TDR Cable

Model 4600

TDR Cable is primarily used to measure soil mass and rock movements but can also measure soil volumetric water content, soil bulk electrical conductivity, or any user-specific time-domain measurement.

APPLICATIONS

Typically used to monitor soil mass and rock movements in response earth works, such as mining or civil works.

FEATURES

- Precise shear zone monitoring
- Easy to install and read
- Read remotely
- Provides real-time monitoring
- Can be installed in borehole with other instrumentation

OPERATING PRINCIPLE

A TDR system consists of a single coaxial cable grouted in a borehole with a TDR200 Module attached to the cable at the collar of the borehole. Readings can be taken manually with a TDR Hand-Held Readout or logged via a Datalogger. The TDR200 Module sends pulsed signals along the cable which are reflected at the end of the cable and travel back to the surface where their arrival time is recorded. Reflections are also generated at places where the resistance of the cable changes, such as soil mass and rock movements or shear zones. The travel time for the reflected signal to return to the collar of the borehole is proportional to the depth at which the reflection is generated. TDR is particularly useful in applications where shearing or deflection of the borehole requires monitoring.

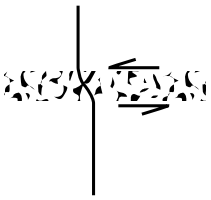
TDR Cable

SPECIFICATIONS

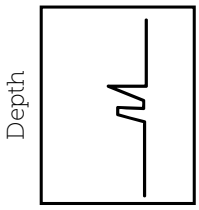
Jacket OD	15.7 mm
Minimum Bend Radius	50 mm
Velocity of Propagation	88%
Centre Conductor	Copper-clad aluminium wire or copper, 4.8 mm
Weight	24 kg per 100 m

TDR READOUT EXAMPLES

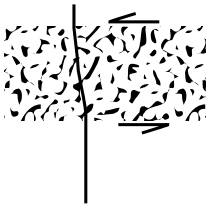
Shear zone with cable bending



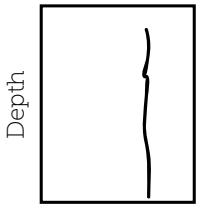
Reflection Magnitude

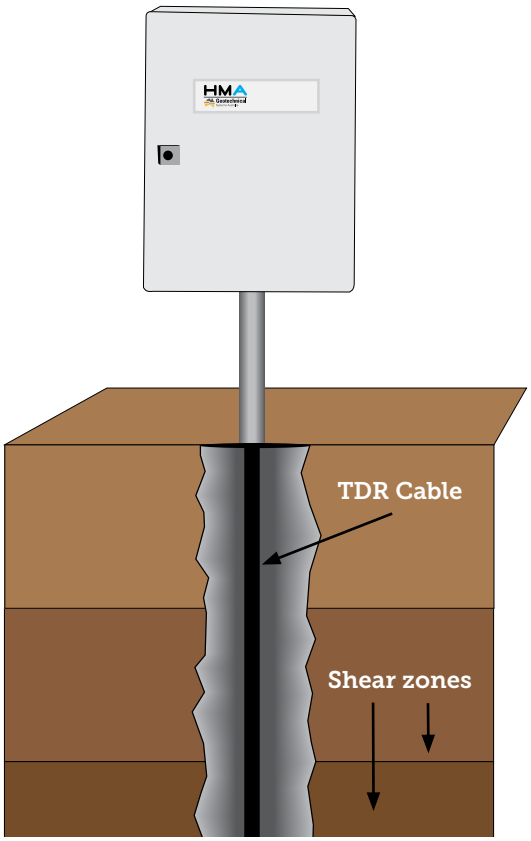


Large shear zone



Reflection Magnitude





ANCILLARY EQUIPMENT

- TDR Hand-Held Readout
- Datalogger
- Protective Enclosure

INSTALLATION

TDR cable is inserted into a borehole and then grouted in place. This method ensures that the borehole matches existing soil and rock conditions resulting in more accurate measurements.

ORDERING INFORMATION

When ordering, please specify the model number and anchor quantity, borehole length and diameter, number of installations and readout requirements. For any special requirements, please contact the HMA Geotechnical Head Office.

Note: HMA Geotechnical is continually improving its products and processes, information contained within this brochure is subject to change without notice

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