

LABORATORY TESTING

Concept provide a comprehensive suite of geotechnical and chemical soils laboratory testing services from basic classification tests, chemical and electro-chemical tests to a full range of compaction, compressibility, permeability and shear strength and effective stress testing.

All testing is carried out in accordance with BS1377: 1990 under our strict quality control procedures developed to ensure accuracy and efficient delivery of reports to meet programme constraints.

Our soils testing suite includes the following tests:

Classification Tests

- ∇ Natural moisture content
- ∇ Liquid and Plastic Limit determinations (Atterberg Limits)
- ∇ Determination of natural bulk and dry density
- ∇ Determination of particle density
- ∇ Particle Size Distribution analyses (Sieve analyses)
- ∇ Pipette or hydrometer sedimentation analysis
- ∇ Split and Describe

Chemical and Electro Chemical Tests

(The following tests are typically associated with geotechnical investigations however a complete and comprehensive range of chemical contamination testing is also available)

- ∇ Organic content of soil
- ∇ Mass loss on ignition
- ∇ Total sulphate content of soil
- ∇ Water-soluble sulphate content of soil or water
- ∇ Determination of pH

Compaction Related Tests

- ∇ Moisture content/dry density relationship (2.5kg rammer)
- ∇ Moisture content/dry density relationship (4.5kg rammer)
- ∇ Moisture content/dry density relationship (vibrating hammer)
- ∇ California Bearing Ratio
- ∇ Minimum and maximum dry density
- ∇ Moisture condition value (MCV) of soil at existing moisture content
- ∇ Oedometer Consolidation
- ∇ Oedometer consolidation test on 75mm diameter soil specimen
- ∇ Measurement of swelling pressure (single stage)

Shear Strength Tests (Total Stress)

- ∇ Unconfined compression test
- ∇ Quick undrained compression test
- ∇ Quick undrained (multi stage) triaxial test using 3 lateral pressures

Shear Strength Tests (Effective)

- ∇ Shear box (standard 60mm or large shear box)
- ∇ Consolidated drained peak and residual shear box test (up to 4 days)
- ∇ Determination of residual strength parameters using the Bromhead ring shear apparatus
- ∇ Consolidated undrained triaxial compression test with pore pressure
- ∇ Multi-stage consolidated undrained triaxial compression test using 3 lateral pressures
- ∇ Consolidated undrained triaxial compression test with volume change (up to 4 days)

Other Tests

- ∇ Filter Paper Suction Tests (BRE Digest method)
- ∇ Suction Probe