BS EN ISO 22476-1:2012

Incorporating corrigendum January 2013



BSI Standards Publication

Geotechnical investigation and testing — Field testing

Part 1: Electrical cone and piezocone penetration test



...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN ISO 22476-1:2012. It is identical to ISO 22476-1:2012, incorporating corrigendum January 2013. It partially supersedes BS 1377-9:1990, specifically Clause 3.1, and also BS 5930:1999+A2:2010, which is being revised to remove any conflicting material. Where conflict arises between BS EN ISO 22476-1 and either BS 1377-9:1990 or BS 5930:1990+A2:2010, the provisions of BS EN ISO 22476-1:2012 take precedence. In BS 5930:1999+A2:2010, specifically in Clause 26.3, where any mention to Clause 3.1 in BS 1377-9:1990 or to the 'International Reference Test Procedure' is found, they should all be replaced by a reference to BS EN ISO 22476-1:2012.

ISO corrigendum January 2013 replaced Figure 4 with a corrected figure.

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

A list of organizations represented on this subcommittee 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.

© The British Standards Institution 2013. Published by BSI Standards Limited 2013

ISBN 978 0 580 77121 7

ICS 93.020

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 February 2013.

Amendments/corrigenda issued since publication

Date Text affected

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN ISO 22476-1

September 2012

ICS 93.020

English Version

Geotechnical investigation and testing - Field testing - Part 1: Electrical cone and piezocone penetration test (ISO 22476-1:2012)

Reconnaissance et essais géotechniques - Essais en place - Partie 1: Essai de pénétration au cône électrique et au piézocône (ISO 22476-1:2012)

Geotechnische Erkundung und Untersuchung -Felduntersuchungen - Teil 1: Drucksondierungen mit elektrischen Messwertaufnehmern und Messeinrichtungen für den Porenwasserdruck (ISO 22476-1:2012)

This European Standard was approved by CEN on 14 September 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2012 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO 22476-1:2012: E

Foreword

This document (EN ISO 22476-1:2012) has been prepared by Technical Committee CEN/TC 341 "Geotechnical Investigation and Testing", the secretariat of which is held by ELOT, 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 March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Cont	ents	Page
Introdu	iction	vi
1	Scope	1
2	Normative references	2
3	Terms, definitions and symbols	2
3.1	Terms and definitions	2
3.2	Symbols	9
4	Equipment	
4.1	Cone penetrometer	
4.2	Tolerances	
4.3	Surface roughness	
4.4 4.5	Cone	
4.5 4.6	Friction sleeve	
4.6 4.7	Filter element	
4.7 4.8	Push rods	
4.9	Measuring system	
4.10	Thrust machine	
5 5.1	Test procedures	
5.1 5.2	Selection of cone penetrometer	
5.2 5.3	Position and level of thrust machine	
5.4	Preparation of the test	
5.5	Pushing of the cone penetrometer	
5.6	Use of friction reducer	
5.7	Frequency of logging parameters	
5.8	Registration of penetration length	
5.9	Dissipation test	
5.10	Test completion	
5.11	Equipment checks and calibrations	
5.12	Safety requirements	22
6	Test results	22
6.1	Measured parameters	
6.2	Correction of parameters	22
6.3	Calculated parameters	24
7	Reporting	24
, 7.1	General	
7.2	Reporting of test results	
7.3	Presentation of test results	
7.4	Presentation of test results and calculated parameters	
Annex	A (normative) Maintenance, checks and calibration	28
	B (normative) Calculation of penetration depth	
	C (informative) Correction of sleeve friction for water pressure	
	D (informative) Preparation of the piezocone	
	E (informative) Uncertainties in cone penetrometer testing	
WILLIEY.	L (IIIIOIIIIALIYE) UIIGEI LAIILLES III GUIIE PEHELIUHELEI LESLIIU	ວວ