Healthcare workers may carry the bacteria on their hands, and as they move through a facility, they may spread it to patients or contaminate surfaces such as bedding, commodes, bedpans, sinks, rectal thermometers, and handrails.

Course of disease

Symptoms of C. difficile infection include:

- Watery diarrhea (at least three bowel movements per day for two or more days)
- Fever
- Loss of appetite
- Nausea
- Abdominal pain or tenderness

Severe diarrhea can lead to serious complications, including dehydration. C. difficile can be fatal in debilitated patients.

Prevention

Follow thorough cleaning procedures that decontaminate the environment, using 1-part household bleach to 50 parts water, mixed fresh daily. In the case of an outbreak, disinfect surfaces using 1-part household bleach to 10 parts water, mixed fresh daily. Wash hands after handling contaminated waste (including diapers) and before eating, feeding, or providing personal care.
Note: Alcohol-based hand rubs are not effective against C. difficile.
Who is at risk for C. difficile?

Scabies

Scabies is a skin infestation caused by the scabies mite, a tiny parasite related to ticks and spiders. Scabies mites burrow beneath a person's skin (they can do this within two to three minutes) to live and lay their eggs.
It may take two to six weeks before the person experiences severe itching. The infestation is visible as red, crusty, scaling skin —this is especially obvious on the webs between the fingers and toes; the insides of the wrists and elbows; and the thighs and buttocks.
Scabies is spread by prolonged skin contact with an infested person. The best way to prevent scabies is to recognize the physical symptoms of infestation and avoid skin contact with an infested person. Use disposable gloves, and wash with soap and water after contact with an infested person, or after handling their clothing or bedding.

Healthy workers are not usually vulnerable to C. difficile. Patients who receive antibiotics, especially the elderly, are at increased risk of acquiring C. difficile. Treatment with antibiotics alters the normal levels of good bacteria found in the intestines and colon. When there are fewer of these good bacteria, C. difficile can thrive and produce toxins that can cause infection. The combination of the presence of C. difficile in healthcare settings and the number of patients receiving antibiotics in these settings can lead to frequent outbreaks.

### 15.4.12 Preventing exposure to contact diseases

The transmission of diseases that are spread by direct and indirect contact can be greatly limited by following infection prevention and control practices. Consider the following guidelines:

- Develop safe work procedures that encourage infection prevention and control practices.
- During an outbreak, minimize unnecessary patient activities, consider restricting public access to the facility, and temporarily reduce the intake of new clients.
- Educate staff about safe work practices.

- Follow proper hand washing procedure (see page 45). Hand washing is the simplest, most effective means of controlling the spread of infectious disease.
- Follow routine practices, which include, hand hygiene and the use of PPE such as gloves, eye protection, and gowns.
- Develop laundry and waste collection procedures that minimize possible contamination of other surfaces.
- Develop procedures and schedules to ensure disinfection of contaminated surfaces. A dilute bleach solution (1-part household bleach to 50 parts water) is sufficient.
- Encourage staff who have signs and symptoms of illness to stay home until they feel better

### 15.4.13 Airborne diseases

Airborne diseases are infectious diseases that are spread through the air in:
- Large respiratory droplets (droplet transmission)
- Aerosolized airborne droplet nuclei (airborne transmission)

Large droplets and aerosolized droplet nuclei are both generated by coughing, sneezing, and talking. They can also be generated by some medical procedures such as endotracheal intubation or airway suctioning.

Large respiratory droplets generally travel only a short distance (less than 2 m) through the air, and then settle out of the air quickly. Influenza is an airborne disease spread via droplet transmission. Aerosolized airborne droplet nuclei are extremely light, and therefore can remain suspended in the air and travel considerable distances via air currents.

A person becomes infected by breathing in air contaminated with the virus or bacteria. It is unlikely but not impossible to become infected from even a brief exposure to contaminated air. The chances of infection increase the longer one is near an infected person.

Diseases that can spread through the air and present a risk to workers include tuberculosis, measles, chicken pox, mumps, and influenza. The following sections describe how these airborne diseases are transmitted, the course of disease (symptoms), who is at risk, and how to prevent exposure.

### 15.4.14 Tuberculosis (TB)

Tuberculosis (TB) is an illness that attacks the lungs and other organs and can result in death if untreated. TB is caused by a bacterium called Mycobacterium tuberculosis.

<u>Transmission</u>

TB is spread through the air. The sputum of a person who has TB is loaded with TB bacteria. When other people nearby breathe in contaminated air, the bacteria enter their respiratory system, and they may become infected.

Most people need several days around someone with TB in order to breathe in enough germs to get the infection themselves. People living in the same household as an infectious TB patient have about a 30% risk of becoming infected. However, people infected with HIV can become infected with TB from brief exposures.

Course of disease

Ninety per cent of those infected do not ever develop active TB. These infected people have what is called latent infection and are not contagious. Their bodies can keep the bacteria in check. Connective tissue in their lungs forms an enclosure that prevents the bacteria from reproducing and destroying the lungs. TB bacteria remain trapped in this enclosure in a dormant (latent) stage—alive, but not reproducing. In the latent phase, there are no symptoms.

If a person with latent TB suffers from another illness or their immune system falters, the live bacteria can escape the enclosure and multiply, resulting in active TB disease. This is called reactivated TB. The lifetime risk of active TB for people with latent infection is 5 to 10%.

People with active TB disease feel tired and weak. They cough constantly, sometimes bringing up blood. They also suffer chest pain, night sweats, fever, and fatigue. They have no appetite and lose weight. Many people become short of breath. Among older people, males typically experience worse symptoms than females.

The incubation period for TB infection is about 4 to 12 weeks, after which a skin test will show positive or, in some cases, a lesion will appear on a chest X-ray.

TB screening:

The BC Centre for Disease Control recommends pre-employment screening for workers at risk of exposure to TB, including hospital-based healthcare workers, community and home care workers, and corrections officers. Establishing baseline data for new workers helps with future TB contact screening. For more information on TB screening, go to www.bccdc.org.

Who is at risk?

Healthcare, social service, and prison workers who work with higher-risk population groups are at risk. In B.C., these vulnerable population groups include Aboriginal communities, the homeless, and immigrants from countries with high TB rates, including parts of Eastern Europe, Asia, and Africa.

Prevention

If a person has potential or confirmed infectious TB, give them a surgical mask to wear and place them in a separate room (in acute care hospitals this might include a negative-pressure isolation room with adequate ventilation and sinks). Workers should use personal respiratory protection (for example, an N95 filtering respirator) in areas where there is increased risk of exposure, including the following:

- Rooms where cough-inducing or dental procedures are done
- Homes of infectious TB patients

- Correctional institutions
- Interview rooms

### 15.4.15 Chicken Pox

The medical name for chicken pox is varicella. It is easy to catch chicken pox because it spreads through the air. The tiny blisters of a child or adult who has chicken pox are filled with the chicken pox virus, which sheds into the air, and can infect anyone who breathes it.

Chicken pox vaccine

There is a chicken pox vaccine that protects 85 to 90% of children completely and protects all children from moderate to severe disease. It is not quite as effective in adults; however, even if the vaccine does not completely prevent chicken pox in adults, it does prevent severe disease. All infants in B.C. are eligible to receive one dose of the vaccine between the ages of 12 and 18 months.

Transmission

The varicella virus infects only humans. The virus does not live on surfaces. It can be transmitted through airborne transmission or direct contact with weeping sores or contaminated hands.

Course of disease

Chicken pox is usually a relatively mild childhood illness, but it can be dangerous and more severe when contracted by adults. The first signs appear anywhere from 10 to 21 days after infection. An itchy rash usually starts on the face, chest, back, shoulder blades, or armpits. Small red bumps or pimples appear, turn clear, burst, dry up, and scab over before finally healing. It takes about five days for all the bumps to appear, and five more days until the last of them crusts over. Other symptoms include fever, tiredness, and loss of appetite.

The varicella virus remains active in the body and may reactivate as shingles later in life. The vesicles of a patient with shingles are contagious to a non-immune person.

Who is at risk?

Chicken pox can occur anywhere in the population. Now that most infants receive the chicken pox vaccine, exposure is much less common. There is no risk of infection for workers who have been vaccinated or previously infected with chicken pox— they are considered immune.

Prevention

One chicken pox infection gives lifelong immunity; a person can get it only once. If a person is exposed again, antibodies will prevent another attack of chicken pox. For prevention tips, see page 24.

### 15.4.16 Measles

The medical name for measles is rubeola, also known as red measles, to distinguish it from German measles (rubella). Measles is one of the most highly contagious diseases known.

Transmission

When someone with measles breathes, coughs, sneezes, or talks, the virus is released into the air. It can survive on surfaces for up to two hours and in the air for about 30 minutes. If you enter a

room soon after someone with measles has left, you can still catch measles from that person. Direct contact with the secretions from an infected person's runny nose, eyes, or cough can also spread the disease.

Course of disease

The first signs of measles appear about ten days after the virus enters the body. Symptoms include a high fever (as high as $40.6^0$ C), followed by a cough; red, puffy, painful eyes; and a runny, stuffed-up nose. The fever lasts about six days —the rash usually appears on the second day of fever.

Who is at risk?

Like chicken pox, measles can occur anywhere in the population. Babies and older adults are usually the most seriously ill. There is no risk of infection for workers who have been vaccinated or previously infected with measles— they are considered immune.

Prevention

One measles infection gives lifelong immunity; a person can get it only once. After that, antibodies will prevent another attack of measles. Vaccine also gives lifelong immunity to measles. For prevention tips, see page 24.

### 15.4.17 Mumps

Mumps is caused by the mumps virus, which invades and multiplies in one or more of the salivary glands. It most commonly affects the parotid gland, causing swelling under the front of the ear lobe, between the jaw and ear. Since 1997, the incidence of mumps has declined dramatically.

This is likely because of the two-dose measles, mumps, and rubella (MMR) vaccine schedule for young children, as well as booster vaccinations offered to post-secondary students and healthcare workers.

Transmission

Mumps does not spread as easily as chicken pox or measles. It spreads through direct contact and droplet transmission when the saliva of an infected person contacts the mucous membranes of another person's mouth or nose.

Course of disease

Most people get swelling in the saliva gland between the jaw and ear. Swelling begins on one side of the face and may spread to the other side within one or two days.

Older children and adults usually experience symptoms for three to five days before the swelling starts. These symptoms may include fever, chills, headaches, weakness, and a general sick feeling. Young children generally have fewer symptoms before the swelling starts.

Symptoms usually develop two to three weeks after exposure. People are most infectious from two days before swelling starts to five days after. Some may be infectious for as long as seven days before and nine days after the onset of swelling.

Who is at risk?

Children under the age of two rarely get mumps. People who have not been vaccinated or not been previously infected with mumps are at risk.

Prevention

Like measles and chicken pox, the mumps vaccine provides lifelong immunity. Anyone who has been infected with mumps is also immune. For prevention tips, see page 24.

### 15.4.18 Influenza

Most people are familiar with seasonal influenza (the flu). It is a common respiratory disease caused by a highly contagious virus that changes slightly from year to year.

Flu vaccine

One dose of influenza vaccine is highly effective in healthy adults younger than 65 years. When the vaccine and circulating viruses are a good match, the influenza vaccine prevents laboratory-confirmed influenza among 70 to 90% of healthy adults under 65. Vaccinated or not, it is still necessary to follow other safe work practices. Because the influenza strain mutates slightly from year to year, it is necessary to be revaccinated each flu season to remain protected.

## Transmission

Influenza viruses are spread via droplet transmission when an infected person coughs or sneezes near a susceptible person. The susceptible person must be close to the infected person because large respiratory droplets generally travel only a short distance (less than 2 m) through the air, and then settle out of the air quickly.

A person can also catch influenza from direct or indirect contact. Infected people who do not wash their hands properly will have respiratory-tract secretions filled with the virus all over their hands. The virus can live for hours in dried mucus on doorknobs, telephones, faucets, or wherever infected people with unwashed hands have passed. A person can become infected by touching any of these surfaces and then touching his or her eyes, nose, or mouth. Influenza can be spread by an infected person from about one day before symptoms start to appear, to as many as five days after symptoms appear. Children can be infectious for ten or more days after symptoms appear.

## Course of disease

Common influenza symptoms include fever, headache, cough, fatigue, aches and pains, runny nose, and sore throat. The worst symptoms usually last about five days, and most people recover from the flu easily.

## Who is at risk?

All workers are at risk of acquiring or spreading seasonal influenza. Annual vaccinations are available, based on the viral strain that is anticipated for that flu season.

## Prevention

Wash hands often, avoid touching surfaces in public places, and avoid touching your mouth, eyes, or nose. Flu vaccinations are also available.

Washing hands frequently using proper hand washing procedure (see page 45) is the best way to control the spread of influenza and other infectious diseases.

### 15.4.19 Pandemic influenza

Pandemic influenza is different than seasonal flu. An influenza pandemic is a global epidemic that occurs when a powerful new strain of human influenza virus appears. Few people have natural immunity to a new virus, so it spreads rapidly from person to person, and some people may become very ill and die. Flu pandemics can last from 12 to 36 months.

The 1918—19 pandemic was the worst on record; it killed close to 50 million people worldwide, mostly infants, elderly people, and people 20—40 years old. The 1957—58 and 1968—69 pandemics were less deadly.

Who is at risk?

If a pandemic influenza strikes, it will affect all workers in all industries. There will be a significant need for additional healthcare resources at a time when many healthcare workers will be off sick. All levels of government in B.C. and Canada are developing comprehensive preparedness plans for an influenza pandemic.

Preventing exposure to airborne diseases

The transmission of diseases that are spread through the air must be managed through a combination of engineering controls, administrative controls (including safe work practices), and personal protective equipment. Consider the following guidelines:

- Follow proper hand washing procedure (see page 45). Hand washing is the simplest, most effective means of controlling the spread of infectious disease.
- Follow routine practices, which include hand hygiene and the use of
- PPE such as gloves, eye protection, respiratory protection, and gowns. Develop safe work procedures that encourage infection prevention and control practices. During an outbreak, minimize unnecessary patient activities, consider restricting public access to the facility, and temporarily reduce the intake of new clients.
- Place patients with infectious TB, chicken pox, or measles in a separate room with the door closed. In hospitals, place patients in a negative air pressure room, if available.
- Educate staff about safe work practices.
- Develop laundry and waste collection procedures that minimize surface contamination.
- Develop procedures and schedules to ensure disinfection of contaminated surfaces. For example, dilute bleach solutions (1-part household bleach to 50 parts water) or alcohol-based disinfectants (for small surface areas) are usually sufficient.
- Encourage staff to get vaccinated if vaccines are available.
- Encourage staff who have signs and symptoms of illness to stay home until they feel better.
- Encourage cough/sneeze etiquette (coughing into sleeves instead of hands) and put surgical masks on coughing people. Try to seat coughing people away from others, if possible.

### 15.4.20 Zoonotic diseases

*Zoonotic diseases* are diseases caused by infectious agents that can be transmitted between animals and humans. These diseases have affected human health throughout history. The bubonic plague, which is transmitted by rat fleas, has caused illness and death since ancient times. It was

known as the Black Death during the Middle Ages. More recently, West Nile virus, SARS, and avian influenza have captured our attention—all of these diseases come from animals originally.

Zoonotic diseases can be transmitted in many ways. Several can be transmitted directly to humans through contact with skin (for example, brucellosis or tularemia). Some are transmitted through contact with saliva (for example, rabies). A few are airborne (for example, hantavirus). Many others are transmitted through insect bites, particularly mosquito or flea bites (for example, West Nile virus or plague).

People who work with animals have a higher risk of acquiring a zoonotic disease. The following table lists a few examples of animal-handling occupations and diseases of concern.
Common diseases associated with animal-handling occupations

| Occupation | Diseases (and the organisms associated with them) |
|---|---|
| Veterinarians and pet shop workers | Ringworm (fungus)<br>Toxoplasmosis (protozoa)<br>Leptospirosis (bacteria)<br>Rabies (virus)<br>M RSA (bacteria)<br>Brucellosis (bacteria)<br>Psittacosis (bacteria) |
| Farmers and ranchers | Ringworm (fungus)<br>E. coli (bacteria)<br>Campylobacteriosis (bacteria)<br>Brucellosis (bacteria)<br>Hantavirus<br>Psittacosis (bacteria) |
| Groundskeepers and wildlife workers | Hantavirus<br>Rabies (virus)<br>Bubonic plague (bacteria) |
| Meat processors, butchers, and abattoir workers | Listeriosis (bacteria)<br>Campylobacteriosis (bacteria)<br>E. coli (bacteria)<br>Q fever (bacteria) |

### 15.4.21 Campylobacteriosis

Campylobacteriosis is caused by Calllpylobacter bacteria, the most common agent of bacterial diarrhea among humans. In B.C. alone, there are approximately 2300 reported cases of campylobacteriosis each year.

Transmission

Campylobacter spreads quickly through the fecal-oral route, from infected pets or farm animals to susceptible people. Transmission between people is less common. The bacteria may also be consumed in undercooked meat, contaminated food, contaminated water, or raw milk.

Course of disease

Campylobacter infection causes severe watery or bloody diarrhea, fever, abdominal cramps, nausea, and vomiting. The incubation period is usually from two to five days, depending on the number of bacteria ingested, and the symptoms last from one to seven days or more.

Prevention

Wash hands with soap and water after handling animals or animal feces, and before preparing and eating food. If running water is not available, use an alcohol-based hand rub.
Hantavirus

Hantaviruses are a group of viruses carried by many different kinds of wild rodents (mainly wild rats and mice), all over the world. So far, only deer mice have been found to carry the virus in B.C. however, other rodents could be potential carriers.

Transmission

Humans typically become infected when they inhale particles of saliva, urine, or feces of infected rodents. This may happen via direct contact with the rodents or by breathing airborne dust particles generated when rodent feces are disturbed.

Course of disease

Hantavirus pulmonary syndrome is the disease caused by hantavirus. It begins as a flu-like illness. As the disease progresses, fluid builds up in the lungs, making it difficult to breathe. Severe respiratory failure resulting in death can occur within a few days of the early-stage symptoms. Symptoms may appear from 5 to 45 days after exposure to the virus.

Prevention

Workers who handle rodents or clean up debris contaminated by rodent droppings must wear PPE, including a respirator. The type of equipment depends on the task and the amount of contaminated material present.

### 15.4.22 Rabies

Rabies is a viral disease in animals that is most often transmitted to humans through bites from rabid animals —usually wild animals such as raccoons, skunks, bats, and foxes. Pets and other domestic animals are responsible for less than 10% of reported cases, and most of these are from dog bites.

Transmission

Rabies is contracted when saliva from an infected animal enters a bite wound and spreads to the central nervous system (after a latency period that may last from days to months).

Course of disease

The first symptoms may be flu-like, followed by anxiety, confusion, agitation, insomnia, hallucinations, and eventually delirium. The disease is nearly always fatal.

Prevention

Observe animals for unusual aggressive behaviour. These animals should be adequately restrained, and only handled using bite-resistant gloves. Check for bites after handling animals — you might not realize that you have been bitten.

If you are bitten, wash the wound well with soap and water for at least five minutes. See your doctor as soon as possible, and have the wound examined. The biting animal should be tested for rabies. A rabies vaccine is available and recommended for those working with animals.

Insect-borne diseases
Many diseases such as West Nile virus and Lyme disease are transmitted by blood-feeding insects such as mosquitoes, fleas, and ticks. When working outdoors around biting insects, use insect repellent on all uncovered skin, and wear loose-fitting, long-sleeved shirts and pants.

Preventing exposure to zoonotic diseases

Prevention measures include safe work practices and PPE.

Consider the following guidelines:

- Educate staff about safe work practices.
- Encourage staff to get vaccinated if vaccines are available.
- Wash hands with soap and water after handling animals, animal feces, or soil that might be contaminated. Follow proper hand washing procedure (see page 45). If running water is not available, use an alcohol-based hand rub.
- Restrain aggressive animals and use bite-resistant gloves when handling them. Plan an escape route when handling large animals.
- Wear respiratory protection if there is a potential for exposure to an airborne organism (for example, exposure to hantavirus while cleaning up rodent droppings).
- Wear face protection (for example, goggles or a visor) if there is a potential for exposure to sprays or splashes of blood or body fluids.
- Disinfect contaminated equipment (for example, with 1-part household bleach to 10 parts water, mixed fresh daily).
- For more information on zoonotic diseases, see the following:
- US Centers for Disease Control and Prevention (www.cdc.gov/az/a.html)
- BC Centre for Disease Control (www.bccdc.org/topic_index.php)
- British Columbia Veterinary Medical Association (www.bcvma.org)

### 15.4.23 Exposure control plans

An exposure control plan is a document that describes how workers will be protected from infectious diseases in the workplace. It includes information on the nature of the hazards and the risks associated with exposure, as well as controls such as safe work procedures that the employer will use to protect workers.

Occupational Health and Safety Regulation
The requirements for exposure control plans are described in sections 5.54 and 6.34 of the Regulation. Exposure control plans may also be required to reduce exposure to hazardous chemicals and other

Do I need an exposure control plan?

Exposure control plans may be required for many workplaces, including the following:

- Hospitals
- Nursing homes, residential care facilities, home healthcare, and hospices
- Doctors' and dentists' offices
- Ambulance and paramedic services
- Law enforcement, fire and rescue, and lifesaving services
- Correctional institutions
- Research laboratories
- Schools
- Daycare facilities
- Animal hospitals
- Wherever occupational first aid attendants are designated

What should my plan include?

Every workplace is unique, so you need to develop an exposure control plan that is specific to your workplace. Exposure control plans should only be developed by a qualified person.
An exposure control plan must include the following components, which are described further in the rest of this section:

What does qualified person mean?

According to the Regulation, qualified "means being knowledgeable of the work, the hazards involved and the means to control the hazards, by reason of education, training, experience or a

- Statement of purpose
- Responsibilities of the employer, supervisors, and workers
- Risk identification and assessment
- Risk controls
- Written safe work procedures
- Worker education and training
- Written records
- Statement of purpose

The purpose of an exposure control plan is to prevent harmful exposure of workers to infectious diseases in the workplace. The following is an example of a typical statement of purpose:

Quolus is committed to providing a safe and healthy workplace for all our employees. A combination of measures will be used to achieve this objective, including the most effective control technologies available. Our work procedures will protect not only our workers, but also any other workers who enter our workplace. All employees must follow the procedures described in this plan to prevent or reduce exposure to infectious diseases."

**Responsibilities of employers, supervisors, and workers**

Employer

The employer has the following responsibilities:

- Ensure that the resources (for example, safe work procedures, worker training, and PPE) required to implement and maintain the exposure control plan are readily available where and when they are required. •Select, implement, and document the appropriate site-specific control measures.
- Ensure that supervisors and workers are educated and trained to an acceptable level of competency.
- Ensure that workers use appropriate PPE (for example, gloves, gowns, eye protection, and respirators).
- Conduct a periodic review of the plan's effectiveness. This includes a review of the available control technologies to ensure that these are selected and used when practical.
- Maintain records of training and inspections.
- Ensure that a copy of the exposure control plan is available to workers.

Supervisors

Supervisors have the following responsibilities:
Ensure that workers are adequately instructed on the controls for the hazards at the location.
Ensure that workers use appropriate PPE
If workers require respirators, ensure that they have been fit tested, and the results are recorded.
Direct work in a manner that eliminates or minimizes the risk to workers.

Workers

Workers have the following responsibilities:

- Know the hazards of the workplace.
- Follow established safe work procedures as directed by the employer or supervisor.
- Use any required PPE as instructed.
- Report any unsafe conditions or acts to the supervisor.
- Know how and when to report exposure incidents.

**Risk identification and assessment**

Risk identification and assessment begins with an understanding of the nature of infectious diseases and how they are transmitted.
When identifying and assessing risks, consider factors such as the following:

**Routes of transmission**

These are the ways in which the virus or bacteria can infect a worker—for example, contact transmission, droplet transmission, or airborne transmission.

**Work methods or procedures that may result in exposure**

The potential for exposure will vary from workplace to workplace and will depend on work activities. For example, in the healthcare industry direct patient care activities involve a higher potential for

exposure to infectious diseases than activities that involve work at a distance (for example, cleaning, delivery of supplies, or maintenance where patients are not present). During direct activities, all routes of transmission are possible. During work at a distance, the routes are more likely to be restricted to indirect contact

Workers who have a higher risk of exposure

Appropriate protective measures will vary according to the kinds of activities workers perform. Workers who are at risk of exposure to infectious diseases could be documented using a table such as the following:

| Job title | Department or location | Task or procedure | Risk level (low, moderate, or high) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Risk levels could be interpreted as follows:

- Low risk might mean workers who rarely come into contact with potentially infected people or materials.
- Moderate risk might mean workers who rarely come into contact with infected people, but who may work in areas where infected people have been, or who handle potentially contaminated items (indirect contact). •High risk might mean workers who work directly with people who are or may be infected.

**Risk controls**

Risk controls are measures that are used to eliminate the risk to workers or, if elimination is not possible, minimize the risk. Controls must be implemented in the following order of preference: Engineering controls reduce risk by mechanical means.

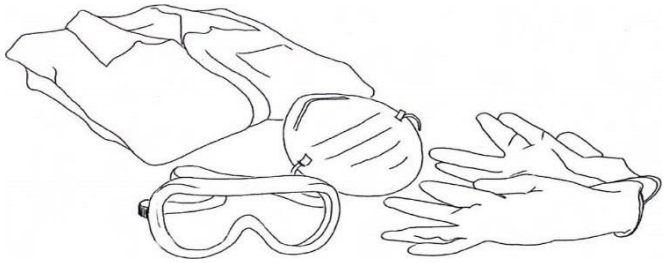
*Examples:* Safety-engineered medical devices, barriers, room ventilation, negative-pressure isolation rooms

Administrative controls involve changes to scheduling, job rotation, or work procedures to reduce exposure.

*Examples:* Hand washing, cough/sneeze etiquette, encouraging sick workers to remain at home, conducting telephone interviews, screening clients before they enter the office

Personal protective equipment (PPE) is considered the last line of defense and should only be used when other controls are not practicable, or in addition to other controls. The proper use, fit checking, and disposal of PPE must also be considered.

*Examples:* Gloves, gowns, goggles, respirators, and face shields



Workers must be trained in the use of any required PPE such as gloves, goggles, respirators, and protective clothing.

Using controls in healthcare settings

Controls that address routes of transmission may range from simple hand washing and cough/sneeze etiquette to more extensive measures that combine engineering and administrative controls with the use of PPE. If the route of transmission of an infectious organism is not known or fully understood, then the employer must implement controls that address all routes of transmission.

**Written safe work procedures**

Written safe work procedures may be required, depending on the nature of the workplace (for example, a hospital) and the exposure risks involved (for example, working directly with infectious people). Written procedures would likely be required in a hospital isolation ward, but probably not in a small, low-risk workplace such as a typical office environment, if education and training adequately address worker protection.

If facilities are needed for proper hand washing, they should be included in the exposure control plan. Decontamination procedures will be needed in some higher-risk workplaces (for example, when cleaning reusable PPE such as gowns, face shields, or goggles).

**Worker education and training**

Employers must ensure that workers are informed about the contents of the exposure control plan, and that they are educated and trained to work safely. Exposure control plans should describe worker education and training, and how it will be carried out. Education and training are particularly important for new workers.

**Written records**

The exposure control plan should be written down, and records should be kept for each component of the plan. For example, document education and training activities - keep track of who was trained, when the training took place, and what it included. Other documentation should include the following:

- Workplace inspections
- Health and safety meetings
- Investigations that take place after exposure incidents
- Records of exposed workers and any health monitoring required
- Immunization records

These records can be especially useful for demonstrating compliance with the Regulation.

**Reviewing the plan**

Review the exposure control plan at least once a year and update it as necessary. During this process, consult with the joint health and safety committee or worker health and safety representative.

### 15.4.24 Controlling exposure to infectious diseases

This part includes information on how to prevent exposure to infectious diseases. It describes basic guidelines for working safely, including routine practices, contact precautions, droplet precautions, and airborne precautions. This part also describes various controls that can be used in workplaces to prevent exposure to infectious diseases.

The use of routine practices is an approach to infection prevention and control in which all blood and body fluids are presumed to carry infectious pathogens. This approach consists of a collection of safe work procedures that helps prevent the transmission of infectious diseases in the workplace.

Routine practices include the following:
- Wash hands regularly.
- Wear disposable waterproof gloves when touching blood and body fluids, or when handling contaminated items.
- Wear other PPE (for example, face shields, eye protection, and gowns) if there is a risk of splashes or sprays of blood and body fluids.
- Handle contaminated equipment and linens according to safe work procedures to prevent the transfer of infectious organisms to people and other equipment.
- Handle and dispose of sharps according to safe work procedures. Use mouthpieces or other ventilation devices instead of mouth to mouth resuscitation, whenever possible.
- In healthcare settings, assign patients to private rooms, whenever possible if they might contaminate the environment.
- In addition to the routine practices described above, there are also specific safety measures for contact precautions, droplet precautions, and airborne precautions.

**Contact precautions (includes routine practices)**

Contact precautions include routine practices, as well as the following:
- Wear gloves when entering rooms.
- Change gloves after contact with potentially infected materials.
- Wear gowns when entering rooms if direct patient contact is anticipated or if the patient has diarrhea, a colostomy, or wound drainage that is not covered by a dressing.
- Limit movement and transport of patients from the room.
- Ensure that there is daily cleaning of patient care items, bedside equipment, and frequently touched surfaces.
- Dedicate the use of non-critical patient care equipment to a single patient or patients with the same infection.
- Disinfect equipment that must be used for different patients.

**Droplet precautions (includes routine practices and contact precautions)**

Droplet precautions include routine practices and contact precautions, as well as the following:

- Place patients in private rooms or with other patients who have the same infection.
- Wear a face shield when working with patients.
- Place surgical masks on patients being moved.
- Airborne precautions (includes routine practices)

Airborne precautions include routine practices, as well as the following:

- Place patients in private rooms with doors closed. Ideally, these rooms should have negative air pressure, at least six air changes per hour, and appropriate filtration of air before it is discharged from the room.
- Wear an appropriate respirator when entering rooms.

**Controls for preventing exposure**

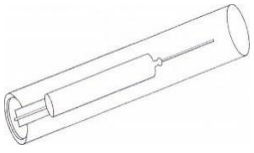
There are numerous methods used to prevent exposure of workers to infectious diseases. Preventive measures for the workplace are commonly referred to as controls. Three basic types of controls are engineering controls, administrative controls, and personal protective equipment.
Engineering controls (equipment and work environment)
Engineering controls include modifications to the work environment or equipment, or the use of special equipment, to control hazards.

**Safer sharps**

Specially designed medical sharps (for example, hollow-bore needles, suture needles, and scalpels) reduce the risk of needle-stick injuries and other puncture wounds from contaminated sharps. Self-sheathing needles have a built-in sheath or sleeve that extends to cover the needle. Retractable syringes are designed so the needle can be pulled up inside the syringe. Needleless systems use threaded ports on IV tubing, so healthcare workers can remove the needle from the syringe after drawing up medication, and then simply screw the syringe directly into the port. Disposable safety scalpels have a built-in sheath that covers the blade between use and disposal, and suture needles for sewing tissues other than skin are available with blunted tips.

Sharps containers:

Workers should dispose of sharps in rigid, puncture-resistant, leak-proof containers that have a closable lid. In situations where containers have not been installed, workers can use portable sharps containers. Containers should be replaced when they become three-quarters full.
Workers can also carry single-use containers —small, leak-proof, puncture resistant units that are designed to hold one needle. They are not meant to replace sharps containers but are useful to carry around in case workers come across unexpected needles. Single-use sharps containers are designed to be thrown into the garbage once the recovered needle is safely contained.



Workers can carry single-use containers around to deal with unexpected needles when sharps containers are not available

**Physical barriers:**

Clear, solid barriers help protect workers from exposure to diseases that spread via contact or droplet transmission. For example, clear glass or plastic barriers attached to countertops will reduce worker exposure when dealing with the public. Clear barriers in buses and taxis provide a protective divider between drivers and passengers.

Isolation rooms:

In healthcare, isolation rooms are useful for patients who are infected with diseases that are spread through contact, droplet, or airborne transmission. Isolating such patients helps prevent the spread of infectious pathogens to healthcare workers and other patients, as long as workers are diligent about using other precautions such as hand hygiene and PPE when in contact with the infected patients. Patients who are infected with the same pathogen can share rooms or wards.

Specially designed isolation rooms may be used for diseases that are spread through airborne transmission. These rooms require ventilation that will prevent droplet nuclei from being spread through the air to other areas of the facility. When designing an isolation room, consult standards such as CSA *Z317.2-01* (R2008) Special requirements for Heating, Ventilation, and Air Conditioning (HVAC) Systems in Health Care Facilities. Generally speaking, isolation rooms should have:

- Negative air pressure
- A dilution ventilation rate of at least six air changes per hour
- HEPA filters that air passes through before it is discharged from the room

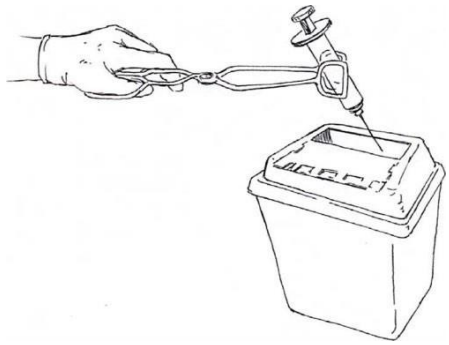
Caregivers who need to enter such an isolation room must be trained to do so safely and equipped with appropriate PPE (for example, an approved respirator).

Administrative controls (safe work procedures)
Administrative controls include safe work procedures that workers can use to eliminate or minimize their risk of exposure. As a general rule, workers should follow routine practices (see page 35) such as washing hands and removing disposable gloves safely. Where necessary, workers should also follow contact, droplet, or airborne precautions as well.

**Cough / sneeze etiquette**

All workers are expected to follow cough/sneeze etiquette, which is a combination of measures that minimizes the transmission of diseases via droplet or airborne routes. Cough/sneeze etiquette includes the following components:

- Educate workers in control measures, including hand washing.
- Post signs at entry points to instruct everyone about control measures.
- Cover your mouth and nose with a sleeve or tissue when coughing or sneezing.
- Use tissues to contain secretions and dispose of them promptly in a waste container.
- Turn your head away from others when coughing or sneezing.
- Offer surgical masks to people who are coughing.
- Wash hands regularly.
- Handling and disposing of sharps



Vaccination

One of the most effective ways to protect against disease is to get vaccinated. There is a vaccine for hepatitis B that is 95% effective. There are also effective vaccines for measles and chicken pox. There are no vaccines for hepatitis C, HIV, MRSA, VRE, or noroviruses. Regardless of a person's vaccination status, it is important to follow infection prevention practices to avoid becoming infected with these diseases. According to Section 6.39 of the Regulation, employers must offer vaccinations to workers at no cost, for the infectious diseases that the workers are or may be exposed to. The BC Centre for Disease Control has established criteria for determining the conditions under which vaccinations are appropriate.

Sharps such as needles may be contaminated with infected blood or body fluids, so workers need to handle them safely and dispose of them in designated sharps containers. Workers should not pick up sharps or other items unless they have been trained to do so and have appropriate equipment and PPE.

Workers should assume that all sharps are contaminated with infected blood or body fluids and dispose of them safely in designated sharps container

Disposing of garbage and other potentially infectious materials:

Workers should always be careful when handling garbage because it may contain sharps or other objects contaminated with blood and body fluids. For a sample safe work procedure, see page 53.

**Handling laundry:**

Although the risk of disease transmission from contaminated or soiled laundry is low, it should be handled carefully and only by workers who have been trained to do so and have appropriate PPE. Medical sharps are sometimes collected with laundry

**Cleaning up spills:**

Workers should not clean up spills of blood and body fluids unless they have been trained to do so and have appropriate equipment and PPE. Janitorial and safety-supply companies offer kits that contain all the supplies needed for cleaning up spills.

**Cleaning patient care equipment:**

Workers must follow safe work procedures for cleaning and disinfecting patient care equipment used for potentially infectious patients because it may be contaminated. This means wearing gloves and, if necessary, other PPE as well. Some items may need to be cleaned by hand, but it's preferable to use mechanical cleaning equipment such as ultrasonic cleaners or washer-sterilizers. The level of disinfection needed may range from using a simple disinfectant to sterilizing in an autoclave.

**Caring for patients in isolation rooms:**

When dealing with patients in isolation rooms, workers must follow safe work procedures, and use appropriate PPE. The following are basic guidelines:

- Wear appropriate respiratory protection, gloves, and gowns or aprons in the room.
- Keep the door closed at all times for patients on airborne precautions.
- Perform hand hygiene before and after contact with the patient.
- Follow safe work procedures for removing gloves and other PPE.
- Follow safe work procedures for disposing of sharps and other medical waste.

Make sure disinfection procedures are followed for items such as toilets and bedpans.
Transfer patients only when necessary.

The level of precaution will depend on whether the patient is in a private room or a specially designed isolation room with ventilation. Contact isolation is a lower-level control used for patients who have contact diseases such as MRSA or VRE. Workers caring for patients who have an airborne transmissible disease such as TB must be trained to deal with the stricter procedures that are called for in this situation.

**Personal protective equipment (PPE)**

Personal protective equipment (PPE) such as gloves and goggles provide a barrier that helps protect against exposure to infectious disease. Employers must provide workers with PPE, train them in its proper use, and make sure they use it when necessary. Workers must use PPE according to their training. Workers must also inform their manager if they are having difficulty using PPE.

Gloves:

Gloves protect you during patient care or while working with potentially infected blood and body fluids. Make sure your gloves are appropriate for the task.

Gloves may be made of natural rubber latex, vinyl, neoprene, or nitrile rubber. Thicker gloves provide more protection, but they also make it harder to handle objects. Follow safe work procedures when putting on or removing gloves. For a sample safe work procedure for removing gloves, see page 50.

Eye protection:

Eye protection such as goggles or a face shield is useful during procedures that are likely to generate splashes or sprays of blood and body fluids. A face shield is especially useful because it covers the nose and mouth as well as the eyes.

Other barriers:

Other barriers that can help protect skin against exposure to infectious material include gowns and aprons. If there is a chance that infectious material may contaminate footwear, it is a good idea to wear waterproof covers over shoes or boots.

Respirators:

There is often confusion in the healthcare industry about the term respirator because it is typically used to refer to equipment that provides respiratory support for patients. When it comes to PPE, a respirator is a device that is worn on the face, covers at least the nose and mouth, and is used to reduce the risk of inhaling hazardous gases, vapours, and aerosols (which include infectious pathogens).

For example, approved N95 particulate respirators are used to reduce the risk of inhaling droplets or other particles containing infectious organisms. The N95 respirator is a common and effective choice, but there are alternatives.

Surgical masks
A surgical mask is a protective barrier that is worn on the face, covers at least the nose and mouth, and is used to prevent the spread of airborne droplets and droplet nuclei generated by the person wearing the mask.
Many healthcare workers still believe that surgical masks are adequate protection against airborne transmissible pathogens—this is not true. Surgical masks are not designed to seal to the user's face, and do not provide respiratory protection against small inhalable particles.

If respirators are necessary to protect workers, then a respirator program must be implemented. The respirator program must:

- Help protect the health of workers, and prevent illnesses related to breathing hazards in the workplace
- Promote more effective use of respirators

Ideally, you should designate a program administrator who will be responsible for the respirator program and who is knowledgeable about respirators. The administrator can delegate parts of the program to others, but ultimately the administrator should have the final authority for running the program.

Respirators must be approved by the National Institute for Occupational Safety and Health, rated at N95 or better, and fit tested to each worker to ensure proper protection.

**Sample safe work procedures**

Fit-test requirements

A respirator will not be effective unless it forms a seal against the worker's face. The only way to tell for sure if a respirator forms a seal is to do a fit test. Fit-test kits and equipment are available from safety suppliers.

Workers must be fit tested if they may be exposed to an airborne contaminant that is listed in the Regulation, and a risk assessment has indicated that this contaminant poses a hazard. See the "Table of Exposure Limits for Chemical and Biological Substances," in the Guidelines for Part 5 of the Regulation.

Follow these requirements for fit tests:

-Provide fit tests when workers are first fitted with respirators and then once a year afterward.
-Use a fit test that follows a protocol that is acceptable to WorkSafeBC, such as the protocol described in CSA Standard Z94.4-02. Details of this protocol are included in the WorkSafeBC publication Breathe Safer.

Keep records of fit tests.

This section includes some sample safe work procedures that can be adapted for your workplace as part of your exposure control plan. These are only a few of the possible procedures that may be needed in your plan. Your risk assessment may indicate a need for other procedures to keep workers safe.

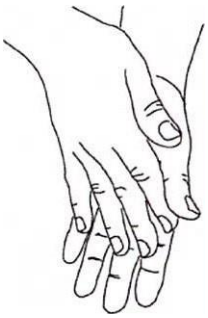
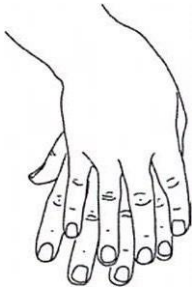
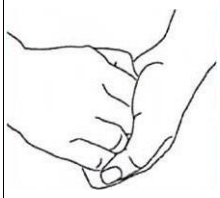
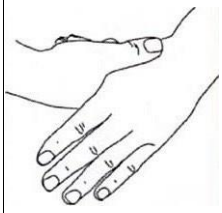
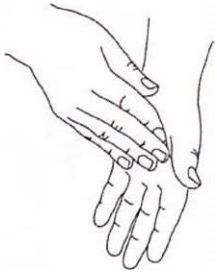
**Hand washing**

Hand washing is one of the best ways to minimize the risk of infection. Proper hand washing helps prevent the transfer of infectious material from the hands to other parts of the body—particularly the eyes, nose, and mouth—or to other surfaces that are touched.

You should wash your hands:

- After handling materials that may be contaminated
- Before leaving a work area
- After arriving at and before leaving a patient's home
- Before and after direct contact with a patient
- If blood or body fluids come into contact with your skin
- After removing gloves (even if the gloves appear to be intact)
- After removing other PPE (for example, goggles or respirators) •Before eating, drinking, smoking, handling contact lenses, or applying makeup

Hand washing procedure

| 1. Press hands palm to palm. | 2. Press each palm over back of opposing hand. | 3. Interlace fingers, palm to palm. | 4. Interlock fingers. | 5. Rotate each thumb in palm. | 6. Rotate fingertips in palm. |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

Use soap and warm running water, and wash for 20—30 seconds. (The water does not have to be hot to do the job.) If water is unavailable, use an alcohol-based hand rub as long as the hands are not visibly soiled. Hands do not need to be rewashed with soap and water afterward.
Putting on and taking off PPE

The following sections describe general procedures for putting on and taking off PPE. Please note that these are general procedures, and that procedures may differ depending on the nature of the workplace (for example, a healthcare facility versus a poultry barn).

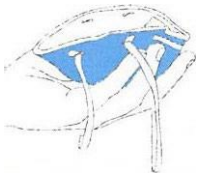
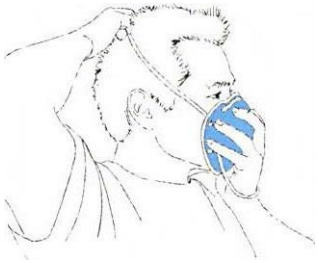
**Putting on PPE—general**

When using more than one piece of PPE, put it on using the following steps (ignore the steps for any PPE that is not applicable):

- Wash your hands or use an alcohol-based hand rub.
- Put on a hair cover.
- Put on a respirator.
- Put on eye and face protection (such as goggles or a face shield).
- Put on a gown or apron.
- Put on foot covers.
- Put on gloves.

**Putting on respirators**

Only use a respirator for which you have been fit tested, and fit check the device as instructed before using it.

| | |
|---|---|
| 1. Cup the respirator in your hand with the nose piece at the fingertips. |  |
| 2. Place the respirator over your nose, mouth, and chin. |  |
| 3. Secure the respirator's top band over your head and above your ears. |  |
| 4. Secure the respirator's bottom band behind your head and below your ears. |  |
| 5. Mould the flexible nose piece over the bridge of your nose and adjust the respirator to fit.<br>6. Perform a fit check. |  |

**Taking off PPE—general**

While still inside the work area (for example, an isolation room), remove PPE using the following steps (ignore the steps for any PPE that is not applicable):

- Remove and dispose of footwear covers.

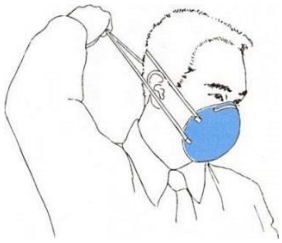
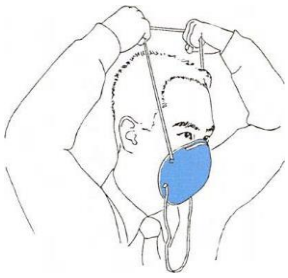
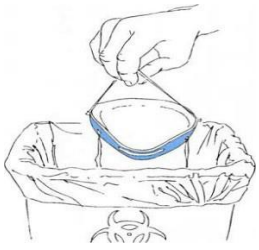
- Remove gloves.
- Remove the gown or apron and put it in the laundry hamper.
- Wash your hands or use an alcohol-based hand rub.
- Exit the room.

Immediately outside the room, follow these steps:

- Wash your hands or use an alcohol-based hand rub.
- Remove eye and face protection and clean it as necessary.
- Wash your hands or use an alcohol-based hand rub.
- Remove and discard the respirator, handling it by the straps.
- Remove and discard the hair cover.
- Wash your hands or use an alcohol-based hand rub.

Removing respirators

Remember the front of the respirator is contaminated — avoid contact with your hands. Use the following procedure:

| | |
|---|---|
| I. Grab the bottom strap and pull it over your head. |  |
| 2. Grab the top strap and pull it over your head. |  |
| 3. Discard the respirator, handling it by the straps. |  |

Putting on gowns

Follow these steps:

- Select the appropriate type of gown for the task in the right size for you.

- Make sure the opening of the gown is in the back and secure the gown at the neck and waist.
- If the gown is too small to cover your torso fully, use two gowns. Put on the first gown with the opening in front and the second gown over the first one with the opening in the back.

Removing and disposing of gowns

- Follow these steps:
- Pull the gown off inside-out.
- Roll the gown away from your body so the outer surface of the gown is on the inside of the roll.
- Put the gown into a laundry receptacle or, if it is disposable, a waste receptacle.

Putting on gloves

The use of disposable, waterproof gloves is another effective way to prevent contact transmission of infectious materials. Gloves should always be the last piece of PPE that you put on.

Follow these steps:
- Select the appropriate type of gloves for the task in the right size for you.
- Insert your hands into the gloves, and adjust as necessary.
- If you are wearing an isolation gown, tuck the gown cuffs securely under each glove.

Removing gloves

For gloves to be effective, they must be removed safely to prevent exposure to blood or body fluids. Workers should remove gloves:
- After completing a task that required gloves
- Before leaving the work area
- As soon as possible if the gloves become damaged or contaminated
- Use the glove removal procedure below.

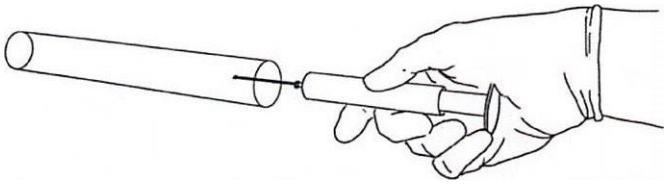
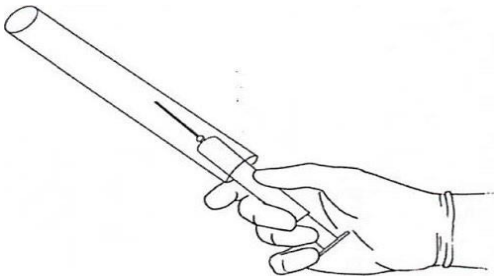
**Handling and disposing of sharps**

Follow these guidelines when dealing with sharps:
- Do not pick up sharps with the intention of disposing of them later. For example, do not put a used needle in your pocket unless you have a proper one-needle container to put it in.
- Do not try to recap needles.
- Do not try to remove contaminated needles from disposable syringes.
- Discard them as a single unit.
- Do not dispose of sharps in regular garbage— this may create a hazard for others.
- Do not fill sharps containers to the top. When a sharps container is about three-quarters full, replace it with a new one and properly dispose of the old one. Contact your municipality for disposal information.

How to handle and dispose of sharps

Follow these steps:

- Wear disposable waterproof gloves (for example, latex or neoprene gloves), and have a proper sharps container ready.
- If you are using a portable sharps container, place it next to the needle or other item.
- Use tongs or pliers to pick up the needle.
- Place the needle in the sharps container, pointed end first, away from you. Do not insert your fingers into the opening of the container, and keep your free hand out of the way.
- Remove and discard the gloves, then wash your hands with soap and water, or use an alcohol-based hand rub.
- Procedure for using a one-needle container

| | |
|---|---|
| 1. Wear disposable, waterproof gloves.<br><br>2. Using one hand only, ease the sharp end of the needle into the container. Do not use your other hand to guide it. |  |
| 3. Lift and tip the needle and container so the container falls down over the needle.<br>4. Once the sharp end is in the container, grasp the container and syringe in the other hand, and place the cap securely on the container.<br>5. Discard in a suitable disposal container as soon as possible. |  |

**Cleaning up spills**

Workers need to be careful when dealing with spills of blood or body fluids, or any other materials that may be infectious. If a person has been exposed to blood and body fluids, attend to them first before cleaning up a spill.

How to clean up spills that may contain infectious material

Follow these steps:

- Restrict access to the area.
- Gather the necessary tools and materials (for example, plastic bags for contaminated items and bleach or germicide for the spill).
- Put on disposable, waterproof gloves. Other necessary PPE may include a face shield, a gown, and waterproof covers for footwear.
- Wipe up and dispose of visible material first (for example, using disposable towels). If necessary, change your gloves before the next step.
- Decontaminate the area using a fresh solution of household bleach and water. Carefully pour the solution over the spill site, leave it on for 10 minutes, wipe it up with disposable towels, and dispose of the towels.

Mixing a bleach solution
A solution of 1-part common household bleach to 10 parts water will kill HIV and the hepatitis B and C viruses when used for larger spills.

- Clean and decontaminate all soiled and reusable equipment.
- Wear the gloves to remove other PPE. Dispose of or clean PPE according to the manufacturer's directions.
- Remove and dispose of your gloves and wash your hands.

Disposing of garbage and other potentially infected materials

Follow these guidelines for handling and disposing of medical waste:
- Handle garbage as little as possible.
- Use waterproof garbage bags or other appropriate containers.
- Never reach into garbage or disposal containers with your bare hands.
- Watch for sharps sticking out of bags or containers and listen for broken glass.
- Do not compress garbage bags.
- Do not overfill garbage bags. Leave enough free space at the top so the bag is light and easy to grab.
- Do not use bare hands to pick up bags or to support them from underneath.
- Hold bags by their tops, away from your body.
- Do not hold them against your body.

**Handling soiled or contaminated laundry**

Follow these guidelines for handling soiled or contaminated laundry:
- Handle laundry carefully—there may be hidden sharps.
- Isolate contaminated laundry from other linen, and bag it separately.
- Place wet laundry in leak-proof bags or containers.
- Label or colour code contaminated laundry bags or containers.
- Do not rinse contaminated laundry at the original location. Send it directly to the laundry room or commercial laundry.
- Wash contaminated laundry and laundry bags in hot water (minimum 70 $^{0}$C) with detergent for 25 minutes. If using lower water temperatures, use an appropriate concentration of cold water and low temperature detergents, which may include bleach.
- Identify to cleaners in writing any items that pose a hazard to workers handling contaminated laundry, as well as the precautions to follow when handling the laundry.

What if a worker is exposed to or develops an infectious disease?

When we talk about work-related diseases, generally we are referring to diseases that have serious health effects—hepatitis, TB, and the like. Work-related exposure does not include relatively minor illnesses such as common colds or seasonal flu.

Treat exposures to blood or body fluids involving non-intact skin or mucous membranes more seriously. Follow the five steps described in this section.

Exposure incidents involving airborne-disease organisms such as TB are a bit different because they usually do not involve first aid such as washing a cut or flushing an eye.

1. Get first aid immediately:

If the exposure involves an area of non-intact skin such as a cut, wash it thoroughly with soap and water. For sharps injuries, allow the wound to bleed freely—do not squeeze the wounded area

while washing it. If a mucous membrane such as the eyes, nose, or mouth is affected, flush the area with lots of clean water at a sink or eyewash station.

2. Seek medical attention immediately:

Within two hours of exposure to blood or body fluids, go to the nearest appropriate medical facility that will provide treatment and evaluation. Time is of the essence— there are immunizations or medications that can help prevent infection or reduce the impact of a disease after exposure.

Note: Employers are responsible for transportation costs when a worker seeks medical attention.

3. Complete WorkSafeBC claim forms.

Any time there is a work-related exposure incident that requires medical attention beyond the level of service provided by a first aid attendant, it must be reported to WorkSafeBC, even if there are no symptoms of illness. Employers must fill out and submit claim forms to WorkSafeBC. Workers should tell doctors if the injury or exposure is work related.

Responsibility for submitting WorkSafeBC forms

| Individual | Individual \| WorkSafeBC form |
|---|---|
| Employer | Form 7 - Employer's Report of Injury or Occupational Disease |
| Worker | Form 6 - Application for Compensation and Report of Injury or Occupational Disease |
| Doctor | Form 8/11 - Physician's Report |

Exposure incident investigations

Under section 173 of the Workers Compensation Act and section 5.59 of the Regulation, employers must investigate exposure incidents in any of the following cases:

- A worker required medical treatment
- An incident had a potential for causing serious injury to a worker .A worker exhibits signs or reports symptoms of exposure to a hazardous substance present in the workplace

## 15.5 RETURN TO WORK PROGRAM

### Introduction

A modified work program assists in the rehabilitation and early return to work of an injured employee, while enabling the Company to reduce the costs of injury and illness. In the event of an injury/illness Quolus Construction Services will make every effort to retain the worker at the jobsite with a “stay at work” initiative. Verbal agreement on light duty tasks will enable the worker to remain at the workplace. Remaining at the workplace aids in recovery by shortening the recovery period and keeping worker morale high. If remaining at work is not an option, the worker will be provided with a Graduated Return to Work Program (GRTW) as outlined in this policy.

### 15.5.1 Modified Work Policy

Quolus Construction Services will maintain a modified work program to assist in the rehabilitation and early return to work of all injured or ill employees.
Quolus Construction Services will make every reasonable effort to provide suitable (temporary) employment to any employee unable to perform their regular duties due to illness or injury. This may include a modification of the employee's original position or providing an alternate position, depending on the employee's medical restrictions.
All employees, regardless of injury or illness, will be considered for placement with modified work.

### 15.5.2 Confidentiality

The GRTW Program respects the individual employee's dignity, privacy of personal information and confidentiality of personal health information. Data is collected for the purpose of a safe return to work plan for the employee and his/her department in compliance with the *Freedom of Information and Protection of Privacy Act* (1996) and the *Personal Information Protection Act* (2004). Your information will not be shared with others outside of consultation to provide the best recovery program for your illness/injury.

### 15.5.3 Definitions

**Modified Work** - Modified is a medically supervised program for employees who have had time loss due to injury or illness. This program includes any job, task, function, or combination of tasks that an employee suffering from diminished capacity can do without risk of re-injury or delayed recovery.

**Temporarily / Partially Disabled** - Means an employee who, due to illness or injury, is unable to perform all of the functions of their job, but is capable of doing other duties that are compatible with medically determined factors of work restriction for the injury, during a period of recovery.

### Object

Quolus will make every reasonable effort to provide meaningful and productive work to disabled employees who are temporarily unable to perform their regular duties because of a job site injury.

The Injury Management program is designed to actively support the employee, following an illness or injury, in rehabilitation to their standard state of wellness and return to regular duties.

In order to achieve this objective Quolus will consider the following:

- *Modification of an existing job:* An employee's existing job may be changed either to reduce or remove those parts of the job, which the employee is currently unable to do as a result of the disability.

- *Providing transitional work:* In this case an employee would perform regular job duties. However, less time would be spent doing these duties. For example, working four hours per day on the initial return and progressing to a full eight-hour shift as the disabling condition improves, or to a point of future reassessment.

- *Providing alternate work:* An employee may be assigned duties that are different from the normal workplace activities. A warehouse employee may be assigned some office or shipping tasks to carry out, or participate in training programs.

- *All or any combination of the above: A modified work assignment may involve combining a number of changes to regular employment*.

### 15.5.4 Standard

- Generally, the term of temporary modified duties is for a maximum of four weeks.
- A medical reassessment may be required every two weeks.
- Modified work is transitional and permits the matching of an individual's medical restrictions and abilities with the physical demands of the job.
- Jobs shall be identified that make use of their skills, while maintaining the integrity of the job and the value of the work performed.
- Every effort will be made to place an employee in their normal work environment. Employees will be placed elsewhere when this is not possible, but shall be re-integrated back to their normal environment as restrictions permit.
- To ensure employees are assigned appropriate modified duties, Quolus may require that a mutually agreed upon Occupational Medical Physician or Specialist examine an employee. The results of this exam are confidential and Quolus will only be provided with information related to the suitability of the assigned modified duties.

### 15.5.5 Responsibilities

Managers are responsible for:

- Communicating on, and explaining, the Modified Work Program to all employees.
- Ensuring that employees who require medical attention are provided with a letter of introduction and a Work Capacity Form for the attending physician
- Submitting copies of completed forms to appropriate personnel Maintaining regular contact with an injured employee, both while they are off work and during the term of the Modified Work Program.
- Reporting the progress of modified work situations as necessary Inquiring with payroll of the WorkSafeBC adjudicator if any portion of the employee's wage is received from another source.
- Assessing their workplace for suitable modified work assignment.

Employees are responsible for:

- Following restrictions set out by the attending physician. Communicating to their supervisor any difficulties regarding the duties, as soon as they arise.
- Complying with company policies.
- Making medical or physiotherapy appointments in their early or later portion of the shift, and ensuring their supervisor is made aware in advance of any such appointments.

### 15.5.6 Types of Modified Work

Modified work may consist of the following:

- **Modifying the existing job**; an employee's existing job is changed to remove those parts of the job which the employee is currently unable to do because of the injury.

- **Provide Transitional Work;** an employee will perform regular job duties; however, less time is spent doing these duties. For example, an employee may work two hours/day for the first week, 4 hours/day for the second and then return to regular hours on the third.

- **Providing an Alternate Job**; an employee is given duties other than his usual ones.

- **Training**; an employee is sent for training to enhance job skills.

- **Any combination of the above;** modified work may be made by combining the above listed formats, e.g. training for 2 days followed by Alternate Work.

In the case of a minor injury, the Superintendent shall make a verbal offer of modified work. If the worker accepts, the Superintendent shall arrange for suitable work and monitor the worker's performance. In the case of a more serious injury, the procedures below should be followed.

Medical approval is needed before an offer of modified work is made. Any injured employee should be provided with the information package to be delivered to the attending physicians.

All work provided in a GRTW program or Light Duty verbal work offer will be meaningful and a job that is done on a regular basis by Quolus Construction Services employees. No worker will be given demeaning tasks or work outside the established norm for Quolus Construction Services employees.

### 15.5.7 Claims Cost Controls

Quolus Construction Services will review their claims cost statements and Experience Rating Assessment (ERA) statements on a regular basis to:

- Determine the overall costs of injury claims and how these claims affect the payroll assessment rate (ERA).
- Identify claims that have costs incorrectly assessed against the claim.
- Identify high cost claims.
- Review the opportunity to apply for cost relief whenever possible.
- Compare claims cost performance to the industry, e.g. merit or demerit.

### 15.5.8 Return to Work Process

The GRTW Process begins once the worker has returned the physician/physiotherapist medical report form to the safety coordinator.

The process is flexible depending on individual case requirements; however, the Return to Work Process generally proceeds in the following manner:

- collection of medical documentation for the purpose of RTW
- communication on a need to know basis
- exploration and delineation of options for accommodation
- RTW plan implementation
- follow up and monitoring

### 15.5.9 Review of Program

Each RTW Program will be reviewed by the JHSC. The Committee will track the injuries/illnesses and days lost as well as reviewing the effectiveness of the program on an ongoing basis.

**Responsibilities of Return to Work Coordinator**

The RTW Coordinator or Safety Coordinator is responsible for being a point of contact for all participants in the process and advocates for appropriate and successful return to work for each employee. Responsible for ensuring privacy and security of medical information.

**Employee Responsibilities**:

Employees must provide objective medical documentation of limitations and abilities to the Safety Coordinator. A form is provided for this. Employees must participate in treatment as prescribed by his or her medical team. Employees must communicate regularly with his/her supervisor and the Return to Work Coordinator. Employees must be honest about their limitations and/or injury/illness and immediately report any setbacks to the safety coordinator and/or their immediate supervisor.

### 15.5.10 Limitations & Capabilities for specific injuries

**Lumbar Sprains and Strains**

Modified Work

Limitations: No extremes of extension or flexion; No extremes of twisting; No climbing ladders

Capabilities: Lifting with knees (with a straight back, no stooping) not more than 5 lbs up to 3 times/hr; squatting up to 4 times/hr; standing or walking with a 5-minute break at least every 20 minutes; sitting with a 5-minute break every 30 minutes; driving car only up to 2 hrs/day.

Manual Work

Capabilities: Lifting with knees (with a straight back) not more than 25 lbs up to 15 times/hr; squatting up to 16 times/hr; standing or walking with a 10-minute break at least every 1-2 hours; sitting with a 10-minute break every 1-2 hours; extremes of flexion or extension allowed up to 12 times/hr; extremes of twisting allowed up to 16 times/hr; climbing ladders allowed up to 25 rungs 6 times/hr; driving car or light truck up to a full work day; driving heavy truck up to 4 hrs/day.

**Thoracic Sprains and Strains**

Modified Work

Limitations: No extremes of extension or flexion; No extremes of twisting; No climbing ladders

Capabilities: Lifting with knees (with a straight back, no stooping) not more than 5 lbs up to 3 times/hr; squatting up to 4 times/hr; standing or walking with a 5-minute break at least every 20 minutes; sitting with a 5-minute break every 30 minutes; driving car only up to 2 hrs/day

Manual Work

Capabilities: Lifting with knees (with a straight back) not more than 25 lbs up to 15 times/hr squatting up to 16 times/hr; standing or walking with a 10-minute break at least every 1-2 hours; sitting with a 10-minute break every 1-2 hours; extremes of flexion or extension allowed up to 12 times/hr; extremes of twisting allowed up to 16 times/hr; climbing ladders allowed up to 25 rungs 6 times/hr; driving car or light truck up to a full work day; driving heavy truck up to 4 hrs/day.

**Neck Sprains and Strains**

Modified Work

Limitations: No lifting over shoulder lifting to level of shoulder not more than 5 lbs up to 2 times/hr; No extremes of motion including extension or flexion; No extremes of twisting or lateral rotation; No climbing ladders

Capabilities: Standing or walking with a 5-minute break at least every 20 minutes; sitting with a 5-minute break every 30 minutes (using an operator head set if extended phone operations); driving car only up to 2 hrs/day; possible use of cervical collar with change of position and stretching every 30 min; modify workstation or position to eliminate lifting away from body or using twisting motion

Manual Work

Capabilities: Lifting over shoulder not more than 25 lbs up to 15 times/hr; lifting to level of shoulder up to 30 lbs of weight not more than 15 times/hr; standing or walking with a 10-minute break at least every 1-2 hours; sitting with a 10-minute break every 1-2 hours; extremes of flexion or extension allowed up to 20 times/hr; extremes of twisting allowed up to 16 times/hr; climbing ladders allowed up to 40 rungs 8 times/hr; driving car or light truck up to a full work day; driving heavy truck up to 4 hrs/day.

**Shoulder: Tendinitis/Bursitis/Impingement/Rotator Cuff Syndromes/Adhesive Capsulitis/Bicipital Tenosynovitis**

Modified Work

Limitations: **No** over shoulder work (reaching above shoulder) plus **No** reaching to shoulder level (90 degree position); **No** holding arm in abduction or flexion (away from the body)

Capabilities: pulling and pushing not more than 8 lbs up to 4 times/hr; lifting and carrying up to 5 lbs 3 times/hr; single arm upper extremity work using injured arm for light work only; possible immobilization by abduction brace, sling, or clavicle brace

Manual Work

Capabilities: Reaching above shoulder not more than 12 times/hr with up to 15 lbs of weight; reaching to shoulder up to 15 times/hr with up to 25 lbs of weight; holding arm in abduction or flexion up to 12 times/hr with up to 15 lbs of weight; pulling and pushing up to 60 lbs 20 times/hr; lifting and carrying up to 40 lbs 15 times/hr; single upper extremity work using injured arm for moderate work only (full use of non-injured arm); possible immobilization by abduction brace, sling, or clavicle brace; climbing ladders up to 50 rungs/hr.

**Elbow: Inflammatory Conditions; Medial/Lateral Epicondylitis**

Modified Work

Limitations: **No** over shoulder work (reaching above shoulder) plus **No** reaching to shoulder level (90 degree position); **No** holding arm in abduction or flexion (away from the body)

Capabilities: pulling and pushing not more than 8 lbs up to 4 times/hr; lifting and carrying up to 5 lbs 3 times/hr; single arm upper extremity work using injured arm for light work only; possible immobilization by abduction brace, sling, or clavicle brace

Manual Work

Capabilities: Reaching above shoulder not more than 12 times/hr with up to 15 lbs of weight; reaching to shoulder up to 15 times/hr with up to 25 lbs of weight; holding arm in abduction or flexion (away from the body) up to 12 times/hr with up to 15 lbs of weight; pulling and pushing up to 60 lbs 20 times/hr; lifting and carrying up to 40 lbs 15 times/hr; single upper extremity work using injured arm for moderate work only (full use of non-injured arm); possible immobilization by abduction brace, sling, or clavicle brace; climbing ladders up to 50 rungs/hr.

**Wrist and Hand: Strains and Sprains**

Modified Work

Limitations: **No** pinching; **Avoidance** of prolonged periods in wrist flexion or extension.

Capabilities: Repetitive motion activities (w or w/o splint) not more than 4 times/hr; repetitive keying up to 15 keystrokes/min not more than 2 hrs/day; gripping and using light tools (pens, scissors, etc.) with 5-minute break at least every 20 min; driving car up to 2 hrs/day; light work up to 5 lbs 3 times/hr

Manual Work

Capabilities: Repetitive motion activities not more than 25 times/hr; repetitive keying up to 45 keystrokes/min 8 hrs/day; gripping and using moderate tools (pliers, screwdrivers, etc.) fulltime pinching up to 5 times/min; driving car or light truck up to 6 hrs/day or heavy truck up to 3 hrs/day; moderate to heavy work up to 35 lbs not more than 7 times/hr.

**Knee and Leg: Strains and Sprains**

Modified Work

Limitations: **No** walking on an irregular surface; **No** climbing stairs; **No** climbing ladders or hill climbing requiring frequent knee flexion; **No** activities requiring balance; **No**

applying strength against bent knee (squatting, kneeling, crouching, stooping, pedaling, etc.)

Capabilities: Standing limited to 5-10 min/hr; walking only on a smooth surface using crutches with limited pressure on the foot; elevate leg half of time; may need immobilization; limited weight bearing.

Manual Work

Capabilities: Standing not more than 50 min/hr; walking on a smooth surface up to 1,200 ft/hr carrying up to 25 lbs; walking on an irregular surface up to 900 ft/hr carrying up to 25 lbs; climbing stairs up to 8 flights/hr carrying up to 40 lbs; climbing ladders up to 50 rungs/hr carrying up to 25 lbs; activities requiring balance up to 45 min/hr (if able to work with two hands without assistance for balance); applying strength against bent knee (pedaling, squatting, kneeling, etc.) up to 60 times/hr; may need brace for uneven ground or ladders.

**Ankle and Foot: Sprains and strains/Fractures**

Modified Work

Limitations: **No** walking on an irregular surface; **No** climbing stairs; **No** climbing ladders or hill climbing requiring frequent knee flexion; **No** activities requiring balance; **No** applying strength against bent knee (squatting, kneeling, crouching, stooping, pedaling, etc.)

Capabilities: Standing limited to 5-10 min/hr; walking only on a smooth surface using crutches with limited pressure on the foot; elevate leg half of time; may need immobilization; limited weight bearing.

Manual Work

Capabilities: Standing not more than 50 min/hr; walking on a smooth surface up to 1,200 ft/hr carrying up to 25 lbs; walking on an irregular surface up to 900 ft/hr carrying up to 25 lbs; climbing stairs up to 8 flights/hr carrying up to 40 lbs; climbing ladders up to 50 rungs/hr carrying up to 25 lbs; activities requiring balance up to 45 min/hr (if able to work with two hands without assistance for balance); applying strength against bent knee (pedaling, squatting, kneeling, etc.) up to 60 times/hr; may need brace for uneven ground or ladders.

### 15.5.11 Modified Work Procedures

In the case of a minor injury, Quolus Construction Services shall make a verbal offer of modified work. If the worker accepts, the company shall arrange for suitable work and monitor the worker's performance. In the case of a more serious injury, the following procedures should be followed. Medical approval is needed before an offer of modified work is made. Any injured employee should be provided with the information package to be delivered to the attending physicians/Physiotherapist.

**Offer of Modified Work**

When the information package is returned, the information will be reviewed and an appropriate modified work offer will be made. The offer must be made in writing using the "Modified Work Offer" forms and shall be signed by both the injured worker and his supervisor. If any employee refuses modified work, the reasons should be immediately reported and recorded. Further, if an

employee fails to provide the information requested, it may result in a delay of benefits to which the employee may be entitled.

**Monitor Return to Work**

The supervisor of any employee on Modified Work shall ensure that the worker is not directed to perform work that he/she is not medically approved for. The supervisor will also monitor the employee's progress.

**Return to Work Duties**

An employee may return to regular duties once medical clearance has been given by a physician. This approval should be in writing. WorkSafeBC must be informed of the employee's return to work.

**Follow-Up**

When an employee returns to regular duties his supervisor should monitor his progress so that any concerns may be addressed.
NOTE: Caution is to be exercised to ensure that injuries are not aggravated through the modified work program.

**Forms**

Physicians – Fit For Duty Form
Modified Work Offer

## PHYSICIANS - FIT FOR DUTY FORM

Employee Name: _____

□ Sickness
□ Work Related Injury
□ Non-Occupational Injury
□ Pre-existing Condition

Date of Visit: _____ Next Visit: _____

Nature of injury: _____

If modified duty is required, please complete the following:

Working Restrictions (filled out by the attending physician or practitioner)

| | | | |
|---|---|---|---|
| Lifting from waist | ___ (weight/frequency) | Sitting | ___ (duration frequency) |
| Lifting from shoulder | ___ (weight/frequency) | Walking | ___ (duration/frequency) |
| Prolonged standing | ___ (duration/frequency) | Climbing stairs | ___ (duration/frequency) |
| Work in damp areas | ___ (duration/frequency) | Ladders | ___ (duration/frequency) |
| Work in cold areas | ___ (duration/frequency) | Work at heights | ___ (duration/frequency) |
| Work in hot areas | ___ (duration/frequency) | Bending | ___ (duration/frequency) |
| Work outdoors | ___ (duration/frequency) | Repetition hand/arm | ___ (duration/frequency) |
| Typing | ___ (duration/frequency) | Operate Equipment | ___ (duration/frequency) |

Other/comment_____

Temporary restricted hours or gradually increasing hours are available. Please indicate any restrictions of this type:

_____

Estimated time of recovery: _____

_____ _____
Name of Medical Authority Telephone Number

_____ _____
Signature Date

I hereby consent to release the above information to my employer:

Employee's Signature: _____ Date: _____

## MODIFIED WORK OFFER FORM

In keeping with our Modified Return to Work Policy (RTW), suitable employment shall be offered to any employee unable to perform their regular duties. Quolus Construction Services is offering the following modified work placement:

The modified position is: _____

The duties you will be required to perform are as follows:

_____

_____

_____

_____

The hours of work will be from _____ to _____

The duration of this modified work program will be from _____ to _____

We will continually review your progress and make adjustments as required based on relevant medical information.

During this period of modified work you will be supervised by: _____

If you have any concerns or difficulties please notify your supervisor and contact the RTW Coordinator.

Your RTW co-coordinator will be: _____

We request that you meet with your RTW coordinator regularly to review your progress.

Offer Accepted: □ Offer Declined: □

| _____ | _____ | _____ |
|---|---|---|
| Employee Name (Print) | Employee Signature | Date |

| _____ | _____ | _____ |
|---|---|---|
| Supervisor Name (Print) | Supervisor Signature | Date |

**INDEX**

# Emergency Response Plan

Company name: _____ Location: _____

Date completed: _____ Signed: _____

**Emergency Contact Information**

**First Responder Name and Contact # on this site:**

_____

| Name | Main # | Local/Regional # |
|---|---|---|
| **Emergency*** | 911 | |
| **Ambulance** | 911 | |
| **Emergency Services** | | |
| **Air Evacuation** | | |
| **Search and Rescue** | | |
| **RCMP** | | |
| **24 Hour Spill Reporting (PEP)** | 1.800.663.3456 | |
| **WCB** | | |
| **Poison Control** | | |
| **Initial Fire Reporting** | 911 | |
| **QUOLUS CONTACTS:** | | |
| | | |
| | | |
| | | |

# Quick JHA

Date: _____ Location: _____

Task: _____

- ☐ Unload
- ☐ Rooftop access
- ☐ Hoisting and rigging
- ☐ Pit work
- ☐ Car top work
- ☐ Multiple tests (load capacities, parachute test, etc.)
- ☐ Setting Machine
- ☐ Installing Room - Cleaning
- ☐ Hoisting wiring piping

**Before you start working, answer this question. If the answer is NO, contact your supervisor:**
Am I able to perform this task? (YES / NO)

REMEMBER, ALWAYS HAVE THE CONTROL OF YOUR EQUIPMENT

## Relevant high risk injury category (check all that applies):

- ☐ Lockout / Tag out
- ☐ Mechanical stored energy
- ☐ False cars and running platforms
- ☐ Fall Protection
- ☐ Jumpers
- ☐ Rigging and hoisting
- ☐ Car top / pit access
- ☐ Barricade
- ☐ Live electrical work

### Environmental Hazards

- ☐ High noise level / Bad communication
- ☐ Possible presence of asbestos and/or silica
- ☐ Spill Risk (Chemicals / Other Products)
- ☐ SDS (Safety Data Sheets) not reviewed and unavailable on site
- ☐ Lighting level too low
- ☐ Adverse weather conditions
- ☐ Poor ventilation
- ☐ Heat / Cold Stress
- ☐ Inadequate housekeeping
- ☐ Pinch points / Rotating unguarded machinery

### Ergonomics hazards / Material handling

- ☐ Pinch
- ☐ Working in a tight area
- ☐ Parts of body in line of fire
- ☐ Work occurring above head
- ☐ Repetitive motion

### Personal Limitations Hazards

- ☐ Working alone
- ☐ Heavy lifting / posture
- ☐ Physical limitations
- ☐ Trained First Aider not on site

### PPE Requirements (check all that applies):

- ☐ Goggles / glasses
- ☐ Gloves
- ☐ Hearing protection
- ☐ Respirator and appropriate filter
- ☐ Harness/lanyard (inspect prior to use)
- ☐ Footwear in good condition
- ☐ Hard hat
- ☐ Face shield

### Working at heights

- ☐ Barricades and signs not in place

**Vehicle / Forklifts**

- ☐ Vehicle / Equipment not inspected
- ☐ Equipment in poor condition
- ☐ Traffic in the vicinity

**Activity Hazards**

- ☐ Risk of projection (welding / grinding / drilling)
- ☐ Risk of burns (welding, grinding, etc.)
- ☐ Poor storage (eg. Compressed gases, pallets, etc.)
- ☐ Electrical hazard (live or nearby work)
- ☐ Poor electrical cords / tool condition
- ☐ Equipment / Tools inspected
- ☐ Open holes / leading edges
- ☐ No hoisting and rigging planned
- ☐ Confined space
- ☐ Unavailable / Depressurized Fire extinguisher
- ☐ Hole coverings not in place
- ☐ Falling items
- ☐ Other working overhead / below
- ☐ No fall arrest systems / Rescue plan
- ☐ Ladders are not in good condition

**Access and Egress Hazards**

- ☐ Slip / Trip potentials
- ☐ Walkways / Roadways not in good condition
- ☐ Deep pit
- ☐ Door stop switch working improperly or not at good position

**Other**

- ☐ _____
- ☐ _____

**Mechanic/Helper (Please print and sign)**

_____ _____

_____ _____

_____ _____

_____ _____

(supervisor please sign upon review)

## *FALL PROTECTION*
***Inspection/Maintenance* Procedures**

# Lanyard Inspection

Serial Number: _____ ☐ OK ☐ Needs Repair ☐ Replace

## HARDWARE - SNAPS

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Inspect hook and eye<br>2. Inspect seating of keeper (latch) into nose<br>3. Inspect keeper spring<br>4. Keeper locks must prevent keeper from opening when keeper closes | ○ Cracks ○ Corrosion<br>○ Pitted Surface<br>○ Obstructions, should not bind<br>○ Does spring exert ample force to firmly close |

## HARDWARE - THIMBLES

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Inspect thimble and splice<br>2. Inspect edges of thimble | ○ Thimble Firmly Seated ○ No Cracks<br>○ No loose/cut strands in splice ○ Sharp edges |

## STEEL LANYARD

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Rotate lanyard<br>2. Broken strands will separate from body of lanyard | ○ Unusual Wear<br>○ Frayed or Cut Areas |

## WEB LANYARD

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Observe each side of lanyard while bending over a pipe | ○ Cuts or breaks ○ Breaks in stitching<br>○ Swelling ○ Discoloration ○ Charring |

## ROPE LANYARD

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Rotate lanyard<br>2. Rope diameter should be uniform throughout | ○ Fuzzy Areas ○ Broken or Cut Fibers<br>○ Wear<br>○ Noticeable change in original diameter |

## SHOCK ABSORBER PACK

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Inspect outer portion of pack<br>2. Examine areas where pack is sewn to D-Rings, belts, or lanyards | ○ Burn holes in pack ○ Tears in pack<br>○ Loose strands, rips & deterioration in stitching |

## SHOCK-ABSORBING LANYARD

| Inspection Procedures: | What to Look For: |
|---|---|
| 1. Observe each side of lanyard while bending over a pipe | ○ Cuts or Breaks ○ Swelling ○ Breaks in stitching<br>○ Discoloration ○ Signs of deployment-flag<br>○ Charring due to heat or chemical damage |

## Scaffolds Inspection Checklist

| | SAFE WORK PRACTICE<br>SCAFFOLDS | | |
|---|---|---|---|
| NO. | SCAFFOLD INSPECTION CHECK LIST | YES | NO |
| 1 | Scaffold erection coordinated by a competent worker | ☐ | ☐ |
| 2 | Scaffold square, straight, and plumb in all directions | ☐ | ☐ |
| 3 | All scaffold components present, tight and secure and in place | ☐ | ☐ |
| 4 | No scaffold members or planks over extended and hazardous – overhang | ☐ | ☐ |
| 5 | Base plates and screw jacks firmly supported on all legs – mudsills | ☐ | ☐ |
| 6 | Leveling adjustment screws extended into fastener | ☐ | ☐ |
| 7 | Tower tied to rigid support horizontally | ☐ | ☐ |
| 8 | Free standing tower or single hole scaffold steadied with guy per WSBC OHS Regulation | ☐ | ☐ |
| 9 | Platform planking cleated on underside at each end with wood or angle iron | ☐ | ☐ |
| 10 | Platform planking tied down securely | ☐ | ☐ |
| 11 | Platform planking maximum span WSBC and/or OH&S regulations | ☐ | ☐ |
| 12 | Vertical access ladder securely fastened in place | ☐ | ☐ |
| 13 | Tag System being used | ☐ | ☐ |
| 14 | Perimeter toe boards WSBC and/or OH&S regulations | ☐ | ☐ |
| 15 | Perimeter hand rail WSBC and/or OH&S regulations | ☐ | ☐ |
| 16 | Separate rope or hand line in place at all platforms to raise and lower tools or material | ☐ | ☐ |
| 17 | Warning devices/signs provided if erected over walkways or roadways (flashing lights, reflective tape streamers, or area in roped off) | ☐ | ☐ |
| 18 | Minimum clearance from overhead power lines maintained as per schedule | ☐ | ☐ |
| 19 | Rolling scaffold wheel brakes locked and outriggers extended to maintain maximum height ratio per WSBC and/or OH&S regulations | ☐ | ☐ |
| 20 | Separate ladders being used for scaffold access | ☐ | ☐ |
| 21 | Scaffold constructed and maintained according to certified engineered drawings | ☐ | ☐ |
| 22 | Special Requirements: | ☐ | ☐ |
| 23 | Has it been inspected | ☐ | ☐ |
| | Inspection Done by: _____ Date: | | |

## CONSTRUCTION PROJECT MSI RISK IDENTIFICATION & ASSESSMENT CHECKLIST

This checklist is intended to assist in meeting WorkSafeBC regulatory requirements for identification and assessment of ergonomic injury risks. It is to be completed by the site superintendent in consultation with a worker representative in the first two weeks of a new project with an anticipated duration of three weeks or longer and updated as necessary to address new MSI hazards resulting from changes on site.

Project Identification: _____

Date: _____

Supervisor Name: _____

Worker Representative Name: _____

Signature (Person completing checklist): _____

**Material Handling**

1. What heavy materials or equipment, e.g. rebar, power generator, pipes, are being manually handled on site? What are their maximum weights?

2. Do workers have to lift more than 50 pounds at one time without help? Yes / No
   If "yes", what practicable suggestions, if any, do you have to minimize this occurrence?

3. Do workers have to lift more than 30 pounds often? Yes / No
   If "yes" what practicable suggestions, if any, do you have to minimize this occurrence?

4. Are there handles for materials that must be carried? Yes / No
   If "yes" are the handles easy to use and comfortable? Yes / No

5. Are workers encouraged to get someone's help to lift heavy materials? Yes / No

6. Are carts and other equipment readily available for moving materials? Yes / No
   If "yes" is the equipment being used? Yes / No
   If "no" why not?
   Is the site clear enough to permit the use of carts? Yes / No

7. Are materials delivered close to where they will be used? Yes / No
   If "no" what practicable suggestions, if any, do you have for improvement?

8. On what jobs do workers have to lift overhead?
   How could this lifting be avoided?

9. Are materials stored at floor or ground level? Yes / No
   If "yes" do workers have to bend down to lift materials? Yes / No
   Could the materials be stored at waist height? Yes / No

10. On which tasks do workers have to reach far to pick up or lift materials?
    Could the materials be moved closer? Yes / No

**Tools**

1. Are tools maintained in good condition? Yes / No
2. Which tools are very heavy?
3. Which tools vibrate excessively?
4. Which tools must be used while in difficult positions?
5. Which tools have poor handle design?
6. Which tools have grips that are too big or too small?
7. Do gloves make it hard to grip tools? Yes / No
   Are alternative tools available with a better design? Yes / No
   If "yes" what are they?
8. Do you recommend replacement of any existing tools? Yes / No
   If "yes" which should be replaced?

**Repetitive Work**

1. Which jobs require the same motions dozens of times an hour for more than one (1) hour per day?
2. What are the motions?
3. Can motion repetitions be reduced by job rotation / rest breaks? Yes / No

**Awkward Postures**

1. Which jobs require overhead work postures more than one (1) hour per day?
2. Can scaffolds or other equipment reduce overhead postures? Yes / No
   If "yes" what equipment?
3. Which jobs require work at floor level or workers to be on their knees for more than one (1) hour a day?
   Are knee pads or cushions available? Yes / No
   Are they used? Yes / No
   Is there equipment that can be used to reduce kneeling? Yes / No
   If "yes" what equipment?
4. Which jobs require workers to stay in awkward postures for a long time?
   Can rotation or rests breaks be used to reduce time in these postures? Yes / No
5. Which jobs require a lot of twisting, turning or bending?
   How can the need for twisting or bending be reduced?

**Standing**

1. Which jobs require workers to stand all day, especially on concrete floors?
2. Would the use of anti-fatigue matting be practicable? Yes / No
3. Would adjustable stools for periodic rest breaks be practicable? Yes / No
4. What other practicable suggestions, if any, do you have for improvement?

**Surfaces for Walking and Working**

1. As far as is practicable, are working and walking surfaces kept dry? Yes / No
2. Are the surfaces unobstructed? Yes / No
3. As far as is practicable, are the surfaces even? Yes / No

**Seating**

1. Which jobs require sitting all day?
2. Are seats well-designed and comfortable? Yes / No
   If "no" what practicable suggestions, if any, do you have for improvement?
3. Do workers have to lean forward in their seats to see/do their work? Yes / No
   If "yes" what practicable suggestions, if any, do you have for improvement?
4. Does the seating in any heavy equipment vibrate a lot? Yes / No
   If "yes" what practicable suggestions, if any, do you have for improvement?

**Weather**

1. Is there adequate worker protection from heat, cold, rain, wind or sun? Yes / No
   If "no" what practicable suggestions, if any, do you have for improvement?

**Lighting**

1. Are work areas well lit to prevent tripping and falling? Yes / No
   If "no" what practicable suggestions, if any, do you have for improvement?
2. Is there enough light to do the work? Yes / No
   If "no" what practicable suggestions do you have for improvement?

**Production Pressures**

1. Are supervisors or workers under production pressures that could lead to shortcuts and injuries? Yes / No
   If "yes" what practicable suggestions, if any, do you have for improvement?

**Training**

1. What training have workers had on recognizing/preventing ergonomic injury hazards and symptoms?
2. What training have supervisors had in recognizing/preventing ergonomic hazards?

**Musculoskeletal Symptoms**

1. Do workers feel free to report symptoms to first aid? Yes / No

2. Have any workers been reporting muscle pain? Yes / No
   If "yes" which muscles? (please check all that apply)

   ❑ Back ❑ Neck ❑ Shoulder ❑ Arm (including elbow) ❑Wrist

   ❑ Hand (including finger, thumb) ❑ Leg (including thigh, knee, calf, ankle)

   ❑ Foot (including toe) ❑ Other (please identify) _____

3. Which jobs create the most problems?

   What may be the main cause(s)? (Please check all that apply)

   ❑ Repetitive motion ❑ Awkward Postures ❑ Heavy lifting

   ❑ Other (please identify) _____

4. Do workers often appear exhausted at the end of the day? Yes / No
   If "yes" what practicable suggestions, if any, do you have for improvement?

5. Identify what you believe are the most hazardous jobs on site for MSI
   a)
   b)

6. What has been done to get worker ideas to reduce MSI on these jobs?
   a)
   b)

7. What are the most practicable (effective, easiest to implement and least expensive) solutions that can be achieved through cooperation between management and labour working together to reduce these injury hazards?
   a)
   b)

**Respirator Fit Test Log**

## Qualitative Fit Test (QLFT) Form

| | |
|---|---|
| Employee Name | Date of Birth |
| Company | Supervisor Name |

**A respirator fit test must be completed by an individual trained in respiratory fit testing procedures.**
**This fit test is required annually.**

Does employee wear prescription glasses? _____ YES _____ NO

Does employee have facial hair or other attributes that may prevent a proper fit? _____ YES _____ NO

**Knowledge Checklist : ☐ Respirator Selection ☐ Limitations ☐ Storage and Maintenance ☐ Cartridge Selection ☐ Cartridge Limitations**

| **Respirator Type (Make & Model)** | | | **North 7700 Half Mask** | **NOSH P100** |
|---|---|---|---|---|
| **Testing Media** | **Irritant Smoke** | | | |
| | **Isoamyl Acetate** | | | |
| **Compatible with eye glasses?** | | | ___YES ___NO | ___YES ___NO |
| Positive pressure fit check | | | ___PASS ____FAIL | ___PASS ____FAIL |
| Negative pressure fit check | | | ___PASS ____FAIL | ___PASS ____FAIL |
| **Sensitivity Test (Does individual react to testing media?)** | | | ____YES ____NO | ____YES ____NO |
| **Respirator Fit Test Result** | | | ___PASS ____FAIL | ___PASS ____FAIL |

Person Administering Test _____Signature_____ Date_____

Employee's Statement: I understand that my use of this respirator must be in accordance with company work rules, manufacturer instructions and applicable WCB Regulations and Standards. I also confirm the above test results as recorded by the tester and that I am familiar with the usage, limitations and maintenance of a respirator in a work environment. I also confirm that I have received an additional safety document with information regarding care, maintenance, and proper usage.

Signature of Employee_____ Date_____

# *INSPECTION REPORT FORM*

| Jobsite Name/Location: | | Portion Inspected: | | |
|---|---|---|---|---|
| Inspectors: | | Date: | | |
| Hazard Or Observation | Hazard Rating A B C | Location | Comments / Corrective Action Required | Date Completed |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## HAZARD RATING:

Any particular deficiency presents a hazard, they will be classified as follows:

**A.** Imminent hazard which requires immediate action.

**B.** Hazardous condition and activity which are not imminently dangerous, but should be attended to as soon as possible.

**C.** Low hazard, generally does not include machinery with moving parts

## Observation:

Any Observation that identifies a positive or negative condition or behaviour.

# WHEN A BOMB THREAT IS RECEIVED

Get the message **exactly**. Try to learn **where** the bomb is, **when** it will go off, **when** it was placed, **why** it was placed, and **what type** of bomb it is.

**DO NOT INTERRUPT, answer "Yes" or "No"**

Time: _____ Date: _____

Message: _____

_____

_____

Is the caller: ❑ Male ❑ Female ❑ Young ❑ Middle-aged ❑ Old Age: _____

Does the caller have an accent? ❑ Yes ❑ No Type: _____ _____

Did the caller mispronounce words? ❑ Yes ❑ No List Words: _____

_____ _____

| Was the Caller: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Laughing | ❑ | Yes | ❑ | No | Angry | ❑ | Yes | ❑ | No |
| | Drunk | ❑ | Yes | ❑ | No | Excited | ❑ | Yes | ❑ | No |

Did you hear background Noises, e.g. traffic, machinery, music, talking? _____

_____

Other comments: _____

If possible, ask the following questions, but only after the caller gives his message:

Where is the bomb located? _____

What time will the bomb explode? _____

What does the bomb look like? _____

When was the bomb placed? _____

Why was the bomb placed? _____

What type of bomb is it?

_____

## PHYSICIANS - FIT FOR DUTY FORM

Employee Name: _____

□ Sickness □ Non-Occupational Injury
□ Work Related Injury □ Pre-existing Condition

Date of Visit: _____ Next Visit: _____

Nature of injury: _____

If modified duty is required, please complete the following:

Working Restrictions (filled out by the attending physician or practitioner)

| | | | |
|---|---|---|---|
| Lifting from waist | ___ (weight/frequency) | Sitting | ___ (duration frequency) |
| Lifting from shoulder | ___ (weight/frequency) | Walking | ___ (duration/frequency) |
| Prolonged standing | ___ (duration/frequency) | Climbing stairs | ___ (duration/frequency) |
| Work in damp areas | ___ (duration/frequency) | Ladders | ___ (duration/frequency) |
| Work in cold areas | ___ (duration/frequency) | Work at heights | ___ (duration/frequency) |
| Work in hot areas | ___ (duration/frequency) | Bending | ___ (duration/frequency) |
| Work outdoors | ___ (duration/frequency) | Repetition hand/arm | ___ (duration/frequency) |
| Typing | ___ (duration/frequency) | Operate Equipment | ___ (duration/frequency) |

Other/comment_____

Temporary restricted hours or gradually increasing hours are available. Please indicate any restrictions of this type:

_____

Estimated time of recovery: _____

_____ _____
Name of Medical Authority Telephone Number

_____ _____
Signature Date

I hereby consent to release the above information to my employer:

Employee's Signature: _____ Date: _____

## MODIFIED WORK OFFER FORM

In keeping with our Modified Return to Work Policy (RTW), suitable employment shall be offered to any employee unable to perform their regular duties. Quolus Construction Services is offering the following modified work placement:

The modified position is: _____

The duties you will be required to perform are as follows:

_____

_____

_____

_____

The hours of work will be from _____ to _____

The duration of this modified work program will be from _____ to _____

We will continually review your progress and make adjustments as required based on relevant medical information.

During this period of modified work you will be supervised by: _____

If you have any concerns or difficulties please notify your supervisor and contact the RTW Coordinator.

Your RTW co-coordinator will be: _____

We request that you meet with your RTW coordinator regularly to review your progress.

Offer Accepted: □ Offer Declined: □

| _____ | _____ | _____ |
|---|---|---|
| Employee Name (Print) | Employee Signature | Date |

| _____ | _____ | _____ |
|---|---|---|
| Supervisor Name (Print) | Supervisor Signature | Date |

## 2.3.1 HAZARD / INCIDENT REPORT

**(1) Worker's Name:** _____ **(2) Jobsite:** _____

**(3) Date Submitted:** _____ **(4) Supervisor's Name:** _____

**(5) Hazard or Incident :**

_____
_____
_____
_____
_____
_____

**(6) WSBC Regulation or Quolus Procedure(s)/Policy(s) Referenced:**

_____

**(7) Remedial Action or Investigation Recommended:**

_____
_____
_____
_____
_____

**TO BE COMPLETED BY SUPERVISOR:**

**(8) Remedial Action to be Undertaken and projected date to be completed.**
**If NO ACTION will be undertaken explain rationale:**

_____
_____
_____
_____
_____
_____
_____

**(9) Supervisor's Signature:** _____ **(10) Date:** _____

**NOTE:** Original to be sent to the employee's shift Coordinator/Supervisor. One photocopy to be kept by worker and one photocopy to be sent to Human Resources and the JHSC member. Supervisor to record remedial action to be undertaken on original and retain it for follow-up. Photocopy of completed form to be forwarded to worker and Human Resources.

**NOTE:** Safety representative may submit hazard/incident report on behalf of worker.

### 4.6.5 LOCKOUT CHECKLIST

The following checklist is provided to assist in ensuring compliance with lockout requirements:

- ❑ Lockout procedures and policy have been developed and are assessable on site.
- ❑ Site specific written lockout procedures have been developed on site.
- ❑ Lockout procedures where electrical, mechanical, hydraulic, pneumatic, thermal or other energy sources are to be isolated.
- ❑ Project personnel have been trained in the lockout policy and procedure for each particular job.
- ❑ Locks have been issued to personnel with responsibilities for lockout.
- ❑ Materials on conveyances that may pose a hazard to workers are removed as part of the lockout process.
- ❑ A system is in place to notify personnel about changes in lockout policy and procedures.
- ❑ Locks are issued to personnel and each lock is marked to identify the owner.
- ❑ Only assigned locks are used for lockout.
- ❑ All energy sources are isolated prior to work commencing.
- ❑ Every person working on the isolated equipment has placed their own locks on the lockout point(s).
- ❑ Lockout is performed in accordance with policy and procedure and WorkSafeBC OHS Regulation.
- ❑ There is an orderly and planned transfer of lockout between in-coming and out-going personnel at shift change.
- ❑ Supervisors only remove locks is the provisions outlines in the policy, procedures and WorkSafeBC OHS Regulation are met.

NOTE: The numbering of the ***Workers Compensation Act*** has changed, effective April 6, 2020. See worksafebc.com/wca2019.

THIS NOTICE IS TO BE POSTED BY THE EMPLOYER IN A CONSPICUOUS PLACE

# NOTICE TO WORKERS

## TO PREVENT INJURIES

- Comply with the Occupational Health and Safety Regulation
- Use all safety devices and required personal protective equipment
- Where conditions appear to be dangerous, notify your supervisor or employer, your health and safety committee representative, or the nearest WorkSafeBC office

## IF YOU ARE INJURED

- Get first aid immediately — even for slight injuries
- Notify your employer as soon as possible, giving particulars of all injuries sustained and full details of the cause
- If you require medical attention, you may choose your own physician, chiropractor, dentist, naturopathic physician, or podiatrist
- If you intend to change your physician or practitioner while on a claim, advise WorkSafeBC

## HOW TO CLAIM COMPENSATION

- Telling your employer and doctor that you were injured at work will help initiate your claim
- If you lose time from work beyond the day of injury, call WorkSafeBC's Teleclaim centre at 1 888 967-5377 and press 2

## FOR ASSISTANCE WITH YOUR CLAIM

- Please call the Claims Call Centre to speak to a client service representative at 604 231-8888, or toll-free at 1 888 967-5377
- More information is available online at WorkSafeBC.com

WORK SAFE BC

PL9 (R01/08)

This notice is to be posted permanently.

RESET

# Notice to Workers
## (Act and Regulation)

Section 21(2)(f) of the *Workers Compensation Act* states that employers must make a copy of the Act and the Occupational Health and Safety Regulation available for review by workers. Employers must also post and keep posted a notice advising where the copy is available for review.

### At this worksite

The *Workers Compensation Act* and the Occupational Health and Safety Regulation can be reviewed here:

The Act and Regulation can also be found at worksafebc.com/searchable-regulation.
For additional assistance, contact your supervisor or your health and safety representative.

PL29

WorkSafeBC

**14.4.3**

# Joint Health and Safety Committee Evaluation Tool

This document was generated using a modifiable template that is owned by the Workers' Compensation Board ("WorkSafeBC") and published on worksafebc.com. The template is for information purposes only and may be used for non-commercial, personal, or educational purposes to help promote occupational health and safety, including as part of a health and safety program.

Use of WorkSafeBC's template does not constitute an endorsement, express or implied, of any person, service provider, service, or product.

Use of WorkSafeBC's template is at your own risk. WorkSafeBC does not warrant the quality, accuracy, or completeness of any information contained in the template, which is provided "as is" without warranty or condition of any kind.

Template publication date: August 2022

## Joint Health and Safety Committee
### Evaluation Tool

Please refer to the Guide to completing a Joint Health and Safety Committee Evaluation Tool for assistance in completing the evaluation process and this form.

| |
|---|
| Employer's name (legal name and trade name) |
| Joint committee name and location:<br><br>(Name and location of the workplace or part of the workplace represented by the committee) |
| Date evaluation complete:<br><br>(If the evaluation was completed over several days, include the date it was finalized.) |

Committee evaluators:

(The evaluators may be the committee co-chairs or designate(s), the employer, or a person retained by the employer. The evaluators should be knowledgeable about the duties, functions, and effective administration of a committee.)

| Name | Job title | Committee position |
|---|---|---|
| | | |
| | | |
| | | |

# Part 1: Assessment of legal obligations

## 1.1 Committee selection, membership and procedures

(Refer to sections 33, 34, 35, 36, and 37 of the *Workers Compensation Act*.)

| | Yes | No |
|---|---|---|
| Does the committee have at least four members? | ☐ | ☐ |
| Does the committee have worker representatives and employer representatives as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have worker representatives as at least half the membership, as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have two co-chairs, one selected by worker representatives and one selected by employer representatives, as required by section 33 of the Act? | ☐ | ☐ |
| Does the committee have worker representatives selected according to the procedures specified in section 34 of the Act? | ☐ | ☐ |
| Does the committee have employer representatives selected as required by the section 35 of the Act? | ☐ | ☐ |
| Does the committee meet at least once a month (unless otherwise permitted)? | ☐ | ☐ |
| Does the committee prepare a report of the meeting (meeting minutes) and provide a copy to the employer? | ☐ | ☐ |
| Does the committee have rules of procedure (terms of reference)? | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on committee selection, membership, and procedures.

## 1.2 Support for the committee

(Refer to sections 40, 42, 44 and 51 of the Act.)

| | Yes | No |
|---|---|---|
| Did committee members attend meetings during paid working hours? | ☐ | ☐ |
| Did members receive paid time off work that is reasonably necessary to prepare for meetings and fulfill other duties and functions? | ☐ | ☐ |
| Did the employer provide equipment, premises, and clerical personnel necessary for the carrying out of the committee's duties and functions? | ☐ | ☐ |
| Did the employer provide information requested by the committee, including information on health and safety hazards? | ☐ | ☐ |
| Has the employer posted and kept posted:<br>• The names and work locations of committee members<br>• The reports (minutes) of at least the three most recent committee meetings | ☐<br>☐ | ☐<br>☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on the support provided to the committee.

Training and education of committee members

(Refer to sections 40 and 41 of the Act and the requirements of section 3.27 of the Regulation.)

| | Yes | No |
|---|---|---|
| Did new members as of April 3, 2017 receive the minimum of eight hours of instruction and training that is required within six months of becoming a committee member? | ☐ | ☐ |
| Did all committee members receive the annual educational leave totalling eight hours to which they are entitled, in order to attend occupational health and safety training courses? | ☐ | ☐ |
| Did committee members receive educational leave without loss of pay or other benefits? | ☐ | ☐ |
| Did the employer pay for, or reimburse committee members for, the costs of the training course and the reasonable costs of attending? | ☐ | ☐ |
| Did a committee member designate another member as being entitled to take all or part of the member's educational leave? | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information about committee member training and education.

### 1.3 Committee recommendations

(Refer to sections 36 and 39 of the Act.)

The committee has a duty to make recommendations to the employer about the improvement of workplace health and safety, as well as recommendations on educational programs promoting the health and safety of workers and compliance with the Act and the Regulation. These recommendations may take a variety of forms, including formal and informal, oral, or written.

Do the committee's rules of procedure (terms of reference) include provisions for how to make recommendations to the employer?

☐ Yes ☐ No

Within the past 12 months, has the committee sent written recommendations to the employer with a request for a response from the employer?

☐ Yes ☐ No

| | Yes | No | n/a |
|---|---|---|---|
| Were the committee's recommendations described clearly? | ☐ | ☐ | ☐ |
| Were recommendations directly related to workplace health and safety? | ☐ | ☐ | ☐ |
| Were recommendations made in accordance with the committee's rules of procedure? | ☐ | ☐ | ☐ |
| Did the employer respond in writing within 21 days? If the employer did not respond within that timeframe, did they explain the delay and indicate when a response would be provided? | ☐ | ☐ | ☐ |
| If the employer did not respond within 21 days, did they explain the delay? | ☐ | ☐ | ☐ |

| | Yes | No | n/a |
|---|---|---|---|
| Where the employer did not accept the committee's recommendations, did the employer provide written reasons for not accepting the recommendations? | ☐ | ☐ | ☐ |
| Where the employer did not accept the recommendations, did the employer provide alternatives? | ☐ | ☐ | ☐ |
| If the employer did not accept the committee's recommendations, did the committee ask WorkSafeBC to investigate and attempt to resolve the matter? | ☐ | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information about committee recommendations to the employer.

### 1.4 Duties and functions of the committee

(Refer to section 36 of the Act and the requirements of section 3.12 of the Regulation.)

The following questions are intended to assess whether or not the committee has fulfilled each of its duties and functions. It may be helpful to refer to relevant records and documents when determining whether or not the committee fulfilled each of its duties and functions. Copies of these documents may be included with this evaluation for reference purposes.

| Over the past 12 months, the committee has | Yes | No |
|---|---|---|
| Identified situations that may be unhealthy or unsafe for workers — this may include reviewing incident and near miss reports to look for accident trends, or reviewing the effectiveness of a risk assessment | ☐ | ☐ |
| Advised on effective systems for responding to situations that may be unhealthy or unsafe | ☐ | ☐ |
| Considered and expeditiously dealt with complaints related to the health and safety of workers | ☐ | ☐ |
| Consulted with workers and the employer on issues related to workplace health and safety and the work environment | ☐ | ☐ |
| Made recommendations to the employer and workers about the improvement of the workplace health and safety and work environment | ☐ | ☐ |
| Made recommendations to the employer on educational programs promoting the health and safety of workers and compliance with the Act and the Regulation, and monitored their effectiveness | ☐ | ☐ |
| Advised the employer on programs and policies required under the Regulation and monitored their effectiveness | ☐ | ☐ |
| Advised the employer on proposed changes to the workplace, including significant proposed changes to equipment and machinery, or the work processes that may affect the health or safety of workers | ☐ | ☐ |
| Ensured that accident investigations are carried out as required by the Act and the Regulation | ☐ | ☐ |
| Ensured that regular inspections are carried out as required by the Act and the Regulation | ☐ | ☐ |
| Participated in inspections, investigations, risk assessments, and inquiries as provided in the Act and the Regulation | ☐ | ☐ |
| Participated in the procedure for resolving refusals of unsafe work | ☐ | ☐ |

If you answered "No" or were not sure of the answer to any of the questions above, provide further information on how the committee fulfilled each of its duties and functions under section 36 of the Act.

## Part 2: Evaluation of effectiveness

The following questions are intended to measure the effectiveness of committee procedures, participation, and record-keeping.

### 2.1 Rules of procedure (Terms of reference)

The following are characteristics of an effective committee's rules of procedure:

- Committee members know the role of the committee and the extent of its authority.
- Committee members actively contribute to a set of regularly reviewed objectives.
- Rules of procedure meet the minimum legal requirements of section 37 of the Act.
- Rules of procedure include provision for:
  - Committee composition and selection of members
  - Duties and functions
  - Record keeping
  - Roles of guests
  - Decision-making procedures
  - Informal and formal committee recommendations
  - Resolution of action items
  - Education and training for committee members
  - Committee evaluation
  - Defining quorum
  - Conflict resolution
  - Other relevant matters
- Rules are developed collaboratively, with the participation of committee members.
- Rules are reviewed periodically and reflect the committee's current process and mandate.

With these criteria in mind, how effective is your committee in relation to rules of procedure?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's rules of procedure might be improved.

## 2.2 Meeting attendance and participation

The following are characteristics of an effective committee's meeting attendance and participation:

- Agenda is distributed prior to meetings.
- Agenda is used at meetings to guide discussion and keep the meeting on time.
- Relevant documents (reports, etc.) are distributed and reviewed prior to meetings.
- Committee members are given time that is reasonably necessary to prepare for committee meetings (per section 40 of the Act).
- Committee members regularly attend meetings.
- Alternates are selected in case of member absence.
- Employer and worker co-chairs take turns running the meeting.
- Committee members are engaged and participate in discussions.
- Employer and worker representatives participate equally, with no one group dominating discussions.
- Regular attendance is supported by the employer. This includes removing barriers such as scheduling, and back up coverage.

With these criteria in mind, how effective is your committee in relation to meeting attendance and participation?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's meeting attendance and participation might be improved.

### 2.3 Report of the meeting (Meeting minutes)

The following are characteristics of an effective committee's meeting minutes:

- Meeting minutes provide a full and accurate record of the meeting, and include:
  - Who attended the meeting
  - The issues that were discussed
  - Reports, statistics, and other documents reviewed
  - Any action required, the name of the person assigned to complete the action, its priority, and the expected completion date
- Outstanding action items are tracked and monitored to completion
- Minutes are circulated to members promptly
- Minutes are adopted at the next meeting

With these criteria in mind, how effective is your committee in relation to meeting reports?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how you rated your committee. Include suggestions on how your committee's meeting reports might be improved.

### 2.4 Committee response to refusals of unsafe work

(Refer to section 3.12(4) of the Regulation.)

Has the committee been aware of any refusals of unsafe work at your workplace in the past 12 months?

☐ Yes ☐ No

Is the committee informed of work refusals even when the matter is resolved by the worker and the supervisor?

☐ Yes ☐ No

Has there been a refusal of unsafe work at your workplace that could not be resolved between the worker and employer or supervisor?

☐ Yes ☐ No

Are committee members trained in their role in the procedure for refusal of unsafe work?

☐ Yes ☐ No

If there has not been a refusal of unsafe work, consider the nature of your industry and the hazards inherent in the work you do. Are there any:

☐ Barriers that may be making workers reluctant to exercise their right to refuse unsafe work?

☐ Hazards that are being overlooked or trivialized because they are seen as "part of the job"?

☐ Other reasons workers might not feel they are able to refuse unsafe work:

How effectively is the committee participating in the procedure for responding to refusals of unsafe work?

| ☐ Very ineffective | ☐ Somewhat ineffective | ☐ Moderately effective | ☐ Somewhat effective | ☐ Very effective |
|---|---|---|---|---|

Comment further on how effectively your committee is participating in refusals of unsafe work and any recommendations the committee might make to the employer on this issue.

### 2.5 Overall effectiveness

Considering your responses to all of the previous questions in Part 1 and Part 2, how effective is the committee overall?

| ☐ | ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|---|
| Very ineffective | Somewhat ineffective | Moderately effective | Somewhat effective | Very effective |

Comment further on how you rated your committee. Include suggestions on how your committee might improve its overall effectiveness. Consider compliance with legal obligations as well as how effectively the committee is performing its duties and functions. You may wish to consider the focus areas included in this evaluation tool to help identify opportunities for committee member growth and development, and ideas for building committee effectiveness.

## Part 3: Focus Areas — Encouraging committee growth and development

An effective committee provides a way for workers and employer to work together to identify and find solutions for health and safety problems in the workplace. Generally, your first objective will be to ensure your committee complies with the minimum legal requirements. Once you are satisfied that your committee is compliant, committee members should develop a plan for continual improvement.

Your committee may wish to choose one of the following areas to focus on improving each year:

- Focus Area A — Communication
- Focus Area B — Workplace inspections, hazard identification, risk assessment and control
- Focus Area C — Incident investigation

The questions here are intended to help your committee identify strengths and areas of improvement. For each item, consider the characteristics of an effective committee, as well as the legal requirements. Then, use the rating scale to assess how effectively your committee performs.

Finally, consider what positive steps you can take to improve your committee effectiveness in this focus area. Steps for improvement will vary for every workplace, and may include training for committee members, discussions at safety meetings, or changes in policies or procedures.

### Focus Area A — Communication

Effective communication ensures that everyone at the workplace is aware of the work of the committee in promoting workplace health and safety, and encourages people to contribute ideas and be more involved.

#### A.1 Committee meetings and communication

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Does the committee seek out and explore different opinions to ensure issues and concerns are fully considered? | ☐ | ☐ | ☐ | ☐ |
| Where there are differences of opinion within the committee, can the committee generally resolve the matter? | ☐ | ☐ | ☐ | ☐ |

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Is the committee regularly divided on occupational health and safety issues, often along management and labour lines? | ☐ | ☐ | ☐ | ☐ |
| Is the committee generally able to reach agreement on matters relating to health and safety relating to workers? | ☐ | ☐ | ☐ | ☐ |
| Do the co-chairs demonstrate effective communication, conflict resolution, and facilitation skills? | ☐ | ☐ | ☐ | ☐ |
| Does the committee regularly follow up on the implementation of decisions and recommendations? | ☐ | ☐ | ☐ | ☐ |
| Does the committee composition reflect the composition of the workplace? | ☐ | ☐ | ☐ | ☐ |
| Does the committee proactively identify possible barriers to the implementation of health and safety decisions and recommendations, and propose solutions? | ☐ | ☐ | ☐ | ☐ |

General comments on committee meetings and communication, and suggestions for improvement:

| |
|---|
| |

## A.2 Communication with workers

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Do workers regularly approach committee members to make suggestions or to discuss health and safety matters? | ☐ | ☐ | ☐ | ☐ |
| Is there effective communication between the committee and workers? | ☐ | ☐ | ☐ | ☐ |
| Does the committee regularly interact with a cross-section of workers (including part-time, dispatched, and shift workers, and workers at other job sites) about relevant health and safety matters? | ☐ | ☐ | ☐ | ☐ |

General comments on communication with workers, and suggestions for improvement:

| |
|---|
| |

### A.3 Communication with the employer

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Is the employer representative on the committee someone with decision-making authority? | ☐ | ☐ | ☐ | ☐ |
| Does the employer regularly seek out the opinions of the committee on existing and potential workplace health and safety issues, including proposed changes to the workplace? | ☐ | ☐ | ☐ | ☐ |
| Does the employer share health and safety information with the committee? (This may include industrial hygiene testing results, WorkSafeBC reports or statistics, other occupational and safety health reports, etc.) | ☐ | ☐ | ☐ | ☐ |

Were all matters resolved at the committee level, or did the committee feel reluctant to make recommendations? Include any suggestions around how the committee recommendations could be made more effective.

General comments on communication with the employer, and suggestions for improvement:

### Focus Area B – Workplace inspections, hazard identification, risk assessment and control

Regular workplace inspections can help to improve communication around workplace health and safety, identify unsafe conditions and procedures, and better understand the work and the work environment. (Refer to section 3.5 of the Regulation.)

| | Never | Sometimes | Usually | Always |
|---|---|---|---|---|
| Does the committee confirm that workers who conduct workplace inspections are trained to do so? | ☐ | ☐ | ☐ | ☐ |
| Do committee members interact with a representative sample of workers when conducting workplace inspections? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ask workers and supervisors about their workplace health and safety concerns? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure that workers with first-hand knowledge about and experience with the day-to-day operations are engaged in the inspection process? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure a cross-section of equipment, work methods, and work practices are inspected? | ☐ | ☐ | ☐ | ☐ |
| Are inspections tailored to look at workplace-specific hazards? | ☐ | ☐ | ☐ | ☐ |
| After hazards are identified, does the committee participate in assessing the risks and implementing effective controls? | ☐ | ☐ | ☐ | ☐ |
| Does the committee ensure implemented controls are communicated effectively to workers and monitored to verify the risk remains controlled? | ☐ | ☐ | ☐ | ☐ |
| Are workplace inspections done at various times and without advance notice? | ☐ | ☐ | ☐ | ☐ |
| When hazards are identified and controls implemented, are they reviewed periodically? | ☐ | ☐ | ☐ | ☐ |
| Is information from workplace inspection reports reviewed by committee members to identify any trends that may be developing? | ☐ | ☐ | ☐ | ☐ |

Comment further on how effectively your committee is participating in workplace inspections. Include suggestions on how your committee might improve the effectiveness of workplace inspections and identify unhealthy and unsafe situations in the workplace.

What are the most significant risks to worker health and safety in your workplace? Who might be harmed, and how?

Have controls been put in place, and are they effective at reducing the risks?

### Focus Area C — Incident investigation

Employers must conduct investigations of any workplace incidents resulting in an injury to a worker or near misses with the potential for worker injury, as well as major structural failures, release of hazardous substances, and other circumstances. Refer to Part 2 Division 10 of the Act and section 3.28 of the Regulation.

| | | | Yes | No |
|---|---|---|---|---|
| Have worker and employer representatives received appropriate training on incident investigation methodology? | | | ☐ | ☐ |
| Do committee members understand the purpose of preliminary and full investigation reports, including the statement of sequence of events? | | | ☐ | ☐ |
| | **Never** | **Sometimes** | **Usually** | **Always** |
| Does the committee ensure that incidents are investigated in accordance with sections 69 to 72 of the Act? | ☐ | ☐ | ☐ | ☐ |
| Do committee members explain the purpose of preliminary and full investigation reports, including the statement of sequence of events? | ☐ | ☐ | ☐ | ☐ |
| Are incident investigations focused on improving workplace health and safety? | ☐ | ☐ | ☐ | ☐ |
| Do worker representatives actively participate in incident investigations, and is that participation reflected in the investigation reports? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of preliminary investigations in a timely manner? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of preliminary corrective actions taken? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of full investigations in a timely manner? | ☐ | ☐ | ☐ | ☐ |
| Does the committee receive reports of corrective actions taken as a result of full investigations? | ☐ | ☐ | ☐ | ☐ |

| | | | Yes | No |
|---|---|---|---|---|
| Is information from incident investigation reports reviewed by committee members to identify any trends that may be developing? | ☐ | ☐ | ☐ | ☐ |

Comment further on how effectively your committee is participating in incident investigations. Include suggestions on how your committee might better participate in incident investigations.

## Part 4: Committee response to the evaluation

(Refer to section 3.26 (4),(5), and (6) of the Regulation.)

If the evaluation is not performed by the committee co-chairs, the person who conducts the evaluation must obtain and consider the input of the co-chairs, or designates. Describe how the evaluators consulted the co-chairs (or designates) in the evaluation.

Co-chair signatures:

_____

_____

Employer's signature:

_____

**After the completion of the report, did the committee:**

| | Yes | No |
|---|---|---|
| Ensure the employer received and signed a copy of the evaluation? | ☐ | ☐ |
| Discuss the evaluation at its next meeting? | ☐ | ☐ |
| Ensure the evaluation and a summary of the discussion were included in the report of that meeting (meeting minutes)? | ☐ | ☐ |

Include any general comments from the committee in response to the evaluation. This may include areas where the worker and employer representatives may have disagreed on the evaluation results.

QUOLUS CONSTRUCTION SERVICES LTD.

## SITE SAFETY INSPECTION & HAZARD ASSESSMENT FORM

**Inspected by:** _____ **Job/Location:** _____

**Date:** _____ **Time:** _____ **# of Employees:** _____

| SITE ACCESS | Y | N | N/A | Notes/Corrective Action | Date Completed |
|---|---|---|---|---|---|
| Clean level ground | ☐ | ☐ | ☐ | | |
| Adequate ramps | ☐ | ☐ | ☐ | | |
| Adequate stairs | ☐ | ☐ | ☐ | | |
| Adequate ladders | ☐ | ☐ | ☐ | | |
| **SIGNS & PRINT MATERIAL** | | | | | |
| MSDS | ☐ | ☐ | ☐ | | |
| Warning signs | ☐ | ☐ | ☐ | | |
| Emergency phone list | ☐ | ☐ | ☐ | | |
| Products properly labeled | ☐ | ☐ | ☐ | | |
| **DOCUMENTATION** | | | | | |
| Fall protection plan | ☐ | ☐ | ☐ | | |
| Confined Space Permit | ☐ | ☐ | ☐ | | |
| Other permits (NOP) | ☐ | ☐ | ☐ | | |
| Hazard Assessment Form | ☐ | ☐ | ☐ | | |
| **WORKER TRAINING** | | | | | |
| WHIMIS | ☐ | ☐ | ☐ | | |
| Safety Orientation | ☐ | ☐ | ☐ | | |
| Fall Protection | ☐ | ☐ | ☐ | | |
| Confined Space | ☐ | ☐ | ☐ | | |

QUOLUS CONSTRUCTION SERVICES LTD.

## SITE SAFETY INSPECTION & HAZARD ASSESSMENT FORM

| | | | | |
|---|---|---|---|---|
| **PROTECTIVE EQUIPMENT** | | | | |
| Hard Hats Worn | ☐ | ☐ | ☐ | _____ |
| Foot Protection Worn | ☐ | ☐ | ☐ | _____ |
| Fall Protection Worn | ☐ | ☐ | ☐ | _____ |
| Eye and face protection Worn/Available | ☐ | ☐ | ☐ | _____ |
| Hearing protection Worn/Available | ☐ | ☐ | ☐ | _____ |
| Respiratory protection Worn/Available | ☐ | ☐ | ☐ | _____ |
| **HOUSEKEEPING** | | | | |
| Clear Walkways/Access/ | ☐ | ☐ | ☐ | _____ |
| Debris & Garbage cleared | ☐ | ☐ | ☐ | _____ |
| **LADDERS** | | | | |
| Secured | ☐ | ☐ | ☐ | _____ |
| Proper angle/extension | ☐ | ☐ | ☐ | _____ |
| Proper size & type | ☐ | ☐ | ☐ | _____ |
| Proper handrails & landings | ☐ | ☐ | ☐ | _____ |
| Non-slip bases | ☐ | ☐ | ☐ | _____ |
| **FALL PROTECTION** | | | | |
| Properly worn | ☐ | ☐ | ☐ | _____ |
| Unprotected openings/edges | ☐ | ☐ | ☐ | _____ |
| Working from: Elevation? | ☐ | ☐ | ☐ | _____ |
| **FIRE PROTECTION** | | | | |
| Extinguishers where required | ☐ | ☐ | ☐ | _____ |
| Emergency Response plan | ☐ | ☐ | ☐ | _____ |
| **POWER TOOLS & EQUIPMENT** | | | | |
| General conditions | ☐ | ☐ | ☐ | _____ |
| Proper guards/cords/PPE | ☐ | ☐ | ☐ | _____ |

QUOLUS CONSTRUCTION SERVICES LTD.

## SITE SAFETY INSPECTION & HAZARD ASSESSMENT FORM

**FIRST AID REQUIREMENTS**

| | | | |
|---|---|---|---|
| Adequate # of first aiders on site | ☐ | ☐ | ☐ |
| 1st Aid kit available & with required contents | ☐ | ☐ | ☐ |

| | Y | N | | Y | N | | Y | N |
|---|---|---|---|---|---|---|---|---|
| Tool Box Talks Reviewed | ☐ | ☐ | Current | ☐ | ☐ | Signed | ☐ | ☐ |
| Site Safety Meeting Reviewed | ☐ | ☐ | Signed | ☐ | ☐ | | | |
| FLHA Reviewed | ☐ | ☐ | Current | ☐ | ☐ | Signed | ☐ | ☐ |
| Safe Work Practices signed off | ☐ | ☐ | Safe Work Procedures signed off | | | | ☐ | ☐ |
| Fall Plan needed | ☐ | ☐ | Fall plan implemented and signed | | | | ☐ | ☐ |
| Exposure control plan needed | ☐ | ☐ | Exposure control plan signed | | | | ☐ | ☐ |
| Violations observed | ☐ | ☐ | Disciplinary action | | | | ☐ | ☐ |

Notes:

Site Inspection reviewed by:

Name: _____ Signature: _____

# Employer Incident Investigation Report (EIIR)

Please refer to the companion quick guide for assistance completing the investigation and this form. Please attach a separate sheet if necessary

## 1. Employer's information

| Employer's name (legal name and trade name) | Operating location number | WorkSafeBC account number |
|---|---|---|
| Employer's head office address | | |
| City | Province | Postal code |
| Employer's representative's name | Email address | Phone number (include area code) |

## 2. Injured persons

| Last name | First name | Job title |
|---|---|---|
| a) | | |
| b) | | |
| c) | | |
| d) | | |

## 3. Place, date, and time of incident

| Location where incident occurred (street address or GPS coordinates) | | |
|---|---|---|
| City (nearest) | Province | Postal code |
| Date of incident (yyyy-mm-dd) | Time of incident ☐ a.m. ☐ p.m. | |

## 4. Type of occurrence (select all that apply)

- ☐ Death of a worker
- ☐ Serious injury to a worker
- ☐ Major structural failure or collapse
- ☐ Major release of hazardous substance
- ☐ Blasting accident causing personal injury
- ☐ Dangerous incident involving explosives other than blasting incident
- ☐ Diving incident, as defined by regulation
- ☐ Incident of fire or explosion with potential for serious injury
- ☐ Minor injury or no injury but had potential for causing serious injury
- ☐ Injury requiring medical treatment beyond first aid

**An incident investigation report is NOT required under the *Workers Compensation Act* if none of the above applies or if this incident is a vehicle accident occurring on a public street or highway.**

## 5. Report type (select all that apply) If this is a revised version of a previous report, please check here ☐.

| ☐ Preliminary Investigation Report<br>If requested only, provide a copy to WorkSafeBC. | ☐ Interim Corrective Action Report | ☐ Full Investigation Report<br>**Must be provided** to WorkSafeBC within 30 days*<br>Fax 1.866.240.1434 | ☐ Full Corrective Action Report |
|---|---|---|---|
| Report date (yyyy-mm-dd) | Report date (yyyy-mm-dd) | Report date (yyyy-mm-dd) | Report date (yyyy-mm-dd) |
| Officer's name | | Date sent (yyyy-mm-dd) | |

# Employer Incident Investigation Report (EIIR)

## 6. Witnesses

| Last name | First name | Job title |
|---|---|---|
| a) | | |
| b) | | |
| c) | | |

## 7. Other persons whose presence might be necessary for proper investigation

| Last name | First name | Job title |
|---|---|---|
| a) | | |
| b) | | |

## 8. Sequence of events that preceded the incident

Required in Preliminary Report. Update in Full Report if necessary. Describe events earlier that day or even in previous years that led up to the incident. Examples may include events such as training given or changes in equipment, procedures, or company management.

## 9. Unsafe conditions, acts, or procedures that significantly contributed to the incident

Required in all reports. Describe anything, or the absence of anything, that contributed to the hazard such as poor housekeeping or poor visibility, using equipment without guards, or the lack of safe work procedures.

## 10. Nature of the serious injury (optional – complete only if there has been a serious injury)

| | |
|---|---|
| ☐ Life threatening or resulting in loss of consciousness | ☐ Punctured lung or other serious respiratory condition |
| ☐ Major broken bones in head, spine, pelvis, arms, or legs | ☐ Injury to internal organ or internal bleeding |
| ☐ Major crush injuries | ☐ Injury likely to result in loss of sight, hearing, or touch |
| ☐ Major cut with severe bleeding | ☐ Injury requiring CPR or other critical intervention |
| ☐ Amputation of arm, leg, or large part of hand or foot | ☐ Diving illness such as decompression sickness or near drowning |
| ☐ Major penetrating injuries to eye, head, or body | ☐ Serious chemical or heat/cold stress exposure |
| ☐ Severe (third-degree) burns | ☐ Other (specify) |

# Employer Incident Investigation Report (EIIR)

## 11. Brief description of the incident

Required in Preliminary Report. Briefly, summarize the sequence of events, the unsafe factors, and the resulting injury, if any.

## 12. Corrective actions identified and taken to prevent recurrence of similar incidents

| Action (Required in Preliminary Report and Interim Corrective Action Report. Update in Full Report, if necessary.) | Action assigned to (name, job title, contact information) | Expected completion date (yyyy-mm-dd) | Completed date (yyyy-mm-dd) |
|---|---|---|---|
| a) | | | |
| b) | | | |
| c) | | | |
| d) | | | |
| e) | | | |

## 13. Explanation of blank areas on this Preliminary Report, if any

If there are blank areas, describe the circumstances beyond your control that explain this lack of information.

## 14. Persons who carried out or participated in the preliminary investigation

| Representative | Name | Job title | Signature (optional) | Date signed (yyyy-mm-dd) |
|---|---|---|---|---|
| Employer representative | | | | |
| Worker representative | | | | |
| Other | | | | |
| Other | | | | |

## End of report

Completing all the sections above satisfies the requirements for a Preliminary Investigation Report and an Interim Corrective Action Report.

**Note**: If this was a simple investigation and **all needed corrective actions have been completed within 48 hours**, the Preliminary and Full Investigation portions of the report can be completed at the same time. If so, you can check both the Preliminary Investigation Report and the Full Investigation Report boxes in section 5 on page 1.

Copies of **all** reports must also be provided to the joint occupational health and safety committee or worker representative, as applicable.

# Employer Incident Investigation Report (EIIR)

## 15. Determination of causes of incident

Required in Full Report. Analyze the facts and circumstances of the incident to identify underlying factors that led to the incident. Underlying factors include factors that made the unsafe conditions, acts, or procedures in the Preliminary Report possible. Update items from section 9, if needed.

## 16. Full description of the incident

Required in Full Report. Use the brief description from the Preliminary Report and update it, if necessary.

## 17. Additional corrective actions necessary to prevent recurrence of similar incidents

| Additional corrective action (Required in Full Report and Full Corrective Action Report.) | Action assigned to (name, job title, contact information) | Expected completion date (yyyy-mm-dd) | Completed date (yyyy-mm-dd) |
|---|---|---|---|
| a) | | | |
| b) | | | |
| c) | | | |
| d) | | | |
| e) | | | |

Your logo goes here

# Employer Incident Investigation Report (EIIR)

## 18. Persons who carried out or participated in the full investigation

| Representative | Name | Job title | Signature (optional) | Date signed (yyyy-mm-dd) |
|---|---|---|---|---|
| Employer representative | | | | |
| Worker representative | | | | |
| Other | | | | |
| Other | | | | |

## 19. Other relevant workplace parties

| Company name | Contact person and job title | Contact information or email address |
|---|---|---|
| a) | | |
| b) | | |

## End of report

Completing all the sections above satisfies the requirements for a Full Investigation Report and a Full Corrective Action Report.

## Ways to submit an Employer Incident Investigations Report (EIIR)

Employers are required to submit full investigation reports to WorkSafeBC within 30 days of the incident. Do not submit a preliminary report unless you have been directed to by a WorkSafeBC officer. Copies of all reports must also be provided to the joint occupational health and safety committee or worker representative, as applicable.

The easiest and most convenient way to submit your report is through our online reporting tool.

Once you have logged into your online services account, click on the "Health & Safety" tab. You will see a link to the Employer Incident Investigation Report (EIIR) Dashboard where you can view and submit EIIRs.

Alternatively, you can upload this completed form to us or fax it to to 604.276.3247 (toll-free at 1.866.240.1434) or send by mail to: WorkSafeBC, PO Box 5350 Stn Terminal, Vancouver, BC V6B 5L5.

Note that employers can request an extension from a WorkSafeBC officer if the full investigation cannot be completed within 30 days.

(Sample)

## EMERGENCY PROCEDURES

### Medical

All injuries or illnesses must be reported

**Collapse or Serious Injury**
Person closest to injured person:

1. Ensure the accident scene is safe and that there is no further danger to you or the injured person.
2. Do not move the injured person unless there is a high risk of further injury and it is safe for you to do so.
3. Keep calm and do not leave the injured worker unattended.
4. Contact the Occupational First Aid Attendant immediately and report the exact location of the patient and the patient's condition.
5. Be prepared to assist when directed by the First Aid Attendant.

| *Emergency phone numbers* | *Work Location* |
|---|---|
| _____ First Aid Attendant<br>911 Ambulance<br>**If required or requested by the First Aid Attendant call for an ambulance and provide as much information as possible.**<br>• **designate someone to meet the ambulance** | _____<br>_____<br>_____<br>**Phone:**<br>_____<br>**corner of** _____ **and** _____<br>_____ **main access for ambulance** |

**Minor Injury or Illness**

1. Contact the First Aid Attendant immediately by calling 9 – 123 – 4567.
2. Follow the First Aid Attendant's instructions and provide as much information as possible.
3. Ensure that your manager is informed that you have reported to the First Aid Attendant.

### Alarm Bells

Continuous Ringing

1. Evacuate the building as quickly as possible
2. Follow the direction of your area's Fire Warden or their designated alternate and go to your assembly area.
   Assembly area:

   **Main Park, located immediately across from main entrance of building, corner of Main Street and Second Ave.**

## Fire

If you discover a fire

1. Immediately shout "FIRE" and activate the nearest internal fire alarm pull station.
2. For assistance call security at: _____.
3. Dial 911 for Fire Department. State the location and nature of the emergency or have someone else do so and report back to you.
4. If trained and safe to do so, attempt to extinguish or control the fire with appropriate fire-fighting equipment.
5. If not safe to do so, or if you cannot extinguish or control the fire, then try to contain it by closing the doors.
6. Evacuate the area and proceed to your assembly area
    - Do not use the elevators
    - Do not leave the assembly area until instructed by the Evacuation Control Officer.
    - Do not re-enter the building for any reason until the Evacuation Control Officer indicates it is safe to do so.
    - Report to your fire warden to ensure an accurate headcount.

## Security

If you need help, take the following actions (as required):

1. Dial 911 for police and notify your manager.
2. Take only reasonable measures to protect other staff from violence and to protect company property from damage, do not endanger yourself.
3. Report all threats to your Manager and Health & Safety committee – using incident report form.

## Building Emergency

If you discover building damage that is an immediate hazard

Take reasonable measures to protect employees from the hazard or send a co-worker to report the damage (and report back to you) while you stand and watch over the hazard.
Report hazard to building maintenance, including location and description of damage
Building maintenance dial _____.

WORKSAFE BC

# First Aid Record

RESET

This record must be kept by the employer for three (3) years. This form must be kept at the employer's workplace. Do **NOT** submit to WorkSafeBC.

Sequence number

| Name | Occupation |
|---|---|
| Date of injury or illness (yyyy-mm-dd) | Time of injury or illness (hh:mm) ☐ a.m. ☐ p.m. |
| Initial reporting date and time (yyyy-mm-dd) (hh:mm) ☐ a.m. ☐ p.m. | Follow-up report date and time (yyyy-mm-dd) (hh:mm) ☐ a.m. ☐ p.m. |
| Initial report sequence number | Subsequent report sequence number(s) |

**Description of how the injury, exposure, or illness occurred** (What happened?)

**Description of the nature of the injury, exposure, or illness** (What you see — signs and symptoms)

**Description of the treatment given** (What did you do?)

**Name of witnesses**

| 1. | 2. |
|---|---|

**Arrangement made relating to the worker** (return to work/medical aid/ambulance/follow-up)

| Provided worker handout ☐ Yes ☐ No<br>Alternate duty options were discussed ☐ Yes ☐ No | A form to assist in return to work and follow-up was sent with the worker to medical aid ☐ Yes ☐ No |
|---|---|
| First aid attendant's name (please print) | First aid attendant's signature |
| Patient's signature | |

QUOLUS

## SAFE WORK PROCEDURE

Safe Work Procedure Job Title or Task: _____

Department / Area: _____ Approved by: _____

Date Created: _____ Review / Revised Date: _____

**Potential Hazards: Fill in those that apply**

| H | M | L | Risk For Injury: |
|---|---|---|---|
| ☐ | ☐ | ☐ | Awkward/sustained postures |
| ☐ | ☐ | ☐ | Forceful exertion |
| ☐ | ☐ | ☐ | Repetitive motions |
| ☐ | ☐ | ☐ | Vibrations |
| ☐ | ☐ | ☐ | Skin compression |
| ☐ | ☐ | ☐ | Sharp points/edges |
| ☐ | ☐ | ☐ | Pinch points |
| ☐ | ☐ | ☐ | Material falling |
| ☐ | ☐ | ☐ | Surface causing falls |
| ☐ | ☐ | ☐ | Moving machinery |
| ☐ | ☐ | ☐ | Chemicals |
| ☐ | ☐ | ☐ | Biological pathogens |
| ☐ | ☐ | ☐ | Electrical |
| ☐ | ☐ | ☐ | Extreme heat/cold |
| ☐ | ☐ | ☐ | Noise |
| ☐ | ☐ | ☐ | Combustibles/flammables |
| ☐ | ☐ | ☐ | Other |

**PPE / Devices Required / Other Safety Considerations**

_____
_____
_____
_____
_____
_____

**Training / Reference Information**

_____
_____
_____
_____
_____
_____
_____

**Supervisors must ensure that workers are trained and follow this safe work procedure:**

_____
_____
_____
_____
_____

**Steps to perform this task safely:**

_____
_____
_____
_____
_____
_____
_____

## Quolus Construction Services Ltd.
## Workplace bullying and harassment reporting procedures

The following are sample procedures for workers to report to their employer incidents or complaints of workplace bullying and harassment. They can be adapted to meet the needs of individual workplaces. Additional resources and an explanation of legal duties can be found at www.worksafeb c.com/ bullying /.

### 1. How to report

Workers at Quolus Construction Services Ltd. can report incidents or complaints of workplace bullying and harassment verbally or in writing. When submitting a written complaint, please use the workplace bullying and harassment complaint form. When reporting verbally, the reporting contact, along with the complainant, will fill out the complaint form.

### 2. When to report

Incidents or complaints should be reported as soon as possible after experiencing or witnessing an incident. This allows the incident to be investigated and addressed promptly.

### 3. Reporting contact

Report any incidents or complaints to Devon Smith, Safety Manager, 778-996-9976; or Brian Butler, Training & Safety Coordinator, 778-898-6364; or email us @ safety@quolus.com

### 4. Alternate reporting contact

If the employer, the complainant's supervisor, or the reporting contact named in Step 3 is the person engaging in bullying and harassing behavior, contact Kathy Steer, Administrator; 604 943 1434 Ext 3.

### 5. What to include in a report

Provide as much information as possible in the report, such as the names of people involved, witnesses, where the events occurred, when they occurred, and what behavior and/ or words led to the complaint. Attach any supporting documents, such as emails, hand written note s, or photographs. Physical evidence, such as vandalized personal belongings, can also be submitted.

### 6. Annual review

These reporting procedures will be reviewed on an annual basis. All workers will be provided with a copy.

| Date created | Annual Review date |
|---|---|

# Quolus Construction Services Ltd.
# Workplace bullying and harassment complaint form

This is an example of a complaint form for workers to report incidents or complaints of workplace bullying and harassment to the employer. It can be adapted to meet the needs of individual workplaces. Employers might use other reporting procedures, and are not required to use this form. Additional resources are available at www.worksafebc.com/bullying/.

**Name and contact information of complainant**

**Name of alleged bully or bullies**

## Personal statement

Please describe in as much detail as possible the bullying and harassment incident(s), including:

- the names of the parties involved
- any witnesses to the incident(s)
- the location, date, and time of the incident(s)
- details about the incident(s) (behavior and/or words used)
- any additional details that would help with an investigation

Attach any supporting documents, such as emails, handwritten notes, or photographs. Physical evidence, such as vandalized personal belongings, can also be submitted.

Signature

Date

## FIELD LEVEL HAZARD ASSESSMENT (PAGE 1 OF 2)

Prior to each work task, **STOP AND THINK**, then check off the hazards that apply to this job. For each hazard identified, controls must be discussed and recorded.

| ***Work Task:*** | ***Site Name:*** |
|---|---|
| ***Task Location:*** | ***Date:*** |

***Task:***

- Is there a clear pre-job plan?
- The task is on the Hazardous job list?
- Is there a SWP developed?
- Is equipment required?
- Are adjacent workers affected by the work-task?
- Adjacent workers pose a risk to you?

***General Conditions:***

- Poor task lighting?
- Is work area clear and clean?
- Weather conditions?
- Tripping hazards/slippery conditions
  i.e. walkways, platforms, stairs, excavations etc.
- Working in wet conditions or locations?

***Risk of Injury:***

- Overhead hazards, power lines, equipment overhead, other workers above.
- Fall hazards, lack of guardrails, leaving edge work, uncovered openings, working from scaffolds or ladders?
- Tight or confined work area?
- Underground utility locations?
- Working near hazardous equipment?
- Working with hazardous materials (WHMIS)
- Working in an excavation or trench?
- Working over water?
- Is someone in the bight?
- Working above your head.
- Near or adjacent to vehicle traffic.

***Personal Limitations/Hazards:***

- Do workers have adequate training to perform this task?
- 1st time doing this work task?
- Physical restrictions (i.e. back or fatigue etc.).

***Access/Egress Hazards:***

- Safe access to the work area?
- Safe access to required materials?
- How are materials transitioned into work area?

## FIELD LEVEL HAZARD ASSESSMENT (PAGE 2)

### Pre-Job Planning Session

Listed identified hazards below, then discuss and identify the controls to eliminate/control the hazards.

| *Hazards* | *S* | *L* | *R* | *Controls* List the controls for each hazard: elimination, engineering, administrative, PPE |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| *Severity* | *Likelihood* | *Risk* |
|---|---|---|
| 1. It could make you uncomfortable | 1. Unlikely | Calculate the risk of the hazard to prioritize preventative actions |
| 2. It could send you to the hospital | 2. Might Happen | Severity x Likelihood = Risk |
| 3. Fatal or permanent disability | 3. Highly Likely | |

Has plan been discussed with site CSO? Yes_____ No_____ If no explain: _____

Are there remaining hazards? Yes_____ No_____ If no explain: _____

Please Print names of crew members present: Supervisor:

_____ _____

_____ _____

_____ _____

_____ _____

**These forms are to be kept on file at the side office for employer and supervisor review.**

Quolus Management: Reviewed by: _____

Date: _____

19-7228 Progress Way
Delta, BC V4G 1H2
Phone: 604 943 1434
Fax: 604 357 1367
www.quolus.com

QUOLUS
CONSTRUCTION SERVICES LTD.
QUALITY | QUALIFIED | QUANTITIES

# TOOLBOX TALK

Date: _____ Project Name: _____
Contractor Name: _____ Site Super: _____
Contractor Supervisor: _____ Time: _____

Items Discussed:

1. _____
2. _____
3. _____
4. _____

Action to be taken:

1. _____
2. _____
3. _____
4. _____

Other Business:

1. _____
2. _____
3. _____
4. _____

Workers in attendance: please print names

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Toolbox talk delivered by: _____ Signature: _____

QUOLUS CONSTRUCTION SERVICES LTD

Date: _____

## INSPECTION FORM – Anchorage Connector

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

| HARDWARE | "PASS OR FAIL" |
|---|---|
| Signs of Deformity | |
| Body of D-Ring | |
| Corrosion | |
| Pitting | |
| Nicks | |
| Bars, Shafts, Housing | |
| Signs of Damage | |
| Corrosion or Pitting | |
| Impact Indicators | |

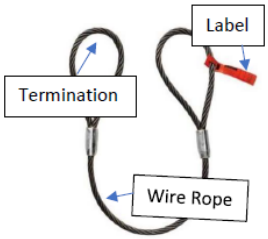
| WEBBING | "PASS OR FAIL" |
|---|---|
| Termination to Connector | |
| Cuts | |
| Soiled | |
| Burns | |
| Melting | |
| Deterioration | |
| Termination (stitch or splices or swage) | |

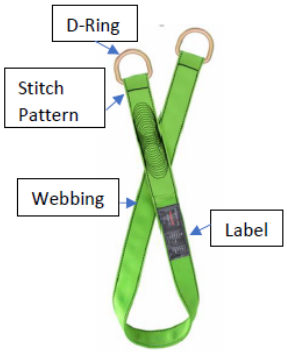
| STITCHING/CABLE | "PASS OR FAIL" |
|---|---|
| Signs of Damage | |
| Kinks or Caging | |
| Broken Strands or Fibers | |

| LABELS/TAGS | "PASS OR FAIL" |
|---|---|
| Legible Label | |
| Appropriate ANSI/CSA/OSHA markings | |
| Date of First Use | |

NOTES:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____




**DEFINITION OF TERMS:**

*Pitting* – A small indentation in a surface

*Kinks* – A tight curl, twist, or bend in a length of material

*Caging* – Intertwined in a confused mass

*Nicks* – A shallow notch, cut, or indentation on an edge or surface

*Deterioration* – Eaten or worn away by chemicals

QUOLUS CONSTRUCTION SERVICES LTD

Date: _____

## INSPECTION FORM – Full Body Harness

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

| HARDWARE | "PASS OR FAIL" |
|---|---|
| Back D-Ring | |
| Waist D-Ring (if applicable) | |
| Sternum D-Ring (if applicable) | |
| Shoulder Adjustment | |
| Chest & Back Buckle Hardware | |
| Chest Carabiner | |
| Leg Straps | |

| WEBBING | "PASS OR FAIL" |
|---|---|
| Shoulder Straps | |
| Chest & Back Straps | |
| Waist Straps | |
| Leg Straps | |
| Cuts | |
| Burns | |
| Holes | |
| Deterioration | |

| STITCHING | "PASS OR FAIL" |
|---|---|
| Shoulder Straps | |
| Chest & Back Straps | |
| Waist Straps | |
| Leg Straps | |
| Appropriate ANS/CSA/OSHA markings | |
| Legible Label | |
| Date of First Use | |

NOTES:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____


**DEFINITION OF TERMS:**

*Deterioration* – Eaten or worn away by chemicals

QUOLUS CONSTRUCTION SERVICES LTD

Date: _____

## INSPECTION FORM – Lanyard

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

TYPE OF LANYARD:

CJ - Faltweb with pouch EA
D Y-lanyard

CJ - Tubular web-elastic pouch EA
D Y-lanyard D Internal Shock Bungee
CJ Other

CJ – Tubular web with POY EA
D Y-lanyard D Internal Shock Non-Bungee
CJ Other

CJ – Cable web with pouch E
D Y-lanyard

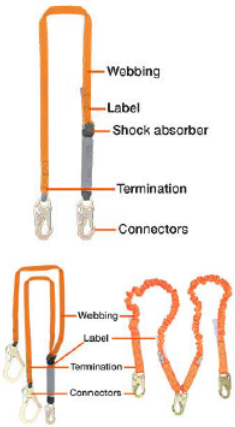
| HARDWARE | "PASS OR FAIL" |
|---|---|
| Function of Connector | |
| Body of Hook | |
| Corrosion | |
| Pitting | |
| Nicks | |

| LIFELINE (rope or wire rope) | "PASS OR FAIL" |
|---|---|
| Cuts | |
| Fraying | |
| Excessive Wear | |
| Impact Indicator | |
| Kinks | |
| Caging | |
| Broken Strands or Fibers | |
| Melting | |

| SHOCK PACK (if supplied) | "PASS OR FAIL" |
|---|---|
| Integrity of Cover | |
| Signs of Deployment | |
| Signs or Damage | |

| LABELS/TAGS | "PASS OR FAIL" |
|---|---|
| Legible Label | |
| Appropriate ANSI/CSA/OSHA | |
| Date of First Use | |

NOTES:




**DEFINITION OF TERMS:**

*Pitting* – A small indentation in a surface

*Deterioration* – Eaten or worn away by chemicals

*Nicks* – A small notch, cut, or indentation on an edge or surface

QUOLUS CONSTRUCTION SERVICES LTD.

Date: _____

## INSPECTION FORM – Self – Retracting Lifeline

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

| HOUSING | "PASS OR FAIL" |
|---|---|
| Anchorage Point | |
| Nuts/Bolts/Rivets/Screws | |
| Swivels | |
| Evidence of Damage | |

| CONNECTORS & D-RING(S) | "PASS OR FAIL" |
|---|---|
| Function of Connector Gate & Lock | |
| Impact Indicator | |
| Body of Hook or Rivets | |
| Corrosion | |
| Pitting | |
| Nicks | |

| LIFELINE (webbing, cable, synthetic) | "PASS OR FAIL" |
|---|---|
| Terminations (stitch or splice or swage) | |
| Cuts | |
| Fraying | |
| Excessive Wear | |
| Cable Separation | |
| Entire Length Retracts Smoothly | |
| Reserve Lifeline Deployed | |

| SHOCK PACK | "PASS OR FAIL" |
|---|---|
| Integrity of Cover | |
| Signs of Damage | |
| Impact Indicator | |
| Lanyard or Webbing Length | |

NOTES:


| LABELS & MARKINGS | "PASS OR FAIL" |
|---|---|
| Legible Label | |
| Appropriate ANSI/CSA/OSHA Markings | |
| Date of First Use | |
| Last Manufacturer Recertification | |

**DEFINITION OF TERMS:** *Pitting* – A small indentation in a surface
*Nicks* – A small notch, cut, or indentation on an edge or surface

Date: _____

## INSPECTION FORM – Snap Hook

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

| HARDWARE | "PASS OR FAIL" |
|---|---|
| Pitting | |
| Excessive Wear | |
| Deformation | |
| Nicks | |
| Corrosion | |
| Holes | |
| Locking Function | |
| Smooth Operation | |
| Clean Free of Dirt or Grit | |
| Lateral Movement | |

| LABELS/TAGS | "PASS OR FAIL" |
|---|---|
| Legible Label | |
| Appropriate ANSI/CSA/OSHA Markings | |

NOTES:


**DEFINITION OF TERMS:**

*Pitting* – A small indentation in a surface

*Deformation* – An alteration of form for the worse

*Nicks* – A small notch, cut, or indentation on an edge or surface

*Lateral Movement* – Situated at or extending to the side (no more than 1.25")

QUOLUS CONSTRUCTION SERVICES LTD

Date: _____

## INSPECTION FORM – Vertical Lifeline

User: _____ Model # _____ Serial # _____

Date of Manufacture: _____ Name of Competent Inspector: _____

| HARDWARE | "PASS OR FAIL" |
|---|---|
| Function of Connector Locking Gate | |
| Body of Hook | |
| Corrosion | |
| Pitting | |
| Nicks | |

| TERMINATION | "PASS OR FAIL" |
|---|---|
| Broken, Missing or Loose Stitching | |
| Termination (stitch or splice or swage) | |

| LIFELINE (rope or wire rope) | "PASS OR FAIL" |
|---|---|
| Cuts | |
| Fraying | |
| Excessive Wear | |
| Impact Indicator | |
| Kinks | |
| Caging | |
| Broken Strands or Fibers | |
| Melting | |

| SHOCK PACK (if supplied) | "PASS OR FAIL" |
|---|---|
| Integrity of Cover | |
| Signs of Deployment | |
| Signs or Damage | |

| LABELS/TAGS | "PASS OR FAIL" |
|---|---|
| Legible Label | |
| Appropriate ANSI/CSA/OSHA | |
| Date of First Use | |

NOTES:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____


**DEFINITION OF TERMS:**

*Pitting* – A small indentation in a surface

*Caging* – Intertwined in a confused mass

*Nicks* – A small notch, cut, or indentation on an edge or surface

**SUPPLEMENTAL COVID-19 SITE ORIENTATION:**

**Name:** _____ **Job Site:** _____

**Date:** _____

Please read and acknowledge the following requirements related to recent COVID-19 pandemic and the steps that are being taken to prevent the spread at his workplace and elsewhere in the community.

**HOW COVID-19 CAN BE SPREAD AND TRANSMITTED:**

Coronavirus, like COVID-19, can be transmitted via liquid droplets when a person coughs or sneezes. The virus can be transmitted via these droplets through the eyes, nose or throat if you are in close contact. The virus is not something that comes in through the skin.

Coronavirus can be spread by touch if a person has used their hands to cover their mouth or nose when they cough or sneeze; or if they cough, sneeze or spit on a surface. Therefore, the BC Centre for Disease Control recommends you cough into your arm and wash your hands regularly.

**I AM AWARE OF AND AGREE TO THE FOLLOWING:**

Initial:

_____ I will check in with my Supervisor upon arriving Every day before commencing work.
_____ I am aware of the location of the handwashing stations(s) on site.
_____ I will wash my hands thoroughly when entering or existing the site, before/after meal breaks and on a regular basis throughout the day.
_____ I understand that I should avoid touching my face, eyes, nose or mouth.
_____ I understand that I should not share food or drinks with others.
_____ I will avoid sharing or using other people's tools
_____ I will maintain a minimum of 2 meters (approximately 6.5') between myself and others unless effective task-specific measures are in place.
_____ If I experience COVID-19 symptoms (such as a fever, cough or difficulty breathing) I will immediately leave, the site, notify my supervisor and the site superintendent by phone or email and follow Health Canada Instructions.
_____ I will follow the most recent guidelines as provided by Health Link BC at www.healthlinkbc.ca/ and the provincial health officers' orders at www.gov.bc.ca/covid19 .

WORKERS ARE NOT PERMITTED AT PROJECTS AND WILL BE SENT HOME:

- If they are presenting symptoms of cold or flu, regardless of whether the illness has been confirmed as COVID-19.
- Until they have completed a 14-day self-isolation period after traveling outside of Canada.
- Until they have completed a 14-day self-isolation period if they have had contact with a person who has tested positive for COVID-19.

I understand and will comply with these measures. **SIGNATURE:**_____

**BEFORE RETURNING TO WORK AFTER AN ILLNESS OR QUARANTINE PERIOD, ALL WORKERS MUST CONTACT QUOLUS AND THE JOBSITE.**

# LADDER INSPECTION CHECKLIST
# TO BE COMPLETED MONTHLY

| | |
|---|---|
| Ladder No / I.D.: | Location: |
| Type of Ladder: | Material: □ Wood □Metal □Fiberglass |
| Date of Inspection: | Inspected by: |

| Item # | Description | Yes | No |
|---|---|---|---|
| 1 | Are any parts broken, dents, bends, sharp edges, corrosion, rust, cracked, splintered or excessive wear? | | |
| 2 | Are there any defects in the side rails, rungs or other parts? | | |
| 3 | Are there any missing or broken rungs? | | |
| 4 | Does the ladder have any mud, grease, oil, wet paint, snow or slippery substances? | | |
| 5 | Are there any makeshift repairs on the ladder? | | |
| 6 | Are there any worn, damaged or missing feet? | | |
| 7 | Are there any worn, damaged or unworkable extension ladder locks, pulleys or other fittings? | | |
| 8 | Is the rope on extension ladders worn, broken or frayed? | | |
| 9 | Has the rope been replaced with an inferior to the ladder manufacturer's original rope? | | |
| 10 | Are the spreader arms on step ladders bent, worn, broken or otherwise rendered partly or totally ineffective? | | |
| 11 | Is the ladder twisted, warped or bowed? | | |
| 12 | Does the ladder have a CSA and load rating classification label that is not legible? | | |

**IF THE ANSWER TO ANY OF THE ABOVE IS 'YES', THE LADDER MUST BE TAGGED AND IMMEDIATELY TAKEN OUT OF SERVICE.**

**LADDERS ARE INSPECTED BY THE WORKER PROIR TO EACH USE.**

**SUPERVISOR SIGNATURE:** _____

QUOLUS CONSTRUCTION SERVICES LTD

## PERSONAL PROTECTIVE EQUIPMENT CHECKLIST

Name: _____ Date: _____

Title: _____

| ITEM | MANUFACTURER | YEAR | OWNED / BORROWED | MAKE | MODEL | SERIAL # | DATE OF ISSUE | PASS OR FAIL |
|---|---|---|---|---|---|---|---|---|
| Coat/Vest | | | | | | | | |
| Pants | | | | | | | | |
| Helmet | | | | | | | | |
| Gloves | | | | | | | | |
| Footwear | | | | | | | | |
| Eyewear | | | | | | | | |

Comments:_____

_____

_____

_____

Inspected By:_____ Signature:_____ Date:_____

Version 05/18

QUOLUS

## Task monitoring for new and young workers

JOB_____

LOCATION_____

EQUIPMENT_____

PPE_____

HAZARD LEVEL: Low_____ / Medium_____ / High _____

**Brief description of instructions provided:**

_____
_____
_____
_____
_____
_____

**NOTES:**

_____
_____
_____
_____
_____
_____

Does worker understand the job or task requirements? Yes_____ / No_____

Does worker display adequate knowledge of the job or task? Yes_____ No_____

Has worker been provided with the safe work practice of safe work procedure for this particular job or task? Yes_____ No_____

Does the worker understand the safe work practices or procedures? Yes_____ No_____

Supervisor Signature_____

Worker Signature_____