



BSI Standards Publication

Geotechnical investigation and testing – Field testing

Part 4: Prebored pressuremeter test by Ménard procedure

National foreword

This British Standard is the UK implementation of EN ISO 22476-4:2021. It is identical to ISO 22476-4:2021. It supersedes BS EN ISO 22476-4:2012, which is withdrawn.

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

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

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English Version

**Geotechnical investigation and testing - Field testing - Part
4: Prebored pressuremeter test by Ménard procedure (ISO
22476-4:2021)**

Reconnaissance et essais géotechniques - Essais en
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préalable selon la procédure Ménard (ISO 22476-
4:2021)

Geotechnische Erkundung und Untersuchung -
Felduntersuchungen - Teil 4: Vorgebohrter
Pressiometerversuch nach Ménard (ISO 22476-
4:2021)

This European Standard was approved by CEN on 15 August 2021.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 22476-4:2021) 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of an identical text or by endorsement, at the latest by March 2022, and conflicting national standards shall be withdrawn at the latest by March 2022.

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

This document supersedes EN ISO 22476-4:2012.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN websites.

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

Endorsement notice

The text of ISO 22476-4:2021 has been approved by CEN as EN ISO 22476-4:2021 without any modification.

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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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This document was prepared by Technical Committee ISO/TC 182, *Geotechnics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 341, *Geotechnical Investigation and Testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 22476-4:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

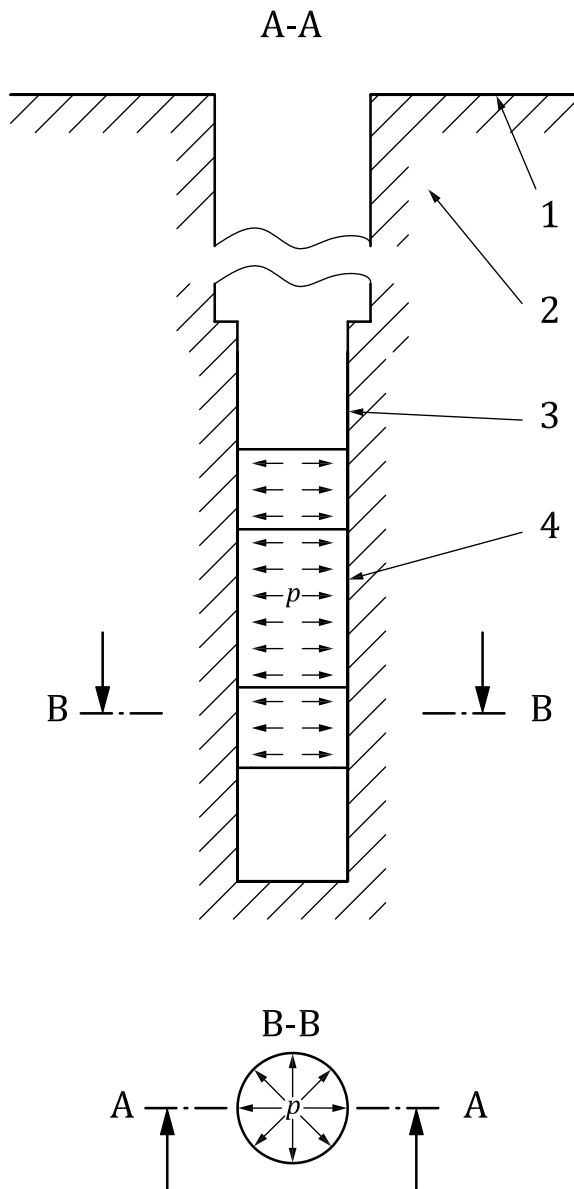
- types of probes;
- correction procedures;
- probe placing techniques in [Annex C](#);
- clarification of D;
- harmonization of terms and symbols.

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.

Introduction

The Ménard pressuremeter test is performed by the radial expansion of a cylindrical probe of a minimum slenderness of 6, placed in the ground (see [Figure 1](#)). During the injection of the fluid volume in the probe, the inflation of the measuring cell first brings the outer cover of the probe into contact with the pocket wall and then producing ground displacement. Pressure applied to and the associated radial expansion of the probe are measured either by volume or radial transducers and recorded so as to obtain the stress-strain relationship of ground as tested.



- Key
- 1

ground surface

2

ground

3

pressuremeter test pocket

4

expanding pressuremeter probe

p

applied pressure

A-A

axial section

B-B

cross section

Figure 1 — Principle of a Ménard pressuremeter test

Together with results of investigations with ISO 22475-1 being available or at least with identification and description of the ground according to ISO 14688-1 and ISO 14689 obtained during the pressuremeter