S0106/SM - Consolidation testing system (Rowe type)

Options available

Sample sizes: 63 mm - 70 mm - 100 mm

Pressure range: 500KPa - 1.000Kpa - 2.000KPa 4.000KPa

Other diameters / pressure ranges - Consult us

The Proetisa Hydraulic Consolidation System (Rowe type) is a fully-automated consolidation testing system designed for soil.

This system can run classic tests such as step loading to more advanced tests such as automated testing rate by controlled hydraulic gradient, all under PC control. In fact, using the flexibility of EDS software, almost any user-defined test may be performed.

The hydraulic Rowe Cell system is used because of its multiple drainage (radial and radial & vertical) options as well as the capability of testing large diameter samples through the use of water pressure on a diaphragm. Furthermore, free strain and equal strain can be applied by applying the water pressure on the top of the sample through a flexible platen or a rigid one.

The system for consolidation testing using the hydraulic Rowe-type consolidation cell automates an entire consolidation test.

Once a sample is placed into the Rowe cell, the test conditions programmed and the test started, EDS software performs the entire test without intervention. The system automatically initializes, back pressure saturates, and consolidate incrementally by using conditions specified by the user. A typical incremental consolidation test can be completed in 36 to 48 hours on most materials.

This system may be programmed with a series of events. At the end of each step, the system will automatically move to the next step based on the computer determining that the specified conditions for completion of consolidation for the previous step are reached. Any load-unloadreload pattern may be specified.

Standard system

The system is based on the Rowe consolidation cell and two volumen / pressure maintainers.

<u>The maintainers are use for:</u>

- One for axial stress and axial displacement control
- One for setting back pressure and measuring volumen change

The hardware used may be chosen to satisfay final user needs.

Standard configuration:

- Rowe Cell, two volumen / pressure maintainers 1000 kPa.
- Displacement transducer:
  Ranges 0-10 mm to 0 - 50 mm
  Resolution: 0.001 mm.
- Pressure transducers:
  Ranges: 0 - 1000 to 0 - 5000 kPa (intersticial pressure).

Alll the devices have been designed towards achieving the greatest resolution and accuracy, for the highest quality test achievable in a research environment.
The system can be upgraded to a triaxial adding a triaxial cell and a triaxial frame.

STANDARDS - ASTM D-2435 and BS 1377:6

Technical features:
Accuracy of pressure: <0,1%
Pressure resolution: 0,1 KPa
Accuracy volumen: <0,1%
Volumen resolution: 0,5mm^3
EDS software for test control and post-analisys.
EDS Software allow several test stations and additional hardware to be incorporated at any time.

Sample dimensions
Diámetro 63,5 mm / Altura 30,00 mmm
Diámetro 70,00 mm / Altura 40,00 mm
Diámetro 100,00 mm / Altura 60,00 mm