SLOVENSKI STANDARD
SIST EN ISO 22476-6:2018

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Geotehnično preiskovanje in preskušanje - Preskušanje na terenu - 6. del: Preskus s samouvrtanim presiometrom (ISO 22476-6:2018)

Geotechnical investigation and testing - Field testing - Part 6: Self boring pressuremeter test (ISO 22476-6:2018)

Geotechnische Erkundung und Untersuchung - Felduntersuchungen - Teil 6: Selbstbohrender Pressiometerversuch (ISO 22476-6:2018)

Reconnaissance et essais géotechniques - Essais en place - Partie 6: Essai pressiométrique autoforé (ISO 22476-6:2018)

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93.020	Zemeljska dela. Izkopavanja. Gradnja temeljev. Dela pod zemljo	Earthworks. Excavations. Foundation construction. Underground works

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 22476-6

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ICS 93.020

English Version

Geotechnical investigation and testing - Field testing - Part 6: Self boring pressuremeter test (ISO 22476-6:2018)

Reconnaissance et essais géotechniques - Essais en place - Partie 6: Essai pressiométrique autoforé (ISO 22476-6:2018)

Geotechnische Erkundung und Untersuchung - Felduntersuchungen - Teil 6: Selbstbohrender Pressiometerversuch (ISO 22476-6:2018)

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European foreword

This document (EN ISO 22476-6:2018) has been prepared by Technical Committee ISO/TC 182 "Geotechnics" in collaboration with Technical Committee CEN/TC 341 “Geotechnical Investigation and Testing” the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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INTERNATIONAL STANDARD

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Geotechnical investigation and testing — Field testing —

Part 6: Self-boring pressuremeter test

Reconnaissance et essais géotechniques — Essais en place —

Partie 6: Essai pressiométrique autoforé

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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).

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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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 341, *Geotechnical investigation and testing*, in collaboration with ISO Technical Committee 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 can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Geotechnical investigation and testing — Field testing —

Part 6: Self-boring pressuremeter test

1 Scope

This document specifies the equipment requirements, execution of and reporting on self-boring pressuremeter (SBP) tests.

NOTE This document fulfils the requirements for self-boring pressuremeter test as part of the geotechnical investigation services according to EN 1997-1 and EN 1997-2.

Tests with the self-boring pressuremeter cover the measurement in situ of the deformation of soils and weak rocks by the expansion and contraction of a cylindrical flexible membrane under pressure.

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 10012, *Measurement management systems — requirements for measurement processes and measuring equipment*

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1
self-boring pressuremeter
SBP
equipment used to carry out a *self-boring pressuremeter test* (3.5), including the *self-boring head* (3.3) used to drill the test pocket into the ground and the *pressuremeter* (3.2) used to carry out the expansion

Note 1 to entry: An SBP includes a probe composed of a *self-boring head* (3.3) and a *pressuremeter* (3.2) , an hydraulic pump or other source of pressure, a test Control Unit (CU), pressure lines and wires to connect the probe to the CU and a data logger which is either built into the CU or attached to it. The SBP is drilled into the ground using the integral self-boring head at its lower end in such a way that the probe replaces the material it removes, creating its own test hole, and minimises the disturbance to the soil outside the instrument.

3.2
pressuremeter
cylindrical expanding part of the equipment used to carry out a pressuremeter test excluding the means necessary to place the pressuremeter probe into the ground

3.3
self-boring head
part of the equipment used to drill the test pocket as the probe is advanced into the ground

Note 1 to entry: A self-boring head includes a boring tool: i.e. a rotating cutter or a high pressure jet arrangement, housed in a cutting shoe attached at the probe end.

3.4
self-boring pressuremeter sounding
series of sequential operations necessary to perform self-boring pressuremeter testing at a given location

Note 1 to entry: See 3.1.

EXAMPLE Pushing the self-boring pressuremeter, activating the self-boring head (see 5.3) and then performing pressuremeter tests (see Clause 6).

3.5
self-boring pressuremeter test
process of expanding the self-boring pressuremeter probe so as to press the flexible membrane against the borehole wall and so measure the associated displacement as a function of pressure and time

3.6
self-boring pressuremeter curve
graphical plot of pressure versus the measured displacement

3.7
depth of test
distance between the ground level and the centre of the expanding length of the *self-boring pressuremeter* (3.1) measured along the borehole axis

Note 1 to entry: See Figure 1.

3.8
operator
qualified person who carries out the probe insertion and the test

4 Symbols

Symbol	Description	Unit
a	pressure coefficient of the displacement	$mm.MPa^{-1}$
b	membrane stiffness coefficient of the displacement	$MPa.mm^{-1}$
d	corrected displacement at the borehole wall	mm
d_a	apparent displacement during the membrane compression calibration	mm
d_c	calculated cylinder expansion during the membrane compression calibration	mm
d_i	internal diameter of the calibration cylinder	mm
d_p	outside diameter of the cutting shoe	mm
d_r	displacement as read at the measuring unit	mm
d_{so}	initial outside diameter of the measuring cell	mm
d_s	outside diameter of the measuring cell	mm
e	thickness of the calibration cylinder	mm
h	distance between the cutting tool and the cutting edge	mm
l_c	length of calibration cylinder	mm
l_g	distance between the displacement transducer and the membrane clamping ring	mm
l_s	expanding length	mm