JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Sloping, Benching, Embankments and Bundwalls Training Course

1 – 5 March 2027
Rome

Sloping, Benching, Embankments and Bundwalls Training Course

Ref: 2763_105678 **Date:** 1 – 5 March 2027 **Location:** Rome **Fees:** 7200 GBP

Sloping, Benching, Embankments and Bundwalls is a 1-week training course for civil and site engineers, earthworks supervisors and safety officers; participants prepare an earthworks and containment method statement for a live site. Trench collapses, settling fills and leaking tank compounds remain among the costliest failures on construction and industrial sites. Jupiter Prime Training runs this sloping, benching, embankments and bundwalls course.

Why Sloping, Benching, Embankments and Bundwalls Matter Now

Three pressures shape earthworks today. Tighter schedules push crews into deeper excavations with less time for soil checks. Clients expect documented reasoning behind every cut and fill. Owners of fuel, chemical and water storage face sharper scrutiny of secondary containment after spills. A site that handles these well avoids buried workers, cracked roads and polluted ground; one that handles them badly faces stoppages, claims and lasting damage to reputation. The course rests on soil mechanics principles, slope stability methods, compaction testing practice and recognised secondary containment design guidance.

Who Gains Most from Sloping, Benching, Embankments and Bundwalls

- Site engineers who set out excavations and choose between sloping, benching and shoring
- Earthworks supervisors who control fill placement, layer thickness and compaction on the ground
- Design engineers who size embankment profiles and bund compounds for storage tanks
- Safety officers who inspect open excavations and sign off permits to dig
- Quality staff who run density tests and keep records of each placed layer

A contractor or plant owner gains most when its site engineers, earthworks supervisors and safety staff attend together.

Sloping, Benching, Embankments and Bundwalls Capabilities

Participants move from soil classification to the slope angles, fill specifications and bund dimensions a site crew can build and inspect.

- Classify soils for excavation decisions — permit to dig
- Specify safe slope angles and bench geometry for trench depth and soil type — excavation sign-off
- Calculate an embankment factor of safety for a simple profile — design acceptance
- Design compaction control with layer thickness, moisture limits and density tests — quality inspection
- Size a bundwall compound for tank volume, rainfall allowance and wall height — containment approval

- Build an inspection checklist for open excavations and bund integrity — site safety audit

Key Sloping, Benching, Embankments and Bundwalls Terms

- Sloping — cutting excavation sides back to a stable angle.
- Benching — forming horizontal steps in an excavation wall to reduce height.
- Embankment — a raised structure of compacted fill carrying roads, rail or water.
- Factor of safety — the ratio of soil resisting forces to driving forces along a potential slip surface.
- Optimum moisture content — the water content at which a soil reaches its highest dry density.
- Bundwall — a wall or earth bank around storage tanks that holds spilled liquid inside a secondary containment area.

Sloping, Benching, Embankments and Bundwalls Day by Day

Day 1: Ground Behaviour and Excavation Hazards

- Soil Classification By Grain Size And Plasticity — Choosing Excavation Approach
- Cohesive Versus Granular Soil Behaviour — Predicting Collapse Modes In Trenches
- Groundwater And Surcharge Loads — Judging Extra Risk Near Excavation Edges
- Trench Collapse Case Reviews — Tracing Failures To Missed Ground Checks
- Permit To Dig Process — Assigning Authority Before Excavation Starts

Day 2: Sloping and Benching Design

- Allowable Slope Angles By Soil Type — Setting Cut Profiles For Trench Depth
- Single And Multiple Bench Geometry — Limiting Wall Height And Access Risk
- Sloping Versus Shoring Selection — Weighing Space, Cost And Schedule Limits
- Spoil Heap And Plant Setback Distances — Keeping Loads Away From Edges
- Daily Excavation Inspection Checklist — Spotting Cracks, Seepage And Bulging Early

Day 3: Embankment Design and Stability

- Embankment Profile And Side Slope Selection — Matching Height To Foundation Soil
- Slip Circle Stability Checks — Calculating Factor Of Safety For Fill Slopes
- Foundation Preparation And Soft Ground Treatment — Reducing Settlement Under Fill
- Drainage Layers And Erosion Protection — Protecting Slopes From Surface Water
- Settlement Monitoring Points — Tracking Movement After Fill Placement

Day 4: Compaction Control and Bundwall Containment

- Laboratory Compaction Curves — Setting Moisture And Density Targets For Fill
- Layer Thickness And Roller Pass Trials — Fixing Placement Method On Site
- Field Density Testing Methods — Accepting Or Rejecting Each Compacted Layer
- Bund Capacity Sizing For Tank Farms — Allowing For Largest Tank And Rainfall
- Bund Wall Lining And Penetration Sealing — Preventing Leaks Through Joints And Pipes

Day 5: Practising the Earthworks and Containment Method Statement

- Site Ground Model Summary — Applying Soil Classification From Earlier Sessions
- Excavation Support Choice For Each Zone — Combining Slope Angles And Benches
- Fill Specification And Testing Schedule — Linking Compaction Targets To Inspection
- Bund Compound Layout And Drainage Valves — Confirming Capacity And Rainwater Release
- Earthworks And Containment Method Statement — Completing Sequence, Controls And Sign-Offs

Applying Sloping, Benching, Embankments and Bundwalls After the Course

- Audit one open excavation against the slope angle and bench geometry rules.
- Check the capacity and penetration seals of one existing tank bund.

Sloping, Benching, Embankments and Bundwalls Questions FAQ

What are sloping, benching, embankments and bundwalls, and why do they matter now?

They are the earthworks methods that keep excavations stable, fills sound and stored liquids contained. They matter now because tighter schedules, deeper cuts and stricter spill expectations leave little margin for error.

Which roles gain most from sloping, benching, embankments and bundwalls training?

Site and civil engineers, earthworks supervisors and safety officers gain most. Design and quality staff also benefit.

How does sloping, benching, embankments and bundwalls training differ from a general construction safety course?

It goes deeper into ground engineering. A general safety course lists excavation hazards; this subject covers soil classification, slope angles, embankment stability checks, compaction control and bund capacity sizing.

What do you bring back from sloping, benching, embankments and bundwalls training?

You bring back a structured method statement for cut, fill and containment works. It sets excavation profiles per zone, fill and testing requirements, bund layout and the inspection and sign-off sequence.

Sloping, Benching, Embankments and Bundwalls: The Way Forward

The earthworks and containment method statement informs the first decision on any site: how each excavation zone will be supported before digging begins. Site engineers, supervisors and safety officers use it to brief crews and issue permits. After the first stage of works, revisit the ground model and compaction results, because real soil conditions often differ from early investigation logs.