W1 STANDPIPE PIEZOMETER

Datasheet W1

Description

The Standpipe Piezometer (also known as a Casagrande Piezometer) is used to monitor piezometric water levels in vertical boreholes.

The Standpipe Piezometer typically comprises two parts: at its lowest point is a porous piezometer tip; connected to the tip is a riser pipe which continues upwards out of the top of the borehole.

To measure the borehole water level, the filter tip zone is packed with sand and then backfilled above. To isolate pore water pressure at the filter tip, a bentonite seal is required between the sand filter zone and the backfill.

Alternative filter tip types may be driven or pushed into soft soil; different tip designs are available to suit various types of ground.

Features

- **Porous plastic or ceramic filter tip**
- **Choice of PVC or galvanized steel riser pipe**
- **Drive-in tip available**
- **Used when monitoring piezometric water levels in vertical boreholes**
- **Can measure artesian pressures using a Bourdon Gauge readout**

Benefits

- **Simple, low cost system**
- **Ideal for routine site investigation**
- **Excellent long-term reliability**

Comprehensive information about this product and our full range is available at www.itmsoil.com
If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@itmsoil.com

Operation

Water level indication is measured with a water level meter.

Measuring artesian pressures requires a Bourdon Pressure Gauge to be connected to the top of the standpipe.

The Standpipe Piezometer is capable of measuring the borehole water level or water pressure at the piezometer tip.

The water pressure at the filter tip is derived by measuring the height of the water surface in the riser pipe above the piezometer tip. This is achieved by installing a bentonite seal in between the sand filter zone and the backfill.

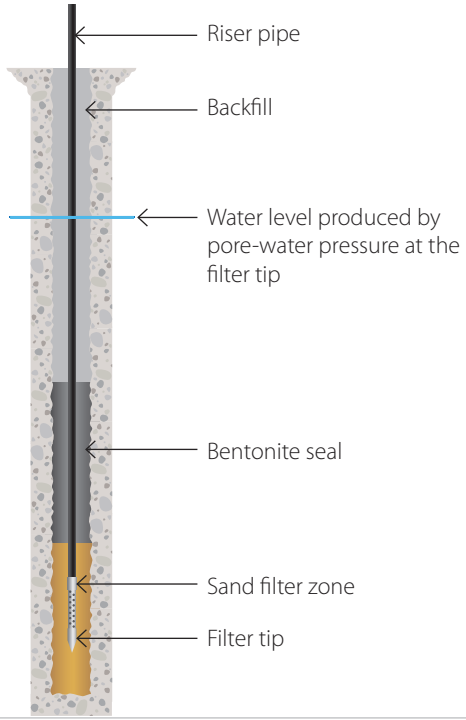
For measuring the borehole water level, no bentonite seal is required, but measurements are taken in the same manner.

Applications

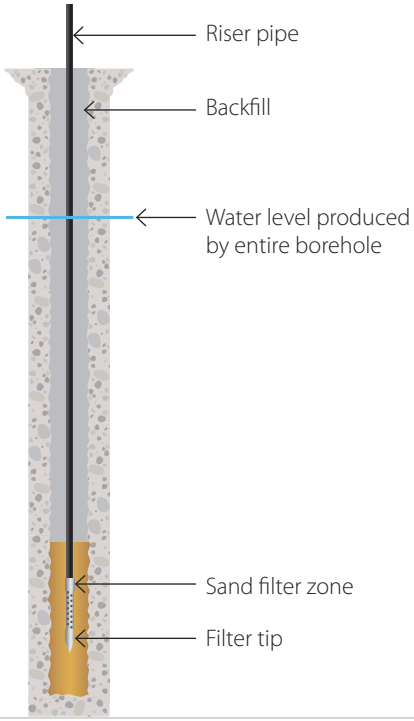
Typical applications include monitoring pore water pressure and water levels in soil or rock, such as:

- Stability of embankments, dams and reservoirs
- Investigations of natural and cut slopes
- Control of de-watering and drainage operations
- Seepage and groundwater movements
- Monitoring of water table and aquifers
- Pollution and environmental studies
- Construction control of shallow underground works
- Permeability measurements

Water level produced by pore-water pressure at the filter tip



Water level produced by the entire borehole



Associated products

For details on:	Catalogue code:
Water Level Meter	W7
Bourdon Gauge	W1-4/W1-5
Borehole Sealing	W6

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THE TECHNICAL RATING FOR THIS PRODUCT: **BASIC**

As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, itmsoil makes the following recommendations, for the skill level of the installation contractor.

ADDITIONAL SUPPORT

itmsoil offer installation and monitoring services to support this system. For more information please email : **sales@itmsoil.com** or call **+44 (0) 1825 765044**

ADVANCED	The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.
INTERMEDIATE	The installer already has previous experience and/or training in the installation of this instrument or system.
BASIC	As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

Specifications

Piezometer Tips

Type[1]	Porous plastic	Drive-in
Element diameter	27mm	27mm
Lengths	300mm | 1000mm | non standard lengths up to 3m	300mm
Overall diameter	43mm	32mm
Pore diameter	60 micron	60 micron
Permeability	3×10^{-4} m/s (low entry)	
Material	PVC	Galvanised/plated steel

Tubing and Coupling

Tubing material	PVC	Galvanised steel
Tubing lengths	1m | 1.5m | 3m	1m | 3m
Coupling material	PVC	Galvanised steel
Coupling threading	Threaded – threaded | Plain – threaded | Plain – plain	Threaded – threaded
End cap material	PVC	Galvanised steel
End cap threading	Plain | Threaded	Threaded
Nominal inner diameter	19mm	

[1] Ceramic Casagrande also available; please contact itmsoil Sales directly

Ordering Information

Casagrande Piezometer Tips

¾inch nominal bore, ¾inch BSP thread

W1-1.3	Casagrande porous plastic tip; overall 300mm length, Ø27mm. For use with W1-2.1
W1-1.4	Casagrande porous plastic tip; overall 1000mm length, Ø27mm. For use with W1-2.1
W1-2.1	PVC standpipe tubing; rigid PVC tube, 19mm ID, includes threaded coupling, 3m length
W1-2.15	PVC standpipe tubing; rigid PVC tube, 19mm ID, includes threaded coupling, 1.5m length
W1-2.16	PVC standpipe tubing; rigid PVC tube, 19mm ID, includes threaded coupling, 1m length
W1-2.2	PVC coupling – threaded to threaded
W1-2.3	PVC coupling – plain to threaded
W1-2.6	PVC coupling – plain to plain
W1-2.4	PVC end cap – plain coupling
W1-2.5	PVC end cap – threaded coupling
W6-4.1	PVC adhesive; 250 ml, sufficient for approx. 150 joints

Drive-in Casagrande Piezometer Tips

Mild steel galvanised, ¾inch nominal bore, ¾inch BSP thread

W1-1.6	Casagrande piezometer drive-in tip; overall 300mm length. For use with W1-2.7 galvanised standpipe tubing
W1-2.7	Galvanised standpipe tubing; includes coupling, 1m length
W6-8.2	Galvanised standpipe tubing; includes coupling, 3m length
W1-2.8	Galvanised coupling – threaded to threaded
W1-2.9	Galvanised end cap – threaded coupling
W1-3.5-1	Jar plate; for installing drive-in piezometer W1-1.6
W1-3.6	Driving monkey; for installing drive-in piezometer W1-1.6

Installation Accessories

W6-8.1	Punner; to compact material in borehole
E2-2.13	Protective cover; 2inch BSP threaded cap, 50mm ID, 500mm length
E2-2.14	Security cover; with bar and padlock, 50mm ID, 500mm length

Bourdon Dial Gauges

W1-4.7	Bourdon gauge connecting kit for ¾inch BSP pipe, threaded fit
W1-5.3	Bourdon gauge; 0-10metres head of water
W1-5.2	Bourdon gauge; 0-20metres head of water

Manual

MAN-52	Standpipe Piezometer

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