



# FORENSIC: UNDERSTANDING CONCRETE DEFECTS & DIAGNOSIS >>>>



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CONCRETE SPECIALIST

1. Planning and preparations for inspection
2. Identifying distress
  - a) Cracks
  - b) Staining
  - c) Leakage
  - d) Damping
  - e) pop out
  - f) spalling
  - g) chemical attack, etc.
3. Sampling and testing
  - a) Tracing non-compliance material.
  - b) Understanding Non-destructive test
    - Rebound hammer
    - Winsor Probe test
  - c) Destructive concrete test
    - Core test
    - Water absorption test
    - Water penetration test
  - d) Petrographic/chemical/mineral analysis
    - Cement and water content
    - Aggregate and mineral content
    - Equivalent alkali content
    - Chloride content
    - Sulphate content

**Reference:**

- TR54 Diagnosis of deterioration in concrete structures
- TR31 Permeability Testing of Site Concrete
- TR22 Non-structural cracks in concrete
- ACI 201.1R-08 Guide for Conducting a Visual Inspection of Concrete in Service
- BS EN 12504-1:2019 Testing concrete in structures Part 1: Cored specimens — Taking, examining and testing in compression
- BS EN 13791:2019 Assessment of in-situ compressive strength in structures and precast concrete components Etc.

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