



## Safety in excavations

### Construction Information Sheet No 8 (Revision 1)

#### Introduction

Every year, people are killed or seriously injured when working in excavations. Excavation work has to be properly planned, managed, supervised and carried out to prevent accidents. This information sheet provides advice for those involved in excavation work.

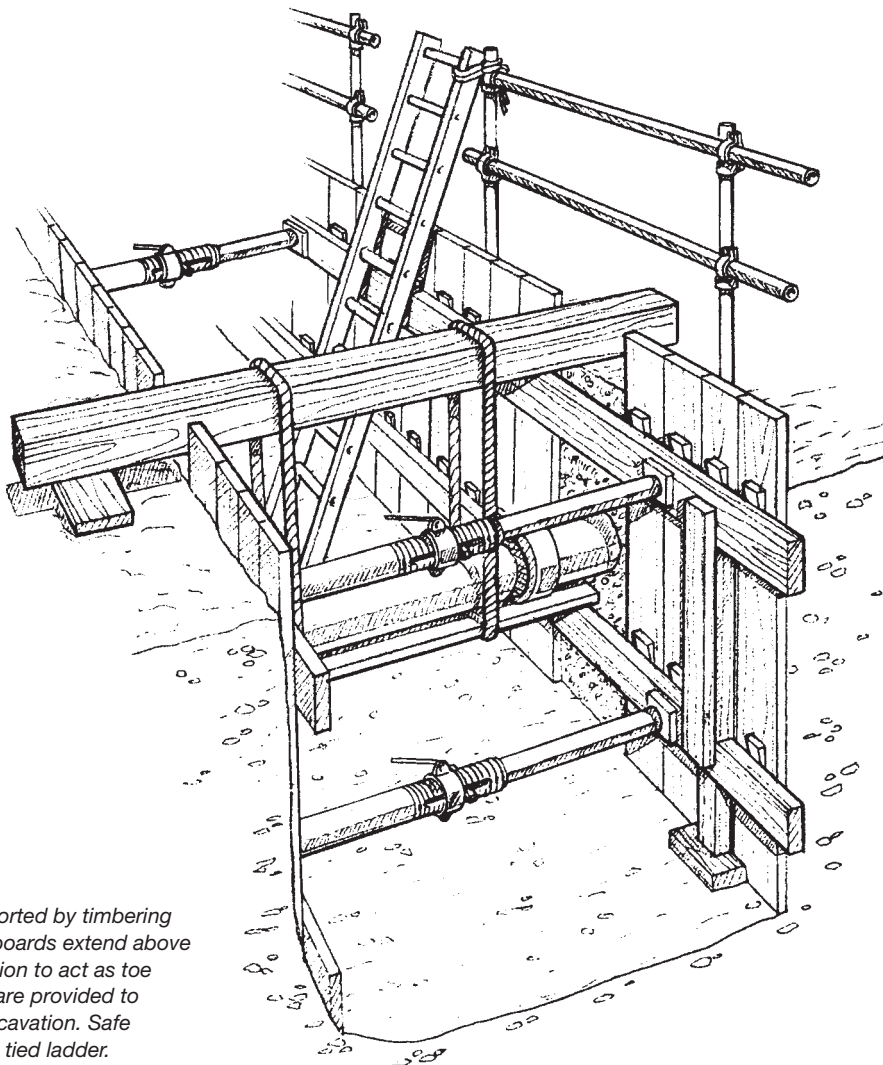
#### Planning

Before digging any excavations, it is important to plan against the following:

- collapse of the sides;
- materials falling onto people working in the excavation;

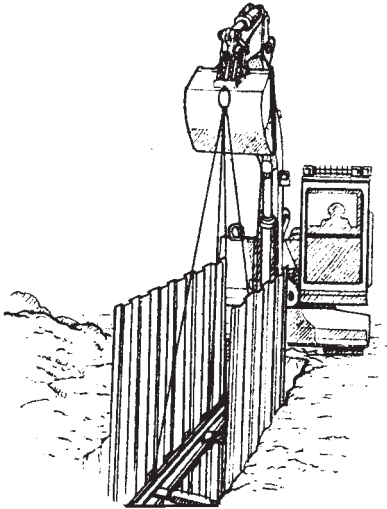
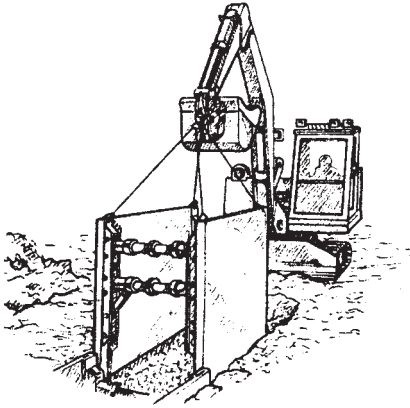
- people and vehicles falling into the excavation;
- people being struck by plant;
- undermining nearby structures;
- contact with underground services;
- access to the excavation;
- fumes; and
- accidents to members of the public.

Make sure the necessary equipment needed such as trench sheets, props, baulks, etc, is available on site before work starts.



*This excavation is supported by timbering and props. The poling boards extend above the edge of the excavation to act as toe boards and guard rails are provided to prevent falls into the excavation. Safe access is provided by a tied ladder. Exposed services are supported.*

## Excavation collapse



*A range of proprietary trench boxes and hydraulic wallings allow trench supports to be put in place without requiring people to enter the excavation.*

- Prevent the sides and the ends from collapsing by battering them to a safe angle or supporting them with timber, sheeting or proprietary support systems.
- Do not go into unsupported excavations.
- Never work ahead of the support.
- Remember that even work in shallow trenches can be dangerous. You may need to provide support if the work involves bending or kneeling in the trench.

## Materials falling into excavations

- Do not store spoil or other materials close to the sides of excavations. The spoil may fall into the excavation and the extra loading will make the sides more prone to collapse.
- Make sure the edges of the excavation are protected against falling materials. Provide toe boards where necessary.
- Wear a hard hat when working in excavations.

## People and vehicles falling into excavations

- Take steps to prevent people falling into excavations. If the excavation is 2 m or more deep, provide substantial barriers, eg guard rails and toe boards.
- Keep vehicles away from excavations wherever possible. Use brightly painted baulks or barriers where necessary.
- Where vehicles have to tip materials into excavations, use stop blocks to prevent them from over-running. Remember that the sides of the excavation may need extra support.

## People being struck by plant

- Keep workers separate from moving plant such as excavators. Where this is not possible use safe systems of work to prevent people being struck.
- Plant operators should be competent.

## Undermining nearby structures

- Make sure excavations do not affect the footings of scaffolds or the foundations of nearby structures. Walls may have very shallow foundations which can be undermined by even small trenches.
- Decide if the structure needs temporary support before digging starts. Surveys of the foundations and the advice of a structural engineer may be needed.

## Avoiding underground services

- Look around for obvious signs of underground services, eg valve covers or patching of the road surface.
- Use locators to trace any services. Mark the ground accordingly.
- Make sure that the person supervising excavation work has service plans and knows how to use them. Everyone carrying out the work should know about safe digging practices and emergency procedures.

## Access

- Provide good ladder access or other safe ways of getting in and out of the excavation.

## Fumes

- Exhaust fumes can be dangerous. Do not site petrol or diesel-engined equipment such as generators or compressors in, or near the edge of, an excavation unless fumes can be ducted away or the area can be ventilated.

## Protecting the public

- Fence off all excavations in public places to prevent pedestrians and vehicles falling into them.
- Where children might get onto a site out of hours, take precautions (eg backfilling or securely covering excavations) to reduce the chance of them being injured.

For more information, read HSG151 *Protecting the public: Your next move*.

## Supervision

- **A competent person must supervise the installation, alteration or removal of excavation support.**
- People working in excavations should be given clear instructions on how to work safely.

## Inspecting excavations

- **A competent person must inspect excavations:**
  - **at the start of each shift before work begins;**
  - **after any event likely to have affected the strength or stability of the excavation; and**
  - **after any accidental fall of rock, earth or other material.**
- **A written report should be made after most inspections. Stop work if the inspection shows the excavation to be unsafe.**

For more information on inspections and reports, read CIS 47.

## Legal requirements

Health and Safety at Work etc Act 1974

Management of Health and Safety at Work Regulations 1999

Provision and Use of Work Equipment Regulations 1998

Construction (Health, Safety and Welfare) Regulations 1996

## References and further information

*Inspections and reports* Construction Information Sheet CIS47(rev1)HSE Books 2005

*Health and safety in construction* HSG150 (Second edition) HSE Books 2001 ISBN 0 7176 2106 5

*Protecting the public: Your next move* HSG151 HSE Books 1997 ISBN 0 7176 1148 5

*Health and safety in excavations: Be safe and shore* HSG185 HSE Books 1999 ISBN 0 7176 1563 4

The future availability and accuracy of the references listed in this publication cannot be guaranteed.

## Further information

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax: 01787 313995 Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk) (HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: [www.hse.gov.uk](http://www.hse.gov.uk).)

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This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

**The leaflet includes mandatory requirements under the Construction (Health, Safety and Welfare) Regulations 1996. These are shown in bold type.**

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