

---

**Geotehnično preiskovanje in preskušanje - Preskušanje na terenu - 7. del: Preskus z bočnim tlakom v vrtini (ISO 22476-7:2012)**

Geotechnical investigation and testing - Field testing - Part 7: Borehole jack test (ISO 22476-7:2012)

Geotechnische Erkundung und Untersuchung - Felduntersuchungen - Teil 7: Seitendruckversuch (ISO 22476-7:2012)

Reconnaissance et essais géotechniques - Essais en place - Partie 7: Essai au dilatomètre rigide diamétral (ISO 22476-7:2012)

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

**Ta slovenski standard je istoveten z: EN ISO 22476-7:2012**

---

**ICS:**

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

**SIST EN ISO 22476-7:2013**

**en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 22476-7:2013

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

EUROPEAN STANDARD

EN ISO 22476-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2012

ICS 93.020

English Version

## Geotechnical investigation and testing - Field testing - Part 7: Borehole jack test (ISO 22476-7:2012)

Reconnaissance et essais géotechniques - Essais en place  
- Partie 7: Essai au dilatomètre rigide diamétral (ISO  
22476-7:2012)

Geotechnische Erkundung und Untersuchung -  
Felduntersuchungen - Teil 7: Seitendruckversuch (ISO  
22476-7:2012)

This European Standard was approved by CEN on 25 November 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.

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

**Contents**

Page

Foreword.....3

**iTeh STANDARD PREVIEW  
(standards.iteh.ai)**

SIST EN ISO 22476-7:2013

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

## Foreword

This document (EN ISO 22476-7:2012) 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 June 2013, and conflicting national standards shall be withdrawn at the latest by June 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.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 22476-7:2013](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 22476-7:2013

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

INTERNATIONAL  
STANDARD

ISO  
22476-7

First edition  
2012-12-01

---

---

**Geotechnical investigation and testing —  
Field testing —**

**Part 7:  
Borehole jack test**

*Reconnaissance et essais géotechniques — Essais en place —*

*Partie 7: Essai au dilatomètre rigide diamétral*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 22476-7:2013](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>



Reference number  
ISO 22476-7:2012(E)

© ISO 2012

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 22476-7:2013

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



| <b>Contents</b>  | <b>Page</b> |
|--|-------------|
| Foreword .....   | iv          |
| Introduction .....   | v           |
| <b>1 Scope</b> .....   | <b>1</b>    |
| <b>2 Normative references</b> .....  | <b>1</b>    |
| <b>3 Terms, definitions and symbols</b> .....  | <b>1</b>    |
| <b>3.1 Terms and definitions</b> .....   | <b>1</b>    |
| <b>3.2 Symbols and abbreviations</b> .....   | <b>3</b>    |
| <b>4 Equipment</b> .....   | <b>4</b>    |
| <b>5 Test procedure</b> .....  | <b>8</b>    |
| <b>5.1 Calibration of the testing device</b> .....                                       | <b>8</b>    |
| <b>5.2 Pocket drilling and device placing</b> .....                                      | <b>8</b>    |
| <b>5.3 Loading programme</b> .....   | <b>8</b>    |
| <b>5.4 Back-filling of borehole</b> .....  | <b>10</b>   |
| <b>5.5 Safety requirements</b> .....   | <b>10</b>   |
| <b>6 Test results</b> .....  | <b>10</b>   |
| <b>6.1 Basic equations</b> .....   | <b>10</b>   |
| <b>6.2 Loading tests</b> .....   | <b>11</b>   |
| <b>6.3 Constant load test</b> .....  | <b>11</b>   |
| <b>7 Reporting</b> .....   | <b>11</b>   |
| <b>7.1 General</b> .....   | <b>11</b>   |
| <b>7.2 Reporting of test results</b> .....   | <b>12</b>   |
| <b>7.3 Choice of axis scaling</b> .....  | <b>13</b>   |
| <b>7.4 Presentation of test results</b> .....  | <b>13</b>   |
| <b>Annex A (normative) Dimensions of borehole jacks and related device factors</b> ..... | <b>14</b>   |
| <b>Annex B (normative) Calibration and correction</b> .....                              | <b>15</b>   |
| <b>Annex C (normative) Field report example</b> .....                                    | <b>16</b>   |
| <b>Annex D (informative) Test example</b> .....  | <b>17</b>   |
| <b>Annex E (normative) Placing the borehole jack in the ground</b> .....                 | <b>20</b>   |
| <b>Annex F (normative) Resolutions and uncertainties</b> .....                           | <b>22</b>   |
| <b>Bibliography</b> .....  | <b>23</b>   |

## ISO 22476-7:2012(E)

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 22476-7 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 341, *Geotechnical investigation and testing*, in collaboration with Technical Committee ISO/TC 182, *Geotechnics*, Subcommittee SC 1, *Geotechnical investigation and testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 22476 consists of the following parts, under the general title *Geotechnical investigation and testing — Field testing*:

— Part 1: *Electrical cone and piezocone penetration test*

— Part 2: *Dynamic probing*

— Part 3: *Standard penetration test*

— Part 4: *Ménard pressuremeter test*

— Part 5: *Flexible dilatometer test*

— Part 7: *Borehole jack test*

— Part 9: *Field vane test*

— Part 10: *Weight sounding test* [Technical Specification]

— Part 11: *Flat dilatometer test* [Technical Specification]

— Part 12: *Mechanical cone penetration test (CPTM)*

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

[SIST EN ISO 22476-7:2013](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

[https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

[bbcb3e496070/sist-en-iso-22476-7-2013](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

## Introduction

The results of borehole jack tests are used for ground deformation calculations provided that the range of stresses applied in the test are representative of the stresses caused by the proposed foundation. Local experience normally improves the application of the results.

For identification and classification of the ground, the results of sampling (according to ISO 22475-1) from each borehole are available for the evaluation of the tests. In addition, identification and classification results (ISO 14688-1 and ISO 14689-1) are available from every separate ground layer within the desired investigation depth (see EN 1997-2:2007, 2.4.1.4(2) P, 4.1(1) P and 4.2.3(2) P.)

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 22476-7:2013](https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013)

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 22476-7:2013

<https://standards.iteh.ai/catalog/standards/sist/9d4cd581-b6b9-45a6-a551-bbcb3e496070/sist-en-iso-22476-7-2013>