INCLINOMETER CASING

GEOKON®

MODEL 6500

Two sections of the Model 6500 Inclinometer Casing shown with a standard length coupling.

APPLICATIONS

The Model 6500 is used with all commercially available inclinometer probes to monitor the stability of:

- Embankments
- Slopes
- Rock cuts
- Foundations and excavation walls
- Piles
- Coffer dams
- Landfills

Close-up shows two sections of the Model 6500 riveted and taped together with a standard length coupling.

Model 6501-6-2 Inclinometer Casing Protective Housing, 4" galvanized steel pipe with lockable cap.

OPERATING PRINCIPLE

The Model 6500 Inclinometer Casing is used in conjunction with all commercially available inclinometer probes to monitor the stability of embankments, slopes, rock cuts, foundation and excavation walls, piles, coffer dams, etc. The casing sections are coupled and grouted inside boreholes, or fixed to the surface of piles or sheet piling. The casing and couplings have grooves spaced at ninety-degree intervals, which fit the wheels of the inclinometer probe thus maintaining the orientation of the probe as it is traversed up and down the casing. The probe accurately measures the change in the angle of tilt, from the vertical, of each portion of the casing. These incremental changes are added together to give a vertical profile of the casing. Changes in the profile become a measure of the stability of the structure.

ADVANTAGES AND LIMITATIONS

The model 6500 Inclinometer Casing is manufactured from pultruded fiberglass, an ideal material, being very strong, lightweight and environmentally resistant. The pultrusion process guarantees there will be no spiraling of the grooves.

Casings and couplers telescope snugly together. This has several advantages: the casings do not need specially machined or molded ends and thus casings can be cut and joined together at any point along their length. Furthermore, connection can still be made even if the ends are damaged. A telescoping joint can easily be made using an extra-long section of coupling, pop-riveted to the casings, using aluminum pop-rivets, to leave a space between the ends of the casings. Both casing and couplings have grooves so that the inclinometer probe cannot lose its orientation as it passes through the telescoping coupling.

Fiberglass casing is resistant to heat and will not deform at temperatures as high as 200 °C (400 °F). It is suitable for use in landfills or for geothermal applications.

The Model 6400 Glue-Snap Inclinometer Casing can accommodate a range of inclinometer sensors including the Model GK-604D Digital Inclinometer System.

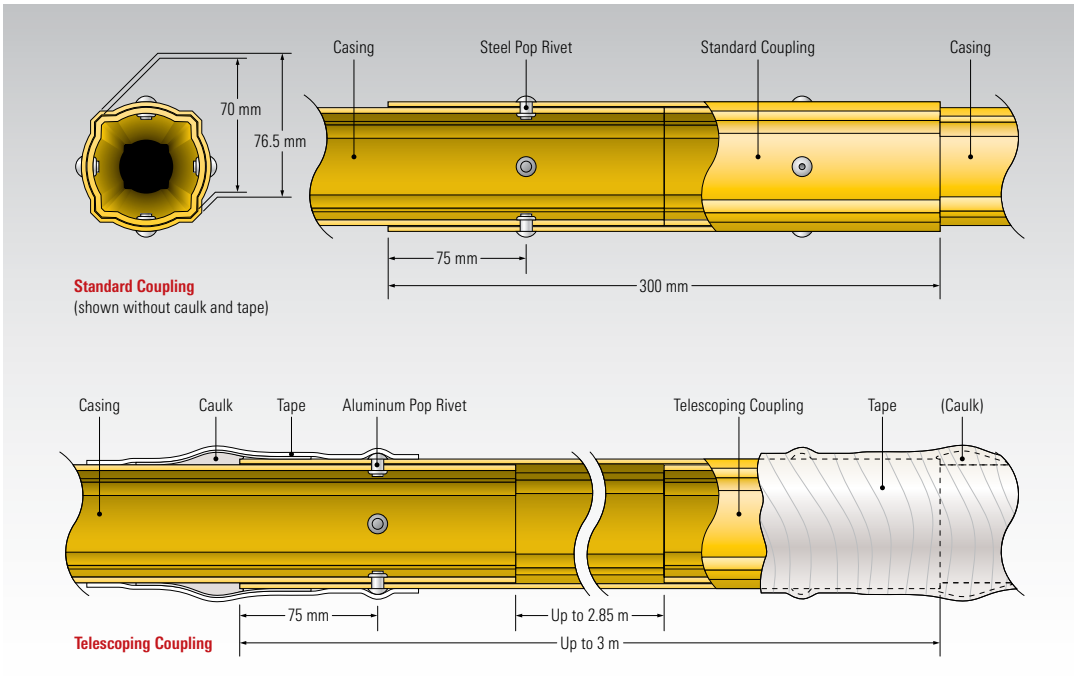

Illustration depicts the Model 6500 Inclinometer Casing dimensions, and configurations of the standard and telescoping couplings.

SYSTEM COMPONENTS

Casings and couplings are pop-riveted together and the joints are water-proofed using caulk and tape. Steel pop-rivets, (⅛ × 3⁄16 inch or ⅛ × ¼ inch), are standard. Aluminum pop-rivets are used in telescoping couplings, because they are sheared more easily by the telescoping forces.

A bottom plug, pop-riveted and sealed, is used to cap the bottom of the casing and a top plug is used to cap the top of the casing. Lockable protective housings, made from galvanized steel pipe and cement-grouted in-place around the top of the casing, are recommended to help prevent damage and vandalism.

Installation kits, which include caulking, tape, pop-rivets, a pop-rivet gun, and a manual or battery operated hand drill with #30 drill bits, are available.

TECHNICAL SPECIFICATIONS

Maximum O.D. (Nominal)	casing: 70 mm coupling: 76.5 mm
Wall Thickness (Nominal)	casing: 3 mm coupling: 2 mm
Length	casing: 3 m coupling: 300 mm
Telescoping Coupling (specify)	available up to 3 m
Material	Fiberglass
Temperature (Maximum)	200 °C (400 °F)
Collapsing Pressure[1]	1.4 MPa (200 psi)
Weight	1.1 kg/m (0.74 lbs/ft.)

[1]Maximum recommended pressure differential (O.D. to I.D.) is 700 kPa (100 psi) (equivalent to a 70 m depth of water-filled casing in a grouted borehole).

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