G-AM II - Ménard Pressuremeter

Pressuremeter

VERSATILE
MENARD PRESSUREMETER
DIRECT READOUT OF GUARD CELL PRESSURE

The G-AM II is a pressuremeter used to measure in situ strength and stress-strain properties of soils and very soft rock

Description

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

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 comes with gauges in the 0-25, 0–6, and 0–10 MPa, which is the range needed for most soil applications. 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.

Key Features

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

Applications

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

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Specifications

CONTROL UNIT			
Pressure gauge accuracy	±1% F.S.		
Volume scale accuracy	±0.1 cc (by-pass) ±5 cc (normal)		
Max. working pressure	10 000 kPa		
Pressure supply	Compressed nitrogen		
PROBE	**AX**	**BX**	**NX**
Diameter	44 mm	58 mm	70 mm
Length	84 cm	70 cm	70 cm
Weight	4.5 kg	4.3 kg	6.4 kg

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.

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:

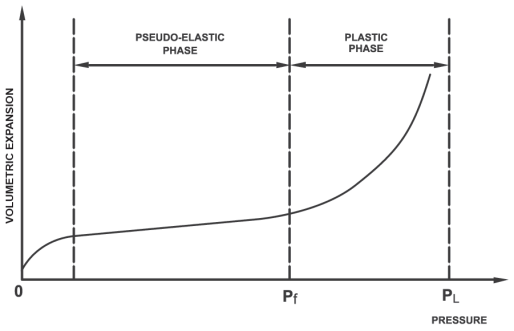
$Qa = (C/F) \times P_L$

Qa = Allowable bearing capacity
C = Shape factor
F = Safety factor

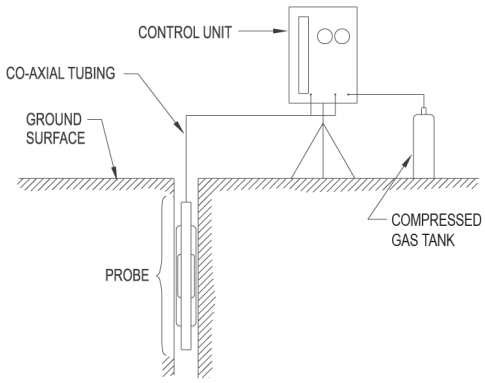
The modulus of deformation E used to calculate settlement is given by:

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

v = Poisson's ratio
V = Initial cavity volume
ΔP/ΔV = Pressure variation dependent on volume variation



Example of pressuremeter test results



Ordering Information

Please specify:
- Tubing length (25 m, 33 m, or 50 m)
- Probe dimension

Optional Accessories

- Accessories required (Slotted casing assembly)

Roctest Ltd,
680 Birch Street
St-Lambert, Quebec
Canada J4P 2N3
DOC: E5001A-160130

Phone +1 450 465 1113
Fax. +1 450 465 1938
Email info@roctest.com
Web www.roctest.com