The DMP® Borehole - or Flexible - Dilatometer equipment is designed for the in situ determination of the deformation modulus of rock masses in 96 mm or 101 mm boreholes.

**Description**

The DMP® Dilatometer consists of a probe with a metal central body. The probe includes:

- An inflatable membrane (rubber sleeve) equipped with three pairs of metallic inserts spaced at 120° intervals
- A split spring-ring and double cone membrane retaining system
- Three pairs of inductive displacement sensors with two measurement points each.
- A pressure sensor allowing to measure pressure in the probe
- A sediment collector

The dilatometer probe is designed to be lowered down into the borehole using a string of rods. Nitrogen compressed dry gas is used for pressurizing the probe.

The borehole dilatometer test consists in loading the rock in progressive pressure steps and measuring the diametrical deformation resulting from this loading.

The test is used for generating the following parameters:

- A modulus of global deformation
- Elastic modulus measured on cyclic loadings
- Creep parameters
- Anisotropy of the rock mass

**Key Features**

- Electronic version of the DMP
- Direct contact between sensors and borehole walls via solid inserts in the membrane for optimum reliability
- Modulus of deformation obtained without correction thanks to the flexible membrane and solid inserts
- Allows measurements of rock anisotropy
- Compatible with deep boreholes (> 100 m)
- Automatic acquisition and real-time visualisation for enhanced control of the test
- Compliant with ISO 22476-5 & AFNOR P94-443.1
- DMPe 90 for 96 mm borehole
- DMPe 95 for 101 mm borehole

**Applications**

- Investigation of soil bearing capability for large civil engineering structures
- Investigation of tunnels crossing rocky mass
- Geomechanical characterization of underground storage sites and mines

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Specifications

**DMPe Probe**

- **Weight**: 45 kg
- **Diameter**:
  - 90 mm (96-mm borehole)
  - 95 mm (101-mm borehole)
- **Probe / Membrane Length**: 1.8 m / 1 m
- **Membrane standard 90 ou 95**: For soft to hard rock

### 3 Inductive Displacement Sensors

- **Calibrated Range**: 20 mm
- **Resolution (D/P BOX)**: 1 μm

### Pressure Sensor

- **Max Working Pressure**: 20 000 kPa
- **Resolution (D/P BOX)**: 10 kPa

**D/P BOX Readout**

- **User Interface**: Bluetooth communication with an Android tablet
- **Power Supply**: 2 x 12 V, 2.3 A, rechargeable batteries
- **Data Output Format**: CSV, spreadsheet compatible
- **Dimensions**: 25 x 28 x 12 cm (l x w x h)
- **Housing**: Splashproof, resistant ABS case
- **Autonomy**: > 8 hours typically
- **Power supply interface**: Universal AC wall plug with US/Euro adapter + adapter cable for car (lighter) & for external battery

Optional Accessories

- Spare Set of Displacement Sensors
- Tools Kit for Assembling and Disassembling the Membrane
- Carrying Box for the Dilatometer Probe
- Kit to transform DMPe 90 into DMPe 95
- Kit to transform DMPe 95 into DMPe 90

Accessories

- Flexible High Pressure Pneumatic Tubing with Connector
- Electrical Cable
- CRAELIUS 50 & 60 Type Connectors
- Cable Reel
- Pressure Regulator, Manometers & Valves
- DP Box Readout Unit
- Spare Membrane 90 or 95

**Ordering Information**

Please Specify:

- DMPe design, 90 or 95
- Tubing & Cable Length (Special configuration required over 150 m)
- Accessories

Roctest reserves the right to make any changes in the specifications without prior notice.