

Intelligent Transportation System (ITS) & Soil Dynamics Lab

Lab-In-Charge: Prof. A. Trivedi

Lab Attendant: Mr. Atul

About the Lab:

The ITS & soil dynamics laboratory of the geotechnical engineering branch of the civil engineering department is well equipped with the instruments to find the acceleration, velocity, and displacement profile, damping characteristics, DCPI index, cone resistance, stiffness characteristics, particle size using Brinell microscope, compressional wave velocity, constrained modulus, and strain in confined geomaterials using electrodynamic vibration analyser, dynamic cone penetration, static cone penetration, Brinell microscope, piezo sensors, and oscilloscope.

List of Equipment:

1. Electrodynamic vibration analyser-
 - (a) Electrodynamic Shaker,
 - (b) Power amplifier cum signal generator,
 - (c) Data acquisition system, and
 - (d) 1 qty. uniaxial accelerometer
2. DCPT (Dynamic Cone Penetration Test)-
 - (a) 13kg Hammer,
 - (b) Two rods,
3. (c)Scale, and
4. (d) 4 cones (15°, 30°,45°, and 60°)
5. SCPT (Static Cone Penetration Test)-

- (a) Hand-held LVDT and load cell arrangement,
 - (b) 4 cones (15° , 30° , 45° , and 60°), and
 - (c) Data acquisition system
- 6. Brinell Microscope
 - 7. Oscilloscope
 - 8. Miscellaneous (2 geophones, piezo sensors, geogrid, geotextile, MS tank-2 qty.)

List of Experiments:

- 1. To find the AVD characteristics of geomaterials using an electrodynamic vibration analyser
- 2. To find the damping characteristics of geomaterials using the logarithmic decrement method with an electrodynamic vibration analyser
- 3. To find the DCPI index of geomaterial using DCPT
- 4. To find the resistance behaviour of geomaterials using SCPT
- 5. To find the stiffness characteristics of geomaterials using SCPT
- 6. Particle size analysis using Brinell Microscope
- 7. To find the compressional wave velocity using oscilloscope and geophones
- 8. To find the constrained modulus of geomaterials using oscilloscope and geophones
- 9. To find the strain in confined geomaterials using piezo sensors and oscilloscope.



