PRESSUREMETER

Model TEXAM®

APPLICATIONS

The TEXAM pressuremeter is a reliable instrument for the evaluation of most ground engineering problems. It is used to run routine in-situ loading tests at various depths. The well-proven method developed by Louis Ménard is used to interpret the test results for calculation of:

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

DESCRIPTION

The probe

A cylindrical hollow body fitted with an inflatable sheath.

The control unit

- A metal case that houses a cylinder with piston, two pressure gauges for low and maximum pressure tests, a connector for an auxiliary pressure gauge, and the control valves.
- A manual actuator to operate the piston.

The tubing

A high-pressure single conduit fitted with a shut-off quick connect to keep the probe and tubing saturated.

FEATURES

- **Easier to operate than Ménard-type pressuremeters**
- **Rugged construction**
- **No compressed gas necessary**
- **Controlled rate of deformation**
- **Easy cyclic testing**
- **Optional equipment is available for creep testing**

TEST PROCEDURE

The probe is placed at the test depth in a pre-drilled borehole obtained by a method adapted to the soil conditions: augering, rotation with drag bit and bentonite, shelby tube driving, etc. In granular soils below the water table, the probe can be driven directly within a slotted casing.

The test is run either with a constant rate of deformation, by using a uniform rate of rotation of the actuator, or with equal increments of pressure as for the Ménard pressuremeter test.

TEST RESULTS

An in-situ stress-strain curve is obtained by plotting the injected volume against pressure.

- The limit pressure P_L is the pressure at which failure occurs, and it reflects directly the bearing capacity:

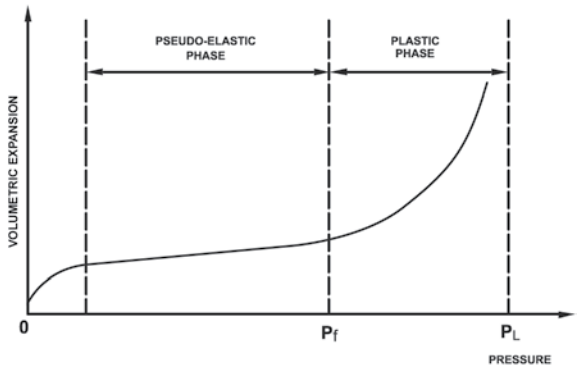
  $Q_a = (C/F) \times P_L$

  where: Q_a = Allowable bearing capacity
  C = Shape factor
  F = Safety factor

- The modulus of deformation E is used to calculate settlements and is given by:

  $E = (1 + \nu)\, 2V(\Delta P/\Delta V)$

  where: ν = Poisson's ratio
  V = Cavity volume at the middle of the elastic zone
  $\Delta P/\Delta V$ = Pressure variation dependent on volume variation



Example of pressuremeter test results

SPECIFICATIONS

CONTROL UNIT		
Working pressure (max.)		10 000 kPa (1500 psi)
Actuator capacity		10 tons
Dimensions		L = 52 cm W = 31 cm H = 46 cm
Metal case weight		30 kg
Actuator weight		28 kg
PROBES		
Diameter	74 mm (NX Long)	44 mm (AX)*
Length	72 cm	59 cm
Weight	6.4 kg	4.5 kg

*For use with slotted casing

ACCESSORIES

- Slotted casing assembly for direct driving of the AX-size probe in granular soils below the water table
- Creep test kit for long term testing at constant pressure