Formwork Design and Falsework Safety Training Course

8 – 12 November 2027
Singapore (Singapore)



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Introduction:

This Formwork Design and Falsework Safety Training Course prepares you to manage temporary works operations, calculate structural construction loads, and enforce rigorous site safety protocols across one week. You will build a Formwork Design and Falsework Safety Dossier that integrates lateral pressure models, shoring structural checks, stripping criteria, and temporary works registers. You need foundational experience in construction site management, civil engineering, or project delivery, as this practitioner-level course applies technical design rules to active concrete construction. You will practise through case study analysis, examining engineering calculations, falsework schematics, and site failure reports.

Course Objectives:

- Calculate concrete lateral pressure distributions using ACI 347R-14 formulas for vertical formwork walls and columns.
- Draft structural sizing verifications using ACI SP-4 design principles for sheathing, joists, stringers, and shores.
- Map independent design check categories and procedural controls using BS 5975:2019 standards for falsework systems.
- Model multistory shoring and reshoring load distributions using ACI 318-19 structural concrete framework requirements.
- Test concrete formwork execution tolerances against ACI 117 quality benchmarks for horizontal and vertical concrete elements.
- Present permit to load and permit to strike sign-off protocols using BS 5975:2019 temporary works management workflows.

Target Audience:

- You direct structural concrete operations, falsework erection workflows, and contractor site execution across civil infrastructure projects.
- You manage temporary works registers, structural design brief reviews, and technical submittals for commercial building construction.
- You coordinate site safety inspections, concrete placement procedures, and falsework stability sign-offs on major engineering projects.
- You supervise structural formwork assembly, shore installation quality, and multi-tier reshoring schemes across multistory developments.



Course Outline:

Day 1: Establishing Formwork Design Loads and Site Context

- Classifying temporary works types using BS 5975:2019 procedural guidelines
- Calculating concrete lateral pressures using ACI 347R-14 design equations
- Determining environmental and construction live loads using design specifications
- Evaluating concrete placement rates using fresh concrete pressure tables
- Build: Formwork Lateral Pressure and Load Calculation Sheet

Day 2: Applying Falsework Structural Standards and Codes

- Sizing timber and steel formwork elements using ACI SP-4
- Categorising independent design check categories using BS 5975:2019 protocols
- Verifying member bending and deflection limits using permissible stresses
- Auditing formwork fabrication alignment tolerances using ACI 117 specifications
- Build: Falsework Structural Check and Tolerance Matrix

Day 3: Executing Shoring, Reshoring, and Cycle Logistics

- Calculating multistory shore load distributions using ACI 318-19 principles
- Sequencing stripping cycles using seventy percent concrete strength thresholds
- Designing backshoring schemes for heavy concrete slab construction stages
- Controlling prop installations using manufacturer axial capacity safety factors
- Build: Multistory Shoring and Reshoring Schedule

Day 4: Mitigating Temporary Works Risks and Site Failures

- Analysing structural collapse mechanisms using forensic falsework failure casebooks
- Structuring formal temporary works registers using BS 5975:2019 governance
- Drafting permit to load protocols using site inspection checklists
- Formulating permit to strike authorisations using concrete strength verification
- Build: Temporary Works Risk Register and Stripping Protocol

Day 5: Resolving Site Scenarios Through Case Study Analysis

- Auditing design brief discrepancies using Day 1 load sheets
- Reassessing high-risk falsework check tiers using Day 2 matrices
- Stress testing accelerated multistory stripping schemes using Day 3 schedules
- Resolving site inspection permit non-conformances using Day 4 registers
- Build: Formwork Design and Falsework Safety Dossier



Skills You Will Gain:

- ACI 347R-14 Lateral Pressure Estimation
- BS 5975:2019 Temporary Works Procedural Control
- ACI SP-4 Formwork Component Sizing
- Multistory Reshoring Load Analysis
- ACI 117 Concrete Construction Tolerance Auditing
- Permit to Load Falsework Sign-Off
- Permit to Strike Safety Governance

Why Attend This Course:

- Size vertical and horizontal formwork assemblies using ACI SP-4 design methods to prevent structural deflection and blowout.
- Establish independent falsework check categories using BS 5975:2019 procedures to protect workforce safety and ensure compliance.
- Formulate multistory shore and reshore schedules using ACI 318-19 load models to safeguard curing concrete slabs from premature overloading.
- Build a Formwork Design and Falsework Safety Dossier to standardise temporary works registers, inspection sign-offs, and striking permits on site.

Conclusion:

Returning to your project, you will use the Formwork Design and Falsework Safety Dossier to standardise temporary works registers and review active falsework design briefs. You will present the completed structural check matrices, shoring schedules, and permit to strike protocols to your project director and site supervision team for operational implementation. Following its initial rollout on an upcoming concrete pour, you will check the pre-pour inspection log and striking permits against concrete strength test data to verify that all falsework releases comply with safety thresholds.

Frequently Asked Questions FAQ:

What will you be able to do after the Formwork Design and Falsework Safety Training Course?

You will be able to calculate formwork design loads, verify component structural capacities, coordinate independent falsework design checks, sequence safe shoring and reshoring operations, and govern site safety using formal permit to load and permit to strike procedures.



What do you need to know before starting the Formwork Design and Falsework Safety Training Course?

You need a foundational understanding of civil engineering, construction site practices, or project supervision. Familiarity with basic structural concepts is helpful, as this practitioner-level course focuses on practical application of temporary works standards and site governance rather than entry-level construction basics.

What do you build during the Formwork Design and Falsework Safety Training Course?

You build a Formwork Design and Falsework Safety Dossier. This practical project deliverable incorporates concrete lateral pressure calculations, structural falsework checks, execution tolerance tables, multistory reshoring schedules, and temporary works permit to load and permit to strike registers.

How does the Formwork Design and Falsework Safety Training Course differ from advanced structural engineering courses?

This course focuses on practical construction site management, safety governance, and temporary works procedural controls under ACI and BS standards. Advanced structural engineering courses focus on permanent structure design and finite element software, whereas this curriculum directly manages temporary construction hazards.

