

Excavations Safety Policy



Here's a policy template you can use to ensure that excavations work at your site is carried out safely and in compliance with OHS requirements. **Note:** Because OHS regulations vary widely by jurisdiction, you may have to adapt this template in accordance with the rules of your particular province and the circumstances of your workplace.

1. POLICY

No worker may enter a trench or excavation on ABC Company work sites unless it is absolutely necessary and it has been verified that all safety measures set forth in this Policy have been properly implemented. Work performed inside a trench or excavation must meet the safety requirements outlined in this Policy.

2. DEFINITIONS

'Excavation' means a dugout area of ground and includes a deep foundation excavation, trench, tunnel and shaft

'Trench' means:

- A long, narrow dug out area of ground that is deeper than its width at the bottom [Alberta/Manitoba/Nova Scotia/Ontario/Saskatchewan/Northwest Territories/Nunavut]
- An excavation less than 3.7 m (12 ft) wide at the bottom, over 1.2 m (4 ft) deep, and of any length [BC/Newfoundland/Yukon]
- A piece of land dug to a depth of at least 1.2 m where the width of the base is equal or less than the depth, with the width of the base measured between the excavated walls or between an excavated wall and a structure [Quebec]
- Not specifically defined in Federal/New Brunswick/PEI]

3. PRE-EXCAVATION REQUIREMENTS

Before excavation begins on an ABC Company work site, the ABC Company OHS Coordinator site or the Prime Contractor if a prime contractor has been designated for the project must ensure that all of the following precautions are taken.

3.1 Notice of Project

All required permits and approvals must be secured and a written notice of project must be submitted to [jurisdiction's OHS agency] in accordance with the requirements of applicable OHS laws and regulations.

3.2 Locates

The location of all underground utility services in the area must be accurately determined and conspicuously marked so that all workers can see them, and any danger to workers from those utility services must be controlled. Excavation in proximity to an underground utility service must be undertaken in accordance with the requirements of the owner of that utility service.

3.3 Removal of Nearby Hazards

Trees, utility poles, rocks and similar objects adjacent to an area to be excavated must be removed or secured if they could endanger workers.

4. SOIL CLASSIFICATION

Before excavation work commences, ABC Company or the Prime Contractor will designate a competent person to perform a visual and physical inspection of the soil and determine its classification as one of the following (**Note:** If an excavation contains soil of more than one soil type, it will be treated as if all of it is the soil type with the least stability):

[VERSION A: ALBERTA/BC/YUKON]

4.1 Hard and Compact

Soil will be classified as 'hard and compact' if it closely exhibits most of the following characteristics:

- it is hard in consistency and can be penetrated only with difficulty by a small, sharp object;
- it is very dense;
- it appears to be dry;
- it has no signs of water seepage;
- it is extremely difficult to excavate with hand tools; and
- it has not been excavated before.

4.2 Likely to Crack or Crumble

Soil will be classified as 'likely to crack or crumble' if it has been excavated before but does not exhibit any of the characteristics of 'soft, sandy or loose' soil, or it closely exhibits most of the following characteristics;

- it is stiff in consistency and compacted;
- it can be penetrated with moderate difficulty with a small, sharp object;
- it is moderately difficult to excavate with hand tools;
- it has a low to medium natural moisture content and a damp appearance after it is excavated;
- it exhibits signs of surface cracking; and
- it exhibits signs of localized water seepage.

4.3 Soft, Sandy or Loose

Soil will be classified as 'soft, sandy or loose' if it closely exhibits most of the following characteristics:

- it is firm to very soft in consistency, loose to very loose;
- it is easy to excavate with hand tools;
- it is solid in appearance but flows or becomes unstable when disturbed;
- it runs easily into a well-defined conical pile when dry;
- it appears to be wet;
- it is granular below the water table, unless water has been removed from it; and
- it exerts substantial hydraulic pressure when a support system is used.

[VERSION B: ONTARIO/SASK/NW TERRS./NUNAVUT]

4.1 Type 1

Soil will be classified as Type 1 if it closely exhibits most of the following characteristics:

- it is hard in consistency and can be penetrated only with difficulty by a small, sharp object;
- it is very dense;
- it exhibits low natural moisture content;
- it has no signs of water seepage; and
- it exhibits a high degree of internal strength.

4.2 Type 2

Soil will be classified as Type 2 if it closely exhibits most of the following characteristics:

- it is very stiff and dense;
- it can be penetrated with moderate difficulty by a small, sharp object;
- it exhibits low to medium natural moisture content;
- it exhibits a medium degree of internal strength; and
- It has a damp appearance after being excavated.

4.3 Type 3

Soil will be classified as Type 3 if it closely exhibits either of the following characteristics:

- it was previously excavated OR;
- it is stiff to firm or compact to loose and exhibits one or more of the following characteristics:
 - it exhibits signs of surface cracking;
 - it exhibits signs of water seepage;
 - if it's dry, it may run easily into a well-defined conical pile;
 - it has a low degree of internal strength.

4.4 Type 4

Soil will be classified as Type 4 if it closely exhibits most of the following characteristics:

- it is soft to very soft and very loose, very sensitive + upon disturbance is significantly reduced in natural strength;
- it runs easily or flows, unless it's completely supported before excavating procedures;
- it has almost no internal strength;
- it is wet or muddy; and
- it exerts substantial fluid pressure on its supporting system.

5. PROTECTION AGAINST CAVE-IN & COLLAPSE

ABC Company or the Prime Contractor will implement appropriate engineering controls to support the excavation walls and guard against cave-in and collapse in accordance with the soil classification, depth of the excavation, slope of the excavation walls and work conditions such as the use of heavy equipment or presence of vibrations that may potentially affect the stability of the excavation.

Excavation protection system configurations requiring development by a Registered Professional Engineer include:

- Excavations equal to or greater than ten (10) feet in depth;
- Excavations below the level of the base or footing of any foundation or

retaining wall that

could be reasonably expected to pose a hazard to employees; and

- Excavations that may endanger the stability of adjoining buildings, walls or other structures.

Engineering designs must be in writing and include, at a minimum, the protective system configurations determined to be safe for the particular project and the identity and stamped seal of the Registered Professional Engineer approving the design. At least one copy of the design must be kept at the project site.

Sloping may be used in lieu of shoring, trench boxes and other temporary protective structures in accordance with the requirements of [jurisdiction] OHS regulations.

6. SAFE MEANS OF ENTRY & EXIT

ABC Company or the Prime Contractor must ensure that any excavation a worker is permitted or required to enter is provided with a safe means of entry and exit. If the excavation is a trench over 1.2 m/4 feet 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 and sloped to the entry and exit location. In addition:

- Walkways must be secured to prevent dislodgment;
- The open side of an access route used by mobile equipment must have a curb;
- Structural ramps that are used as the sole means of entry and exit must be designed by a competent person;
- Ramps and runways constructed of two or more structural members must have the structural members connected together to prevent displacement;
- Structural members used for ramps and runways must be of uniform thickness;
- Structural ramps used in lieu of steps must have cleats or other surface treatment to prevent slipping;
- Mechanical equipment may not be used to enter and exit trench excavations.

7. PROTECTION FROM SPOIL PILES & LOOSE MATERIALS

Tools, powered mobile equipment, spoil piles and other materials must be kept at least minimum 1 metre/3 feet away from the edge of the excavation. Lateral pressure exerted by spoil piles on the excavation walls will be determined and considered in deciding which engineering controls to use to guard against cave-in and collapse in accordance with Section 5 above. Measures will be taken to protect workers from loose rock or soil that could pose a hazard by falling or rolling from an excavation face or objects or equipment that may fall into the excavation, which may include one of a combination of:

- Scaling to remove loose material;

- Installation of protective shields or barricades at intervals as necessary on the face to stop and contain falling material;
- Banning workers from being underneath a load handled by lifting or digging equipment;
- Requiring workers to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials;
- Requiring operators of such vehicles to remain out of the cab of the vehicle during loading or unloading.

8. PROTECTION FROM HAZARDOUS ATMOSPHERES

Atmospheric testing or other appropriate steps will be taken before and, if necessary, during entry to excavations and trenches deeper than 1.22 metres/4 feet to determine whether the air inside the excavation contains less than 19.5% or more than 23.5% oxygen, flammable or combustible substances greater than 10% of their lower explosive level (LEL), toxic substances above their occupational exposure limit (OEL), or other atmospheric hazards.

If reasonably practicable, ventilation of the excavation or other engineering controls will be used to eliminate hazardous atmospheres before entry. When these measures are in place, atmospheric testing will be conducted as often as necessary to ensure that the atmosphere inside the excavation and trench remains safe.

If it is not reasonably practicable to use ventilation or other engineering controls to eliminate atmospheric hazards, workers will not be allowed to enter the excavation or trench unless they are equipped with and properly use a self-contained breathing apparatus or air-line respirators with emergency escape air packs. Emergency rescue equipment will also be kept readily available where hazardous atmospheric conditions exist or can reasonably be expected to exist, with such equipment to be attended by a worker trained in its use.

9. PROTECTION FROM POWERED MOBILE EQUIPMENT

If powered mobile equipment is operated near an excavation, or such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, barricades, flag persons, hand or mechanical signals, stop logs or other warning systems will be used. Powered mobile equipment will also be kept as far as reasonably possible, and in no event any closer than 1 metre/3 feet from the edge of the excavation to guard against the risk of falling into or exerting extra pressure on the walls of the excavation.

10. FALL PROTECTION

Walkways or bridges with guardrails that meet applicable OHS requirements will be provided where workers or equipment are required to cross over excavations.

Workers entering bell-bottom pier holes, or other similar deep and confined footing excavations, must wear a full-body harness with a securely attached lifeline that's separate from any line used to handle materials, and which is individually attended at all times while the worker wearing the lifeline is in the excavation.

Excavations must be barricaded to prevent workers and others from falling into them. Barricades and warning signs will be used when an excavation must be left open for the duration of the construction work. Excavations, pits, etc. will be backfilled after the work is completed.

11. PROTECTION FROM WATER ACCUMULATION

If water has accumulated or is accumulating in an excavation, workers may not work in the excavation unless and until adequate precautions are taken to protect workers against the hazards posed by water accumulation, which may include use of special support or shield systems to prevent cave-ins and/or water removal to control the level of accumulating water. Water removal equipment and operations must be monitored by a competent person.

12. POSTING OF ATTENDING WORKER

At all times when workers enter an excavation or trench, a competent person will be posted at the edge to monitor conditions and detect danger to the workers inside. Such competent person must be ready, willing and capable (via training and authority) of:

- Identifying and predicting trenching/excavation hazards;
- Eliminating hazards and stopping work if necessary;
- Evaluating shoring systems;
- Classifying soil conditions; and
- Operating emergency rescue equipment or quickly summoning outside help, if necessary.

13. INSPECTIONS

A competent person must inspect the excavation:

- Before work starts each day;
- Throughout the shift, as needed;
- After every rainstorm; and
- After any unusual occurrence that affects or may potentially affect the excavation's integrity.

If the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed workers must be immediately

removed from the hazardous area until the necessary precautions are taken to address the problem and ensure their safety.

14. PPE

Workers who enter excavations must use all required personal protective equipment, including, at a minimum, approved hardhats, safety glasses and safety boots. Workers exposed to hazardous atmospheres will be provided with and must use appropriate respiratory equipment. Workers exposed to vehicular traffic hazards will be provided with and must wear warning vests or other suitable garments marked with or made of high-visibility material (and be reflective if working in dim light or at night).