

Service pits are still commonly found in the workplace, but they have some specific hazards and are a common cause of incidents. If you have a service pit in your workplace, ensure to assess the risks of the pits and mitigate with controls. This document will outline some of the control systems available for consideration for service pits.

The Hazards are:

- falling into the pit
- slipping on access steps
- fire or asphyxiation from an accumulation of gases or vapours, or fuel release
- a vehicle or other objects falling on an employee in the pit
- head injuries from contact with the vehicle over the pit

Preventing falls into pits

When deciding on the preventative measures, the employer needs to consider a number of options. The best solution is likely to depend on the particular work undertaken, the layout of the premises and supervision in the workplace. It will probably include a combination of measures drawn from the following;

Limited access: The more people working or walking around the pit area, the greater the risk of falls, because they become familiar with the risk and are concentrating on other tasks. Restrict access to people who need to be there. (for example, by making clearly defined pedestrian routes)



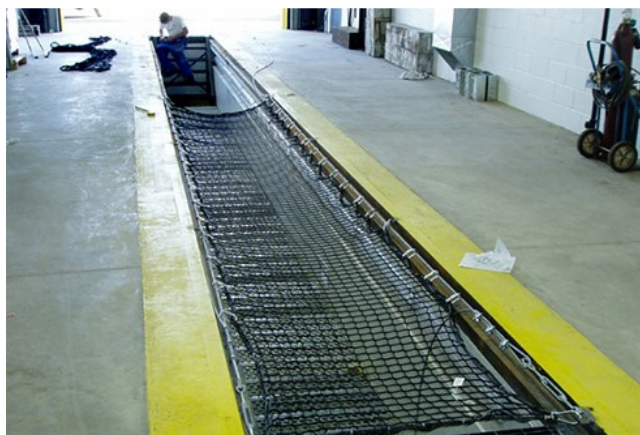
Covering pit openings: Where practical, cover pit openings when they are not in use. Cover areas of the pit that are left open when the vehicle being worked on is shorter than the length of the pit. Several systems are available that allow all or parts of the pit to be covered. Ideally, any cover should:

- be quick to install and remove
- be strong enough to withstand a falling person and any other load likely to be imposed on them
- fit securely in place
- be compatible with other pit equipment.

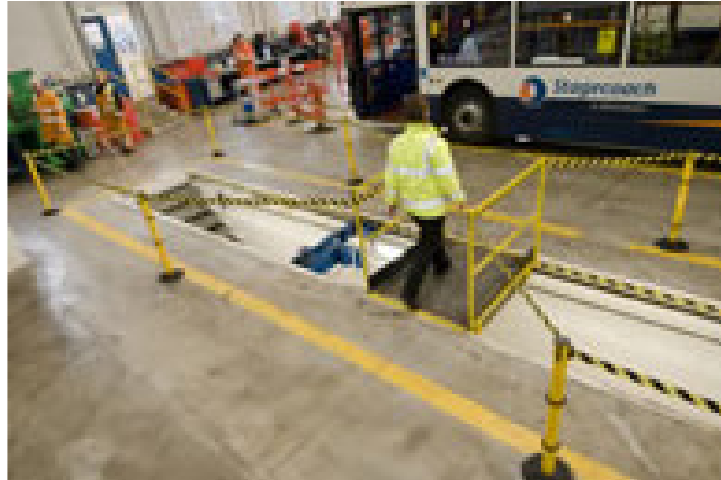
Installation and removal of covers may itself create a small risk, due to handling and proximity to the opening, and this should be weighed against the time that the pit is left uncovered and other precautions in place.



Safety Net: The simplest, most effective and most economical solution is a safety net system that easily slides along a pair of cables installed on opposite sides of the pit. The strength is in the framework consisting of cable and anchors. The safety net must function to resist wear and tear, including seepage from oils and solvents, and the net must be able to withstand the impact of a falling person with minimal deflection.



Access across the pit: Given the length of many pits, people take short cuts across the opening even where they have rules not to. It may be a better solution to provide a moveable bridge across the pit with handrails on the open sides. Such a bridge can also be used as a safe platform for work that would otherwise be impractical to carry out due to the open pit.



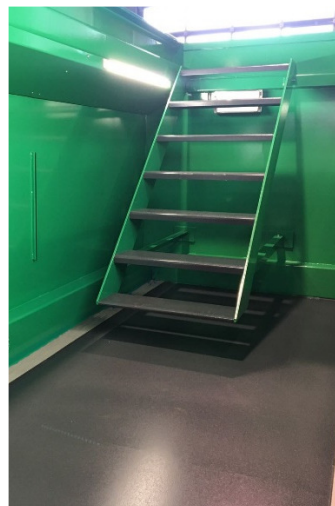
Other types of barrier: Guard rails, chains or extendible barriers can provide protection for workers near the pit edge. They allow access to the side of a vehicle over a pit (as the vehicle covers the pit at this point) while providing a warning of the open pit not covered by the vehicle. They need to be sufficiently high, stable and clearly visible so that they do not create a tripping hazard.



Improving visibility: It is important that the pit opening can be seen easily. Use pit lighting during working hours and clearly mark pit edges, for example by black and yellow bands of slip-resistant paint. Ensure the pit lights are kept clean and replace failed bulbs immediately. White painted walls help reflect light and increase the efficiency of the lighting system but need to be cleaned regularly.



Reducing the risk of slips and trips: Ensure the surface around the pit is slip-resistant, either by using anti-slip materials or by having an effective cleaning regime. As far as possible, keep the area clear from obstructions and deal with spills immediately. Similarly, keep the area inside the pit free from obstructions, this will improve access for pit workers.



Access to pits: Pits require safe means of entry and exit. Provide at least one fixed entry/exit point with additional, separate, usable means of escape.

Section 13.4 of the Manitoba Workplace Safety and Health Act and Regulations:

Secondary means of egress

13.4 An employer must ensure that there is a ready, convenient and safe secondary means of egress from the workplace that is conspicuously marked and readily usable at all times if

- A. the primary means of egress from a workplace becomes unusable because of a malfunction of equipment or a work process; or
- B. a worker could be isolated from the primary means of egress

A significant number of injuries occur from people slipping on the access steps. Provide a handrail where possible, for example a permanent handrail may be appropriate on sunken pits or low-level handrails below floor level. Use slip-resistant coatings on the steps and keep them free from contamination.



Preventing fire and asphyxiation: Pits are likely to have poor natural ventilation so the release of any low flashpoint substance or heavier-than-air gas above or near a pit can create fire/ explosion and asphyxiation risks. To reduce these risks:

- Have at least one fire extinguisher located in the pit at all times.
- do not carry out pit work on non-diesel tanks or associated fuel lines where there is a risk of release. Do not carry out any hot work on or near any tank or fuel line, including diesel systems;
- do not store portable gas/propane heaters, or other gas/propane fuelled devices, in or near pits in case they leak;
- before carrying out pit work on air-conditioning units, empty the refrigerant with a proprietary system well away from the pit area;
- do not weld in a pit unless effective local exhaust ventilation is provided;
- use fixed lighting in the pit that is suitable for potentially explosive atmospheres and conforms to a suitable standard;
- use handlamps, that have been designed and tested to prevent ignition in flammable atmospheres
- do not leave vehicles idling over pits unless there is dedicated exhaust extraction.

Preventing vehicles falling into the pit: Highlighted pit edges (approximately 150 mm wide) are a useful guide when driving vehicles on and off the pit. It may be necessary to use a spotter to assist manoeuvring (and watch out for moving vehicles or pedestrians).

For narrow-wheelbase, twin-wheeled vehicles (where the inner tire may be hanging over the pit edge), ensure that the outer tires are correctly inflated and in a satisfactory condition to reduce the risk of vehicles tipping or sliding into the pit. Also ensure that outer tires will not be loaded in excess of their carrying capacity.



Preventing other injuries: Provide suitable head protection for pit workers where there is a risk of injury from contact with the vehicle overhead or from falling objects. For example, baseball-style, short-peak bump caps provide a degree of protection, stay in place and allow reasonable upward vision. They may be more appropriate than traditional, construction-type helmets.(note, these are not CSA approved to withstand a lot of force) Eye protection may be required to guard against displaced dust, rust or other debris and especially materials ejected under pressure, e.g. hydraulic fluids. Hearing protection may be necessary for noisy processes such as an engine running.

