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Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation —

Part 3: Measurement of displacements across a line: Inclinometers

Reconnaissance et essais géotechniques — Surveillance géotechnique par instrumentation in situ —

Partie 3: Mesurages des déplacements perpendiculairement à une ligne par inclinomètre

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 182, *Geotechnics.*

A list of all parts in the ISO 18674 series can be found on the ISO website.

Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation —

Part 3: Measurement of displacements across a line: Inclinometers

1 Scope

This document specifies the measurement of displacements across a line by means of inclinometers carried out for geotechnical monitoring. General rules of performance monitoring of the ground, of structures interacting with the ground, of geotechnical fills and of geotechnical works are presented in ISO 18674-1.

This document also refers to deflectometers (see Annex B) to supplement inclinometers for the determination of horizontal displacements across horizontal measuring lines.

NOTE In general, there are two independent displacement components acting across measuring lines. Inclinometers allow the determination of the two components for vertical measuring lines. For horizontal lines, inclinometers are limited to the determination of the vertical component only.

If applied in conjunction with ISO 18674-2, this document allows the determination of displacements acting in any direction.

This document is applicable to:

— checking geotechnical designs in connection with the Observational Design procedure;

— monitoring of geotechnical structures prior to, during and after construction (e.g. natural slopes, slope cuts, embankments, excavation walls, foundations, dams, refuse dumps, tunnels);

— deriving geotechnical key parameters (e.g. from results of pile load tests or trial tunnelling);

— identification and monitoring of active shear planes in the ground.

NOTE This document fulfils the requirements for the performance monitoring of the ground, of structures interacting with the ground and of geotechnical works by the means of inclinometers as part of the geotechnical investigation and testing in accordance with References [1] and [2].

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 18674-1:2015, *Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation — Part 1: General rules*

ISO 18674-2:2016, *Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation — Part 2: Measurement of displacements along a line: Extensometers*

ISO 22475-1:2006, *Geotechnical investigation and testing — Sampling methods and groundwater measurements — Part 1: Technical principles for execution*