

Unshaped refractory products - Part 4: Determination of consistency of castables

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Determination of consistency of castables

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1402-4:2004 sisaldab Euroopa standardi EN 1402-4:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 28.01.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1402-4:2004 consists of the English text of the European standard EN 1402-4:2003.</p> <p>This document is endorsed on 28.01.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This part of this European Standard describes methods for the determination of the consistency of dense and insulating castables as defined in EN 1402-1.</p>	<p>Scope:</p> <p>This part of this European Standard describes methods for the determination of the consistency of dense and insulating castables as defined in EN 1402-1.</p>
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ICS 81.080

Võtmesõnad:

English version

Unshaped refractory products - Part 4: Determination of consistency of castables

Produits réfractaires non façonnés - Partie 4:
Détermination de la consistance des bétons

Ungeformte feuerfeste Erzeugnisse - Teil 4: Bestimmung
der Konsistenz von Feuerbetonen

This European Standard was approved by CEN on 20 June 2003.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 1402-4:2003) has been prepared by Technical Committee CEN/TC 187 "Refractory products and materials", 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of an identical text or by endorsement, at the latest by April 2004, and conflicting national standards shall be withdrawn at the latest by April 2004.

This document supersedes ENV 1402-4:1999.

EN 1402 "Unshaped refractory products" consists of eight parts:

- *Part 1: Introduction and classification*
- *Part 2: Sampling for testing*
- *Part 3: Characterization as received*
- *Part 4: Determination of consistency of castables*
- *Part 5: Preparation and treatment of test pieces*
- *Part 6: Measurement of physical properties*
- *Part 7: Tests on pre-formed shapes*
- *Part 8: Determination of complementary properties*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of this European Standard describes methods for the determination of the consistency of dense and insulating castables as defined in EN 1402-1.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1402-1, *Unshaped refractory products - Part 1: Introduction and classification*.

EN 1402-5:2003, *Unshaped refractory products - Part 5: Preparation and treatment of test pieces*.

3 Principle

The amount of water used in a castable mix for preparing test pieces has a significant influence on the test results. Excess water can reduce strength, increase shrinkage, and can cause sedimentation; insufficient moisture can give voids due to poor compaction, with subsequent lower density and strength.

This European Standard describes procedures for determining and measuring the consistency of castables and is applicable to all types of dense regular castables, dense deflocculated castables and insulating castables to determine the liquid addition necessary for preparing test pieces according to EN 1402-5.

According to the different types of installation and types of castables, this European Standard is subdivided into three test methods:

- a) determination of the consistency of insulating castables containing significant amounts of light-weight aggregates such as vermiculite or perlite which would be destroyed by intensive mixing. Such products are normally installed by rodding;
- b) determination of the consistency of all types of vibratable castables;
- c) determination of the consistency of self-flowing castables.

To obtain reproducible results, the following factors shall be closely controlled:

- wet mixing time;
- batch size, which is chosen for the required number of determinations (e.g. if determination of working time is required), and is also related to mixer pan size or bowl;
- mixer pan size adapted to batch weight to have at least 50 % and a maximum of 75 %, volume loading by the dry batch;
- temperature (of the water, castable and mix and ambient temperature), of 18 °C to 22 °C for consistency and working time determination;
- quantity of water addition used in the test which is rapidly affected when the dry volume loading of the mixer pan drops below 50 % of the total dry capacity, due to the increased metal surface to be wetted;
- water quality.