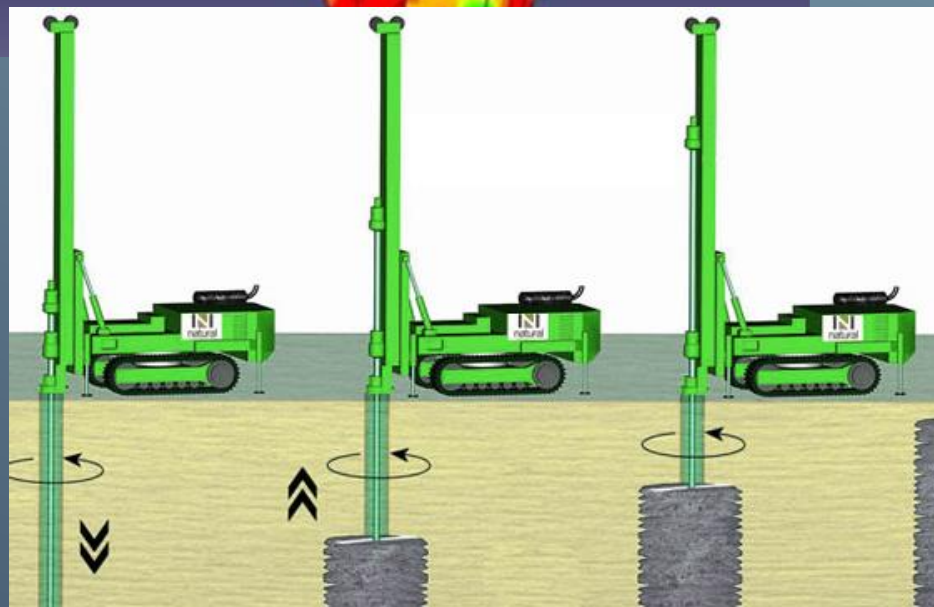
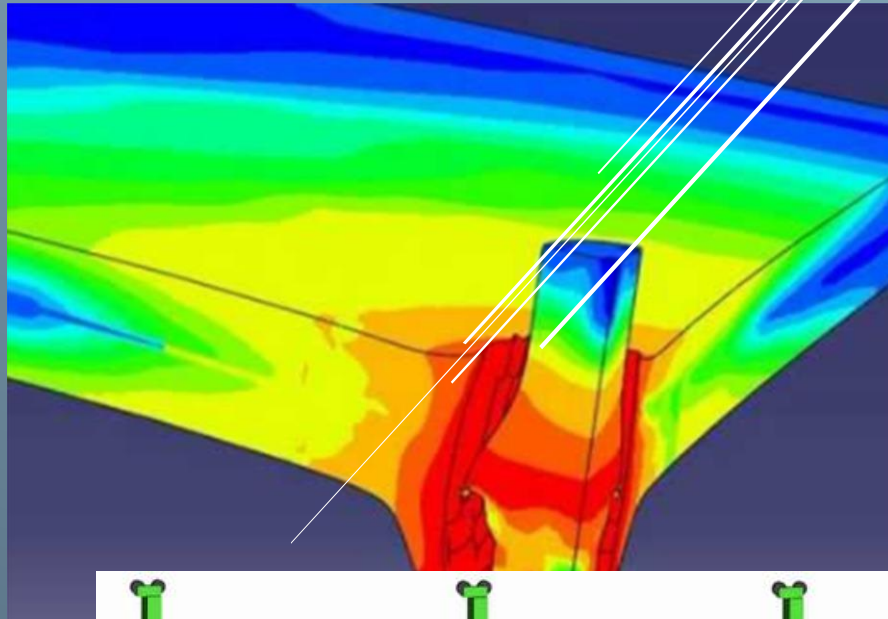




**HARRAN UNIVERSITY**  
**CIVIL ENGINEERING DEPARTMENT**



**GEOTECHNICAL LABORATORY**  
**TEST EQUIPMENT**



**HARRAN**  
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### TRIAXIAL TEST SYSTEMS



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**Standarts:** ASTM D2850, D4767, D7181; AASHTO T-297; BS 1377-7, BS 1377-8

Determining the mechanical properties of soils is a very important step to design foundations, embankments and other soil structures. Building constructions, excavations, tunnelling and similar applications have several effects on the subsoil structures and these effects are successfully simulated with Triaxial Tests where the stress-strain relation of undisturbed soil specimen are investigated by subjecting the soil sample to different stress levels and drainage conditions.

### FULLY AUTOMATED CONSOLIDATION & SWELL SYSTEM



This system for incremental consolidation and swell testing fully automates an entire consolidation test. Constant load and constant volume swell tests can be run automatically. Once a sample is placed into the load frame, the test conditions programmed, and the test started, the LoadTrac III system performs the complete test up to 32 steps without intervention by the user. The computer automatically increments to the next stress by using conditions specified by the user.

### **AUTOMATED CALIFORNIA BEARING RATIO SYSTEM**

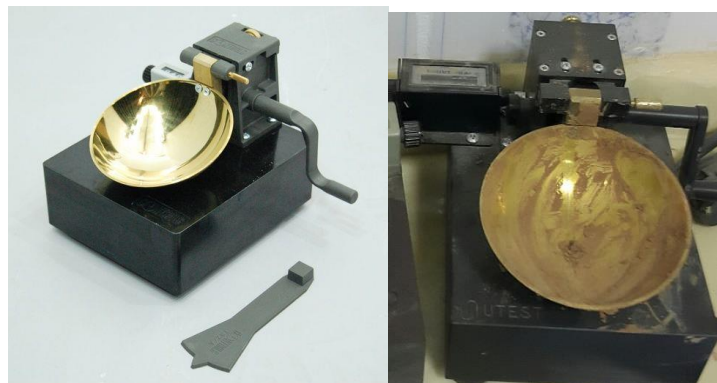


#### **Applicable Test Standards**

ASTM D-2166, AASHTO T-208 Unconfined Compression Testing of Soils  
ASTM D-1663 Compressive Strength of Molded Soil-Cement Cylinders

This system load frame provides compression/extension testing for a number of geotechnical tests that must have accurate control of the rate of displacement during loading. With accessories, the unit can perform unconfined compression, CBR, and triaxial shear phase testing.

### **MANUAL LIQUID LIMIT DEVICE (CASAGRANDE)**



Standards: ASTM D4318; BS 1377:2; AASHTO T89; TS 1900-1

(Casagrande) are used to determine the moisture content at which clay soils pass from plastic to liquid state.

### LABORATORY OVEN



This oven have been designed for drying asphalt, soil, rock, concrete, aggregate or similar materials. 50, 120, 250, 500 and 750 liter capacity models are available. Temperature range is from ambient to 200°C. The interior is manufactured from stainless steel and the exterior is robustly constructed from sheet steel finished in powder coated paint.

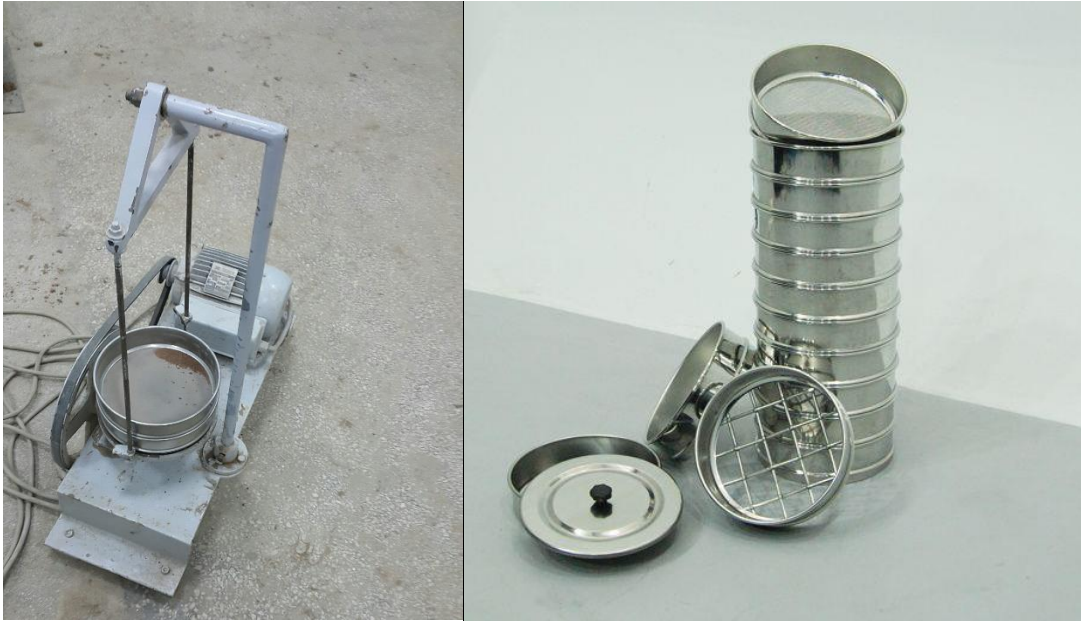
### **AUTOMATIC DIRECT / RESIDUAL SHEAR TEST MACHINE**



**Standarts:** ASTM D3080; BS 1377:7; AASHTO T236, CEN-ISO/TS 17892-10

The test covers the determination of consolidated drained shear strength of a soil material in direct shear. UTS-2060 Automatic Direct / Residual Shear Test Machine is motorized and floor mounted. Supplied with carriage assembly load hanger and integral 9:1, 10:1 and 11:1 lever loading device as standard.

### **SIEVE SHAKER AND SIEVE SET**



This sieve shaker is fitted with a very efficient clamping device that ensures sieves are held firmly without over-tightening and allows them to be quickly removed and replaced

### **CONSTANT HEAD PERMEABILITY SETS AND FALLING HEAD PERMEABILITY SET**



Constant Head Permeability Set are used to study the behaviour of soil, relatively coarse-grained soil such as sands and gravel, in its natural conditions with respect to water flow.

Falling Head Permeability Set is used to study the behaviour of soil, particularly finegrained soils such as clay-like or silty soils, with respect to water flow.