

Excavations

Reason	Deaths and injuries occur every year due to collapsing excavations, or workers being overcome by poisonous gases or striking live services.
Outline	This talk covers how you can stay safe in an excavation and outlines the causes of accidents.



Safe working in a deep excavation using trench boxes and a secured ladder



Examples of stepped excavations



An unsupported excavation resulting in collapse



Deep inspection chamber excavation with access and edge protection



A cubic metre of earth can weigh over 1 tonne – if you get it wrong the consequences could be fatal.

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How to stay safe

1. Before digging, check for services (water, gas and electricity). Always treat them as live, until proven otherwise.
2. Excavations must be supported or battered back if people are working in them, to prevent collapse.
3. Ensure that you receive the correct information and instruction on the safe use of any excavation support or shoring provided.
4. Use ladders for access and egress. Do not climb supports.
5. Fit edge protection around excavations, regardless of excavation depth.
6. Make sure that you are aware of emergency rescue procedures.
7. Keep spoil heaps back at least the depth of the excavation from the edge.
8. Ensure stop blocks are used when a vehicle or plant is tipping into an excavation and that the vehicle or plant is guided by a marshaller.
9. Never throw tools or materials into an excavation. Instead, pass them hand-to-hand or lower them on a rope if it is too deep to pass them.
10. Excavations must be inspected by a competent person prior to entry at the start of every shift.
11. The results of excavation inspections must be recorded.

Causes of excavation accidents

1. Shoring is not installed or the trench walls are not battered back.
2. The use of shoring or supports that are the wrong type for the excavation size, depth and ground conditions.
3. Workers trying to jump across the excavation.
4. Incorrectly installed supports or the unauthorised removal or alteration of supports or braces.
5. People working beyond the supported area of the excavation, or not using the fixed ladder for access or egress.
6. Sides of excavations becoming unstable after periods of hot, dry weather or heavy rainfall.
7. Heavy materials, vehicles or plant being placed, driven or parked too close to the edge of the excavation, causing it to collapse.
8. Vehicles driving into excavations due to lack of stop blocks, barriers or bunds.
9. People, including members of the public, falling into trenches because edge protection was not fitted.
10. Workers being struck by falling materials or the excavator bucket.
11. The accumulation of heavier-than-air toxic gases, resulting in asphyxiation.



What must you check for prior to excavating?

What precautions must be taken when dumpers are tipping spoil back into a trench?

What is the safe means of access to a deep excavation?

What should be fitted to stop vehicles driving into excavations?

When should edge protection be fitted?