TRI-MOD-S - Rock Pressuremeter

Pressuremeter

INFLATED HYDRAULICALLY UP TO 20 000 KPA
DIRECT READING OF DIAMETRIC CHANGES
DISPLAYS DIAMETRICAL EXPANSION IN MM

The TRI-MOD-S Rock Pressuremeter (flexible dilatometer) is a reliable and effective tool used to measure in-situ the strength and stress-strain properties of very stiff soil and rock

Description

The TRI-MOD-S Rock Pressuremeter (Flexible Dilatometer) is a reliable and effective tool used to measure in-situ the strength and stress-strain properties of very stiff soil and rock. It quickly and economically provides a large volume of data encompassing the variability of the geotechnical conditions on a site.

The TRI-MOD-S is comprised of the following components:

- The probe, a single cylindrical cell hydraulically inflated with 6 strain gauges and cantilevered arms, and fitted with an inflatable metallic sheath
- Hydraulic manual pump
- Pneumatical cylinder for deflating the probe
- The datalogger
- The tubing and electrical cable
- Two calibration tubes

Key Features

- Easy to operate and maintain
- Rugged construction
- Controlled rate of deformation or pressure
- Easy cyclic testing
- Conforms ASTM D4719-07
- Safe : no compressed gas necessary
- Optional equipment available for creep testing

Applications

- Bearing capacity estimation of shallow and deep foundations
- Settlement estimation of all types of foundations
- Deformation of laterally loaded piles and sheet piles

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Pressuremeter

Specifications

PROBE	
Diameter (min.) :	73 mm
Diameter (max.) :	76.2 mm at 20 000 kPa 82.0 mm at 10 000 kPa
Working pressure (max.) :	20 000 kPa (3000 psi)
Length of inflatable sheath :	490 mm
Typical sheath inertia :	600 kPa
HYDRAULIC PRESSURE GAUGE	
Range :	20 000 kPa
Accuracy :	1% F.S.
DIGITAL READOUT	
P-3 Vishay strain indicator with selector switch	
Resolution of diametrical change:	Better than 0.01 mm

Test Procedure

The probe is placed at the test depth in a pre-cored borehole. Stress-control is used to run the test. Equal increments of pressure are applied to the probe and held constant for one minute. The diametric changes are logged 30 and 60 seconds after each pressure step is reached. Unload/reload cycles can be performed. In situ stress-strain curves are obtained by plotting the changes in each of the 3 instrumented diameters or their average against pressure.

The modulus of deformation E used to calculate settlement is given by:

$$E = (1 + n)\ (\Delta P/\Delta R)\ R$$

where: n = Poisson's ratio
ΔP = Corrected increase in pressure
ΔR / R = Relative change of radius

In softer materials, the limit pressure PL, which is the pressure corresponding to the doubling of the volume of the initial cavity.

Ordering Information

- Product sold as a complete kit

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