Excavation Safety Training Course: Slope Protection, Embankments and Bund Walls

2 – 6 May 2027
Kuala Lumpur

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Ref: 900_41069 **Date:** 2 – 6 May 2027 **Location:** Kuala Lumpur **Fees:** 4000 GBP

Programme Summary

Excavation safety, covering slope protection, embankment stability and bund wall control, is the subject of this one-week training course for site, HSE and civil leaders, ending in a ground control review pack for one site. Open cuts collapse, embankments slump and bunds fail when slopes, drainage and inspection are left to habit. The programme moves from soil and ground behaviour to slope and benching choices, embankments, bund walls and inspection control, using prepared site cases. Mars Training Centre UK delivers this programme on excavation safety to mixed-organisation cohorts.

The Business Case

An excavation wall that gives way can kill a worker and halt a project, and a failed bund can turn a tank leak into a site-wide release. Leaders who question soil, slope, water and inspection evidence can approve methods with confidence and stop small defects growing into incidents.

- Collapse Exposure: Falls when soil type, slope angle and protective system are matched before digging starts.
- Containment Reliability: Improves when bund walls, floors and drainage are inspected against a set routine.
- Stoppage Time: Reduces when inspection findings are recorded, ranked and closed by named owners.

Principles and Evidence Base

- Excavation soil classification into stable rock, Type A, Type B and Type C: Applied in Sessions 1 and 2 to link soil strength to the choice of slope or protective system.
- Maximum allowable slope tables, with benching limited to Type A and Type B soils: Applied in Session 2 to test proposed slopes and bench layouts.
- CIRIA C736 containment guidance, including the 110% rule for single tank bunds: Applied in Sessions 4 and 5 to review bund capacity, walls and drainage.

Intended Participants

- Site and project leaders who approve excavation methods and permits for earthworks.
- HSE leaders who set inspection routines and review contractor safety evidence.
- Civil and geotechnical leaders who specify slopes, embankments and bund walls.
- Operations leaders who own tanks, bunds and the containment duty around them.

Typical settings include construction, utilities, oil and gas storage and mining and quarrying.

Learning Outcomes

1. Participants will be able to classify soil and rank the collapse risks it creates for an open excavation.
2. Participants will be able to evaluate whether a proposed slope, bench or other protective system suits the ground.
3. Participants will be able to diagnose embankment defects from drainage, compaction and loading evidence.
4. Participants will be able to appraise a bund wall design for capacity, integrity and drainage.
5. Participants will be able to construct an inspection routine with triggers for stopping work.
6. Participants will be able to justify a ground control review pack to a project board.

Programme Structure

Day 1: Excavation Safety and Ground Behaviour

How does the ground behave when it is cut, loaded or wetted?

- Soil Classification Method
- Failure Mode Chart
- Groundwater and Drainage Check
- Surcharge Load Screen
- Competent Person Role Definition

Day 2: Sloping, Benching and Protective Systems

Which protection suits this soil and this depth?

- Maximum Allowable Slope Table
- Bench Layout Test
- Shoring and Shield Selection
- Spoil Placement Rule
- Method Statement Review

Day 3: Embankments and Earth Retention

What keeps an embankment stable over time?

- Embankment Slope Stability Check
- Compaction Evidence Review
- Surface Water Control Plan
- Erosion and Seepage Signs
- Retaining Edge Condition Survey

Day 4: Bund Walls and Secondary Containment

Will the bund hold what it is meant to hold?

- CIRIA C736 Reading
- 110% Capacity Calculation
- Bund Wall and Floor Integrity Check
- Rainwater and Valve Control
- Multiple Tank Bund Case

Day 5: Ground Control Review Pack for One Site

Do the findings join into a pack a board can rely on?

- Applying the Session 1 Soil Classification Method
- Testing the Session 2 Method Statement Review
- Checking the Session 3 Surface Water Control Plan
- Reviewing the Session 4 Capacity Calculation
- Completing the Ground Control Review Pack

Methodology

The programme is a field-style review built on prepared records of two sites, one a pipeline trench and road embankment project and one a tank storage terminal. Participants read soil logs, slope drawings and bund records in small groups, challenge a contractor method statement and defend their review pack to peers acting as a project board.

- Suggested activity: Classifying a soil log and choosing between a slope and a bench layout.
- Suggested activity: Walking through a bund record and finding the missing inspection evidence.
- Suggested activity: Presenting a stop-work trigger list and answering board challenge.

Capstone Output

Each participant completes a ground control review pack for one site. It holds a soil and protection summary, an embankment condition note, a bund capacity and integrity table, an inspection routine with stop-work triggers and an action register. At work it supports permit approval and guides contractor audits.

Frequently Asked Questions

Is excavation safety training suitable for leaders without a geotechnical background?

Yes. Excavation safety is taught through soil logs, drawings and records prepared for the course. You need responsibility for sites, safety or civil works, but no earlier knowledge of soil mechanics or bund design.

Which standards does excavation safety rest on in this programme?

Excavation safety here rests on soil classification into Type A, Type B and Type C, maximum allowable slope tables and CIRIA C736 containment guidance, each applied to a slope, embankment or bund decision.

How is the review pack from excavation safety training used at work?

You take the review pack to permit approval and project board meetings, use its inspection routine to set stop-work triggers and keep its action register as the basis for contractor audits.

How does excavation safety differ from a programme on confined space entry?

Excavation safety concentrates on open cuts, slopes, embankments and bunds and how the ground fails, while confined space entry concentrates on atmosphere testing, isolation and rescue inside enclosed spaces.