# Damage Assessment & Rehabilitation of Concrete Structures

2027 □□□□ 28 – 24
Madrid (Spain)

UK Traininig
PARTNER



# Damage Assessment & Rehabilitation of Concrete Structures

Ref: 20220729_280748 Location: Madrid (Spain) Fees: 5200 GBP

## Course Description

This intensive 1-week course provides comprehensive training on damage assessment and rehabilitation of concrete structures. Participants will learn advanced techniques for evaluating structural integrity, identifying deterioration causes, and implementing effective repair strategies. The course combines theoretical knowledge with practical applications to equip professionals with the skills needed to restore and maintain concrete structures.

## Learning Objectives

- Understand the mechanisms of concrete deterioration and failure
- Master various non-destructive and destructive testing methods for concrete assessment
- Develop skills in designing and implementing appropriate repair and rehabilitation techniques
- Learn to select suitable materials and methods for concrete structure restoration
- Gain practical experience through case studies and hands-on exercises

## Course Modules

### Day 1: Introduction to Concrete Deterioration and Assessment

- Overview of concrete structure deterioration mechanisms
- Visual inspection techniques and documentation
- Non-destructive testing methods for concrete assessment
- Destructive testing and core sampling procedures

### Day 2: Structural Analysis and Damage Evaluation

- Structural analysis of damaged concrete elements
- Crack pattern analysis and interpretation
- Load-carrying capacity assessment
- Risk assessment and prioritization of repairs

### Day 3: Repair Materials and Techniques

- Selection criteria for repair materials
- Concrete removal and surface preparation methods
- Patching, grouting, and crack injection techniques
- Corrosion mitigation and protection strategies



### Day 4: Structural Strengthening and Rehabilitation

- Strengthening techniques for beams, columns, and slabs
- FRP applications for concrete rehabilitation
- Seismic retrofitting of concrete structures
- Durability enhancement strategies

### Day 5: Project Planning and Case Studies

- Repair project planning and execution
- Quality control and assurance in concrete rehabilitation
- Life cycle cost analysis for repair alternatives
- Real-world case studies and practical exercises

## Practical Wins for Participants

- Ability to conduct comprehensive damage assessments of concrete structures
- Proficiency in selecting and implementing appropriate repair techniques
- Skills to develop cost-effective rehabilitation strategies for concrete structures
- Hands-on experience with state-of-the-art assessment and repair technologies

