



Geotechnical laboratory testing services

GHD operates National Association of Testing Authorities (NATA) accredited Geotechnical Testing Laboratories in two strategic locations: Artarmon in Sydney, New South Wales, and Traralgon, Victoria. These laboratories are equipped to perform comprehensive tests, including routine soil classification, advanced strength and deformation testing, and assessments of rocks and aggregates.

Solutions

Our facilities cater to a diverse clientele across Australia and internationally, supporting industries such as construction, infrastructure, and engineering and assisting consultants and government departments. Notably, our Sydney laboratory has upheld continuous NATA accreditation since 1975, reflecting our longstanding commitment to quality and reliability.



Routine soil tests

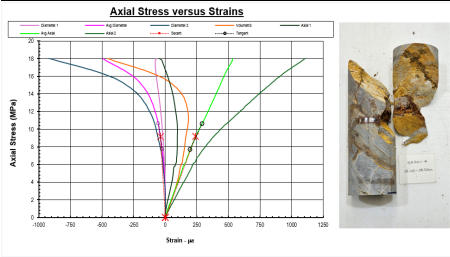
Soil classification (Atterberg, LS, PSD) | Compaction, CBR and pretreatment | Soil density tests | Dispersion tests (Emerson, pinhole, percent dispersion) | Unconfined compressive strength of road gravels and cohesive soils | Permeability of coarse gravels, sands and clays | Soil reactivity tests | Soil resistivity test up to 87,000 ohm.m | Chemical tests are outsourced to GHD-approved suppliers



Specialised soil tests

Soil triaxial compression tests consolidated undrained, drained (CID & CAD), Anisotropic Triaxial (CAU), stress path testing, Critical State Line triaxial tests & undrained unconsolidated triaxial | Hand shear vane | Texas triaxial (T171) | One-dimensional consolidation tests | Constant Rate of Strain | Direct shear tests. 60 and 100 mm square. 50, 63 mm round | Slurry and tailings consolidation | Slurry Deposition Simulation test (DST) including permeability and strength testing | Sedimentation tests | Slurry air drying test | Hole Erosion Test (HET) | No Erosion Filter Test (NEF)

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Rock & aggregate tests

UCS including Young's Modulus and Poisson Ratio | Tensile strength (Brazil) | Direct shear on joints or saw cut specimens | Point load strength | Slake durability | Porosity and density | Bulk density | Particle density and water absorption | PSD



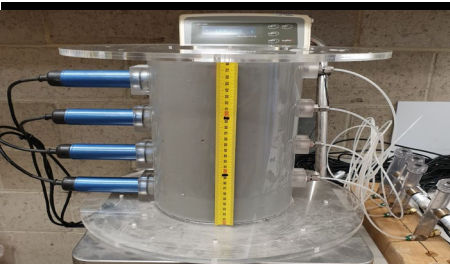
Field tests

Level 1 supervision and testing (GITA) to AS 3798 standards or relevant specifications | Compaction and density tests standard and modified compaction, compaction control - hilt method, moisture content and density using a nuclear gauge, dry density ratio, assignment of OMC and MDD | VicRoads pavement investigation



Dams engineering

The HET is used to evaluate the erodibility of cohesive soils and the erosion characteristics of soils found in cracks in embankment dams. The test can be performed on a disturbed sample in a 100 mm diameter mould or on undisturbed samples of either 75 mm or 100 mm diameter. The NEF test is undertaken to check the ability of a design filter to prevent concentrated erosion of a base sample of clay core material. Filter material ranging in size from a nominal particle size of 2.36 mm to 37.5 mm can be tested in either a 125 mm or 300 mm cell.



Tailings dam engineering

The Slurry DST and air-dry tests are used to obtain sedimentation/settling, consolidation, and permeability parameters for fine-grained (silt/clay) suspended particles in return waters from dredging and tailings operations. The DST is a large-scale laboratory test, normally conducted in Perspex cylinders of approximately 200 mm diameter and around 0.8 – 1.0 m high.

Key contacts



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