

# Safety of Excavations Work – Know The Laws Of Your Province



## Excavation & Trench Shoring Rules Across Canada

### FEDERAL

(1) Employer must mark location of all underground pipes, cables and conduits in the area where the excavation work is to be done before work begins; (2) A highly visible barricade must be installed around an excavation or trench that poses a hazard to employees; and (3) Tools, machinery, timber, excavated materials and other objects may not be placed within 1 m from the edge of an excavation or trench (*COHS Regs.*, Sec. 3.12(2))

### ALBERTA

Employer must: (1) Classify and stabilize soil before work begins; (2) If there's a danger of a worker or equipment falling into an excavation, ensure that workers are made aware of the excavation via flagging, marking, safeguards or other appropriate and effective means; (3) Ensure that an excavation that a worker may be required or permitted to enter is kept free of an accumulation of water that may pose a hazard; (4) Provide workers a safe means of entering and leaving an excavation, tunnel or underground shaft; (5) Ensure that loose materials are scaled and trimmed from the sides of an excavation if workers may be on or near the sides; (6) Ensure that a spoil pile is piled so that: (a) the leading edge of the pile is at least 1 m from the edge of the excavation; (b) the slope of a spoil pile adjacent to the excavation is at an angle of no more than 45 degrees from the horizontal, and (c) loose materials are scaled and trimmed from the spoil pile; and (7) Ensure the open side of an excavation or route used by powered mobile equipment to access an excavation has a barrier high enough to stop the equipment from sliding or rolling into the excavation (*OHS Code*, Part 32)

### BRITISH COLUMBIA

(1) Owner or prime contractor must provide notice of project least 24 hours before work on the construction project begins at the worksite if a worker may be required to enter: (a) a trench over 30 m (100 ft) long; or (b) an

excavation, other than a trench, over 1.2 m (4 ft) deep; (2) Before excavating, the location of all underground utility services in the area must be accurately determined, and any danger to workers from those utility services must be controlled; (3) Safe means of entry and exit must be provided for an excavation a worker enters; if a worker must enter a trench over 1.2 m (4 ft) deep, the safe 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; (4) Excavation that poses a hazard to workers must be effectively covered or guarded; (5) A walkway across an excavation must be at least 50 cm (20 in) wide, and if crossing an excavation over 1.2 m (4 ft) deep, be equipped with proper guardrails on both sides; (6) Excavated material must be kept back a minimum distance of 60 cm (2 ft) from the edge of a trench excavation and 1.2 m (4 ft) from any other excavation and not be piled so that it endangers workers; (7) Water must not be allowed to accumulate in an excavation if it might affect the stability of the excavation or might endanger workers and erosion of slopes by surface water must be prevented if workers may be endangered; and (8) Soil classifications necessary (*OHS Reg.*, Part 20)

## **MANITOBA**

(1) Employer must notify branch no more than 48 hours before the day that excavation work is scheduled to begin and not begin excavation work until it gets a registration number; (2) When a worker is in an excavation that more than 1.5 m deep, employer must ensure a competent person is located at the surface of the excavation to alert the worker of any potentially unsafe condition and provide help in an emergency; (3) Employer must ensure no worker enters an excavation that poses a flood risk unless:

(a) the worker is equipped with a proper full body harness attached to a lifeline; (b) the worker is in direct communication with the person who is required to be on the surface; and (c) the worker's safety equipment is rigged so it can be immediately removed from the excavation if a hazardous situation occurs; (4) Testing and appropriate protections required if atmosphere in excavation poses or may pose a breathing hazard; (5) Employer must ensure that an excavation that a worker may be required or permitted to enter is kept free of an accumulation of water that may create a risk to safety or health; (6) Employer must ensure that excavated material is placed at least 1 m from the edge of an excavation and piled so that it can't fall into the excavation and that no worker places equipment or other material near the edge of an excavation so that the item can fall into the excavation; (7) Employer must ensure that no worker drives, operates or locates powered mobile equipment or machinery so that it endangers the stability of the walls of an excavation; (8) When excavation work is carried out adjacent to an area where the public or a worker who isn't usually engaged in the work may pass, employer must ensure that excavation is adequately guarded by a fence, guardrail or covering sufficient to prevent a person from falling into it; (9) If there's a danger of a worker falling into an excavation that's more than 3 m deep, employer must ensure it's adequately guarded by a fence, guardrail or covering sufficient to prevent a worker from falling into it; (10) If an excavation poses a hazard to traffic because it's located close to a roadway, employer must ensure that reflective traffic control devices are installed around the excavation; (11) If a worker is required or permitted to cross over an excavation, employer must ensure that the excavation is equipped with an adequate walkway with suitable guardrails; and (12) Employer must ensure there's a safe means of entering and leaving an excavation (*WSH*

## **NEW BRUNSWICK**

Employer must ensure that: (1) The location of any underground utility line or piping is determined before beginning an excavation or trench; (2) Excavated material is kept at least 1.2 m from the edge of an excavation or trench; (3) If an excavation or trench is more than 1.8 m deep in rock, that: (a) excavated material is located back from the face of the excavation or trench a distance of at least the height of the excavated material, or (b) a fence that's adequate to support the excavated material is erected at a minimum distance of 1 m from the face of the excavation or trench; (4) An excavation or trench in which an employee works is kept reasonably free of water; (5) Proper hazardous testing is carried out before an employee enters a trench or excavation in which there's potential exposure to a hazardous gas or to an oxygen deficient or oxygen rich atmosphere; (6) No hazardous substance is stored in an excavation or trench; (7) There's an employee working on the surface who's able to observe the employee working in the excavation or trench; (8) An excavation or trench is adequately illuminated: (a) when work is being carried out in or near the excavation or trench; and (b) by warning lights or reflective materials to prevent inadvertent entry; and (9) An adequate barrier is set up around the excavation or trench to protect employees working in it from vehicular traffic (*OHS Gen. Reg., Part XIII*)

## **NEWFOUNDLAND**

(1) Before beginning excavation work with power tools or equipment in area likely to have underground conduits, cables or pipelines, employer must determine and suitably mark the location of the service facilities shall be accurately determined by the employer, marked by suitable means and communicated to the employee; (2) If a worker must enter an excavation greater than 1.22 m deep, a ladder must be provided in the immediate area where the worker's employed, extending from the bottom of the excavation to at least 0.91 m above the top of the excavation; (3) Walkways entering excavations must be: (a) no less than 50.80 cm wide; (b) equipped with guardrails when over 1.22 m above grade; and (c) provided with cleats when the grade is over 1/6; (4) Worker may not permit excavated material to remain: (a) within 1.22 m of the edge of a trench-type excavation; or (b) within 1.52 m of the edge of a pit-type excavation; (5) A worker engaged in scaling, sloping or trimming banks or faces must use a fall protection system that meets Part X of the Regulation; and (6) Excavations must be guarded by effective railings or barriers to prevent workers from falling in to them except for a 'borrow pit,' that is, a pit created to provide earth that can be used as fill at another site (*OHS Regs., Sec. Part XVIII*)

## **NOVA SCOTIA**

(1) Where location of a utility line is likely to endanger a person at a workplace, employer must ensure that before beginning an excavation or trench the utility that owns or operates the utility line is contacted to have the utility clearly locate and mark the utility line to the physical limit of the utility line; (2) No person may enter an excavation or trench 1.2 m or more deep unless an employer ensures that a ladder is installed that extends at least 1 m above the excavation or trench or some other adequate means of access and exit

is provided: (a) that's no more than 15 m from where the person is working; or (b) where a trench cage is used, within the trench cage; (3) Employer must ensure that excavated material is: (a) kept at least 1 m away from the edge of an excavation or trench, unless an engineer certifies a shorter distance as adequate; and (b) located a sufficient distance from the edge of the excavation or trench to ensure the excavated material doesn't re-enter it; (4) Employer must ensure that an excavation or trench in which a person works is kept reasonably free of water; (5) Where a person may be exposed to a hazardous substance or to an oxygen rich atmosphere in an excavation or trench, employer must ensure that, before the person enters: (a) testing is performed to (i) determine the concentration of any hazardous gas, vapour or dust, flammables, the concentration of oxygen and oxygen deficiency in the atmosphere in the immediate area of the excavation or trench where the work is to be performed, (ii) ensure that the concentration of a chemical substance or a mixture of chemical substances in the excavation or trench doesn't exceed its occupational exposure limit under Part 2 of the Regulations or 50% of its lower explosive limit, and (iii) ensure that the level of oxygen in the atmosphere isn't less than 19.5 % and not more than 22.5 %, unless the employer can demonstrate that an unsafe oxygen level isn't possible in the circumstances; and (b) adequate precautions are taken to reduce the risk of injury to a person; (6) No person shall store hazardous substances in an excavation or trench; and (7) Employer must provide, at or near the sides of all temporary excavations that are deeper than 1.2 m, fences, guards or barricades that prevent a person from falling in, and keep those fences, guards or barricades in place at all times, except where they interfere with the excavation or other work being done (*Occ. Safety Gen. Regs.*, Part 14)

## **ONTARIO**

(1) Constructor must provide notice of project before commencing any work on a project if a trench into which a person may enter is to be excavated at the project and the trench is more than 300 m long or over 1.2 m deep and over 30 m long; (2) Soil classification required; (3) Employer must ensure that all gas, electrical and other services in and near the area to be excavated are located and marked; (4) Excavation that a worker may be required to enter must be kept reasonably free of water; and (5) If a person could fall into an excavation that's more than 2.4 metres deep, there must be barrier at least 1.1 metres high at the top of every wall of the excavation that's not sloped safely (in accordance with Sections 234(2)(e), (f) and (g) of the Regulation) (*Const. Proj. Reg.*, Part III)

## **PRINCE EDWARD ISLAND**

Employer must ensure that: (1) The location of possible underground utility lines and piping is determined before beginning an excavation or trench; (2) Workers aren't allowed to enter an excavation or trench 1,219 mm (4 ft.) or more in depth unless: (a) the requirements of Part 12 are complied with; (b) Proper CSA approved safety headwear and footwear are provided and worn by the workers; (c) ladders, extending at least 914 mm (3 ft.) above the excavation or trench are installed and located no more than 15,240 mm (50 ft.) from where workers are working or other safe means of access and egress are provided; (d) the sides and crests have been scaled down to prevent loose material from falling into the excavation or trench; (3) Excavated material is kept at least 609 mm (2 ft.) away from the edge of excavations or trenches; (4) Where piled rock or other

granular material creates a hazard above an excavation or trench more than 1,828 mm (6 ft.) deep in rock: (a) the pile is located back from the face of the excavation or trench a distance equal to at least the height of the pile; or (b) a fence is erected at a minimum distance of 914 mm (3 ft.) from the face of the excavation or trench, consisting of material adequate to support the pile; (5) Every excavation and trench is kept reasonably free of water; (6) Hazardous liquids or gases and explosives aren't stored in excavations or trenches; (7) A worker is working on surface where he can observe the workers working in the excavation or trench; and (8) An excavation or trench is adequately illuminated, has adequate warning lights conspicuously displayed, and has a barricade at all times while workers are working in the excavation or trench (*OHS Gen. Regs.*, Part 12)

## **QUÉBEC**

(1) Before work begins, employer must send CNESST all plans including the installation and disassembling procedures signed and sealed by an engineer of the manufacturer, respecting the shoring of an excavation or trench 6 m or deeper; (2) Before digging, employer must verify whether there's underground piping within the perimeter of the work to be carried out and, if so, determine and mark its exact location; (3) It's prohibited to: (a) place materials less than 1.2 m from the rim of the banks; (b) drive or park vehicles or machines less than 3 m from the rim of the banks, unless reinforced shoring is used; and (c) let banks deteriorate; (4) Employer must ensure that ladders are placed in trenches at intervals of 15 linear m or fractions thereof; (5) When workers are in a trench, employer must post an experienced person at ground level to detect faults, earth breaking away or any other danger; (6) Continuous barriers or barricades that are at least 0.7 m high or a warning line that meets the requirements of Section 2.9.4.1, must be set up on the edge of any escarpment or digging: (i) that's more than 3 m in depth, (ii) or which might pose a hazard to workers or the public; and (7) Excavation or trench must be kept reasonably clear of water (*OHS Safety Code for Construction.*, Sec. 3.15.)

## **SASKATCHEWAN**

(1) Employer, contractor or owner must, as soon as reasonably possible, give notice to the ministry of the intention to dig an excavation, trench or excavated shaft that's more than 5 m deep and that a worker will be required or permitted to enter (*OHS Regs.*, Part 2); (2) Employer or contractor must accurately establish and conspicuously mark the location of all underground pipelines, cables and conduits in an area where work is to be done: (a) before commencing work using power tools or powered mobile equipment on an excavation, trench, tunnel, excavated shaft or borehole; or (b) before breaking ground surface with any equipment to a depth that may contact underground utilities; (3) Soil classification required; (4) Employer or contractor must ensure that equipment, spoil piles, rocks and construction materials are kept at least 1 m from the edge of an excavation or trench; (5) Employer or contractor must ensure that an excavation or trench that a worker may be required or permitted to enter is kept free from any accumulation of water; and (6) Employer or contractor must ensure that no powered mobile equipment or vehicle is operated, and that no powered mobile equipment, vehicle or heavy load is located, near an excavation or trench so as to affect the stability of the walls

## **NORTHWEST TERRITORIES & NUNAVUT**

(1) Employer must, as soon as reasonably possible, give notice to Chief Safety Officer of the intention to dig an excavation, trench or excavated shaft that's more than 5 m deep and that a worker will be required or permitted to enter (*OHS Regs.*, Sec. 7); (2) Employer must accurately establish and conspicuously mark the location of all underground pipelines, cables and conduits in an area where work is to be done: (a) before commencing work using power tools or powered mobile equipment on an excavation, trench, tunnel, excavated shaft or borehole; or (b) before breaking ground surface with any equipment to a depth that may contact underground utilities; (3) Soil classification required; (4) Employer must ensure that equipment, spoil piles, rocks and construction materials are kept at least 1 m from the edge of an excavation or trench; (5) Employer must ensure that an excavation or trench that a worker may be required or permitted to enter is kept free from any accumulation of water; and (6) Employer must ensure that no powered mobile equipment or vehicle is operated, and that no powered mobile equipment, vehicle or heavy load is located, near an excavation or trench so as to affect the stability of the walls (*OHS Regs.*, Part 17)

## **YUKON**

(1) Director must be notified and work procedures discussed before start of any trenching or excavating project: (a) where the trench or excavation depth will exceed 6 m (20 ft.); and (b) where the trenching or excavating will be done in permafrost, where ground conditions may change; (2) All underground cables, pipes and conduits must be located and marked with the help of the owner of the service before the start of excavation or drilling activity with power tools and equipment; (3) A safe means of entry and exit must be provided for each excavation or trench that a worker enters; (4) Where workers are required to enter a trench more than 1.2 m (4 ft.) deep, the safe points 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; (5) Where the means of entry and exit: (a) is a ladder, it must extend from the bottom of the trench to 1 m (3 ft.) beyond the top edge; or (b) is a ramp, it must be sloped so that a worker can safely walk in and out of the trench; (6) Excavated material must be kept back at least 0.6 m (2 ft.) from the edge of a trench and 1.2 m (4 ft.) from any other excavation and under no circumstances may be piled so as to pose a danger to workers; (7) Water must not be allowed to accumulate in or above an excavation or trench if it might affect stability of the excavation or endanger workers; and (8) Erosion of the slopes of a trench or excavation by surface water must be prevented if workers will be required to enter the trench or excavation (*OHS Regs.*, Part 10)