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STN	**Cement. Zloženie, špecifikácie a kritériá zhody špeciálnych cementov s veľmi nízkym hydratačným teplom.**	**STN EN 14216** 72 2102

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

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Supersedes EN 14216:2004

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 Sonderzement mit sehr niedriger Hydratationswärme

This European Standard was approved by CEN on 10 April 2015.

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.

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

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European foreword

This document (EN 14216:2015) 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of an identical text or by endorsement, at the latest by January 2016, and conflicting national standards shall be withdrawn at the latest by April 2017.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 supersedes EN 14216:2004.

Compared to the version EN 14216:2004 the following major changes have been included in this document:

— use of the terminology given by the Construction Products Regulation (Regulation (EU) No 305/2011);

— a clause “Dangerous substances” has been added;

— the former Annex A (informative) “Water-soluble hexavalent chromium” has been deleted;

— Annex ZA has been revised in accordance with the Construction Products Regulation (Regulation (EU) No 305/2011).

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

For relationship with Regulation (EU) No. 305/2011, see informative Annex ZA, which is an integral part of this document.

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.

A need for control of heat development during hydration of concrete is referred to in EN 206. Classification of cements with respect to heat of hydration is one method whereby heat development of concrete can be controlled. The purpose of this European Standard is therefore 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 European Standard are based on the results of tests on cement in accordance with EN 196-1, EN 196-2, EN 196-3, EN 196-5, EN 196-7, 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 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.

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 European Standard. 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 European Standard defines and gives the specifications of six 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 European Standard also states the conformity criteria and the related rules. Necessary durability requirements are also given.

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 this European Standard but should be dealt with in accordance with national standards or regulations or can be agreed between the parties concerned.

NOTE 1 The word "cement" in this European Standard is used to refer to very low heat special cement unless otherwise indicated.

NOTE 2 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

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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 197-1, *Cement - Part 1: Composition, specifications and conformity criteria for common cements*

EN 197-2:2014, *Cement - Part 2: Conformity evaluation*