SUPERSULFAATTSEMENT. KOOSTIS, SPETSIFIKATSIOONID JA VASTAVUSKRITEERIUMID

Supersulfated cement - Composition, specifications and conformity criteria

EESTI STANDARDIKESKUS
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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15743:2010+A1:2015 sisaldab Euroopa standardi EN 15743:2010+A1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 15743:2010+A1:2015 consists of the English text of the European standard EN 15743:2010+A1:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.04.2015.	Date of Availability of the European standard is 08.04.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Supersulfated cement - Composition, specifications and conformity criteria

Ciment sursulfaté - Composition, spécifications et critères de conformité

Sulfathüttenzement - Zusammensetzung, Anforderungen und Konformitätskriterien

This European Standard was approved by CEN on 11 December 2009 and includes Amendment 1 approved by CEN on 24 November 2014.

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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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 15743:2010+A1:2015) has been prepared by Technical Committee CEN/TC 51 “Cement and building limes”, the secretariat of which is held by NBN.

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 October 2015, and conflicting national standards shall be withdrawn at the latest by January 2017.

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.

This document includes Amendment 1, approved by CEN on 2014-11-24.

This document supersedes EN 15743:2010.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

[A1] This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Construction Products Regulation.

For relationship with the EU Regulation concerning the CPR, see informative Annex ZA, which is an integral part of this document. [A1]

Annex A is informative.

This European Standard sets out requirements for the composition and specifications of supersulfated cement. [A1] The scheme for the assessment and verification of constancy of performance (AVCP) of supersulfated cement is that specified in EN 197-2. [A1]

The requirements in this European Standard are based on the results of tests on cement in accordance with parts 1, 2, 3, 7, 8 and 9 of EN 196, *Methods of testing cement.*

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, 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.

Introduction

The basis for this European Standard has been the national standards already existing in Europe. Supersulfated cement was originally standardised in several European countries, Belgium, France, Germany, Netherlands and the United Kingdom, and has been used in concrete for foundations and massive structures. The demand for quick setting cements enabling early formwork removal caused the manufacturing of supersulfated cements to be superseded by those based on Portland cement clinker. Standards were either abandoned, as in France, or kept in the catalogue of standards but never used, as in the United Kingdom.

In discharging the mandate given to CEN, Technical Committee TC 51 considered the large number of different cements involved. It was decided to separate the "common cements", where the hardening mainly depends on the hydration of calcium silicates and setting these out in EN 197-1, from "special cements", i.e. those with additional or special properties.

Supersulfated cement hardening depends on granulated blastfurnace slag activation by calcium sulfate. A lower heat of hydration than for Portland cement clinker results in lower early compressive strength than common cements and a significantly lower early heat of hydration. In addition, it produces concrete which has resistance to chemically aggressive environments, such as sulfates.

Ongoing developments in material technology as well as in production technology again open the option to produce supersulfated cement fulfilling the demands and requirements of the market. As the principles in hydration differ from that of "common cements" covered by EN 197-1, CEN Technical Committee TC 51 decided to elaborate a separate standard for supersulfated cement.

The rate of hardening and lower early strength require that additional precautions are considered when using supersulfated cements to ensure adequate concrete curing.

1 Scope

This European Standard defines and gives the specifications of supersulfated cement and its constituents. The definition of supersulfated cement includes the proportions in which the constituents are to be combined to produce products in accordance with this standard. The definition also includes requirements the constituents have to meet and the mechanical, physical, chemical including heat of hydration requirements. This standard also states the conformity criteria and the related rules.

NOTE 1 In addition to the specified requirements, an exchange of additional information between the cement manufacturer and user may be helpful. The procedures for such an exchange are not within the scope of this standard but should be dealt with in accordance with national standards or regulations or may be agreed between the parties concerned.

NOTE 2 The word "cement" in this standard is used to refer only to supersulfated cement unless otherwise specified.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 196-1, *Methods of testing cement — Part 1: Determination of strength*

EN 196-2, *Methods of testing cement — Part 2: Chemical analysis of cement*

EN 196-3, *Methods of testing cement — Part 3: Determination of setting times and soundness*

EN 196-7, *Methods of testing cement — Part 7: Methods of taking and preparing samples of cement*

EN 196-8, *Methods of testing cement — Part 8: Heat of hydration - Solution method*

EN 196-9, *Methods of testing cement — Part 9: Heat of hydration - Semi-adiabatic method*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

〚A1〛 EN 197-2:2014 〚A1〛, *Cement — Part 2: Conformity evaluation*

EN 459-1, *Building lime — Part 1: Definitions, specifications and conformity criteria*

EN 934 (all parts), *Admixtures for concrete, mortar and grout*

3 Terms and definitions

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

3.1
heat of hydration
quantity of heat generated by cement hydration within a given period of time