

# High-Pressure Dilatometer (HPD)

Specification and technical data sheet.

Cambridge  
insitu



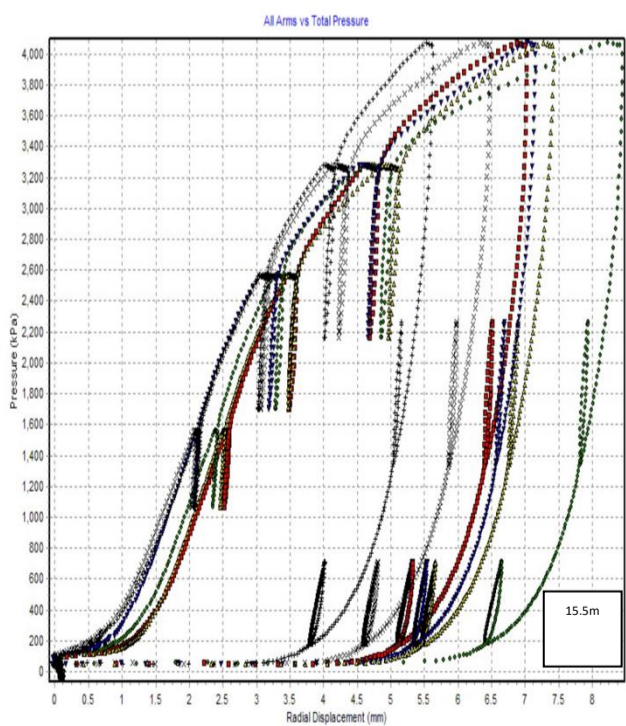
The High-Pressure Dilatometer (HPD) is a large diameter pressuremeter at Ø95mm OD. This probe has 20MPa maximum working pressure and as such can be used in materials ranging from rock, such as mudstone or chalk, to very weak clays.

The 95mm HPD is a pre-bored pressuremeter, so can only be inserted into 'pockets' of between 1.5 – 3.0m length, and nominally of between 98 – 101mm Diameter. A common choice for pre-boring (creating a 'pocket' for the instrument) is by utilising a 3m T6101 core barrel.

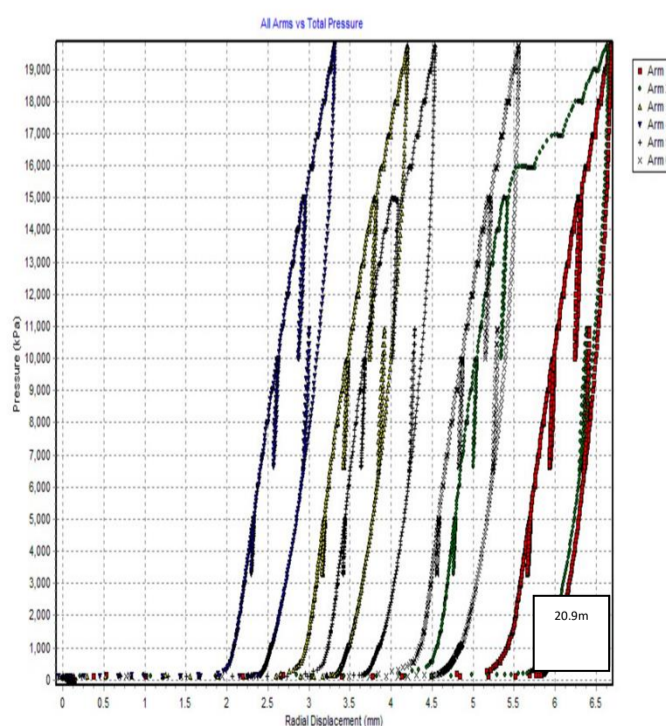
| High Pressure Dilatometer (HPD) |                     |
|---------------------------------|---------------------|
| Probe Diameter (Field Ready):   | 98mm                |
| Max Working Pressure            | 20MPa               |
| Max Arm Radial Displacement:    | 20mm                |
| Maximum Strain:                 | 42.1%               |
| No. of Direct Strain Arms:      | 6                   |
| Arm Spacing at Circumference:   | 60°                 |
| No. of Total Pressure Cells:    | 2                   |
| No. of Pore Pressure Cells:     | 0                   |
| Length of expanding section:    | 725mm               |
| Assembled Length (No Subs):     | 1520mm              |
| Umbilical Diameter:             | 14mm                |
| Actuation:                      | Pneumatic/Hydraulic |
| Power Requirements:             | 12V                 |
| Pre-bored:                      | Yes                 |
| Self-bored                      | No                  |
| Pushed:                         | No                  |
| Thread Type From Probe:         | BW                  |



## Example Data



HPD Test in Soil



HPD Test in Rock

## Common Parameters

|                                |                            |
|--------------------------------|----------------------------|
| Insitu Horizontal Stress       | $\sigma_{ho}$              |
| Yield Stress                   | $P_f$                      |
| Limit Pressure                 | $P_{lm}$                   |
| Undrained Shear Strength       | $C_u$                      |
| Frictional Strength Properties | $\phi_{cv}, \phi_{pk}, C'$ |
| Initial Shear Modulus          | $G_i$                      |
| Shear Modulus                  | $G_{ur}$                   |
| Young's Modulus                | $E$                        |