



Glue and  
Snap  
Inclinometer  
Casing



Snap Seal Inclinometer Casing  
(showing internal "O-ring")



Standard  
Bottom  
Cap

Bottom Cap with  
Grout Valve



PRODUCT CATEGORY:  
INCLINOMETERS + TILT SENSORS

# Inclinometer Casing

RST's Inclinometer Casing is engineered to be assembled quickly and accurately for long and short term monitoring in the most adverse field conditions. It is suited to be installed in boreholes, embankments, piles, set into concrete or attached to structures.

The casing serves as an access tube to guide a MEMS-based inclinometer probe in the two orthogonal directions of measurement. Changes in the output of the probe caused by the deformation of the casing, is proportional to the sine of the angle of inclination of the long sensor axis from vertical. These displacements are incrementally summed to provide profiles of total displacement versus depth.

Key to quality inclinometer casing is not only the material, but the quality and shape of the grooves. The inclinometer probe utilizes grooves in the casing to control the azimuth of the inclinometer probe.

RST casing is manufactured from non-recycled virgin ABS resin. While more costly than common PVC resin, ABS is preferred due to superior flexibility, stability and low temperature impact resistance. Using recycled resin degrades the performance of casing. All RST casing is machined to insure the highest quality possible.

## > THIS PRODUCT

Provides alignment and displacement measurements in numerous applications.

Is available in either "Snap Seal" or "Glue & Snap" coupling styles.

## > APPLICATIONS

Pilings.	Landslides and slope stability.
Subsidence control.	Under large storage tanks.
Embankment and dam stability.	Bridge pier, abutments deflection.
Areas next to large excavations.	

## > FEATURES

High precision, machined guide grooves.	Low spiral $\leq 0.005$ Rad/3 m ( $\leq 0.3$ deg./10 ft.)
Meets or exceeds all applicable standards.	Easy assembly.
Self-aligning, water and grout tight couplings.	70 mm (2.75 in.) and 85 mm (3.34 in.) OD sizes.
Compatible with all commercial probe types and in-place inclinometer sensors.	

Integral coupling reduces assembly induced spiral by 50% over conventional separate coupling methods.

Compatible with inductance, reed switch, magnetic, or mechanical settlement monitoring devices.



Available for  
**IMMEDIATE DELIVERY**  
Info on reverse.

Snap Seal and Glue & Snap integral flush couplings that minimize field installation time.

Low temperature, impact, and corrosion resistant ABS plastic.

External key provides visual and tactile confirmation of proper installation.

High Endurance Casing offers a very homogenous tubing with extra reinforcement at the location of the connection between casing sections in order to ensure maximal torsional, compressive, and bending strength. Available in situations where extra robustness is required.

## > BENEFITS

✓ Increase Safety	✓ High Accuracy
✓ Increase Productivity	✓ Upgradable
✓ High Reliability	

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## SPECIFICATIONS + ORDERING

TELESCOPIC SECTION SPECS		
DESCRIPTION	70 MM (2.75 IN.) CASING	85 MM (3.34 IN.) CASING
Telescopic Section OD	76.96 mm (3.03 in.)	91.44 mm (3.6 in.)
Compressed Length	457 mm (18 in.)	457 mm (18 in.)
Extended Length	609 mm (24 in.)	609 mm (24 in.)
Range	152 mm (6 in.)	152 mm (6 in.)
Weight	0.77 kg (1.7 lbs.)	0.9 kg (2 lbs.)

OPTIONAL EQUIPMENT
Top & bottom caps
Casing Anchor and Casing Anchor with Grout Connector (see separate brochure)
Reconnect adapter
Reconnect alignment tool
Remale grout adapter
Grout cap
ABS-DVW Solvent Cement (cannot be shipped by air)

### SNAP SEAL CASING

Traditional Inclinometer Casing installation methods dictate that screws or pop rivets must be utilized to hold the coupling in shear until the ABS solvent weld cement cures. The requirements for rivets is increased in deep boreholes.

Snap Seal is the original O-ring sealed coupling system, which does not require glue, pop rivets, screws, or shear wires. This patented, innovative system allows casing sections to lock together while maintaining precise groove alignment and high collapse strength. The Snap Seal system is flush coupled for ease of installation in hollow stem augers and casing advancers.

CASING SPECS		
DESCRIPTION	70 MM (2.75 IN.) OD	85 MM (3.34 IN.) OD
Snap Seal / Glue & Snap Coupling OD	70 mm (2.75 in.)	85 mm (3.34 in.)
Casing OD	70 mm (2.75 in.)	85 mm (3.34 in.)
Casing ID	59 mm (2.32 in.)	73 mm (2.87 in.)
Casing Length	1.5 or 3 m (5 or 10 ft.)	1.5 or 3 m (5 or 10 ft.)
Casing Weight	1.27 kg/m (.85 lbs/ft.)	1.49 kg/m (1.0 lbs/ft.)
Snap Seal / Glue & Snap Bottom Cap OD	70 mm (2.75 in.)	85 mm (3.34 in.)
Material	ABS Plastic	ABS Plastic
Groove Spiral	≤ 0.3 deg./10 ft.	≤ 0.3 deg./10 ft.

### GLUE + SNAP CASING

Glue & Snap Inclinometer Casing is an improvement on the Snap Seal design and combines the best features of both installation methods with none of the disadvantages. Glue & Snap provides the speed and convenience of a snap-together flush coupling combined with the low cost and high tensile/high torsional strength of a glue joint.

Installation is simply done by applying a bead of glue to the male end, snap casing together and insert downhole. As with Snap Seal, Glue & Snap Inclinometer Casing is flush coupled for simple installation.

GLUE & SNAP SPECIFICATIONS - 70 MM	
Load Test	738 kg (1630 lbs.)
Collapse Test	17.2 bar (250 psi)



ORDERING DESCRIPTION	GLUE & SNAP		SNAP SEAL	
	70 MM (2.75 IN.)	85 MM (3.34 IN.)	70 MM (2.75 IN.)	85 MM (3.34 IN.)
1.52 m length (5 ft.)	ICGC205	ICGC305	ICSC205	ICSC305
1.50 m length (4.92 ft.)	ICGC205M	ICGC305M	ICSC205M	ICSC305M
3.05 m length (10 ft.)	ICGC210	ICGC310	ICSC210	ICSC310
Top cap	ICC2TC	ICC3TC	ICC2TC	ICC3TC
Bottom cap	ICGC2BC	ICGC3BC	ICSC2BC	ICSC3BC
Grout cap	ICGC2CP	ICGC3CP	ICSC2CP	ICSC3CP
Female Grout Adapter 3/4" NPT	IC1200	IC1200	IC1200	IC1200
Telescopic section	ICGC2TS	ICGC3TS	ICSC2TS	ICSC3TS

Contact RST for Details

### TELESCOPIC SECTION

When vertical heave or settlement is anticipated to exceed 1-2%, Inclinometer Casing Telescoping Sections must be used to allow axial movement of the casing while minimizing distortion due to vertical strain. Telescopic sections must be inserted appropriately extended or collapsed, to accommodate the expected settlement/rebound. Settlement sections are available in 70 mm (2.75 in.) and 85 mm (3.34 in.) and each section can accommodate up to 150 mm (6 in.) of compression or heave. As a general rule, telescopic sections are recommended for use in boreholes, whereas telescopic casing (see separate brochure) is used in embankments that are gradually raised, such as embankments and tailings dams. Another option to accommodate high settlement in boreholes is to use corrugated sleeving over the Inclinometer Casing (see Magnetic Settlement System brochure).



Telescopic Section