

Vibrating Wire Push-In Pressure Cell

Description

A Vibrating Wire Push-In Pressure Cell, also called a Spade Cell, is designed to be pushed into the ground where it can measure total earth pressure and pore water pressure within the soil. It can be used as a site investigation tool to determine the in situ stress state, both vertical and horizontal, depending on the direction of installation. In addition, it can be used to monitor the change in active and passive pressure around retaining structures (diaphragm walls, etc.) as well as in tunneling, and other earthworks. Typical installations are in fine grained cohesive soils, including very soft to stiff clays.

Construction consists of two longitudinal stainless steel plates welded together around their periphery. The annular space between these plates is filled with de-aired glycol. A port and filter for pore water pressure measurement are located on one of the flat sides of the support plate behind the pressure sensitive section of the cell.

The pressure cell and the port for the pore water pressure are connected via stainless steel tubes to two vibrating wire pressure transducers integrated in the cell. A thermistor for temperature measurement is also incorporated in the cell.

The installation method consists generally in drilling a pilot hole slightly shorter than the planned installation depth, and then to push the pressure cell about 1 meter past the bottom of the pilot hole using standard drill rods or CPT rods that will be left in place or retrieved at a later stage after measurements are completed. Push rods and push adapters can also be used if the cell is to be pushed and left permanently in place with retrieval of the push rods (see ordering info).

VIBRATING WIRE PUSH-IN PRESSURE CELL SPECIFICATIONS

ITEM	SPECIFICATION
Capacity	350, 700 kPa 1, 2, 3, 5 MPa
Over Range	150% F.S. (maximum)
Resolution	0.025% F.S. (minimum)
Accuracy	± 0.5% F.S.
Sensor Type (earth and pore water pressure)	Vibrating Wire
Temperature Range	-20°C to +80°C
Filter	50 micron sintered filter
Length x Diameter x Thickness (pressure sensitive section)	200 x 57 x 6.3 mm
Total Length	524 mm

SPECIFICATIONS