



## CIVIL ENGINEERING AND CONSTRUCTION TRAINING

# Concrete Repair, Rehabilitation and Strengthening

5 day course

Classroom, online or in-house

## Course overview

Patch repairs that crack and debond after a few seasons usually fail because the cause of deterioration was never removed, or because the repair mortar was incompatible with the parent concrete. This course takes over once an assessment has diagnosed the problem and asks what to do next. Delegates work through repair strategy selection using the principles of EN 1504, surface preparation and breaking out, reinforcement treatment, and the choice between hand applied mortars, sprayed concrete and recasting. Crack injection, coatings, hydrophobic impregnation, cathodic protection and realkalisation for chloride and carbonation damage are compared. Strengthening covers section enlargement, bonded steel plates, fibre reinforced polymer wraps and external post tensioning, with design checks for each. Delegates leave able to specify, supervise and verify a durable repair.

## What you will learn

- Select a repair and protection strategy matched to the diagnosed deterioration mechanism
- Apply the repair principles and methods set out in EN 1504
- Specify surface preparation, breaking out and reinforcement treatment
- Choose between hand applied mortar, sprayed concrete and recasting for a given defect
- Evaluate crack injection, coatings, impregnation and electrochemical treatments
- Design strengthening using section enlargement, steel plate bonding and fibre reinforced polymers
- Plan quality control and acceptance testing for repair works
- Prepare a repair specification and bill of quantities

## Who should attend

- Structural engineers responsible for existing structures
- Asset and maintenance managers for bridges, buildings and plant
- Repair contractors and site agents
- Clerks of works and resident engineers on rehabilitation contracts
- Specification writers and materials suppliers' technical staff

## Course outline

- 01 Why repairs fail
- 02 Repair strategy and EN 1504 principles
- 03 Preparation, breaking out and steel treatment
- 04 Mortars, sprayed concrete and recasting
- 05 Cracks, coatings and impregnation
- 06 Electrochemical protection and realkalisation
- 07 Strengthening with plates and fibre wraps
- 08 Section enlargement and external post tensioning
- 09 Specification, quality control and acceptance

## Upcoming dates



| Dates                          | Venue                   | Format    | Fee per delegate |
|--------------------------------|-------------------------|-----------|------------------|
| 19 to 23 October 2026          | Nairobi, Kenya          | Classroom | USD 1,325        |
| 26 to 30 October 2026          | Online                  | Online    | R8,500           |
| 30 November to 4 December 2026 | Dar es Salaam, Tanzania | Classroom | USD 1,325        |
| 14 to 18 December 2026         | Maputo, Mozambique      | Classroom | USD 1,325        |

### Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit [www.afrisciencegroup.com](http://www.afrisciencegroup.com), email [info@afriScience.co.za](mailto:info@afriScience.co.za), or WhatsApp us on **+27 63 479 1136**.

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