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Triaxial UU Test Systems

ZI 3094

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

Specification:

A Triaxial Testing Machine is used to measure the mechanical properties of many deformable solids, especially soil.

Unconsolidated Undrained (UU) Test

For the UU test , the specimens (assumed to be saturated prior to test) are subjected to a confining fluid pressure in a triaxial chamber. Once the specimen is inside the triaxial cell, the cell pressure is increased to a predetermined value by rotating the knob, and the specimen is brought to failure by increasing the vertical stress by applying a constant rate of axial strain. Saturation and consolidation are not permitted to keep the original structure and water content of sample untouched. Pore pressures are not measured during this test and therefore the results can only be interpreted in terms of total stress. These tests are generally carried out on three specimens of the same sample subjected to different confining stresses.
Since all specimens are supposedly saturated the shear strength are similar for all tests. The results of the test are plotted as curves of principal stres difference against strain. For conditions of maximum principal stress difference (taken as failure) Mohr circles are plotted in terms of total stress. The average undrained shear strength should be noted, and the failure envelope drawn

tangential to the Mohr circles in order to find the “undrained cohesion intercept” and undrained “angle of shearing resistance”.

Multiplex Universal Electromechanic Test Machine

The Multiplex Universal Electromechanic Test Machine is a Servo Controlled Multiplex Machine supplied complete with 50 kN Load Cell, 25 mm Linear Potentiometric Transducer and Data Acquisition and Control Unit. 5 kN Loadcell should be ordered separately for Triaxial Tests.

The Frame capacity is 50 kN. This versatile digital loading frame features a microprocessor controlled drive system with an advanced servo motor enabling the operator to easily set any test speed via the membrane keyboard. The keyboard comprises adjustment buttons such as “start”, “increase”, “automatic”, “manual”, “down”, “up”. The testing speed can be set between 0,00001 mm/min to 51mm/min. The test automatically stops when load and displacement is reached to 99% value of the set measuring range.

Load and displacement values are collected by software and transferred to PC for further processing with the CU-CD Software.