

Classification of dense shaped refractory products - Part 4: Special products

Classification of dense shaped refractory products -
Part 4: Special products

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12475-4:2001 sisaldab Euroopa standardi EN 12475-4:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12475-4:2001 consists of the English text of the European standard EN 12475-4:1998.</p> <p>This document is endorsed on 18.06.2001 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>
--	---

<p>Käsitlusala:</p> <p>This part of EN 12475 establishes the classification and designation of dense shaped refractory products of special composition of the following series: a) oxide based products: alumina-chromic oxide; alumina-chromic oxide-zirconia-silica; zirconia-silica; alumina-zirconia silica; b) oxide and non-oxide based products: alumina-carbon; alumina-silicon carbide-carbon; c) non-oxide based products: silicon carbide; carbon; d) further special products which are only designated but not classified e.g. non-oxide products such as borides, nitrides or further combinations of the series listed above.</p>	<p>Scope:</p> <p>This part of EN 12475 establishes the classification and designation of dense shaped refractory products of special composition of the following series: a) oxide based products: alumina-chromic oxide; alumina-chromic oxide-zirconia-silica; zirconia-silica; alumina-zirconia silica; b) oxide and non-oxide based products: alumina-carbon; alumina-silicon carbide-carbon; c) non-oxide based products: silicon carbide; carbon; d) further special products which are only designated but not classified e.g. non-oxide products such as borides, nitrides or further combinations of the series listed above.</p>
---	---

ICS 81.080

Võtmesõnad: chemical composition, classifications, dense shaped refractory products, designation, refractory materials, shaped refractories

ICS 81.080

Descriptors: Classification, refractory products, special products.

English version

Classification of dense shaped refractory products

Part 4: Special products

Classification des produits réfractaires façonnés denses – Partie 4:
Produits spéciaux

Klassifizierung dichter geformter
feuerfester Erzeugnisse – Teil 4:
Sondererzeugnisse

This European Standard was approved by CEN on 1998-12-05.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

	Page
Foreword	2
1 Scope	3
2 Normative references	3
3 Classification	4
4 Other refractory products	12
5 Designation of a special refractory product	12

Foreword

This European Standard 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 June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

EN 12475 Classification of dense shaped refractory products consists of four parts:

Part 1 : Alumina-silica products

Part 2 : Basic products containing less than 7 % residual carbon

Part 3 : Basic products containing from 7 % to 30 % residual carbon

Part 4 : Special products

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of EN 12475 establishes the classification and designation of dense shaped refractory products of special composition of the following series:

- a) oxide based products:
 - alumina-chromic oxide;
 - alumina-chromic oxide-zirconia-silica;
 - zirconia-silica;
 - alumina-zirconia-silica;
- b) oxide and non-oxide based products:
 - alumina-carbon;
 - alumina-silicon carbide-carbon;
- c) non-oxide based products:
 - silicon carbide;
 - carbon;
- d) further special products which are only designated but not classified e.g. non-oxide products such as borides, nitrides or further combinations of the series listed above.

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 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.

EN 955-2	: Chemical analysis of refractory products - Part 2: Products containing silica and/or alumina (wet method)
prEN 955-3	: Chemical analysis of refractory products - Part 3: Chrome-bearing materials (wet methods)
ENV 955-4	: Chemical analysis of refractory products - Part 4: Products containing silica and/or alumina (Analysis by Flame Atomic Absorption Spectrometry (FAAS) and Inductively Coupled Plasma Atomic Emission Spectrography (ICP))
prEN 955-5	: Chemical analysis of refractory materials - XRF fused cast bead method
EN 993-3	Methods of test for dense shaped refractory products - Part 3: Test methods for carbon-containing refractories
prENV 12698-1 ¹⁾	: Chemical analysis of silicon carbide refractories : Parts 1: General methods for analysis of oxides, oxygen and nitrogen

¹⁾ in preparation

prENV 12698-2 ¹⁾	Chemical analysis of silicon carbide refractories - Part 2: Products containing less than 25% silicon carbide
prENV 12698-3 ¹⁾	Chemical analysis of silicon carbide refractories - Part 3: Products containing more than 25% silicon carbide

3 Classification

3.1 Basis of classification

Dense shaped special refractory products are classified according to the following six criteria:

- a) the type of product;
- b) the group determined by the content of its main chemical component(s);
- c) the principal raw material(s);
- d) the state of the raw materials;
- e) the nature of the bond;
- f) any post treatment.

3.2 Type of product

The types of dense shaped special refractory products included in this classification are:

- a) alumina-chromic oxide (ACr)
- b) chromic oxide (Cr)
- c) alumina-chromic oxide-zirconia-silica (ACrZS)
- d) zirconia (Z)
- e) zirconia-silica (ZS)
- f) alumina-zirconia-silica (AZS)
- g) alumina-carbon (AC)
- h) alumina-silicon carbide-carbon (ASC)
- i) silicon carbide (SiC)
- j) carbon (C)

These product types shall be classified in accordance with tables 1 to 8 by their chemical analysis carried out on the calcined basis for oxide products and on the as received state for non oxide products.

3.3 Classification groups

The classification groups of dense shaped special refractory products of the mentioned series shall be determined by the content of their main chemical component(s) with the designation as shown in the following tables and in accordance with the ranges given in tables 1 to 8.

¹⁾ in preparation