

Product Name :
Digital Consolidation Test Apparatus

Product Code :
TEST5010RFQLAB-0005



Description :

Digital Consolidation Test Apparatus

Technical Specification :

Automatic Digital oedometer/consolidation testing system and consolidation testing equipment conforming to suitable to conduct incremental consolidation test and swell tests through standalone touch screen graphic display and embedded data acquisition system or computer software. It is totally automatic system where loading and unloading is controlled and maintained by rotation of micro stepper motor or pneumatic actuator eliminating hanging of dead weight arrangement used in conventional consolidation apparatus. The system is operated and follows the user defined stress pattern/ increments given by the user for loading and unloading pattern without further intervention by operator and is maintained on feed back basis by signal received from the load cell.

Unit comprises of :

- Loading Frame – 20kN capacity – 1 No.
- Consolidation cell 60mm x 20mm ht – 1 No.
- Dedicated Computer – 1 No.
- Displacement Sensor $\pm 10 \times 0.001\text{mm}$ – 1 No.
- Load cell capacity 20kN – 1 No.

Control Software is the integral part of the system for precise controlling & Data Acquisition and reporting of test results.

Salient Features

Programmable Stress levels for automatic incremental consolidation test and swell tests with excess pore water pressure measurement
Programmable Sample Parameter and data saving interval
Independent Taring of each channel
Facility to Load and Unload the specimen
Facility for Inching and release for adjustment of the gap
On-line display of readings of Load, Normal stress, Deformation, Time etc.
Real time Plots of v_t vs. Deformation curves or Pore pressure for current stress level as well as for all stress level
Auto adjustment of graph scales
Facility to save the data after the test

Analysis Software

Data Analysis Software that does all the calculations of Consolidation and Swell tests
Analysis module that does all the calculations of Consolidation Test
Calculates Dry Density, Initial Void Ratio and moisture Content of specimen.
Display the following Plots (Graphical)
Sq. Root Time vs Deformation Readings and gives the value of t_{50} / t_{90} for various pressure increments
Void Ratio vs Effective Stress (e log p curve) and also gives the values in the tabular form
Stress vs Strain curve for various pressure increments
Calculates CC , a_v , m_v , CV , CS and co-efficient of permeability (k) for various pressure increments.
Calculate CC and CS for given soil samples from e -log p curve
Calculate pre consolidation pressure from e -log p curve
Calculate field compression index
Dedicated Computer with Controlling and Data Acquisition Card.



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