

# Standpipe Piezometer

## Applications

The Geo-Instruments Standpipe Piezometer is used for the measurement of water levels in soil or rock. It's many geotechnical and structural applications include:

- Construction control and stability monitoring of embankments, dams and reservoirs.
- Stability investigations of natural and cut slopes.
- Control of de-watering and drainage operations.
- Hydrological investigations and water supply.
- Pollution and environmental studies.
- Construction control of shallow underground works.
- Permeability measurements.

## Operation

The GEO Standpipe Piezometer is comprised of a standpipe tube with a porous piezometer tip connected at its lower end. The standpipe piezometer is then installed into a borehole. Alternative types may be driven or pushed into soft soil, and different tip designs are available to suit various types of ground.

For borehole installations, bentonite and grout are used to seal the borehole above the tip. Groundwater can enter the tube only via the tip. Depth to the water level is measured with a



water level meter. The water pressure corresponds to the height of the water surface in the standpipe above the piezometers tip. A bourdon pressure gauge connected to the top of the standpipe will be required to measure artesian heads.

## Features

- Ideal piezometer to ascertain the piezometric level during routine site investigation.
- Low cost and easy to use
- In favorable circumstances, standpipes can be installed and head readings taken in boreholes to depths in excess of 200m, with effective and accurate installation of the filter and backfill grout.

- Drive-in piezometers can be installed to depths in excess of 10m in soft soils (shear strength less than 20 kPa).
- Response to head variations is comparatively slow, generally used for long term readings in high permeability ground (greater than approximately  $10^{-6}$  m/s).
- Water Level Meter readings are feasible only in near-vertical downward installations. Other inclinations are feasible using a Bourdon gauge readout.
- Standpipes may be undesirable in construction areas due to their vulnerability to damage from construction.

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