PRESSUREMETER

Model G-AM II

APPLICATIONS

The G-AM II pressuremeter is an efficient instrument for the evaluation of most ground engineering problems.

It is used for the measurement of in-situ strength and stress-strain properties in all types of soil and soft rock as well as in ice and permafrost.

Several million pressuremeter tests have led to a well proven method of interpretation for the calculation of:

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

DESCRIPTION

The Probe

A cylindrical metal body with an inner rubber membrane and outer protective sheath mounted so as to form three independent cells.

The central cell is inflated with water and the guard cells with gas.

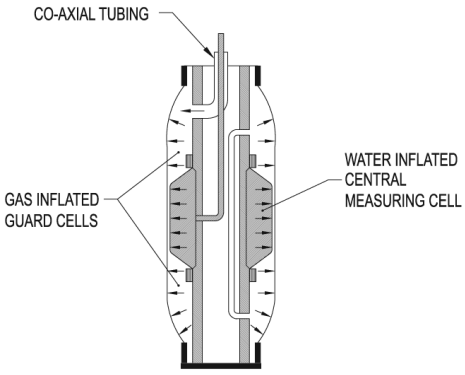
The Control Unit

The case houses all the regulators and valves required to reduce and control the pressure applied to the probe cells. It also contains a reservoir which supplies the flow of water to the measuring cell. The volume variations during a test are read on a sight tube.

The control unit can be configurate for pressure ranges of 0–6 MPa or 0–10 MPa. Two gauges are provided, eliminating the delicate differential pressure gauge.

The Tubing

A coaxial tubing is used to connect the probe to the control unit.



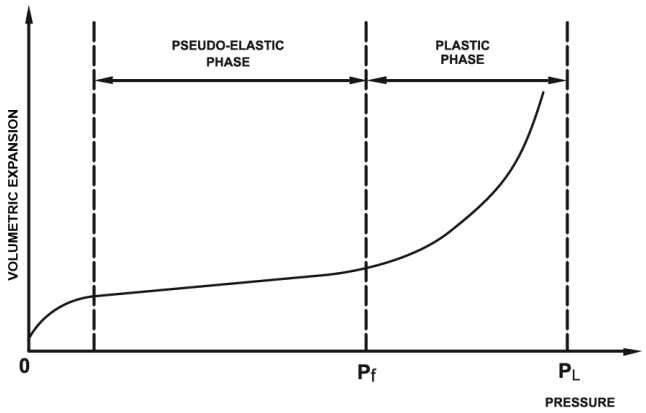
FEATURES

- Versatile pressuremeter
- Built-in high pressure conversion parts
- Direct readout of guard cell pressure

PRESSUREMETER TEST PROCEDURE

The probe is placed at testing depth by insertion in a pre-drilled borehole or, in special conditions, driven to the test depth within a slotted casing.

Stress control is used to run the test. Equal increments of pressure are applied to the probe and held constant. The volume changes are noted 30 and 60 seconds after each pressure step is reached.



Example of pressuremeter test results

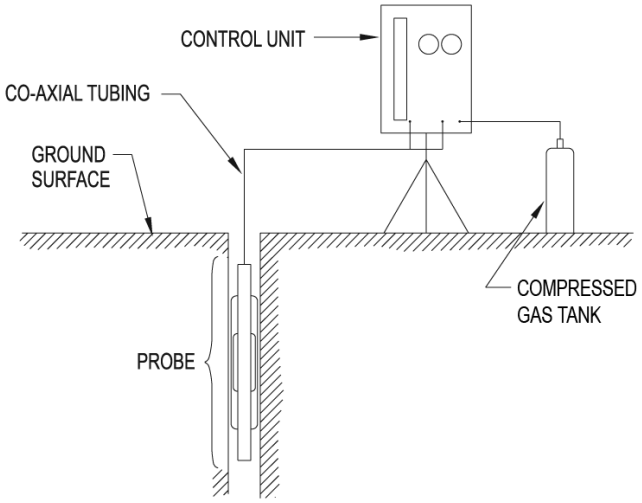
SPECIFICATIONS

CONTROL UNIT

Pressure gauge accuracy	±1% F.S.
Volume scale resolution	±0.1 cc (by-pass) ±5 cc (normal)
Max. working pressure	10 000 kPa
Pressure supply	Compressed nitrogen

PROBE

Diameter	44 mm (AX)	58 mm (BX)	70 mm (NX)
Length	84 cm	70 cm	70 cm
Weight	4.5 kg	4.3 kg	6.4 kg



PRESSUREMETER 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 used to calculate settlement is given by:

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

where: n = Poisson's ratio

V = Cavity volume at the middle of the elastic zone

$\Delta P/\Delta V$ = Pressure variation dependent on volume variation

ACCESSORIES AND OPTIONS

- Sheaths, membranes, tubing, tools, gaz cylinder
- Slotted casing assembly

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NOVA METRIX