
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

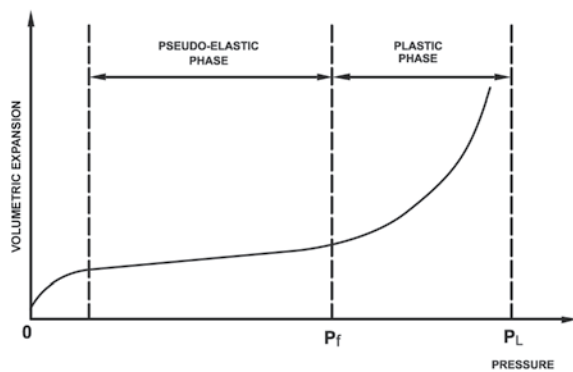
- The modulus of deformation E is used to calculate settlements and is given by:

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

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