

D111

MAGNET EXTENSOMETER

SETTLEMENT
GAUGES



MAGNET EXTENSOMETER

Magnet extensometer is a system for measuring either settlement or heave at various depths in soil, embankments, earthfill dams and dikes. The system consists of an access tube with external corrugate pipe, magnet rings, bottom section with datum ring and suspension head.

Magnet rings (targets) are fixed externally to the access tube in the ground where movement may occur. Magnet rings move together with surrounding soil along the axis of the access tube.

Readings are obtained with a portable readout, lowering the reed switch probe through the access tube. Comparison of surveys taken over time provide profiles of ground.

APPLICATIONS

- Earthfill dams
- Embankments
- Retaining structures, such as sheet piles and slurry walls
- Tunnels and shafts
- Excavations
- Foundations

FEATURES

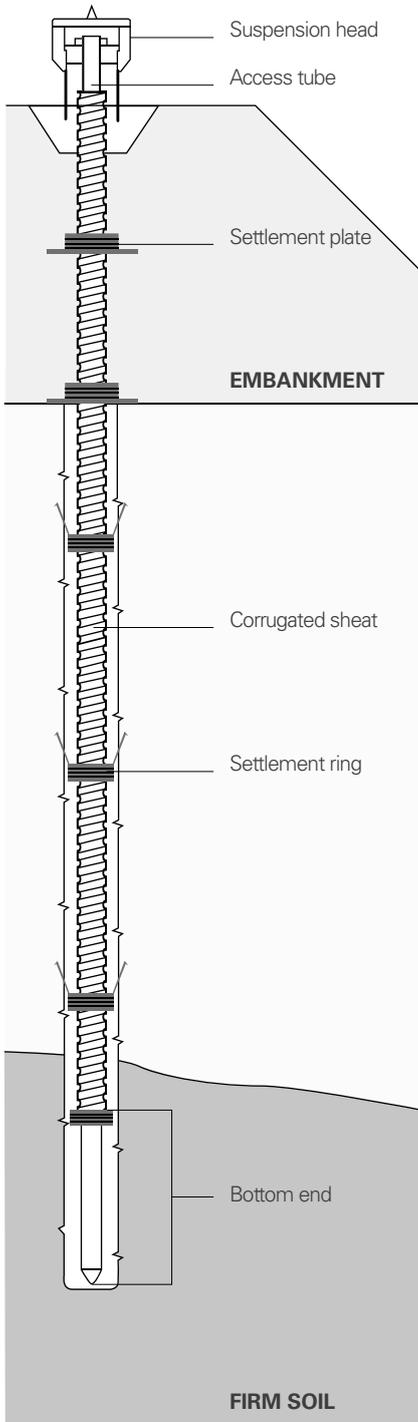
- Simple and cheap system to measure vertical displacements
- Available special targets for inclino-settlement column
- Access tube and corrugate pipe can be extended during embankment construction
- Magnetic detector probe is available with various tape lengths



Meet the essential requirements of the EMC Directive 2014/30/UE

SETTLEMENT COLUMN

The D111 magnet settlement column determines vertical ground movement. Typically the settlement column is anchored in firm soil at its base to provide a datum. Magnet rings have either springs or plate anchor. Spring targets are suitable for borehole application and plate targets for embankments. A suspension head supports the magnetic detector probe during surveys. The bottom end of the column is fitted with a magnet target in order to have a bottom datum point.



SUSPENSION HEAD OD111TS1000

Material	Stainless steel and PVC
OD	140 mm
Lenght	348 mm
Note	With topographic survey pin

BOTTOM END OD111TF6000

Material	Polyethylene
OD	60 mm
Lenght	1000 mm
Note	With magnetic ring, OD 82.5 mm

ACCESS TUBE OD111P30000

Material	PVC
OD	33 mm
ID	25 mm
Lenghts	3000 mm

CORRUGATED SHEATH OD111PV5500

Material	PVC corrugated
OD	55 mm
ID	46 mm
Lenghts	supplied on reel

3-SPRING SETTLEMENT RING OD111AF6000

Application	Borehole
Material	Plastic and nylon spring
Sensitive element	Plastic-ferrite magnet
Ring ID	60 mm
Ring OD	85 mm
Anchor system	3 spider springs, max span 300 mm

SETTLEMENT PLATE OD111AR6000

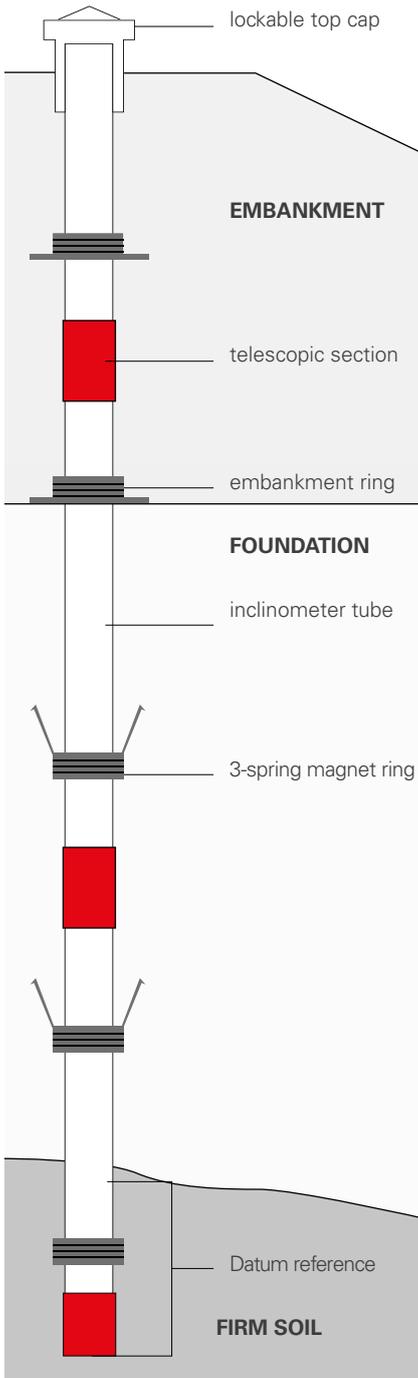
Application	Embankment
Material	Plastic
Sensitive element	Plastic-ferrite magnet
Ring ID	60 mm
Ring OD	85 mm
Anchor system	plate diameter 300 mm

6-SPRING SETTLEMENT RING OD111AF6060

Application	Borehole
Material	Plastic and nylon spring
Sensitive element	Plastic-ferrite magnet
Ring ID	60 mm
Ring OD	85 mm
Anchor system	6 spider springs, max span 300 mm

INCLINO - SETTLEMENT COLUMN

Inclino-settlement column is a cost-effective solution when inclinometer and settlement measurement are requested. They are composed by ABS inclinometer casing model S143 with a number of magnet rings; telescopic sections are provided for columns where big settlements are expected with consequent damage of the casings. Spider magnet rings are usually installed in borehole; embankment magnet rings with circular plate are available for installation during embankment construction. A typical application of inclino-settlement column is in embankment or earth-fill dam to control settlement in foundation and embankment body during construction.



INCLINOMETER TUBE 0S143107000

Material	ABS plastic
Outer diam.	70 mm
Inner diam.	58 mm
Overall section length	3055 mm (coupling included)

TELESCOPIC SECTION, 75MM 0S143ST0700

Material	ABS
Gap	75 mm
Outer diam.	80 mm
Overall section length	3055 mm (compressed)

TELESCOPIC SECTION, 150MM 0S143ST1500

Material	ABS
Gap	150 mm
Outer diam.	80 mm
Overall section length	3055 mm (compressed)

3-SPRING MAGNET RING 0S143AF6000

Application	Borehole
Material	Plastic and nylon spring
Sensitive element	Plastic-ferrite magnet
Ring ID	71 mm
Ring OD	93 mm
Anchor system	max spider spring span 300 mm

6-SPRING MAGNET RING 0S143AF6060

Application	Borehole
Material	Plastic
Sensitive element	Plastic-ferrite magnet
Ring ID	71 mm
Ring OD	93 mm
Anchor system	max spider spring span 300 mm

EMBANKMENT RING 0S143AR6000

Application	Embankment
Material	Plastic
Sensitive element	Plastic-ferrite magnet
Ring ID	71 mm
Ring OD	93 mm
Dimensions	plate diameter 300 mm

DATUM REFERENCE 0S143DR7000

Application	Datum bottom reference
Material	Plastic
Sensitive element	Plastic-ferrite magnet
Ring ID	71 mm
Ring OD	93 mm
Dimensions	length 1500 mm

MAGNETIC DETECTOR PROBE

The C121 magnetic detector probe is the measuring device for multipoint magnet extensometers. The unit consists of a magnetic probe containing a switch actuated by the magnetic field of the target rings. The switch activates buzzer and lamp. The magnetic probe is attached to a stretch resistant flat cable coiled on a portable reel. Cable is marked in unit lengths with division in millimetre. It is supplied with two special centering devices allowing cable guide and datum during measurements for both 1" PVC tube and 58mm ID ABS inclinometer casings.



FLAT CABLE

Available lengths	50, 100, 150, 200 m
Measuring scale divisions (resolution)	millimeter
Width	12 mm
Number of conductors	two
Sheath	nylon
Temperature range	-40°C +100°C
Weight	25 g/m

MEASURING TIP

Dimension	OD 16 mm, Length 250 mm
Material	Stainless steel and PVC
Weights	Zn Al alloy, OD 12 mm

REEL

Diameter	260÷320 mm according to tape length
----------	-------------------------------------

ACCESSORIES AND SPARE PARTS

DETECTOR SWITCH PROBE 0C121KITR00

Spare detector switch probe and set of weights.

CENTERING DEVICE 0C1REFH0800

Spare centering device for 1" PVC tube. It ensures easy and consistent measurements.

All the information in this document is the property of Sisgeo S.r.l. and should not be used without permission from Sisgeo S.r.l. We reserve the right to change our products without prior notice. The datasheet is issued in English and other languages. In order to avoid discrepancies and disagreement on the interpretation of the meanings, Sisgeo Srl declares that English Language prevails.

SISGEO S.R.L.
VIA F. SERPERO 4/F1
20060 MASATE (MI) ITALY
PHONE +39 02 95764130
FAX +39 02 95762011
INFO@SISGEO.COM

TECHNICAL ASSISTANCE

SISGEO offers customers e-mail and phone assistance to ensure proper use of instruments and readout and to maximize performance of the system.

For more information, email us: assistance@sisgeo.com