

3. Soil Mechanics Laboratory



Major Equipments:

- Standard Test Sieves 200 mm Dia, Spun Brass Frames Size 2mm, 1 mm, 600 micron, 425 mic, 300 mic, 212 mic, 150 mic, 75 mic, HS 32.45 Test Sieves 300 mm Dia.
- Thermometer 0-100⁰C, Wash Bottle, HS 14.20 Pycnometer, 3" Aluminium Container IS:2720 (Part-XXIX), Balance Hot Air Oven Electrically Operated Thermostatically Controlled, (inside Chamber Stainless Steel), With Air Circulating fan and digital temperature controller, Size 18" x 18" x 18".
- Lid pan, HS 14.25 Density bottle, Wash Bottle, Balance
- HS 14.20 Pycnometer, 100 ml glass measuring cylinder jar (Borosil), Stop watch, 1000 ml glass beaker, Balance
- Porcelain evaporating dish, medium size, HS 10.10 Liquid limit device, Hand operated with counter, HS 10.30 Shrinkage Limit Apparatus, Stop watch.
- HS 14.05 Field Density Kit IS:2720 (Part-XXIX), Spatula, Trowel, 300 X 300 mm G. I. Tray, 450 X 300 mm G. I. Tray.
- Core Cutter Apparatus, Rammer, Trowel, Spatula, 300 X 300 mm G. I. Tray, 450 X 300 mm G. I. Tray, Universal Extruder. Hand Operated.
- HS 10.37 Hydrometer, 100 ml glass measuring cylinder jar (Borosil)
- Overhead Tank for above, HS 12.10 Universal Permeameter, Mercury (500 gm)
- Unconfined Compression Apparatus.
- Proving ring for Compression
- Vane Shear Apparatus Hand Operated.
- Direct shear Apparatus.

- Triaxial Test Apparatus Load frame. Motorised 50 kN.
- Triaxial Test For 38/50 mm dia x 76/100 mm high specimen.
- Triaxial Test For Pore water pressure Apparatus (0-1000kpa).
- Triaxial Test For Dial gauge 0.01 x 25 mm.

Experiment List:

- Field identification of different types of soil as per Indian standards [collection of field samples and identifications without laboratory testing].
- Determination of natural moisture content.
- Determination of specific gravity of Cohesionless soil.
- Determination of specific gravity of cohesive soil.
- Determination of Plastic limit, liquid limit and Shrinkage limit of soil.
- Determination of Insitu density by sand replacement method.
- Determination of Insitu density by core cutter method .
- Grain size distribution of cohesionless soil by fine grained soil by hydrometer analysis.
- Determination of co- efficient of permeability by constant head pemeameter (coarse grained soil).
- Determination of co- efficient of permeability by variable head parameter (fine grained soil).
- Determination of unconfined compressive strength of soil.
- Determination of undrained shear strength of soil by Vane shear test.
- Determination of Shear parameter of soil by Direct shear test.
- Determination of shear parameter of soil by Triaxial test.
- Determination of compressibility characteristics of soil by Oedometer test (co-efficient of consolidation & compression Index).