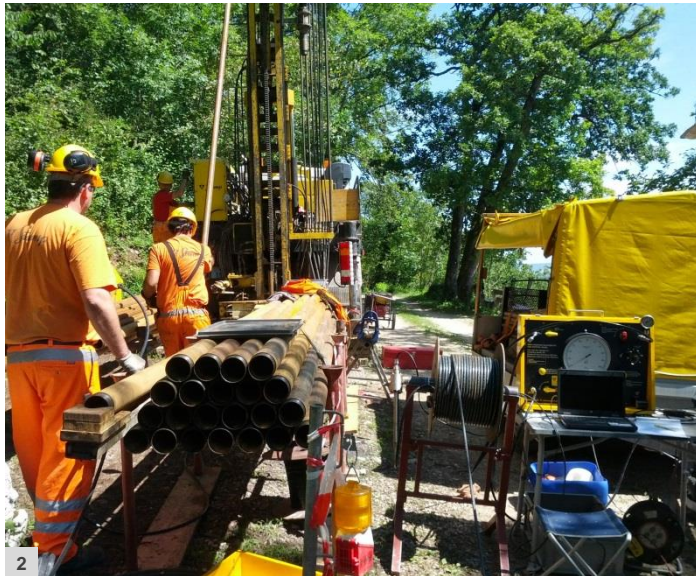


# High Pressure Dilatometer

- Model:  
Cambridge Insitu 93/95mm
- Borehole diameter:  
96 mm or 101 mm



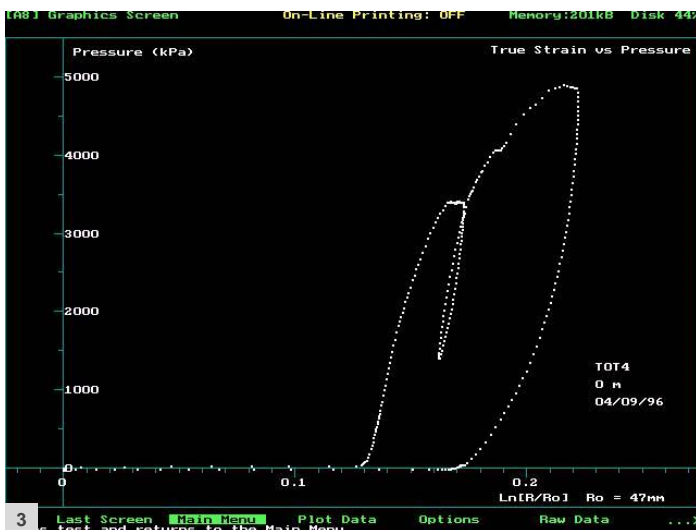
The high pressure dilatometer CAMBRIDGE INSITU was developed to determine the stiffness of soils (e.g. for stiff clays, solid sands) and of rocks.

During the test, the dilatometer is measuring the expansion of the borehole diameter by means of a rubber membrane inflated by compressed air.

Six transducers regularly placed on a horizontal level determine the deformation of the underground. The measurement data is digitized already in the probe. An integrated electrical compass supplies data about the geographical orientation of the transducers. Data of pressure sensor and displacement transducers is registered automatically every 10 seconds. Since the deformation is determined directly without measuring the change in volume, it is not necessary to adjust the measured values, except for the stiffness of the membrane.

Pressure is measured directly within the probe in order to exclude any pressure difference. Operating pressure is up to 20MPa (200bar).

Tests are performed in a pre-bored hole with a diameter of 96 or 101mm. In soft soils, the drilling hole must be stabilized by means of a bentonite suspension or must be cemented and drilled again.



- 1) Dilatometer probe before installation
- 2) Installing the probe through drilling company
- 3) Measurement result (diagram pressure to deformation)

## Technical specifications

|   | Cambridge Insitu 93   | Cambridge Insitu 95 |
|---|---|---------------------|
| <b>Diameter of probe</b>                      | 93 mm   | 95 mm               |
| <b>Length of probe</b>                        | 2030 mm   | 2030 mm             |
| <b>Expansion length of membrane</b>           | 575 mm  | 575 mm              |
| <b>Expansion, max. diameter</b>               | 140 mm  | 140 mm              |
| <b>Resolution of displacement transducers</b> | 0.001 mm  | 0.001 mm            |
| <b>Resolution of pressure sensor</b>          | 0.001 MPa   | 0.001 MPa           |
| <b>Max. operating pressure</b>                | 20 MPa  | 20 MPa              |
|   |   |                     |
| <b>Borehole diameter</b>                      | 96 mm (HQ)  | 101 mm (CHD)        |
| <b>Media in borehole</b>                      | Air or clear water  |                     |
| <b>Measuring of orientation</b>               | Using electronic compass at the head of the probe                                   |                     |
|   |   |                     |
| <b>Measuring principle</b>                    | Measurement of deformation by 6 uniformly arranged on a horizontal plane transducer |                     |