Tsement. Väga väikese soojaeraldusega eritsementide koostis, spetsifikatsioon ja vastavuskriteeriumid

Cement - Composition, specifications and conformity criteria for very low heat special cements

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14216:2006 sisaldab Euroopa standardi EN 14216:2004 ingliskeelset teksti.	This Estonian standard EVS-EN 14216:2006 consists of the English text of the European standard EN 14216:2004.
Standard on kinnitatud Eesti Standardikeskuse 27.08.2004 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 27.08.2004 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 21.04.2004.	Date of Availability of the European standard text 21.04.2004.
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English version

Cement - Composition, specifications and conformity criteria for very low heat special cements

Ciments - Composition, spécifications et critères de conformité de ciments speciaux à très faible chaleur d'hydratation

Zement - Zusammensetzung, Anforderungen und Konformitätskriterien von Zement mit sehr niedriger Hydratationswärme

This European Standard was approved by CEN on 1 September 2003.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Contents

Foreword

This document (EN 14216:2004) has been prepared by Technical Committee CEN/TC 51 “Cement and building limes", the secretariat of which is held by IBN.

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 2004, and conflicting national standards shall be withdrawn at the latest by October 2004.

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 EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Annex A is informative.

This document includes a Bibliography.

The various stages in the development of a European Standard for common cement, in response to the preliminary Mandate given to CEN by the EC and the EFTA, are described in EN 197-1. It is indicated that, in view of the large numbers of different cements involved, it was considered necessary to separate the "common cements", which are now covered by EN 197-1, from special cements i.e. those with special properties or those having hardening processes not mainly dependent on the hydration of calcium silicates.

The low heat property for common cements is covered by EN 197-1:2000/A1:2004.

A need for control of heat development during hydration of concrete is referred to in EN 206-1. Classification of cements with respect to heat of hydration is one method whereby heat development of concrete can be controlled. Thus the purpose of this EN 14216 is to specify the heat of hydration for very low heat special cements. Composition and other requirements are those specified in EN 197-1 for common cements. Conformity criteria are additionally specified.

The requirements in this EN 14216 are based on the results of tests on cement in accordance with EN 196, parts -1, -2, -3, -5, -7, –21, EN 196-8 and EN 196-9. The scheme for the evaluation of conformity in EN 197-2 is applicable to very low heat special cements.

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

Introduction

It is recognized that different cements have different properties and performance. Those performance tests now available (i.e. setting time, strength, soundness and heat of hydration) have been included in this EN 14216. In addition, work is being carried out by CEN/TC 51 to identify any additional tests which are needed to specify further performance characteristics of cement. Until further performance tests are available it is highly recommended that the choice of cement, especially the type and/or strength class in relation to the requirements for durability depending on exposure class and type of construction in which it is incorporated, follows the appropriate standards and/or regulations for concrete valid in the place of use.

1 Scope

This EN 14216 defines and gives the specifications of 6 distinct very low heat special cement products and their constituents. The definition of each cement includes the proportions in which the constituents are to be combined to produce these distinct products in a single strength class having a limited heat of hydration value. The definition also includes requirements the constituents have to meet and the mechanical, physical, chemical and heat of hydration requirements for these products. This EN 14216 also states the conformity criteria and the related rules. Necessary durability requirements are also given.

NOTE 1 In addition to the specified requirements, an exchange of additional information between the cement producer and user can be helpful. The procedures for such an exchange are not within the scope of EN 14216 but should be dealt with in accordance with national standards or regulations or can be agreed between the parties concerned.

NOTE 2 The word "cement" in this EN 14216 is used to refer to very low heat special cement unless otherwise indicated.

NOTE 3 The risk of early-age thermal cracking in concrete depends upon the properties and execution and is, therefore, also dependent on factors other than the heat of hydration of the cement.

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 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 time and soundness.*

EN 196-5, *Methods of testing cement — Part 5: Pozzolanicity test for pozzolanic cement.*

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 196-21[1)], *Methods of testing cement — Part 21: Determination of the chloride, carbon dioxide and alkali content of cement.*

EN 197-1:2000, *Cement — Part 1: Composition, specifications and conformity criteria for common cements.*

EN 197-1:2000/A1:2004, *Cement — Part 1 : Composition, specifications and conformity criteria for common cements*.

EN 197-2:2000, *Cement — Part 2: Conformity evaluation.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 197-12000 apply.

1) EN 196-21 is currently being incorporated into EN 196-2.