Vehicle Service Pit Safety

Service pits are commonly used in vehicle service and maintenance workplaces and present hazards that require specific controls. Employers should identify the hazards associated with each service pit, assess the risks and implement effective control measures.

This guide outlines practical measures to help reduce the risk of falls, slips and trips, hazardous atmospheres, fire and explosion, vehicle movement, and other injuries associated with service pit work.

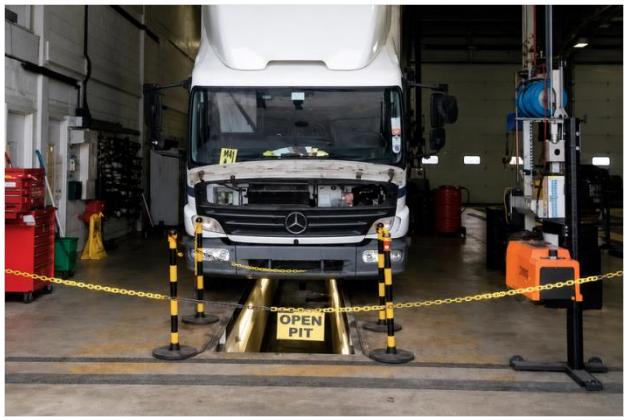
Key hazards associated with service pits include:

- falls into an open pit;
- slips, trips and falls on access steps or around the pit;
- fire, explosion or exposure to hazardous atmospheres from accumulated gases, vapours, vehicle exhaust or fuel releases;
- unintended vehicle movement or a vehicle or other objects falling into the pit;
- head injuries from contact with vehicles or equipment overhead, or from falling objects; and
- exposure to hazardous substances, flying debris, noise or materials released under pressure.

Preventing falls into pits: Service pits create an opening in the floor and must be adequately protected against falls. Saskatchewan legislation requires an opening or hole in a work surface into which a worker could step or fall to be protected by a securely installed cover or by a guardrail and toeboard. Where this protection is removed to allow work to be carried out, an effective alternative means of protection must be provided immediately.

Employers should use a combination of controls appropriate to the pit, the work being performed and the layout of the workplace. Controls may include restricting access, designated pedestrian routes, pit covers, guardrails and other effective fall protection systems.

Limited access: Restrict access around service pits to workers who need to be in the area. Clearly defined pedestrian routes, floor markings, barriers and other access controls can help keep unnecessary foot traffic away from the pit opening. Workers who routinely work around pits may become accustomed to the hazard or distracted by other tasks, making consistent access controls important.



Covering pit openings: Pit openings should be securely covered when the pit is not in use. Where a vehicle only covers a portion of the pit, any remaining open portion must also be appropriately protected. Covers should:

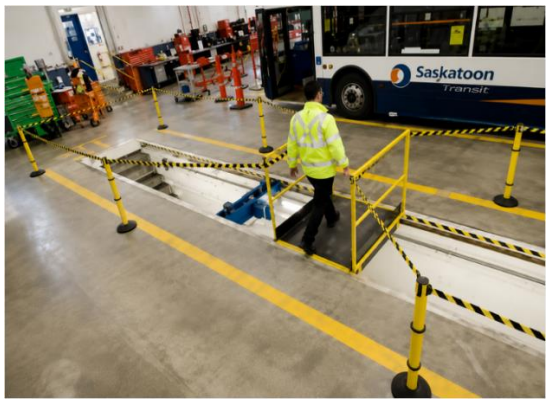
- be securely installed and prevented from unintended movement;
- be capable of supporting the loads that may reasonably be imposed on them and meet applicable legislative requirements;
- clearly identify the presence of the opening or hazard;
- be compatible with the design and equipment used in the pit
- be installed and removed using a method that minimizes workers' exposure to the open pit

Saskatchewan legislation requires a floor-opening cover to be capable of supporting a load of at least 360 kg/m² and to have a warning sign or permanent marking identifying the hazard.

Safety net systems: A properly designed safety net system may provide effective fall protection for a service pit where appropriate for the pit design and work being performed. The system should be designed and installed for its intended use and be capable of preventing a worker from falling.

Nets, cables, anchors and associated components should be inspected and maintained to ensure they remain capable of performing as intended and are resistant to deterioration from oils, solvents and other substances present in the workplace.

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.

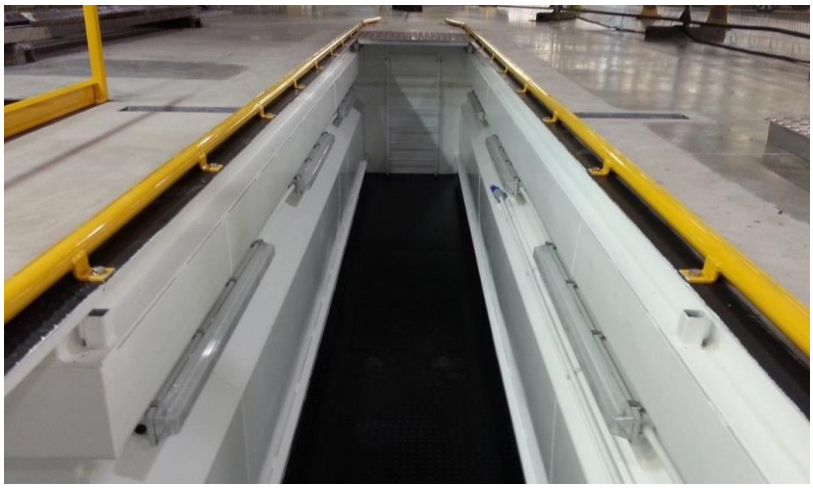


Guardrails and access barriers: Guardrails and toeboards can provide physical fall protection around exposed portions of a service pit when properly designed and installed. Where guardrails are used to meet fall-protection requirements, they must meet applicable legislative requirements for guardrail and toeboard construction.

Chains, cones, retractable barriers and similar devices can also be used to improve visibility, warn workers of the open pit and restrict access to the area. However, these devices should generally be considered warning or control zone measures and not substitutes for fall protection unless they are specifically designed and installed to provide equivalent protection.

All barriers should be highly visible, stable and positioned so they do not introduce additional tripping or contact hazards.

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 adding 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.

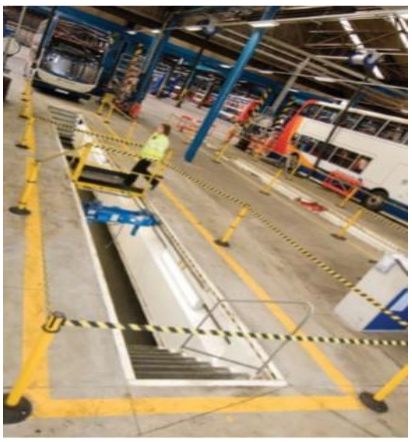
Confined-space considerations: Depending on its design and means of entry and exit, a service pit may meet the Saskatchewan definition of a confined space. Employers should assess each service pit to determine whether the confined-space requirements of the Saskatchewan OHS Regulations apply.

Where a service pit is identified as a confined space, the employer must ensure there is safe entry to and exit from all accessible portions of the space and make any practicable alterations necessary to provide safe access while maintaining the structural integrity of the pit. Before a worker enters a confined space, a competent person must assess the hazards and document the findings and required precautions.

Access to pits: Provide a safe means of entry to and exit from the service pit. Where practicable, provide a separate and readily accessible means of escape so workers are not dependent on a single exit during an emergency.

Access stairs and steps should be maintained in good condition, kept free of oil, grease and other contaminants, and provided with slip-resistant surfaces. Saskatchewan legislation requires a stairway with five or more treads to be equipped with a handrail meeting the applicable requirements.

Where the pit is determined to be a confined space, additional requirements for safe entry, exit, communication and emergency procedures may apply.



Preventing fire, explosion and exposure to hazardous atmospheres: Service pits may have limited natural ventilation, allowing exhaust gases, fuel vapours, refrigerants or other hazardous substances to accumulate. Vapours from some flammable liquids and gases may settle in low areas and create a significant fire, explosion or health hazard.

Employers must assess the hazards associated with the service pit and the work being performed. Where the pit meets the definition of a confined space, the applicable confined-space requirements must be followed.

Before a worker enters a confined space, a competent person must assess the hazards and document the required precautions. Where a hazardous atmosphere has been identified, appropriate atmospheric testing must be conducted using properly calibrated equipment.

If the pit is identified as a hazardous confined space, a written hazardous confined-space entry plan is required. The plan must address matters such as atmospheric monitoring, hazard identification, isolation, ventilation, safe entry and exit procedures, personal protective equipment, communication and rescue procedures. Additional requirements apply where a safe atmosphere cannot be established or maintained.

To reduce fire, explosion and hazardous-atmosphere risks:

- Provide fire extinguishers of an appropriate type and rating in readily accessible locations based on the fire hazards present and applicable fire-code requirements.
- Locate emergency equipment so that it remains safely accessible if a fire or other emergency occurs in or around the pit.
- Provide adequate ventilation to prevent the accumulation of vehicle exhaust, fuel vapours and other airborne contaminants, and maintain mechanical ventilation systems in effective working conditions.

- Avoid work in the pit that could release gasoline, propane or other flammable fuels or vapours unless the hazards have been assessed and effective controls are in place.
- Do not store or use portable gas or propane fueled heaters or similar equipment in or near service pits where a leak could allow gas or vapour to accumulate.
- Before servicing vehicle air conditioning or refrigeration systems in or near a pit, assess the potential for refrigerant release and recover refrigerant using appropriate equipment and procedures in a suitably ventilated area.
- Do not perform welding, cutting or other hot work where flammable substances or vapours may be present until the hazards have been assessed, atmospheric testing has been completed where required, and effective controls are in place.
- Ensure fixed lighting and other electrical equipment installed in or around the pit are suitable for the environment and any applicable hazardous-location classification.
- Use portable lighting and electrical equipment that is approved and suitable for any flammable or hazardous atmosphere that may be present.
- Minimize vehicle idling over or adjacent to service pits. Where an engine must be operated for servicing, testing or diagnostic purposes, use effective vehicle-exhaust extraction and adequate ventilation to prevent exhaust gases from accumulating.
- Where the service pit is identified as a confined space or hazardous confined space, follow all applicable requirements for hazard assessment, atmospheric testing, ventilation, entry procedures, communication and emergency response.

Securing vehicles over the pit: Before a worker enters or performs work in the pit, ensure the vehicle is correctly positioned and secured against unintended movement. Apply the parking brake and place the transmission in an appropriately secured position. Use wheel chocks or other effective means of restraint where required by the vehicle, task or hazard assessment.

Control keys, starting systems or other vehicle controls as necessary to prevent unauthorized or inadvertent movement or operation of the vehicle while workers are in the pit. Do not rely on a single method of restraint where additional measures are necessary to safely secure the vehicle.

Head protection: Select head protection based on the hazards identified in the work area. Where there is a risk of injury to a worker's head, Saskatchewan legislation requires the employer or contractor to provide and require the use of approved industrial protective headwear.

Bump caps may provide protection from minor incidental contact with stationary overhead objects where the hazard assessment determines that industrial protective headwear is not required. Bump caps are not a substitute for approved industrial protective headwear where there is a risk from falling objects or other significant head-impact hazards.

Other personal protective equipment: Provide approved eye or face protection where workers may be exposed to flying particles, rust, dust, splashing liquids or materials released under pressure. Hearing protection may be required where noise exposure presents a hazard. Respiratory protection must be selected and used in accordance with applicable requirements where workers may be exposed to hazardous airborne contaminants.

PPE should be selected based on the hazards of the task and should be used in addition to, rather than in place of, effective engineering and work-practice controls.