

Excavation and Trenching | Mirvac Minimum Requirements

1. Purpose & Scope

The purpose of this document is to eliminate or minimise the risk of injury and property damage when undertaking excavation or trenching work, so far as is reasonably practicable.

This document applies to all workplaces under the management or control of a Mirvac entity.

2. Minimum Requirements

Mirvac personnel and Service Providers must have processes in place to ensure compliance with:

- the Critical Controls (refer Section 3);
- relevant Forms (refer Section 4);
- all relevant Legislation, Codes of Practice and Standards (refer Section 7); and
- product guidelines for installation, use or maintenance from the Original Equipment Manufacturer (OEM).

3. Critical Controls

- **Risk Assessment:** Prior to commencing excavation or trenching work a risk assessment must be conducted. The hierarchy of controls shall be applied in determining the most appropriate method of controlling risks associated with excavation or trenching work (refer examples in the Hierarchy of Controls Triangles in Section 9).
- **Identification and Protection of Services:** As minimum current underground 'essential services' information (including gas, water, sewerage, telecommunications, electricity and similar services, or chemicals, fuel and refrigerant in pipes or lines) must be obtained before directing or allowing the excavation work to commence. Services must be located, verified and physically marked prior to any excavation, piling, boring, trenching, or where stakes or star pickets are driven into the ground (refer to the [Working with Services MMR](#)). Where the work exceeds 200 mm in depth the [Excavation/Piling Boring/Trenching Permit](#) must be completed. Services that need to be cut through must be disconnected using the [Isolation Lockout Tagout MMR](#).
- **Adjacent Structures, Buildings or Other Infrastructure:** Risks to adjacent structures, buildings or other infrastructure must be identified in the planning phase and mitigation measures implemented during construction.
- **Ground Support:** Excavations over 1.5m in depth must have ground support systems in place. Those support systems must be set out in a drawing, design or sketch that is certified by the geotechnical engineer and attached to the permit. Where shoring / benching or battering systems are installed, both the design and installation must be certified by a geotechnical engineer, in accordance with the [Temporary Works - Design and Installation MMR](#). Consideration must always be given to the storing of materials or spoil to prevent a person working in an excavation being struck by a falling thing.

The geotechnical engineer must provide advice to determine the most effective methodology to prevent ground collapse in accordance with the Hierarchy of Controls.

Workers must never stand on or put weight on the cross braces / toms / struts (horizontal) which are holding trench side plates / soldiers in place.

- **Traffic / Mobile Plant:** Excavations must have adequate exclusion zones and / or ground support for machinery / vehicles and excavated material.

Powered mobile plant must not operate or travel within the determined 'zone of influence' of the edge of an excavation unless the ground support system installed has been designed to carry such loads.

Plant undertaking earth moving/excavation work must be fitted with Roll Over Protection Systems and/or Falling Object Protection Systems, as required by the [Plant, Equipment and Tools MMR](#).

When non-excavating mobile plant operates adjacent to excavations or trenches, barricades or "stop" logs must be installed.

- **Access and Egress:** Ladders, steps, ramps or other appropriate access and egress must be maintained at all times. Barriers or edge protection must be provided and a suitably designed trench system to prevent persons, plant and/or materials falling into excavations (including signage).

The excavation must be secured from unauthorised and out of hours access (including inadvertent entry) e.g. covered, fenced off and signposted.

- **Water Ingress:** Water ingress / accumulation into excavations must be controlled. The operation of pumps or other dewatering systems must be monitored, and an inspection of the equipment and excavation is to be carried out after any significant rain period.
- **Hazardous Substances/Atmospheres:** Appropriate radioactive or chemical monitoring of excavation materials/soils must be carried out where the presence of naturally occurring waste or by-products is expected to be encountered (refer to the [Occupational Exposures MMR](#)).

The need for mechanical ventilation must be assessed. All excavations must be assessed regularly for designation as a hazardous work environment. Prior to excavation, the risk of hazardous (explosive) atmospheres or flammable gases must be identified through the [Excavation/Piling Boring/Trenching Permit](#) process and controls implemented as per the JSEA/SWMS.

- **Inspection:** There must be a daily inspection of an excavation greater than 1.5m deep, by a competent person (refer Section 6), to monitor the effectiveness of controls in accordance with the drawing/plan/permit, as well as of pumps or other dewatering systems after any significant rain period.
- **Rescue:** Emergency rescue procedures must be in place for working in and around excavations and services that deals with unexpected incidents, such as ground slip, flooding, gas leaks, service strikes, plant roll over and the rescue of people from an excavation.

4. Mirvac Forms

Checklists and Permits are to be completed and then authorised by Mirvac representative prior to work

[Excavation/Piling Boring/Trenching Permit](#) – for excavation, trenching, piling or boring (including drilling) or minor works where stakes or star pickets are driven into the ground that exceed 200mm in depth.

[Confined Space Permit](#) – where an excavation is determined to be a confined space.

5. Roles and Responsibilities

The Mirvac Workplace Manager of each workplace over which Mirvac has control is responsible to ensure workers at the site are aware of and adhere to the performance requirements of this document and responsible to ensure workers are equipped with adequate tools, training, competency and licensing to undertake the work.

6. Training and Competency

Minimum Training Requirements for Excavation & Trenching

Type of Activity	Required Training
Design of benching, battering or shoring	Engineer – Structural or Geotechnical
Installation of temporary works to prevent ground collapse	Relevant Trade qualification (e.g. CPCCCM2002A – Carry out excavation RIICCM210D – Install trench support)
Inspection of temporary works to prevent ground collapse	Geotechnical, Structural or Civil Engineer or qualifications in Construction Management or 10 years' experience as a supervisor in the Construction industry

7. Relevant Legislation, Codes of Practice and Standards

Document Title

NSW:	Work Health and Safety Act 2011 (NSW) Work Health and Safety Regulation 2017 (NSW) (including regs 32 -38; 299 – 302; 304 – 306)
Vic:	Occupational Health and Safety Act 2004 (Vic) Occupational Health and Safety Regulations 2017 (Vic) (including Part 5.1 and specifically regs 354 and 355)
Qld:	Work Health and Safety Act 2011 (Qld) Work Health and Safety Regulation 2011 (Qld) (including regs 32 -38; 299 – 302; 304 – 306)
ACT:	Work Health and Safety Act 2011 (ACT) Work Health and Safety Regulation 2011 (ACT) (including regs 32 -38; 299 – 302; 304 – 306)
WA:	Occupational Safety and Health Act 1984 (WA) Occupational Safety and Health Regulations 1996 (WA) (including Subdivision 6 - Excavations and earthworks)
	Safe Work Australia - Excavation Work: Code of Practice
	Safe Work Australia - Working in the vicinity of overhead and underground electric lines: Guidance Material (Series)
	Safe Work NSW - Excavation Work: Code of Practice
	Safe Work NSW - Work health and safety procedure: Working near utilities
	Safe Work NSW - Work near underground assets: Code of Practice
	WorkSafe Vic - Excavation work: Code of Practice
	WorkSafe Vic - Safety precautions in trenching operations: Code of Practice
	WorkSafe Vic - Guide for work near underground assets
	WorkSafe Qld - Excavation work: Code of Practice
	WorkSafe Qld - Working near overhead and underground electric lines: Code of Practice
	WorkSafe WA - Excavation: Code of Practice
	AS 4744.1 Steel Shoring and Trench Lining - Design
	AS 5047 Hydraulic Shoring and Trench Lining Equipment

8. Additional Information

[Work at Height MMR](#)

[Work at Height - MMR Reference Document](#) (for Mirvac personnel only).

[Working with Services MMR](#)

[Confined Space Entry MMR](#)
[Plant Equipment and Tools MMR](#)
[Occupational Exposures MMR](#)

9. Hierarchy of Controls Triangle – Excavation and Trenching

HIERARCHY OF CONTROLS

