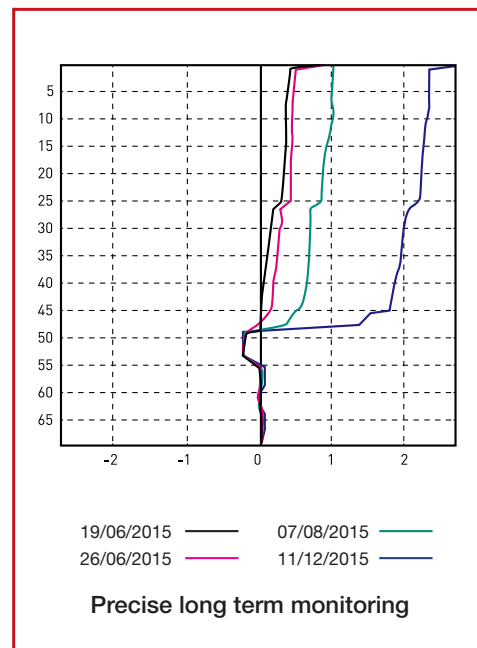
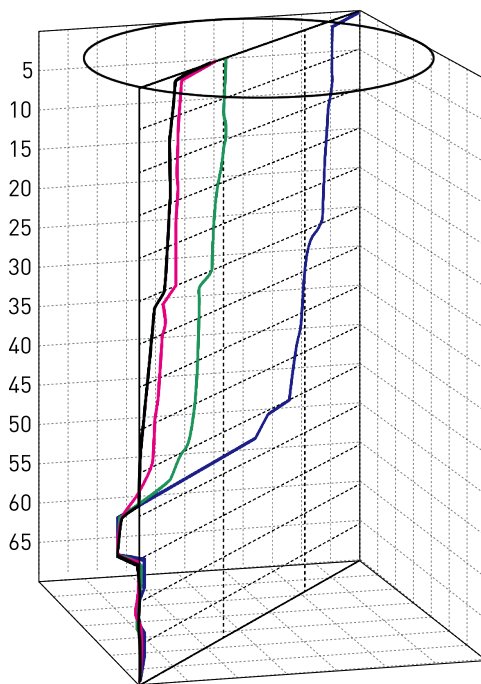


# iNCLINOMETER CASING

| Model GV-2404 |

Edition 2017



Displacements for Inclinometer

## Optimized measurement, Proven safety

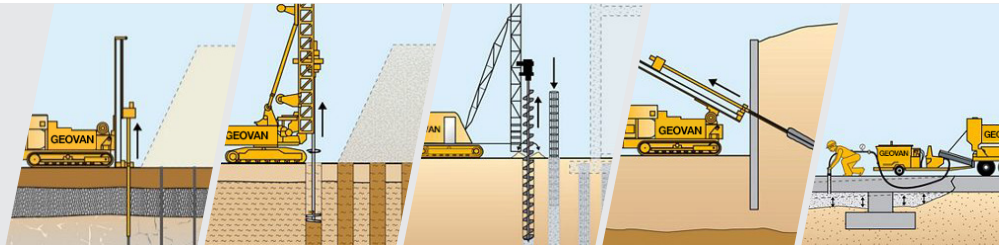
Dong-A Geovan Co.,Ltd manufactured ABS inclinometer casing is a special grooved tubing, generally installed in a borehole, used along with digital inclinometer probe system to monitor lateral ground movement and measure Borehole verticality.

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# INCLINOMETER CASING



## Application

- | Monitoring lateral ground movement in land slide areas
- | Measuring stability during site excavation
- | Detecting the shear planes in earth fill dams
- | Deflection of retaining walls and piles under heavy loads
- | Measuring sub-soil movements in reclamation and sub-soil improvement Sites

## Specification

Casing Specification	OD60mm	OD70mm	OD85mm
Material	ABS	ABS	ABS
Groove Spiral	< 0.3° / 3M	< 0.3° / 3M	< 0.3° / 3M
Collapse Rating	2040kPa	1960kPa	1770kPa
Bend Rating	3.15kN	3.07kN	2.65kN
Maximum Temperature	80°C	80°C	80°C
Tensile Strength	708kgF	705kgF	700kgF
Torque	538Nm	520Nm	481Nm
Casing Dimension			
Length	3000mm (+1mm)	3000mm (+1mm)	3000mm (+1mm)
Outer Diameter	60mm	70mm	85mm
Inner Diameter	53mm	62mm	77mm
Coupling Dimension			
Length(STD/TLS)	200mm	160mm / 400mm	200mm / 380mm
Outer Diameter	67mm	75.5mm	91mm
Inner Diameter	57.5mm	68mm	83mm
Weight			
Casing	2.16kg	2.5kg	3.07kg
Coupling	0.18kg	0.14kg	0.24kg
Top Cap	0.02kg	0.04kg	0.04kg
Bottom Cap	0.06kg	0.08kg	0.10kg

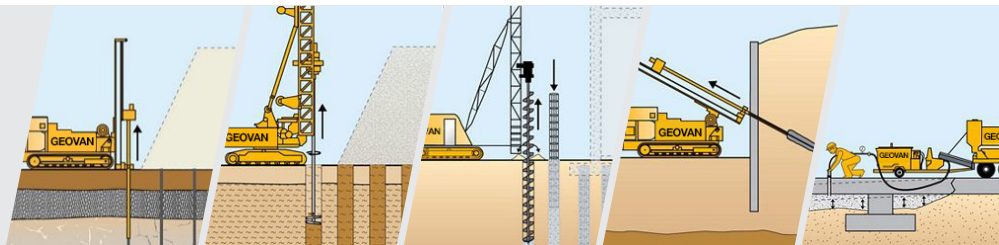
※ Note : Supplied products could be +/-0.06% shrinkage rate upon exposure of heat temperature. Environment Temperature AVG 24 °C

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# INCLINOMETER CASING



## ABS Resin Properties by ASTM

### Physical

Specific Gravity		ASTM D792	-	1.04
Molding Shrinkage (Flow), 3.2mm		ASTM D955	%	0.4~0.7
Melt Flow Rate	230℃/3.8kg	ASTM D1238	g/10min	1

### Mechanical

Tensile Strength, 3.2mm @ Yield	50mm/min	ASTM D638	kg/cm2	420
Tensile Elongation, 3.2mm @ Yield	50mm/min	ASTM D638	%	>5
@ Break	50mm/min		%	35
Tensile Modulus, 3.2mm	1mm/min	ASTM D638	kg/cm2	
Flexural Strength, 3.2mm	15mm/min	ASTM D790	kg/cm2	640
Flexural Modulus, 3.2mm	15mm/min	ASTM D790	kg/cm2	21,100
Tear Strength @ Break	50mm/min	ASTM D624	kg/cm	
IZOD Impact Strength, 6.4mm (Notched)	23℃ -30℃	ASTM D256	kg-cm/cm kg-cm/cm	43
IZOD Impact Strength, 3.2mm (Notched)	23℃ -30℃	ASTM D256	kg-cm/cm kg-cm/cm	50
Rockwell Hardness	R-Scale	ASTM D785	-	97

### Thermal

Heat Deflection Temperature, 6.4mm (Unannealed)	18.6kg 4.6kg	ASTM D648	℃ ℃	87 92
Heat Deflection Temperature, 6.4mm (annealed)	18.6kg 4.6kg	ASTM D648	℃ ℃	88 94
Vicat Softening Temperature	5kg, 50℃/h 1kg, 120℃/h	ASTM D1525	℃ ℃	94
Flammability 1.5mm		UL94	class	HB

## Geovan Inclinometer Casing Model 2404

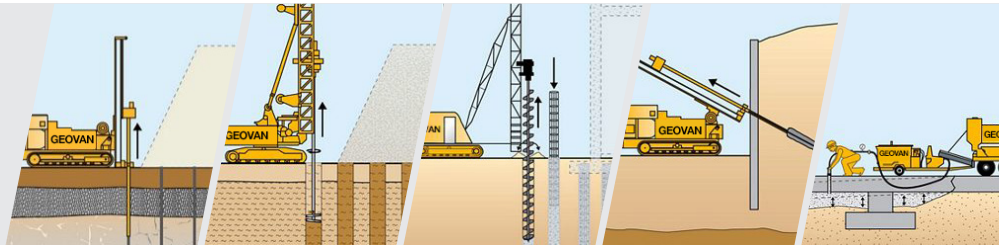


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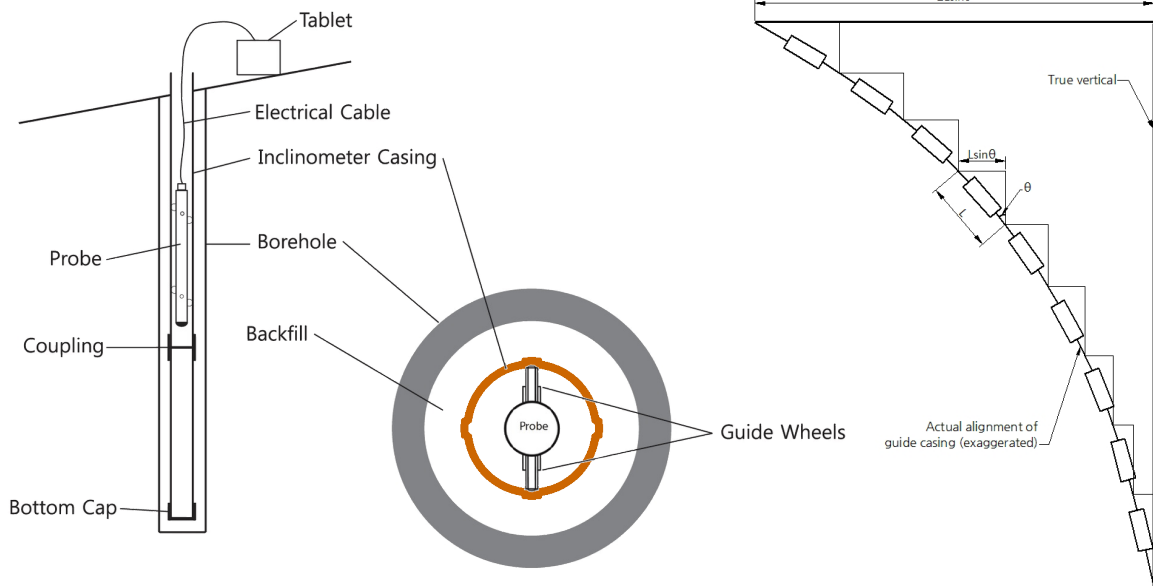
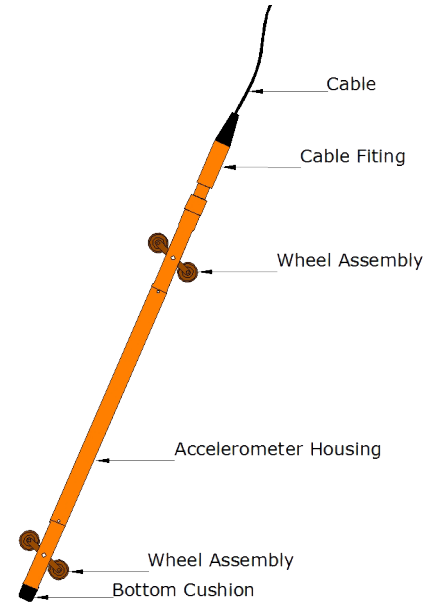
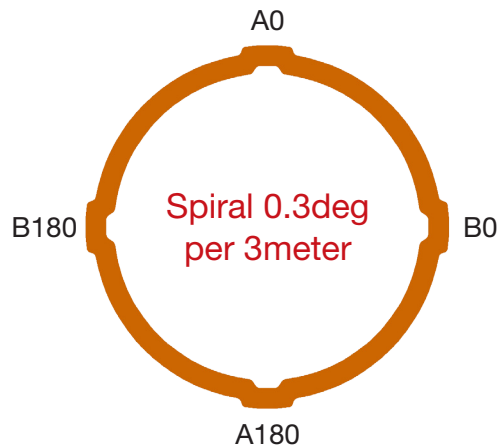
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# INCLINOMETER CASING



## Why It is GEOVAN INCLINOMETER CASING



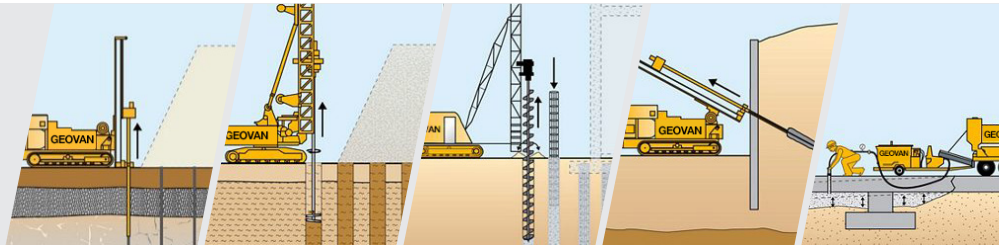
- Reliable spiral quality control less than 0.3deg per 3meter every inclinometer casing
- Produced Inclinometer casing by fresh ABS resin which is lightweight, flexible and robust tubing to install under harsh environment four seasons whenever it needs
- Well packing every 10pieces in cardboard delivery to keep straightness without bending or twist and to prevent any kinds of damages during transportation
- Save cost to use recycle spare inclinometer casing length easily
- Environment friendly product by ABS (**ACRYLONITRILE BUTADIENE STYRENE**)

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# INCLINOMETER CASING



## Test Report

### CERTIFICATE

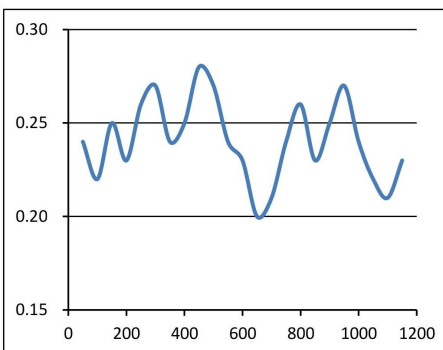
PRODUCT NAME	ABS INCLINOMETER CASING (OD70mm)
TEST DATE	April 7 2017
TEMPERATURE	20°C
HUMIDITY	69%
MATERIAL	ACRYLONITRILE BUTADIEN STYREN (ABS)
SPIRAL	LESS THAN AVERAGE 0.3°PER 3METER
SPECIFIC GRAVITY	1.03

### SPIRAL TEST

#### I. SPIRAL OF 3meter LESS THAN 0.3°

NO	SPIRAL	NO	SPIRAL
50	0.24	650	0.20
100	0.22	700	0.21
150	0.25	750	0.24
200	0.23	800	0.26
250	0.26	850	0.23
300	0.27	900	0.25
350	0.24	950	0.27
400	0.25	1000	0.24
450	0.28	1050	0.22
500	0.27	1100	0.21
550	0.24	1150	0.23
600	0.23	1200	0.24

#### II. Spiral Deviation



#### III. RANDOM SAMPLING SPIRAL OF 5pcs CONNECTION BELOW 2.5°

TEST No	SPIRAL
First	AVG 1.25
Second	AVG 1.28
Third	AVG 1.24

**Certified** that all material and/or ABS Casings above described have been tested and unless otherwise indicated, conform in all respect to the specifications and drawings.



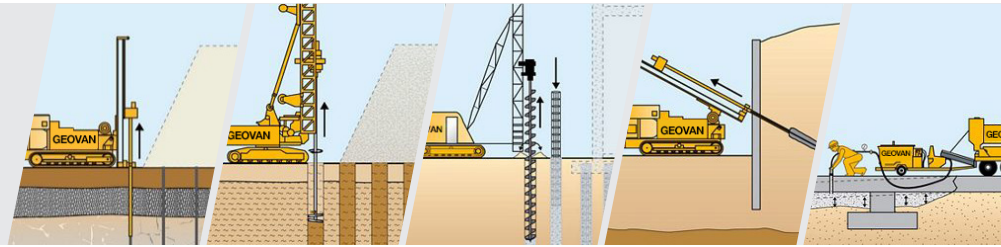
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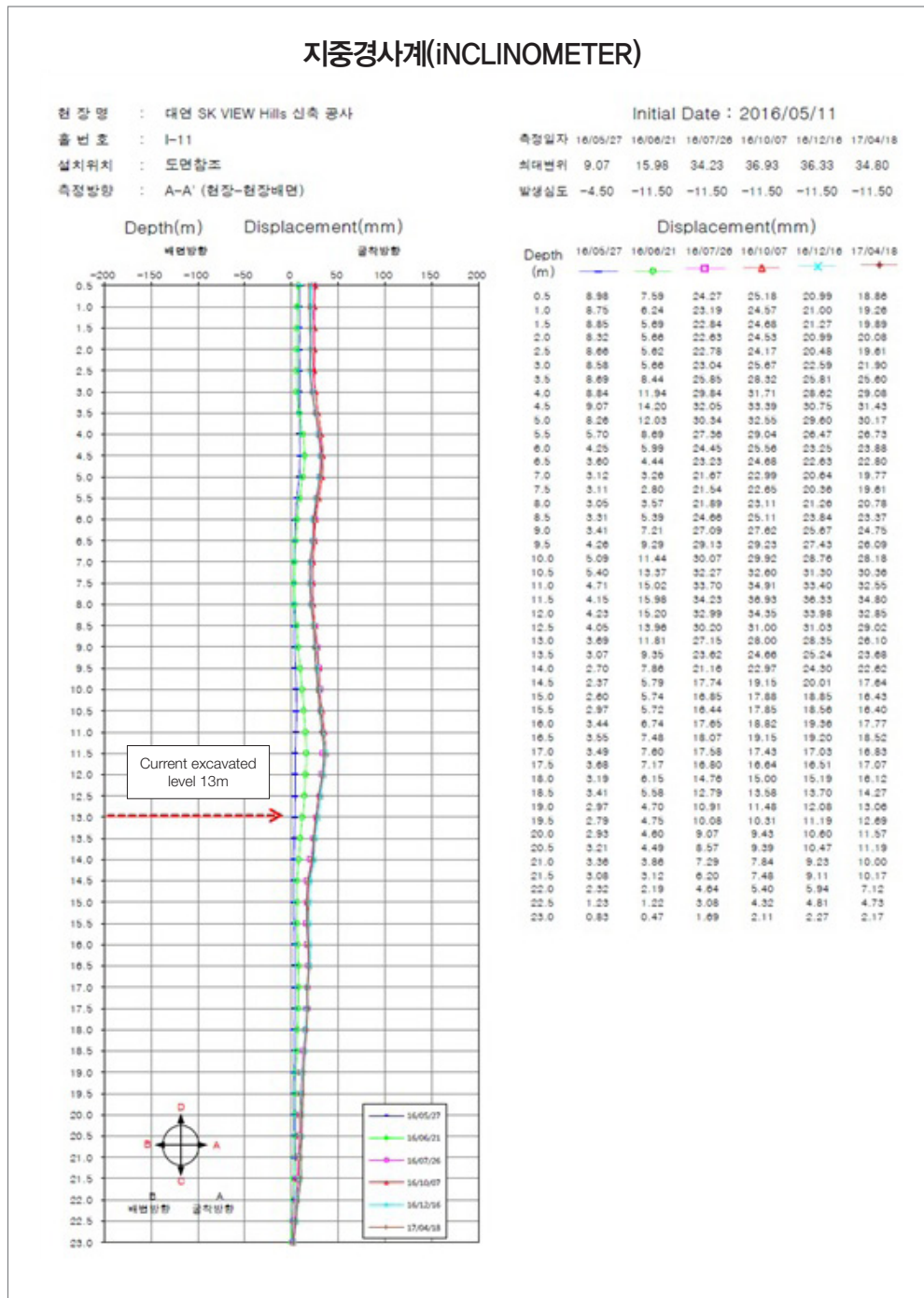
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# iNCLINOMETER CASING



## Real Data from Geovan iNCLINOMETER CASING and Slope Indicator Probe System

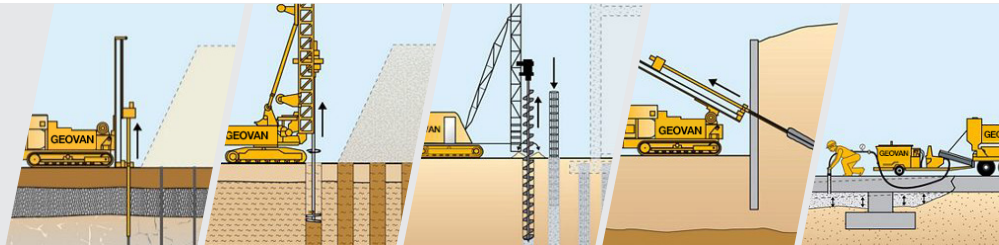


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# INCLINOMETER CASING



## CE Conformity Certificates



### DECLARATION OF CONFORMITY

This above designated product is in conformity with the European Directives.

2004/108/EC, including amendments

2006/95/EC, including amendments

95/12/EC, including amendments

89/106/EEC, including amendments

2011/65/EU, including amendments

**MANUFACTURER** Name and Address DONG-A GEOVAN CO., LTD  
77-137 St, Jang-In Rd, Sasang-Gu,  
Busan City, S.Korea 47018

**PRODUCT** ABS INCLINOMETER CASING

**BRAND** GEOVAN

**TYPE/MODEL** GV-2404

Full compliance with the standards listed below proves the conformity of the designated product with the provisions of the above mentioned EC Directives :

EN55014-1 : 2000 +A1:2001, +A2:2002

EN55014-2 : 1997 +A1:2001

EN61000-3-2 : 2000

EN61000-4-2 : 1995 +A1:1998, +A2:2001

EN61000-4-4 : 1995 +A1:2001

EN61000-4-5 : 1995 +A1:2001

EN61000-4-6 : 1996 +A1:2001

EN61000-4-11 : 1994 +A1:2001

EN60335-1 : 2002 +A11+A1+A12:2006

EN60335-2-4 : 2002 +A1:2004

EN60335-2-7 : 2003 +A1:2004

EN50366 : 2003 +A1:2006

IEC62321 : 2010

Year in which the "CE" marking was affixed: 2009

IDENTIFICATION OF THE SIGNATURE WHO HAS BEEN EMPOWERED TO ENTER INTO COMMITMENTS ON BEHALF OF THE MANUFACTURE AND AUTHORIZED REPRESENTATIVE ESTABLISHED WITHIN THE COMMUNITY.

DATE / PLACE : 2 April 2009 / R&D Center

SIGNATURE : Yong Duk Jung  
AUTHORIZED SIGNATURE

**DONG-A GEOVAN CO., LTD**  
TEL 82-51-315-5067 FAX 82-51-311-8854

## DONG-A GEOVAN

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