

## Excavation Site Stability

Every year people are killed or seriously injured during collapses or by falling materials while working in excavations. They are at risk from excavations collapsing and burying or injuring them, material falling from the sides into any excavation, and from people or plant falling into excavations.

Excavation sites are not as stable as you might think. Remember that:

- No ground can be relied upon to stand unsupported in all circumstances.
- One cubic metre of soil can weigh as much as one tonne.

### What You Need to Do

The law says you must prevent danger to workers in or near excavations. To maintain the required precautions, a competent person must inspect excavation supports or battering at the start of the working shift and at other specified times. No work should take place until the excavation is safe.

Commercial clients must provide certain information to contractors before work begins. This should include relevant information on ground conditions, underground structures or water courses, and the location of existing services.

Additionally, trenchless techniques should always be considered at the design stage, as they replace

the need for major excavations. Underground and overhead services may also present a fire, explosion, electrical or other hazard and will need to be assessed and managed.

All of this information should be used during the planning and preparation stage of excavation work. The following provides sample ways to prevent some of the main hazards associated with excavating.

---

Use this general guidance to prevent some of the main hazards associated with excavating, which kills or seriously injures people every year.

---

### Collapse of Excavations

- **Temporary support** – Before digging any trench pit, tunnel or other excavations, decide what temporary support will be required and plan the precautions that will be taken. Make sure the equipment and precautions needed (trench sheets, props, baulks, etc.) are available on-site before work starts.
- **Battering the excavation sides** – Battering the excavation sides to a safe angle of repose may also make the excavation safer. In granular soils, the angle of slope should be less than the natural angle of repose of the material being excavated. In wet ground, a considerably flatter slope will be required.

---

### Provided by Crendon Insurance Brokers Ltd

The content of this Risk Insights is of general interest and is not intended to apply to specific circumstances. It does not purport to be a comprehensive analysis of all matters relevant to its subject matter. The content should not, therefore, be regarded as constituting legal advice and not be relied upon as such. In relation to any particular problem which they may have, readers are advised to seek specific advice. Further, the law may have changed since first publication and the reader is cautioned accordingly. Contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence v2.0. Design © 2014 Zywave, Inc. All rights reserved.

# Excavation Site Stability

---

## Falling of Dislodging Material

- **Loose materials** – Implement controls, such as edge protection, to stop loose materials from spoil heaps from falling into the excavation. Edge protection should include toe boards or other means, such as projecting trench sheets or box sides for protection against falling materials. Head protection should be worn.
- **Undermining other structures** – Check that excavations do not undermine scaffold footings, buried services or the foundations of nearby buildings or walls. Decide if extra support for the structure is needed before you start. Surveys of the foundations and the advice of a structural engineer may be required.
- **Effect of plant and vehicles** – Do not park plant and vehicles close to the sides of excavations. The extra loadings can make the sides of excavations more likely to collapse.

## Falling into Excavations

- **Prevent people from falling** – Edges of excavations should be protected with substantial barriers where people are liable to fall. To achieve this, use:
  - Guard rails and toe boards inserted into the ground directly next to the supported excavation side or fabricated guard rail assemblies that connect to the sides of the trench box.
  - The support system itself, e.g., using trench box extensions or trench sheets longer than the trench depth.

## General Best Practices

Follow these essential health and safety tips to protect the people that are working on your

construction site. The tips summarise actions for straightforward excavations, for example, pipe and cable laying, manhole construction, shallow foundations, small retaining walls, etc. If your excavation is more complicated, speak to an expert such as a structural engineer.

- Prevent collapse—shore, step or batter back. Do not assume the ground will stand unsupported.
- Support the excavation as you go along.
- Prevent people and materials from falling in by using strong barriers that won't collapse if someone falls against them.
- Keep plant and materials away from the edge.
- Avoid underground services—use relevant service drawings, service locating devices and safe digging practices.
- Provide ladder access to get in and out.
- Make sure adjacent structures are not undermined by digging well enough away from them.
- Check the excavation each day before work starts and after any event that may affect its stability, such as a fall of material or poor weather. Keep records so people can be sure it is safe for work to continue.

## Keep Your Project on Solid Ground

Your excavation project requires constant maintenance and risk management to stay on solid ground. Just one slip-up could cause the entire project to crumble. With resources from the insurance professionals at **Crendon Insurance Brokers Ltd**, you can be sure that your construction site stays clean, safe and stable.