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BSI Standards Publication

Geotechnical investigation and testing — Field testing

Part 15: Measuring while drilling (ISO 22476-15:2016)

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 22476-15:2016.

The UK participation in its preparation was entrusted to Technical Committee B/526/3, Site investigation and ground testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Geotechnische Erkundung und Untersuchung - Felduntersuchungen - Teil 15: Aufzeichnung der Bohrparameter (ISO 22476-15:2016)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 22476-15:2016) has been prepared by CEN/TC 341 “Geotechnical Investigation and Testing”, the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 182 “Geotechnics”.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2017, and conflicting national standards shall be withdrawn at the latest by February 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 22476-15:2016 has been approved by CEN as EN ISO 22476-15:2016 without any modification.

Contents

Page

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).

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For an explanation on 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.

ISO 22476-15 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO/TC 182, *Geotechnics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 22476 series, published under the general title *Geotechnical investigation and testing — Field testing*, can be found on the ISO website.

Introduction

The measuring-while-drilling (MWD) method deals with the recording of the machine parameters during the drilling process. This can be done manually or with the use of computerized systems which monitor a series of sensors installed on rotary and/or percussive drilling equipment. These sensors continuously and automatically collect data on all aspects of drilling, in real time, without interfering with the drilling progress. The data are displayed in real time and are also recorded for further analysis. Examples for interpretation of the results are presented in Annex A.

The borehole can be used for other applications such as installation of monitoring equipment, geophysical logging or realization of expansion tests. The interpretation of the MWD results can be done in relation with the information provided by sampling.

It should be noted that measured and calculated drilling parameters are relative and dependant of the test conditions, procedures and equipment.

INTERNATIONAL STANDARD ISO 22476-15:2016(E)

Geotechnical investigation and testing — Field testing —

Part 15: Measuring while drilling

1 Scope

This part of ISO 22476 specifies the technical principles for measuring equipment requirements, the execution and reporting on the parameters of the investigation drilling process for geotechnical purposes.

It is applicable to top-driven, destructive drilling methods performed by a fully hydraulically powered drill rig and driving device. It is commonly used with destructive drilling techniques but can also be used with core drilling.

The recording of the drilling parameters during soil grouting, drilling of nails, anchors or piles are beyond the scope of this part of ISO 22476.

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 14688-1, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

ISO 14689-1, *Geotechnical investigation and testing — Identification and classification of rock — Part 1: Identification and description*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22475-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
drilling parameters
parameters measured and recorded on the drill rig during drilling (mainly hydraulic pressures, depth, penetration rate, rotation speed, fluid pressure and flow, etc.)

3.2
compound parameters
parameters derived from the combination of a number of the drilling parameters