

## Inspection Protocol for WorkSafeBC Safety Officers

## Personal Protective Equipment (PPE)

Officers must wear all PPE, including:

- Safety headgear
- Hearing protection
- Safety footwear
- Gloves, as needed
- Protective eyewear or screen
- Hi-visibility apparel (vest), as needed
- Weather-related gear when appropriate (for example, rain, snow, or cold)

## Accessing the Worksite

- Review all posted signage, instructions for check-in, and site hazard signs before entering.
- Park out of the way and identify yourself to the site superintendent.
- Receive site orientation or obtain a guide for the visit.
- Follow all the employer's safety rules, where these rules surpass the WorkSafeBC internal safety program.

## Inspection

- Plan the inspection (firm file check and EFS). Keep accurate and complete field notes (blue officer notebook), including:
  - Location of worksite and number of workers on-site
  - Names of people who accompany you
  - Name of supervisors and workers (and union, if applicable)
  - Equipment types and serial and model numbers
- If necessary record statements from supervisor and workers.
- Take photographs and measurements, as required.
- Collect information that would serve as a memory tool.

## Post-Inspection

- Complete an inspection report.
- If required and appropriate, visit the firm's office to discuss issues requiring further attention.
- Follow provincial and regional administration processes.
- Carry out a normal inspection follow-up.

Note: As per operating procedure, routine inspections must not be pre-announced.

## Glossary

**Competent:** Adequately qualified, suitably trained, and with sufficient experience to perform work safely with or without minimal supervision.

**Form 30M33:** Commonly referred to as an assurance in writing. A form acceptable to WorkSafeBC and signed by the utility (owner of the power line), which gives advice on relocating, disconnecting, or guarding of overhead power lines.

**Guard:** 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.

**Guardrail:** Guard consisting of a top rail 102–112 cm (40–44 in.) above the work surface and an intermediate rail located 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.

**Multiple-Employer Workplace:** A workplace where workers of two or more employers are working at the same time.

**NOP/NOPA:** Notice of Project for Construction/Notice of Project Asbestos.

**Prime Contractor:** In relation to a multiple-employer workplace, the directing contractor, employer, or other person who enters into a written agreement with the owner of that workplace to be the prime contractor. If there is no written agreement, the owner of the workplace is considered the prime contractor.

**Qualified Safety Coordinator:** Person who, by reason of education, training, and experience, is knowledgeable of the work, associated hazards, and risk control for those hazards. A qualified coordinator is appointed by the owner or prime contractor to ensure the coordination of occupational health and safety activities on multi-employer worksites.

**Qualified Person:** Person designated by the employer as capable of fulfilling the required function, by reason of education, training, experience or a combination thereof.

**Site Safety Plan:** Site-specific plan that identifies all known hazards and controls. Such a plan also includes site drawings or a map that shows the project layout, first aid locations, fire extinguisher locations, emergency signaller (air horn) locations, emergency transportation provisions, and evacuation plan and muster locations.

This Infoplip is primarily for WorkSafeBC officers to use as a guide during inspections.

Employers, contractors, supervisors, and workers may also find the information useful for assisting them in carrying out their occupational health and safety roles and responsibilities.

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This Infoplip does not replace the Occupational Health and Safety Regulation or the *Workers Compensation Act*.

This Infoplip is not intended to explain the many health and safety requirements that apply to this industry.

Employers and workers should always refer to the Act, the Regulation, and applicable guidelines for specific requirements that apply to their work operations and activities.

Check **WorkSafeBC.com** for more information.

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# CONSTRUCTION COMPLIANCE



**NOTE:** The numbering of the *Workers Compensation Act* has changed, effective April 6, 2020. See [worksafebc.com/wca2019](http://worksafebc.com/wca2019).

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# RIGHTS AND RESPONSIBILITIES

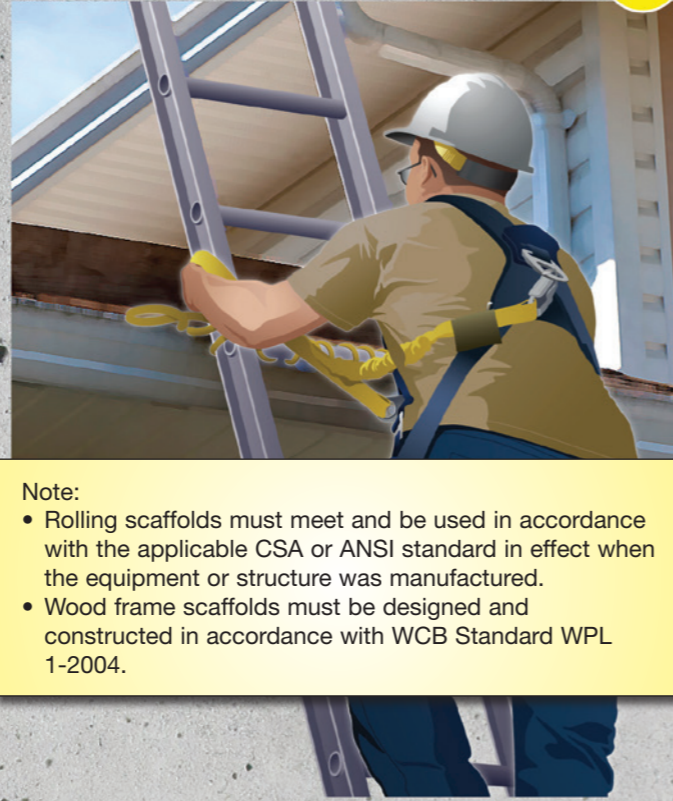
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# PRACTICES

**B**



Note:

- Rolling scaffolds must meet and be used in accordance with the applicable CSA or ANSI standard in effect when the equipment or structure was manufactured.
- Wood frame scaffolds must be designed and constructed in accordance with WCB Standard WPL 1-2004.

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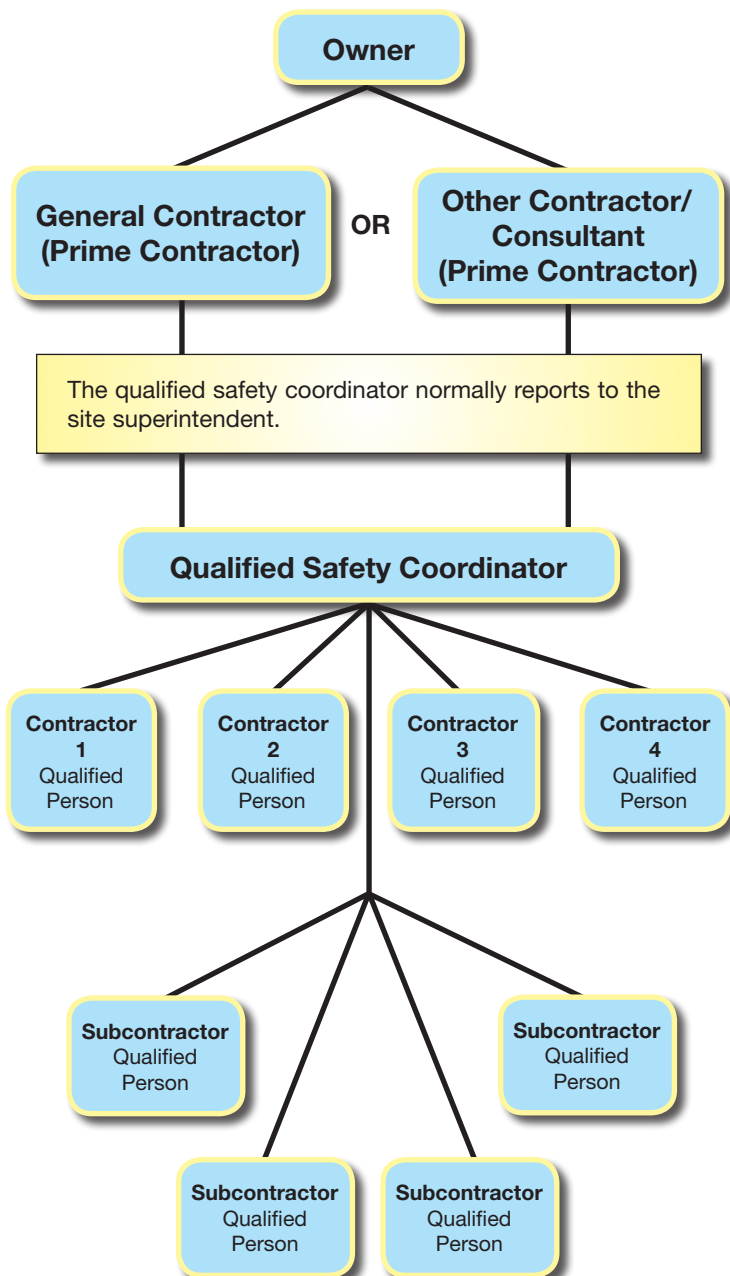
## Common Questions

Questions normally considered by WorkSafeBC officers at construction worksites:

Question	Refer to
Who's in charge (for example, the owner or prime contractor)?	<a href="#">Rights and Responsibilities (1-7)</a>
Is there an NOP or NOPA?	<a href="#">Forms and Engineering Documentation (8)</a>
Is appropriate first aid in place?	<a href="#">First Aid (9)</a>
What is the company doing at the site? What is the scope of work? How many workers are on-site?	N/A
Is there a qualified safety coordinator?	<a href="#">Rights and Responsibilities (1-4)</a>
Is there a health and safety program?	<a href="#">Programs (10)</a>
Have workers received orientation?	<a href="#">Orientation (10 - 11)</a>
Is there engineering documentation?	<a href="#">Forms and Engineering Documentation (8)</a>
Are any necessary forms available (for example, Form 30M33)?	<a href="#">Forms and Engineering Documentation (8)</a>
Are requirements followed for work platforms?	<a href="#">Work Platforms (12)</a>
Are requirements followed for working at heights?	<a href="#">Fall Protection (13)</a>
Are requirements followed for rigging?	<a href="#">Rigging (15)</a>
Are requirements followed for power tools?	<a href="#">Power Tools (16)</a>
Are electrical requirements followed?	<a href="#">Electrical (17 - 18)</a>
Are requirements followed for demolition work?	<a href="#">Demolition Work (19 - 20)</a>
Is traffic control in place, where necessary?	<a href="#">Traffic Control (21)</a>
Are requirements followed for mobile equipment?	<a href="#">Mobile Equipment (21)</a>
Are requirements followed for excavations?	<a href="#">Excavations (22 - 23)</a>
Are requirements followed for hazardous materials?	<a href="#">Exposure to Hazardous Materials (24)</a>
Is there anything else on-site that I should see?	N/A

# 1 Overview of Responsibilities

In a multi-employer workplace, there must be a written agreement between the owner and the prime contractor for the purposes of health and safety. In the absence of such an agreement, the owner must perform the duties of the prime contractor.



The contractors and subcontractors must provide the name of the qualified person to the prime contractor.

# 1 Overview of Responsibilities

## 2 Owner – Prime Contractor

### Owner

Industrial, commercial, and residential construction projects may have different types of ownership.

Industrial owners are normally on-site and retain the duties of safety coordination.

Commercial owners are normally distanced from the construction project and delegate the duties of safety coordination to a prime contractor.

Residential owners are normally distanced from the construction project and the assignment of the responsibilities of prime contractor is often confusing.

### Agreement

The owner can, through a contractual agreement, delegate responsibility to coordinate safety and implement a system that will ensure compliance with safety regulations.

### Prime Contractor

According to section 118 of the *Workers Compensation Act* (the Act), a written agreement is required between the owner of the project and the prime contractor for the purposes of health and safety. In the absence of such an agreement, the owner is responsible for performing the duties of the prime contractor. The prime (or general) contractor has a site superintendent responsible for all safety activities.

Overall, the prime contractor must ensure that a safety system is in place. Examples of this include the following:

- Communicate safety expectations to all contractors, subcontractors, and workers on the worksite. This is usually done through a formal orientation or indoctrination program.
- Communicate the prime contractor's authority in the workplace and relationship with the owner and subcontractors on safety issues.
- Coordinate and sequence work as it relates to safety.
- Create and utilize visitor and site orientation procedures and processes.

The prime contractor must take measures to ensure safety is being coordinated. Examples of this include the following:

- Conduct a written assessment of high-risk situations and work timing.
- Determine the number of persons expected and currently on-site.
- Provide and coordinate suitable access and safe delivery of equipment and materials.
- Ensure that an approved traffic control system is in place.
- Ensure that an emergency response plan is communicated to everyone on-site.
- Establish and maintain first aid services as required under section 3.16 of the Regulation.
- Ensure that hazard identification and risk control occur.
- Ensure that a qualified safety coordinator and representatives (safety coordinator and supervisor or foreman) are identified for each contractor and subcontractor.
- Identify high-hazard processes.



## 3 Prime Contractor (cont'd)

### Notice of Project

The general contractor must submit a notice of project (NOP). A copy of the NOP must be posted at the worksite. The four key components are the names of:

- The owner
- The prime contractor
- The person in charge of the project
- The person responsible for health and safety on the project

### Qualified Safety Coordinator

The prime contractor must appoint a person who will act as qualified safety coordinator and carry out the applicable duties. This person is responsible for coordinating health and safety for the entire workplace. The coordinator would be present on-site during most, if not all, hours of work. An employee of the prime contractor who occasionally visits the site or a health and safety consultant who is not on the site full-time is not an acceptable appointee.

The prime contractor must be able to demonstrate that the person appointed as the qualified safety coordinator has received instruction regarding his or her duties — at the very least those duties assigned by the Regulation. Qualified safety coordinators have two specific duties:

- Inform contractors, subcontractors, and workers of known on-site hazards.
- Ensure all hazards are addressed throughout the duration of the work activities.

### Supervisor or Foreman

Every employer on a multi-employer worksite must give the prime contractor the name of the person that the employer has designated to supervise that employer's workers. The responsibility to provide the name to the prime contractor rests primarily with the individual contractor.

### Qualified Person

Every employer on a multi-employer worksite must give the prime contractor the name of the person the employer has designated to be responsible for that employer's site health and safety activities. This person does not necessarily have to be on the worksite during all hours of work conducted by that contractor.

### Site Safety Meetings

The prime contractor will typically hold regular (weekly) trades meetings to discuss issues related to construction activities at the worksite, including health and safety issues. All employers and a worker representative are expected to attend this meeting. Documentation of this meeting can be formal minutes or notes in the superintendent's journal.

### Suitable Site Access

The prime contractor must ensure there is a system in place to allow suitable site access for the safe delivery of equipment and material to the areas of the worksite where they will be used.

## 3 Prime Contractor (cont'd)

## 4 Employer

Owners, prime contractors, contractors, and subcontractors are recognized as employers. Employers are required to implement an **occupational health and safety program (10)** specific to each workplace.

### Qualified Person

Employers are responsible for their own workers, work areas, and how their work activities affect others. They must designate a qualified person, responsible for safety, to liaise with the prime contractor.

### Organization

Site safety organization and operation requires more than just a posted site plan. Safety systems should include information on planning, training, supervision, and professionalism/due care.

### Planning

The owner or prime contractor carries out the initial site safety planning. These plans must promote compliance with the Act and the Regulation. Day-to-day safety planning must be reviewed diligently. Safety planning must take into account the experience, knowledge, abilities, and skills of workers.

### Training

Employers must ensure that only trained, qualified, authorized workers operate equipment, and must confirm capabilities and limitations.

### Supervision

Employers must plan, implement, and maintain effective supervision. This includes daily planning by everyone and effective communication to identify and deal with hazards and issues. Tasks must be monitored to ensure they are performed safely. Plans and procedures must be reviewed and revised to ensure everyone's safety.

### Provision of Names

Employers must provide the prime contractor with the names of the supervisor or foreman and the qualified person responsible for site health and safety.

### Site Meetings

Employers must attend scheduled site meetings with the prime contractor for safety coordination and for compliance with the Act and the Regulation.

### Hazard Notification

Employers must notify prime contractors in advance of anything likely to create a hazard for other employers. All prime contractor safety rules and procedures must be followed in a multiple-employer workplace. Employers have additional responsibilities for their own workers, including:

- Requirements for personal protective equipment (PPE)
- Procedures for working alone
- Specific procedures for activities such as working at heights or in confined spaces
- Exposure control plans for handling hazardous materials
- Secondary or peripheral controls such as traffic management or other required, easily identifiable control zones or areas
- Rules dealing with worker conduct
- A system for reporting hazards and incidents, including near misses

## 5 Employer (cont'd) – Supervisor

Employers must provide information such as known hazards to workers regularly. Crew safety meetings are good opportunities for education, consultation, and information distribution as an ongoing process.

Employers must know the requirements for incident investigations and carry them out when necessary. Employers will likely receive help from prime contractors for serious investigations. Reports are also required for near misses, which are considered incidents.

A system must be in place for conducting formal inspections. Regular inspections by safety committees, supervisors, and workers can eliminate many hazards. A general awareness of potential hazards such as overhead dangers, moving equipment, or knowledge of restricted access areas can be conveyed through discussions and crew meetings.

### Supervisor

Effective supervision is key to health and safety on construction sites. On smaller sites, the supervisor may be one of the more experienced workers or even the owner of the company and may have other job duties. This is not ideal but is workable as long as supervisory duties are carried out effectively. Larger sites will likely have dedicated supervisors.

Supervisors should be given adequate time to plan properly, before work starts. When circumstances change, the supervisor is a key person in formulating and safely carrying out new plans.

Supervisors should also be given the time and opportunity to discuss planning issues directly with workers and other knowledgeable persons.

### Responsibilities

- Know the requirements of the Act and the Regulation for the work being supervised.
- Know the limitations of on-site machinery and equipment.
- Participate in day-to-day planning and safety meetings.
- Have a system to carry out and document supervisory duties consistently and diligently.
- Review plans to ensure that equipment and machinery are compatible with the site plan or that clearance to use other available equipment has been given by the correct authority.
- Ensure that equipment can be positioned and operated safely (for example, proximity to other equipment or workers).
- Conduct inspections on an ongoing basis while visiting various areas of the workplace and while working. Supervisors are responsible for formal and informal inspections, as well as ensuring that others are conducting required inspections.
- Participate in incident investigations. Generally, supervisors are experienced and have a unique perspective on work processes and work areas. Supervisors are usually responsible for implementing recommendations that come from investigations.

## 6 Worker

Workers play a significant role in planning, particularly in situations where field decisions are made that affect them. Workers should always consider personal standards and proven work practices in their duties. This will help ensure everyone's safety.

Workers must be aware of other activities and people in the area when planning daily work. Workers must operate equipment safely. It is important to ensure the equipment is appropriate for the job and the operator is competent in its use. Operators and workers must wear the proper PPE and high-visibility apparel. Operators must employ, not circumvent, safety devices furnished by the equipment manufacturer. Before moving into the operational area of mobile equipment, workers should make eye contact with the operator of the equipment.

Workers must be qualified to perform tasks through a combination of training, instruction, and controlled practice. Industry experience should also be taken into consideration. For most construction tasks, workers must be qualified and authorized. For some tasks, workers must also be licensed or certified.

### Certification and Qualification

Certification and/or qualification is required for first aid attendants, forklift operators, traffic control persons, blasters (blasting operations), and operators of all mobile cranes, boom trucks, and tower cranes with a rated capacity equal to or greater than five tons or with a boom length of 7.5 m (25 ft.) or more. Equipment operators must be qualified, authorized, capable, and competent in the operation of equipment.

- Workers should be aware of any activities that require the design, inspection, and approval of a professional engineer.
- When required, workers must have task-specific training — for example, fall protection and confined space entry training, Workplace Hazardous Materials Information System (WHMIS) training, fall protection rescue, and injured worker evacuation training.
- Workers must have general training and instruction in emergency preparedness and avoidance of common hazards.
- Workers who require certification or licensing must have proof of these credentials available for review by supervisors or a WorkSafeBC officer.
- Workers who operate equipment or are involved in other tasks that require qualification or experience should be identified to and known by supervisors and other workers.
- Ideally, there should be a professional development plan for workers.

The measure of a construction professional is the demonstration of duty and care resulting in quality workmanship. This includes the establishment, implementation, and maintenance of safe work practices and procedures. Exercising due diligence with respect to health and safety is the only acceptable way of operating.



## 7 Worker (cont'd) – Supplier

### People and Equipment

Workers should:

- Be encouraged to contribute to and participate in site safety activities (for example, crew meetings and emergency drills)
- Know their capabilities and operate within them
- Operate equipment according to the manufacturer's standards and instructions

### Responsibilities

- Take reasonable care to protect your own health and safety and the health and safety of others who may be affected by your acts or omissions.
- Work in accordance with established safe work procedures and do not engage in behaviour that endangers yourself or others.
- Use appropriate PPE.
- Ensure that your ability to work is not compromised by alcohol, drugs, fatigue, or other causes.
- Remedy or report immediately unsafe conditions.
- Cooperate with health and safety representatives, joint occupational health and safety committees, and WorkSafeBC.

### Supplier

Suppliers are an integral part of any construction workplace and play an important part in maintaining a safe work environment. Suppliers have a number of responsibilities when supplying tools, equipment, machines, or biological, chemical, or physical agents.

### Responsibilities

- Ensure that tools, machinery, and equipment are safe when used according to the manufacturer's instructions.
- Provide directions for the safe use of all supplies, tools, machinery, and equipment.
- Ensure that biological, chemical, or physical agents are accompanied by updated material safety data sheets (MSDSs) and labelled in keeping with all regulations and acts.

If the supplier has a leasing agreement to maintain the tools, equipment, machines, or devices, they must be maintained in safe condition and in compliance with the Regulation, the Act, and any applicable orders.

## 8 Forms and Engineering Documentation

### Forms

An officer may ask for the following documents, depending on the situation:

- Notice of project (A, C, or D)
- First aid records (Form 7)
- Assurance in writing (Form 30M33)
- Material safety data sheets
- Workplace inspections
- Orientation — new and young worker

### Considerations When Reviewing Forms

- **NOP:** Properly filled out, with areas of responsibility, assured grounding, and a written agreement in place.
- **First aid records:** Is there a detailed description of what happened to the worker, what the occupational first aid attendant saw during assessment, the first aid rendered, the disposition of the worker, and the advice provided to the worker by the attendant? Level 2 and 3 attendants should also provide a patient assessment chart for workers referred to medical aid.
- **Form 30M33:** Are all requirements of Form 30M33 being followed (for example, guarding and safety watch)?
- **MSDSs:** Are they on-site and available to workers?
- **Workplace inspections:** Are they completed by all employers?
- **Orientation:** Are new and young workers identified and oriented? See section 3.23 of the Regulation for requirements.

### Engineering Documentation

Engineering documentation is required for various types of construction activity, including:

- Excavations deeper than 1.2 m (4 ft.), if not shored or sloped properly
- Formwork drawings (for example, gang forms, fly forms, jump forms, vertical slip forms, and formwork more than 4 m high)
- Confined space hazard assessments
- Engineer's instructions related to cranes in sections 14.13–14.16 and 14.16.1 of the Regulation
- Engineer's certification for tower crane erection or foundation
- Engineer's certification for structural integrity and safe for use
- Engineer's or geoscientist's report on geological hazards and drawings
- Thrust-out platforms
- Tilt-up construction, including pre-lift and post-lift
- Re-shore drawings
- Fibre or wire rope guardrails
- Temporary horizontal lifelines
- Engineer's certification for anchors with multiple attachment points
- Engineer's certification for permanent horizontal lifeline systems
- Engineer's certification for support structures for safety nets
- Engineering required for scaffolds
- Engineer's instructions for elevating work platforms
- Falsework designs and certification
- Designs and changes as described in section 20.20 of the Regulation
- Prior to pour inspections and certification
- Demolition plans
- Hazardous materials survey reports prior to demolition

## 9 First Aid

Employers must assess workplaces and provide the appropriate level of first aid equipment, supplies, attendants, and services for each site as required in Part 3 of the Regulation. A first aid assessment determines the necessary first aid coverage, facilities, training requirements, and transportation.

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

- Assess the circumstances of the workplace under section 3.16(2) of the Regulation of all workers in the workplace.
- Establish and maintain the first aid equipment, supplies, facilities, attendants, and services required under section 3.16.

### **Factors Affecting First Aid Requirements:**

- The number of workers who may require first aid at any time
- The nature of hazards and extent of risks in the workplace, including whether or not the workplace creates a low, moderate, or high risk of injury
- The types of injuries likely to occur
- Any barriers to first aid being provided to an injured worker
- The length of time that may be required to obtain transportation
- Surface travel time to a hospital

Determine requirements as per Schedule 3A of the Regulation for:

- Supplies
- Level of first aid certificate for attendant
- Equipment
- Transportation requirements
- Facility

### **Questions to Consider**

- Who is providing first aid? Has this person been designated as site occupational first aid attendant by the employer? Do workers know their designated occupational first aid attendant?
- How many workers are on-site?
- What is the scope of the work? Are there any special hazards? See section 4.13(3) of the Regulation.
- Are there appropriate first aid services on-site (Schedule 3A)?
- Is there a written first aid procedure that includes the location of first aid and how to call for first aid and transportation? Are the people designated to call for transportation trained in those procedures? Are first aid procedures posted or otherwise communicated to the workforce?
- Are first aid records properly maintained on-site (Form 55B23 or equivalent)? Is there a history of medical aid incidents?
- Has the employer carried out an incident investigation and kept copies of the report on-site (Form 52E40 or equivalent)?
- Are first aid services maintained and provided for work outside of regular hours (weekends or afternoon or night shifts), if applicable?
- Has a risk assessment been done related to the need to rescue or evacuate workers? See section 4.13(3) of the Regulation.
- Have appropriate written emergency procedures been developed and implemented on-site (training records of emergency response team members)? Who is responsible for coordinating those procedures?
- Have workers been trained in emergency procedures?
- Is all emergency response equipment available and maintained?
- Has an emergency response drill been conducted on-site?
- If high angle rescue is required, how will it be achieved, by whom, and where are the resources and equipment? Are there written procedures? Is a written agreement with the emergency response provider available at the site? See the Service Request Form in Guideline G4.13(3).

### Occupational Health and Safety Programs

#### Formal Programs

Employers with 20 or more workers are required to have a formal occupational health and safety program. Formal programs consist of seven elements:

1. Occupational health and safety policy statement
2. Regular inspections
3. Written instructions for workers
4. Periodic management meetings to discuss health and safety issues
5. Incident investigations
6. Records and statistics
7. Instruction and supervision of workers

#### Less Formal Programs

Employers with fewer than 20 workers require a less formal program that is based on regular monthly meetings with workers to discuss health and safety matters. The employer must:

- Ensure that meetings are directed toward the correction of unsafe conditions and practices, as well as the maintenance of cooperative interest in the health and safety of the workforce.
- Maintain records of the meetings and the matters discussed.

A formal program may be required for employers with fewer than 20 workers if an officer deems it necessary. Regardless of the size of an operation, the basic duties specified in the Act and the Regulation will still apply. Each contractor's site organization and procedures should support the prime contractor's system, not replace it.

### Orientation

Employers must provide young and new workers with orientation and training in safe work procedures and hazard recognition. In many workplaces some of the requirements in the Regulation will already be in place as part of the worksite's general safety measures. A proper orientation for young and new workers must include the topics listed below.

#### Orientation Topics for Workers

- Tell workers who is responsible for providing work direction to them and how to contact those individuals if they are not immediately available.
- Inform workers about their rights and responsibilities and those of the employer under the Act and the Regulation, including:
  - The right to be informed about workplace hazards
  - The responsibility to report hazards
  - The responsibility to refuse unsafe work
  - The right to participate in workplace health and safety activities



## 11 Orientation (cont'd)

### Orientation Topics for Workers (cont'd)

- Train workers in the health and safety rules applicable to the workplace and the tasks workers will perform. The rules should address:
  - Hazards that workers may encounter
  - Various controls such as work labels, procedures, use of PPE, and the safe means of operating equipment
- Inform workers about the hazards they may encounter while performing assigned tasks.
- Train workers in the relevant policies and procedures if they are assigned to work alone or in isolation. According to the Regulation, employers must set up a system for checking on the well-being of workers.
- Provide workers with orientation and training on what to do in the event of violence in the workplace.
- Provide workers with orientation and training in the use and care of any required PPE or clothing.
- Ensure that workers know the location of first aid facilities, how to summon first aid, and how to report illnesses and injuries. Make sure they know the identity of first aid attendants and how to summon them.
- Advise workers of potential emergency situations and train them in appropriate emergency response procedures such as evacuation in the event of fire or how to contain a spill of a hazardous substance.
- Inform workers of procedures to report illness or injury to WorkSafeBC.
- Provide workers with instruction and demonstration — not simply a verbal description — of work tasks that they will be required to perform when they begin work. Further training may be required as new tasks are assigned. The demonstration should address the aspects of the work that involve safety risks if not performed correctly.
- Provide workers with an orientation to the occupational health and safety program for the workplace.
- Provide workers with a WHMIS orientation. The orientation should explain the WHMIS hazard classes and the use of WHMIS and MSDSs. The four WHMIS training objectives are that a worker should know:
  - What the product hazards are
  - How to protect themselves
  - What to do in case of an emergency or spill
  - Where to get more information on the products
- Provide workers with contact information for the joint occupational health and safety committee or worker health and safety representative.

## 11 Orientation (cont'd)

## 12 Work Platforms

### Ladder Requirements

- Grade 1/Type I ladders (or higher) will typically be required for construction. Job built to WCB Standard: LDR 1-2004
- A portable non-self-supporting ladder must be positioned against the vertical plane of support at an approximate angle of 75°, adequately secured and must extend 1 m (3 feet) above the landing surface.
- Maintain three point contact at all times.
- Short duration work only (see guidelines for part 11.2(5) of the Regulation).

### Scaffolds – General Requirements

- Place vertical supports on a firm base or sill and ensure that they can withstand superimposed weight from the scaffolding and anything placed on the scaffold.
- Ensure that erection and dismantling are done or supervised by qualified and experienced workers.
- Erect scaffolds plumb and level.
- Install bracing for prefabricated scaffolds according to the manufacturer's instructions.
- Scaffolds must be inspected before use by those who will use them, regardless of who erected them.
- For more information, see the WorkSafeBC Toolbox Meeting Guides for various types of scaffolds.

### Pump Jack Scaffold Requirements

- Erect, operate, and maintain the scaffold in accordance with the manufacturer's instructions.
- Ensure that there are no more than two workers on the scaffold at one time.
- Ensure that each bracket has two positive gripping mechanisms to prevent failure or slippage.

### Rolling Scaffold Requirements

- The floor surface must be within 3 degrees of level.
- The surface must be free from pits, holes, depressions, or obstructions.
- The scaffold must be able to withstand the superimposed point loading of casters supporting scaffold structure and workers.
- Workers must not be on a rolling scaffold while moving it with their own efforts if the work platform height exceeds 1-1/2 times the scaffold's minimum base dimension.
- Workers must not be on a rolling scaffold while other workers are moving it if the work platform height exceeds twice the minimum base dimension.
- At least two of the four wheels should be the swivel-caster type.
- The wheels must have locking devices.

### Wood Frame Scaffold Requirements

- Use No. 2 or better lumber (Douglas fir-larch, hemlock-fir, spruce-pine-fir, or coast-Sitka-spruce species).
- Hand-select lumber to eliminate split, warped, or defective pieces.
- Use progressive bracing.
- Ensure firm contact between bearer blocks, bearers, wall scabs, and ledgers.

### Ladder Jack Scaffold Requirements

- Use grade 1 ladders only, with a maximum length of 6 m (20 ft.).
- Ensure safe access and egress.
- Planks that are 30 cm (12 in.) wide are acceptable.
- The scaffold should be used only for light-duty operations such as painting or siding installation.
- The scaffold must not be used by more than two workers at any one time.

## 12 Work Platforms

## 13 Fall Protection

Fall protection must be used where a fall of 3 m (10 ft.) or more may occur, or if a fall from a height of less than 3 m involves a risk of injury greater than from the impact on a flat surface.

### Fall Protection Plan

Must be complete and available on-site when work is being done from which a fall of 7.5 m (25 ft.) or more may occur. The plan must be available at the workplace for review.

### Hierarchy of Fall Protection:

1. Guardrails
2. Fall restraint (anchor 800 lb. or four times weight of worker)
3. Fall arrest (5,000 lb. or two times the maximum arrest force)
4. Procedures acceptable to WorkSafeBC

In order to move down through the hierarchy, the employer must show that the previous step is not practicable.

### Selection of Harness or Belt

- When using a personal fall protection system for fall arrest, workers must wear a full body harness or other harness acceptable to WorkSafeBC.
- When using a personal fall protection system for fall restraint, workers must wear a safety belt, a full body harness, or other harness acceptable to WorkSafeBC.
- Equipment used for a fall protection system must consist of compatible and suitable components, be sufficient to support the fall restraint or arrest forces, and meet applicable standards.

### Anchors

- In a fall restraint system, anchors must be capable of withstanding (in any direction) loads of 3.5 kN (800 lb.) or four times the weight of the worker.
- In a temporary or permanent fall arrest system, anchors must be capable of withstanding loads of 22 kN (5,000 lb.) or two times the maximum arrest force.

**Note: Only one worker is permitted to tie off to an individual anchor.**

### Temporary Horizontal Lifelines

May be used if the system is:

- Manufactured for commercial distribution and installed and used in accordance with the written manufacturer or authorized agent instructions, and the instructions are available in the workplace, or
- Installed and used in accordance with written instructions certified by a professional engineer, and the instructions are readily available in the workplace, or
- Designed, installed, and used in a manner acceptable to WorkSafeBC.

### Certification by Engineer

The following types of equipment and systems, and their installation, must be certified by a professional engineer:

- Permanent anchors
- Anchors with multiple attachment points
- Permanent horizontal lifeline systems
- Support structures for safety nets

### Inspection and Maintenance

Equipment used in a fall protection system must be inspected by a qualified person before use on each work shift, kept free from substances and conditions that could contribute to its deterioration, and maintained in good working order.

If a fall protection system has been used (arrested the fall of a worker), it must be removed from service until inspected and returned to service by a qualified inspector.

## 13 Fall Protection

# 14 Cranes

## Tower Cranes

### Questions to Consider

- Is there documentation for the tower crane (for example, soils report, foundation design drawing, foundation rebar inspection by engineer, concrete strength tests, base anchors engineered and non-destructive testing, crane certified by engineer, and erection procedures)?
- Is the operator certified for this type of crane?
- Is the crane equipped with a load chart?
- Has the operator provided an example of a load lift scenario to demonstrate understanding of the chart?
- Are the crane's foundation (base) bolts inspected regularly?
- Are the limit switches tested daily (for example, test lift with blocks and trolley in/out)?
- Does the operator have a log book (including pre-shift inspections and daily lift activity notes)?
- Is there a dedicated communication system for the operator and rigger?
- Is there a **fall protection (13)** plan (including personal fall protection and high angle rescue)?
- Are there any critical lifts planned? See the definition in section 14.1 of the Regulation.
- Is a Form 30M33 required? This is necessary if **high voltage lines (17 and 18)** are present?

## Mobile Cranes

### Questions to Consider

- Is the operator certified?
- Is the crane equipped with a load chart? Have the operator provide examples of lift scenarios. Look for the load weight indicator.
- Does the operator have a log book noting pre-shift inspections and daily lift activity?
- When was the last time the crane was inspected by an engineer and certified?
- What is the scope of work?
  - Pile driving, vibrating hammer, lifting, or tilt-up?
  - Are there any critical lifts planned? See the definition in section 14.1 of the Regulation.
- If a truck-mounted crane is being used, is a stability chart and documented test available?
- Are the outrigger pads sufficient for soil conditions?
- Ensure that outriggers are fully extended. If not, why? What are they doing? Chart usage to identify limits.
- Is the surface capable of safely supporting the lift?
- Is a Form 30M33 required? This is necessary if **high voltage lines (17 and 18)** are present.



## 15 Rigging

Rigging and slinging work must be done by or under the direct supervision of qualified workers familiar with the rigging being used and the code of signals authorized by WorkSafeBC for controlling hoisting operations. The most effective way to avoid common rigging problems is to identify them ahead of time by planning every lift.

### Basic Rigging Plan

The rigging plan must answer the following questions:

- Who is responsible for the rigging?
- Has communication been established?
- Is the rigging in acceptable condition and appropriate for lifting?
- Does the rigging have proper identification?
- Does all the gear have known working load limits?
- What is the weight of the load?
- Are the working load limits adequate?
- Will there be any side or angular loading?
- Are the slings padded against sharp corners?
- Where is the centre of gravity (cog)?
- Is the load rigged to the centre of gravity (cog)?
- Is the hitch appropriate for the load?
- Is a tag line needed to control the load?
- Will personnel be clear of suspended loads?
- Is there any possibility of fouling?
- Will the load lift level and be stable?
- Are there any unusual environmental concerns?
- Are there any special requirements?

### Evaluating the Use of Rigging Gear

#### Problems at the Start

- Competent (trained) riggers are not assigned.
- Improper hand signals are used.
- Gear is not inspected frequently.
- Workers do not know what to inspect for.
- Slings are missing tags or the tags are not legible.
- The capacity of rigging gear is not known.
- “Below the hook” devices are improperly made.
- Wire rope slings are formed with clips.

#### Problems at the Hardware

- Hardware connected at the sling eye is too small or too large.
- Bunching or pinching of synthetic slings.
- Loose shackle pins or other connections.
- Missing latches on hoist hooks.
- Too many slings in hoist hook, shackles, or other hardware.
- Improper side loading or misalignment of hardware.

#### Problems with the Hitch

- Beating down the choker hitch may damage the cable.
- Basket capacity is used when not vertical.
- Basket hitch (wire rope) is placed over small diameter metal frame.
- Capacity of bridle is not adjusted for angle.
- Sling loads are not properly distributed.
- Use of a horizontal sling angle of less than 30 degrees.
- Choker and basket hitches at a horizontal sling angle of less than 60 degrees.

Individually, these problems may not result in an accident, but most serious rigging accidents result from a combination of problems. Any rigging situation that has a number of these problems has been poorly planned.

## 16 Power Tools

There are numerous types of power tools used in construction. The following are general considerations when power tools are being used:

- Assess hazards related to the use of power tools and provide adequate safeguarding, worker training, and supervision.
- Ensure that guards are in place and operational (for example, on saws or grinders).
- Clearly identify unsafe tools as out of service (using a red tag).
- Ensure that tool modifications meet acceptable standards.
- Follow the manufacturer's instructions (for example, ensure that the rated RPM for blades and wheels matches the RPM capacity).
- Use dust control for drilling, cutting, or grinding where exposure to silica is possible (for example, with concrete or granite).
- Use PPE appropriate for the specific type of equipment (for example, leg, face, head, and hearing protection when using a chainsaw).
- Protect power tools, cords, and hoses, and maintain them in safe working order.

### Hierarchy of Safeguarding Controls

MOST effective	Safeguarding controls
1. Elimination or substitution	<ul style="list-style-type: none"> <li>• Eliminate human interaction in the process</li> <li>• Eliminate pinch points</li> <li>• Automate material handling</li> </ul>
2. Engineering controls	<ul style="list-style-type: none"> <li>• Mechanical hard stops</li> <li>• Barrier guards</li> <li>• Presence-sensing devices</li> <li>• Interlocked guards</li> <li>• Two-handed controls</li> </ul>
3. Awareness	<ul style="list-style-type: none"> <li>• Computer warnings</li> <li>• Warning signs and labels</li> <li>• "Restricted space" painted on floor</li> <li>• Lights, beacons, and strobes</li> <li>• Beepers, horns, and sirens</li> </ul>
4. Training and procedures	<ul style="list-style-type: none"> <li>• Safe work procedures</li> <li>• Safety equipment inspections</li> <li>• Safety eyewear</li> <li>• Training</li> <li>• Lockout</li> <li>• Gloves</li> </ul>
5. PPE	<ul style="list-style-type: none"> <li>• Hearing protection</li> <li>• Face shield</li> <li>• Steel-toe boots</li> <li>• Respirator</li> <li>• Hard hat</li> </ul>
LEAST effective	

# 17 Electrical

## Low-Voltage Systems (750 Volts and less)

Two factors can make energized low-voltage equipment extremely hazardous:

- Small working clearances between low-voltage components leave little room for error when using tools.
- Low-voltage equipment in some industrial services may be supplied by an electrical system that can feed incredible amounts of energy into a fault (caused by a short-circuit, for example). The fault can cause an intense arc of electrical energy, with flames reaching as far as 3 m (10 ft.).

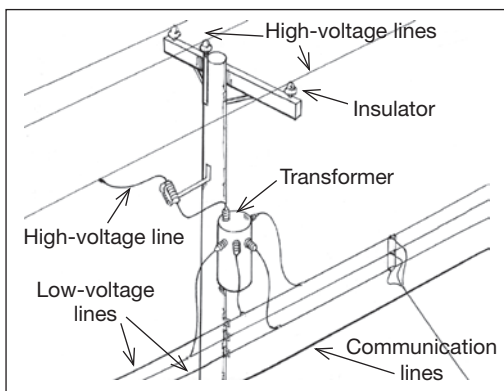
## High-Voltage Systems (More than 750 Volts)

- Any work on high-voltage equipment and power systems must be performed by qualified and authorized workers in accordance with written safe work procedures acceptable to WorkSafeBC. For requirements, see Part 19 of the Regulation.
- For isolation and lockout, workers must follow the safe work procedures set out by the employer or owner of the power system.

## Identifying Overhead Conductors

Utility poles generally carry both low-voltage and high-voltage conductors (power lines). High-voltage conductors are always installed at the top of the utility pole. Low-voltage conductors are usually installed as single conductors mounted one above the other.

If there is a transformer on the pole, lines from the high-voltage conductors feed the transformer, which reduces the voltage for distribution through low-voltage lines to homes and commercial and light industrial buildings.



*Employers must accurately determine the voltage of all power lines in the work area.*

## Construction Sites near Power Lines

- Most power lines are found overhead; however, some are buried a short distance below the surface of the ground.
- The normal operating range of machines or equipment can often reach the overhead or underground power lines above or below workers.

## Working Near Low-Voltage Lines

When a work process such as window washing or painting results in a temporary encroachment by a worker into the area of low-voltage lines, employers must ensure that one of the following occurs:

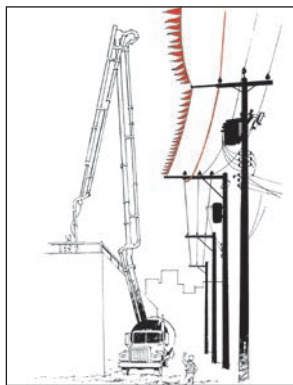
- Provide barriers or covers if a worker unfamiliar with the hazards is working within 1 m (3.3 ft.) of the area.
- Inform workers of the potential hazards and ensure that they follow written safe work procedures.

## 18 Electrical (cont'd)

### Limits of Approach to High-Voltage Lines

Part 19 of the Regulation lists the distances that various workers must keep away from exposed energized conductors. The table below shows the minimum distance from energized high-voltage lines that non-qualified workers and their materials, equipment, and machinery must maintain. Tools and equipment that a worker holds or operates are an extension of the worker's reach. Workers must ensure that they have enough room for movement with their tools without violating these limits.

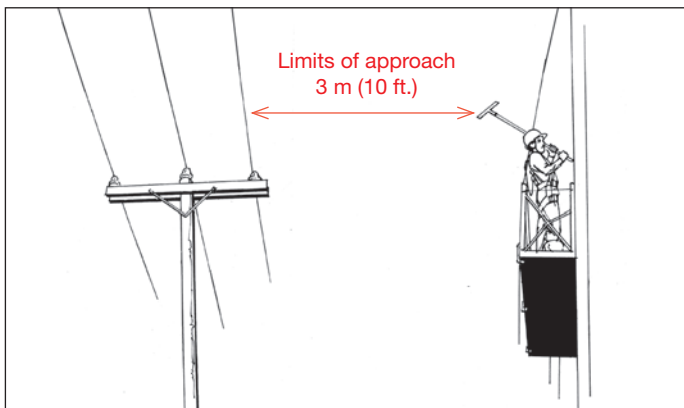
Voltage, Phase to Phase	Minimum Distance	
	Metres	Feet
Over 750 V to 75 kV	3	10
Over 75 kV to 250 kV	4.5	15
Over 250 kV to 550 kV	6	20



*Guarding is a visual warning only. The grounded guard wire (with flags) gives warning of approach. Workers and equipment must not contact the guard wire or overhead line under any circumstances.*

### Scaffolding and Other Equipment Near Power Lines

- Limits of approach must be maintained for all scaffolds and equipment near power lines.
- Scaffolds must be positioned and secured in a manner to prevent them from coming into contact with adjacent power lines.



*The tool is an extension of the worker's reach and must not come within the limits of approach.*



# 19 Demolition Work

## General Considerations

- What is the scope of work?
- Is a hazardous materials survey completed and available on-site?
- Are services disconnected and locked out, if required?
- Has the structural integrity of the building been compromised?
- Are hazardous areas barricaded (for example, falling materials or unsound areas)?
- Are chutes used if free fall of material or debris being removed exceeds 6 m (20 ft.)?
- Are stairways left intact as long as possible?
- Are engineered procedures in place and followed, if required?
- Is PPE used, as required by the hazardous materials survey and regulations?
- Are control measures in place (for example, dust control and ventilation)?

## Structural Integrity

1. If a structure is to be demolished in whole or in part, the structure and any adjoining structures, the integrity of which could be compromised by the demolition, must be supported in a manner prescribed by an engineer.
2. Design of the support system described in paragraph 1 must include a schedule, based on the stages of demolition, for installation of the components of the support system. A copy of the support system plan must be available at the demolition site.
3. While salvage is taking place before or during the demolition process, the integrity of the structure must be maintained.
4. If the nature and method of demolition will not endanger workers and the stability of adjoining grounds and structures will not be compromised, engineered demolition plans and designs are not required.

## Hazardous Materials

Before work begins on the demolition or salvage of machinery, equipment, buildings, or structures, the employer or owner must:

- (a) Inspect the site to identify any asbestos, lead, or other heavy metal or toxic, flammable, or explosive materials that may be handled, disturbed, or removed,
- (b) Have the inspection results available at the worksite, including any drawings, plans, or specifications, as appropriate, to show the locations of any hazardous substances,
- (c) Ensure that any hazardous materials found are safely contained or removed, and
- (d) If hazardous materials are discovered during demolition work that were not identified in the inspection required by paragraph (a), ensure that all work ceases until such materials are contained or removed.

## 20 Demolition Work (cont'd)

### Disconnecting Utility Services

Demolition must not proceed until all electric, gas, and other services that may endanger a worker have been disconnected as required by the owner of the applicable utility.

### Glass Removal

If glass in a building or other structure could endanger workers, it must be removed before other demolition commences. Glass removal must proceed in an orderly manner from the top to the bottom of the structure.

### Protection from Falling Materials

If falling material could endanger a worker, the danger area must be guarded to prevent entry by workers or protected by adequate canopies. A floor or roof opening through which material may fall and endanger workers must be adequately covered.

### Throwing Material

If material is to be dropped or thrown from upper floors, the area into which the material will fall must be barricaded to prevent workers from entering the area and conspicuous warning signs displayed to advise of the danger.

### Stabilizing Walls

If a dangerous or unstable wall is to be left standing, it must be adequately braced.

### Dismantling Buildings

During the dismantling or renovation of a building or structure, materials of a size or weight that may endanger workers must not be loosened or allowed to fall, unless procedures are used that will adequately protect workers.

### Stairways

Stairways, complete with handrails, must be left intact until access to the level they serve is no longer required.

### Housekeeping

Material and debris must not be allowed to accumulate on floors or on the ground outside the building or structure if workers will be endangered.



## 21 Traffic Control – Mobile Equipment

### Traffic Control

Traffic control is required when moving traffic through or around highway or street construction, maintenance operations, or utility work on or adjacent to a roadway.

#### Questions to Consider

- Is a traffic control plan in place, as outlined in the *Traffic Control Manual for Work on Roadways*, published by the Ministry of Transportation and Infrastructure?
- Is signage in place according to the *Traffic Control Manual for Work on Roadways*?
- Are traffic control persons (TCPs) using proper PPE (for example, high-visibility apparel and safety headgear)?
- Are TCPs properly trained?
- Is a traffic control supervisor designated and available to respond to questions or to address changing site conditions?
- Is the traffic control supervisor fulfilling his or her duties? Are procedures known to all, is coordination occurring, and has training occurred?

TCPs should only be used when traffic cannot self-regulate. Take into account traffic sightlines, visibility of signage, and weather and lighting (for example, are flashlights required?).

### Mobile Equipment

Mobile equipment includes scissor lifts, Genie lifts, zoom booms, self-propelled elevated work platforms, skid steer loaders, excavators, and concrete pumpers.

#### Questions to Consider

- Are the operator's training and qualifications appropriate?
- Is fall protection and other PPE readily available and used when required?
- Are pre-shift or pre-use inspections and log books utilized?
- Are inspections performed as required (for example, annually)?
- Is the proximity to overhead conductors identified, including limits of approach (Form 30M33)?
- Are control devices in proper operating condition, with controls clearly identified?
- Is the manufacturer's manual on-site and readily available?
- Are outriggers fully deployed or short rigging procedures in place, if required?
- Is appropriate safeguarding in place (for example, a hopper, discharge pipe, or PTO)?
- Is cribbing adequate for soil conditions (see the manufacturer's manual), in regards to outriggers and pads?
- Has the soil-bearing capacity been determined by a professional engineer or geotech, if necessary?

## 22 Excavations

### Trenches and Excavations – General Requirements

- Before excavating, locate and identify utility services such as electrical, gas, steam, water, and sewer in the area.
- Eliminate or control any hazards related to utility services.
- Do not use pointed tools to probe for underground gas and electrical services.
- If possible, use blunt shovels to expose the facility. Use caution, especially when using newer, sharper spade shovels.
- Remove or secure trees, utility poles, rocks, or similar objects near excavation edges to prevent injury to workers.
- Evaluate and define the edge approach to excavations for mobile equipment, providing distance and weight allowed.

Excavation work must be carried out in accordance with the written instructions of a professional engineer or geoscientist in any of the following cases:

- The excavation is more than 6 m (20 ft.) deep.
- Support structures other than those specified in the Regulation are used in the excavation.
- An improvement or structure adjacent to the excavation could endanger workers.
- The area is subject to vibration or hydrostatic pressure.

A professional engineer's plan and written instructions to support or slope the sides of the excavation must include information on the subsurface conditions that are expected. A copy of the plan and any written instructions—signed and sealed by the engineer—must be available at the site.

### Entry and Exit

Safe means of entry and exit must be provided for any excavation a worker enters. If workers have to enter a trench deeper than 1.2 m (4 ft.), the point of 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. (See section 20.87 of the Regulation.)

### Guarding

If an excavation is a hazard to workers, it must be effectively covered or guarded.

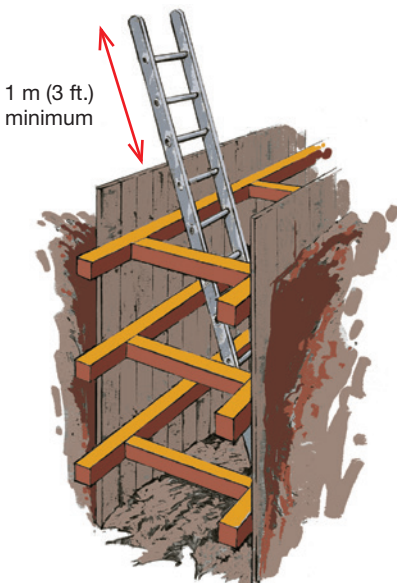
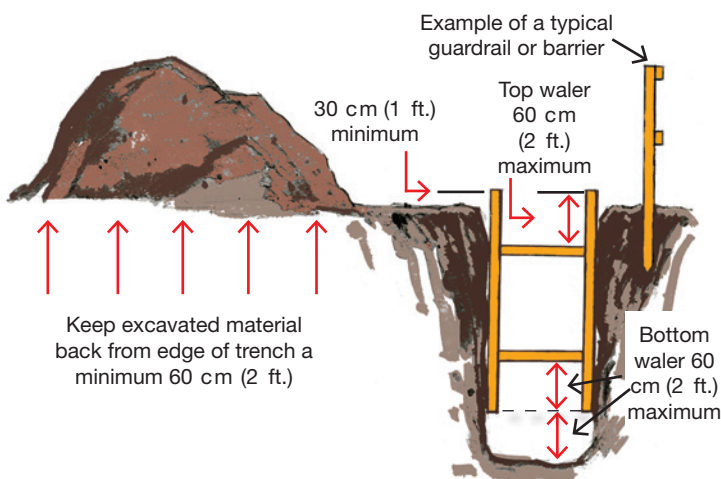
### Excavation Crossings

Walkways across excavations must be at least 50 cm (20 in.) wide and, if crossing an excavation deeper than 1.2 m (4 ft.), must be equipped with guardrails on both sides that meet the requirements of Part 4 of the Regulation.

## 23 Excavations (cont'd)

### Additional Excavation Requirements

- Inspect excavation slopes and supporting systems daily for erosion or deterioration.
- Keep excavated material back at least 60 cm (2 ft.) from the edge of any trench excavation and 1.2 m (4 ft.) from any other excavation.
- When necessary, cover excavations or erect substantial guardrails or barriers around them to prevent workers or others from falling into them.
- Ensure that vertical supports extend at least 30 cm (1 ft.) above ground level and are no more than 60 cm (2 ft.) above the bottom of the trench.
- Provide a ladder when workers are required to enter excavations deeper than 1.2 m (4 ft.).



*The ladder must extend from the bottom of the excavation to at least 1 m (3 ft.) above ground level and be placed so that it is protected by the shoring.*

## 24 Exposure – Hazardous Materials

### Questions to Consider

- Are there any hazardous materials on-site? Is an inventory available (for example, up-to-date MSDSs)?
- If there are hazardous materials, are they controlled (for example, silica, asbestos, lead, or isocyanates)?
- Have the proper authorities been notified about hazardous materials (for example, fire, emergency response, and spill control)?
- If asbestos-containing materials are on-site, is there a NOPA and an exposure control plan (ECP)?
- If lead is present, is there a NOPA and an ECP?

Note: Contact the WorkSafeBC occupational hygiene officer for your region if asbestos or lead are present and you have questions.

- If silica is present, is there an ECP?
- If isocyanates are used, is there an ECP and a ventilation plan?
- Have workers been trained in ECP procedures?
- What type of PPE and equipment has been identified in the ECP?
- If respiratory protection is required, have workers been fit tested and trained in its use?
- Have other contractors been made aware of the presence of any hazardous materials?
- Have workers been trained in WHMIS?
- Are compressed gas cylinders secured and properly stored?
- Is the use of combustion engine equipment restricted to outdoors or otherwise controlled?
- Is confined space entry required to do work on the site? If so, has a hazard assessment been conducted and safe work procedures prepared?
- Have workers been trained in safe entry procedures?
- Has a rescue plan been prepared?

Additional questions to consider:

- Has the employer/owner ensured a qualified person inspects the machinery, building or structure and worksite to identify any hazardous material?
- Is the NOP submitted 48 hours before work activity begins?
- If welding is involved, is there an exposure control plan?
- Is there a responsible, adequately trained supervisor in place?
- Are elimination, substitution, engineering or administrative controls used to protect workers from over-exposure to hazardous materials?



# RIGHTS AND RESPONSIBILITIES

A



## PRACTICES

B



**Note:**

- Rolling scaffolds must meet and be used in accordance with the applicable CSA or ANSI standard in effect when the equipment or structure was manufactured.
- Wood frame scaffolds must be designed and constructed in accordance with WCB Standard WPL 1-2004.

# PRACTICES

C

