

DIN EN ISO 18674-3:2020-06 (E)

Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation — Part 3: Measurement of displacements across a line: Inclinometers (ISO 18674-3:2017 + Amd 1:2020) (includes Amendment A1:2020)

Contents

Page

European foreword.....	4
[A1] European foreword to Amendment A1 [A1]	5
Foreword	6
[A1] Foreword to Amendment 1 [A1]	7
1 Scope	8
2 Normative references.....	8
3 Terms and definitions	9
4 Symbols.....	10
5 Instruments.....	11
5.1 General.....	11
5.2 Probe inclinometers.....	12
5.3 In-place inclinometers	13
5.4 Inclinometer casing.....	15
5.5 Measuring range, accuracy and repeatability.....	16
6 Installation and measuring procedure.....	16
6.1 General.....	16
6.2 Installation of guide tubes at accessible surfaces and in concrete.....	16
6.3 Installation of guide tubes in boreholes	17
6.3.1 Drilling of boreholes	17
6.3.2 Installation of guide tubes	17
6.3.3 Securing borehole measuring locations	19
6.4 Installation of in-place inclinometers	19
6.5 Carrying out the measurement	20
6.5.1 Instrumentation check and calibration	20
6.5.2 Measurement.....	20
7 Data processing and evaluation.....	21
8 Reporting	22
8.1 Installation report	22
8.2 Monitoring report.....	22
Annex A (normative) Measuring and evaluation procedure.....	23
A.1 Course of a measuring line	23
A.2 Displacements across a measuring line	23
A.3 Displacements in A and B directions of vertical inclinometers	25
Annex B (normative) Deflectometers	27
B.1 Terms, definitions and symbols.....	27
B.2 Instruments.....	28
B.3 Installation and measuring procedure.....	29
B.4 Reporting	30

B.5 Measuring and evaluation procedure	30
B.5.1 Course of a measuring line	30
B.5.2 Displacements across a measuring line	30
Annex C (informative) Backfill materials.....	31
Annex D (informative) Geo-engineering applications.....	33
Annex E (informative) Measuring examples.....	34
E.1 General	34
E.2 Vertical inclinometer: Displacement measurements in a natural slope subject to creep	34
E.3 Horizontal inclinometer: Monitoring of settlements at the base of a refuse dump	35
E.4 In-place deflectometer: Measurement of horizontal ground displacements ahead of tunnelling.....	37
E.5 Vertical inclinometer: Displacement measurements in retaining walls of urban excavation	39
Bibliography	45