

PRESSUREMETER Model TEXAM®



GENERAL DESCRIPTION

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 Menard 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

TECHNICAL DESCRIPTION

The probe

A cylindrical hollow body fitted with an inflatable sheath.

The control unit

- A metal case that houses the main cylinder, four quick connectors and the control valve.
- A manual actuator to operate the piston.
- A digital pressure gauge.

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 Menard 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

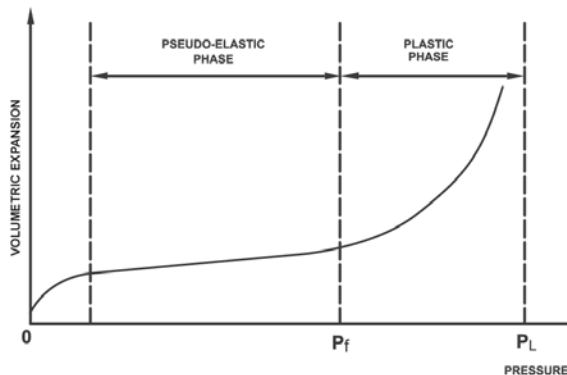
- The modulus of deformation E is used to calculate settlements and is given by:

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

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

ORDERING INFORMATION

Texam[®] unit ordering number: FR-1001A50100

Tubing length available in 25m, 33m and 50m

Specify probe dimension and rubber or metallic sheath.

SPECIFICATIONS

CONTROL UNIT

Working pressure (max.)	10 000 kPa (1500 psi)
Gauge precision	0.05% FS
Gauge resolution	1 kPa
Actuator capacity	10 tons
Dimensions	L = 40 cm W = 46 cm (including handles) H = 45 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

