APAGEO

Ménard Pressuremeter Test according to the ISO 22476-4 and ASTM D4719-07 standars

GeoPAC®

General presentation

Following the footsteps of Louis Ménard, Apageo proposes an exclusive device:
GeoPAC® (the Auto-Controlled Pressuremeter) driven by GeoBOX®. GeoPAC®, such as its predecessor the Ménard Pressuremeter, allows Ménard pressuremeter test according to ISO 22476-4 standard. It is the first equipement totally automatic and autonomous on the market that manages all the different steps of the test, ordered by the operator. GeoPAC® makes the whole process easier to conduct for the operator, reinforces the reliabilty of the results and reduces the time of preparation.

Latest innovations

- Cyclic test with personal programming
- Controlled volume test
- Sinusoïdal mode test

Run with

Available in 2 models : 50 bar or 100 bar

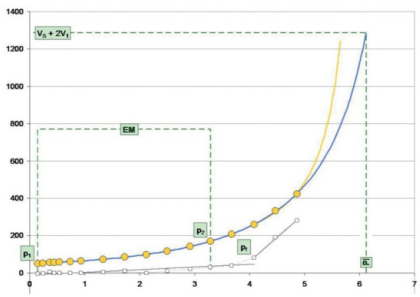
GeoPAC® specifications

- Dimensions : 1000 * 380 * 340 mm
- Weight : 45 kg empty
- Handle for transport and wheels
- Max. gas pressure: 50 or 100 bar
- Power supply : 9 - 18VDC
- Volumeter capacity : roughly 1200 cm³

GeoPAC® Originality

The ingenuity of the system is based, among other things on the physical separation of the 2 circuits necessary for carrying out the pressuremeter tests (gas and water), thus setting itself apart from any pressuremeter equipment available on the market. Thanks to this technology on the water circuit, the precision achieved on volume regulation is unrivaled.

Ménard pressuremeter test



A pressuremeter test is an in situ controlled loading test performed on the wall of a borehole using a cylindrical probe that expands radially. From the test readings (volume variation based on controlled pressure), a stress-strain curve can be obtained for the soil at hand in the case of plane deformation. Testing enables definition of three parameters : Ménard pressuremeter modulus Em, Creep pressure Pf and limit pressure PL.

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Implementation

1 Place the probe in the soil.

The borehole is drilled so as to minimize wall disturbance and maintain a cavity diameter compatible with the probe size (63 or 76 mm)

2 Enter the test parameter in GeoBOX® and order the execution.

In accordance to the principle of Ménard Pressurmeter test, **GeoPAC®** executes pressure and volume loss processes ordered by GeoBOX®. As soon as the probe is lowered into the borehole to the required test depth, the operator enters parameters of the test in GeoBOX® (pressure pf 1st pressure stage etc...) which launch the test execution by WIFI to **GeoPAC®** or throught a wire connexion if necessary. For now, it manages by its own the expansion and deflation of the probe. Pressure increments and pressure lag settings are also automated.

During the entire process, GeoBOX® offers a monitoring of the pending test on its screen (real time display of the data, evolution, curve, etc.) At any time, the operator can decide to stop the test form. The operator can also switch to semi-automatic mode during the test (change of pressure step, stop, etc.)

3 Follow the test process in real time. Print the results, save on a USB key or send to the office via 4G system.

When the test is over, data are saved on GeoBOX® (no time limit). Results can be printed directly on GeoBOX® printer .

Test treatment

Transfer then processing test on **GeoVISION®** via a USB key or 4G system (option). Export of data in txt/csv format as an option for processing on compatible office software. Export of data in JSON format as an option for processing on Soilcloud or Orbow software.

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