

A Safe Workplace

A Workplace Safety and Health Manual for Your Community

Section: III-C	Rules Procedures, Practices and Guidelines	Page 1 of 3
Subject: G-5	Trench Shoring	Approved By: Harvey Bostrom
		Effective: April 01, 2005
		Revised: April 1, 2011

PPE Required: Steel-toe boots, safety glasses, hearing protection, hard hat, coveralls, gloves.

General:

1. Shoring is required on:
 - a) open excavations exceeding 1.5 metres in depth (4.9 feet) but less than 4.5 metres (14.7 feet),
or
 - b) a trench excavation exceeding 1.8 metres in depth (6 feet) where vee-type slopes are not practical or
 - c) if there is a danger of a cave-in, collapse or material sliding or rolling into the excavation due to:
 - soil conditions where the excavation is to be made;
 - work conditions at the construction site.

2. Only approved pre-manufactured shoring cages can be used as outlined in the supplier's manual and only for the purposed intended.

3. All support structures constructed at an excavation site must be designed, inspected and certified by the design engineer prior to entering excavations and in accordance with the professional engineer's specifications which address the following matters:
 - a) the size and specifications of the structure, including the type and grade of materials used in its construction;
 - b) the loads and types of soil conditions for which the structure is designed; and
 - c) the installation, use and dismantling instructions.

4. Council must ensure that any support structure extends at least 300mm (1 foot) above the top of the excavation .

When the excavation has a combination slope and vertical face is used for wall stability in an excavation; and the depth of the excavation below the sloped sides exceeds one metre (3 feet); council must ensure that a support structure is installed and extends at least 600 mm (2 feet) above the bottom of the sloped sides in a continuous manner to prevent any material from falling into the excavation.

A Safe Workplace

A Workplace Safety and Health Manual for Your Community

Section: III-C	Rules Procedures, Practices and Guidelines	Page 2 of 3
		Approved By: Harvey Bostrom
Subject: G-5	Trench Shoring	Effective: April 01, 2005
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If an inspection results in a recommendation that the support structure be redesigned, council must ensure that:

- a) the structure is redesigned and certified by a professional engineer; and
- b) the structure is constructed, installed, used, maintained and dismantled in accordance with the professional engineer's specifications.

If council installs reshoring in an excavation, council must ensure that, before a worker enters the excavation, the reshoring or any other support structure in the excavation is:

- a) designed and certified by a professional engineer; and
- b) constructed, used, maintained and dismantled in accordance with the professional engineer's specifications.

- 5 The *Trench Shoring Procedure* is to be used in conjunction with the *Excavation Procedure* (section III-C-G4), and the Manitoba Guideline for excavation work, and part 26 of *The Manitoba Workplace Safety and Health Act and Regulations*.

Steps:

1. Council must provide a safe means of entering and leaving an excavation when an employee is required or permitted to enter an excavation.

If an employee is required or permitted to enter an open excavation or trench that is more than 1.5 m deep (4.9 feet), council must provide a ladder, stairway or ramp as a means of entering and leaving the excavation or trench.

If a ladder is used as the means for entering and leaving an open excavation or trench, council must ensure that the ladder:

- a) extends 1 m (3 feet) above the top of the excavation or trench; and
 - b) is located not more than 3 m (9 feet) from the worker, when a ladder is used in a trench.
2. When shoring is in progress, the bucket of the excavation machine must be placed in front of the shoring being installed. The bucket will serve as additional protection if a cave-in occurs.
 3. Frozen ground is not considered an alternative to proper shoring.
 4. Employees entering the trench are to follow the *Confined Space Entry Procedure* (section III-C-G9) and the *Fall Protection Procedure* (section II – C-G12), part 14 and part 15, *The*

A Safe Workplace

A Workplace Safety and Health Manual for Your Community

Section: III-C	Rules Procedures, Practices and Guidelines	Page 3 of 3
		Approved By: Harvey Bostrom
Subject: G-5	Trench Shoring	Effective: April 01, 2005
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Manitoba Workplace Safety and Health Act and Regulations, Code of Practice for confined space entry work and the Manitoba Fall Protection Guideline.

5. Council must ensure that an employee does not enter any part of a trench beyond the point to which shoring has advanced.
6. For removal, all shoring designed by a professional engineer must be dismantled in accordance with the professional engineer's specifications.
7. Council must ensure that flammable and combustible liquids are not used in an excavation unless they are stored in accordance with the Manitoba Fire Code and dispensed from safety containers that meet CSA standards and the manufacturer's specifications.

Note additional information can be found on the Department of Labour and Immigration website in the [Guidelines for Trenching and Excavation](#).

ANA has portable trench cages available for use by communities. Contact ANA regional staff for details.