SLOVENSKI STANDARD
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Hidravlično vezivo za nekonstrukcijsko uporabo - Definicija, specifikacije in merila skladnosti

Hydraulic binder for non-structural applications - Definition, specifications and conformity criteria

Hydraulisches Bindemittel für nichttragende Anwendungen - Definition, Anforderungen und Konformitätskriterien

Liants hydrauliques pour applications non structurelles - Définitions, spécifications et critères de conformité

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91.100.50 Veziva. Tesnilni materiali Binders. Sealing materials

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 51.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 15368:2018) has been prepared by Technical Committee CEN/TC 51 “Cement and building lime”, the secretariat of which is held by NBN.

This document shall be submitted to the CEN Enquiry.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of Regulation (EU) No 305/2011.

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

Compared to the version EN 15368:2008+A1:2010, the following major changes have been included in this document:

— Annex A (informative) Water soluble hexavalent chromium has been deleted;

— Annex ZA has been revised.

Introduction

The “Hydraulic binder for non-structural applications” referred to herein has been produced in Italy since 1960s with the name “Calce eminentemente idraulica artificiale in polvere”. The binder was conforming to the requirements of the Italian law n° 595 (26.06.65) and D.M: 31/08/1972. Following the adoption of EN 197-1 in 2000 the product was standardized according to UNI 10892 ”Legante idraulico per costruzioni – definizioni, specifiche e criteri di conformità” (UNI 10892: Building hydraulic binder – composition, specifications and conformity criteria). The product is destined to be used alone or mixed with other binders for the production of mortars for non-structural masonry or rendering and plastering. The experience acquired through the years has shown that the properties of this product satisfy the requirements of both the market and the customers.

1 Scope

This document applies to hydraulic binder for non-structural applications in construction used as binder for preparation of mortar for masonry, rendering and plastering and other non-structural construction products.

This document specifies the definition and composition of hydraulic binder for non-structural applications (HB). It includes physical, mechanical and chemical requirements and defines strength classes. EN 15368 also states the conformity criteria and the related rules. Necessary durability requirements are also given.

For normal applications the information given in this document, and in the masonry specifications, EN 998-1 and EN 998-2, is generally sufficient. However, in special cases, an exchange of additional information between the producer and user can be helpful. The details of such an exchange are not within the scope of this document but can be dealt with in accordance with national standards or other regulations or can be agreed between the parties concerned.

Terms of delivery or other contractual conditions, normally included in documents exchanged between the supplier and the purchaser of hydraulic binder for non-structural applications, are outside the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Method 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 196-6, *Methods of testing cement - Part 6: Determination of fineness*

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

EN 413-2:2016, *Masonry cement - Part 2: Test methods*

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

EN 459-2:2010, *Building lime - Part 2: Test methods*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
hydraulic binder for non-structural applications
factory made finely ground inorganic material which, when mixed with water and fine aggregates, produces a mortar with workability, adhesion and strength properties that make it suitable for use in rendering, plastering and masonry work

Note 1 to entry: Hardening of a hydraulic binder for non-structural applications is mainly due to the hydration of calcium silicates. However, other chemical compounds – i.e. aluminates – also take part in the setting and early stiffening processes thus generating a hardened mass that retains its strength and soundness properties even under water.

Note 2 to entry: Although it consists of finely ground granules of different materials, the hydraulic binder for non-structural applications has a statistically homogeneous composition

3.2
additives
constituents which are added to improve the manufacture or the properties of the hydraulic binder for non-structural applications, e.g. grinding agents, air-entraining agents, etc

3.3
allowable probability of acceptance CR
allowed probability of acceptance of hydraulic binder for non-structural applications with a characteristic value outside the specified characteristic value for a given sampling plan

3.4
sampling plan
specific plan which states the (statistical) sample size(s) to be used, the percentile P_k and the allowable probability of acceptance CR

3.5
characteristic value
value of a required property outside which lies a specified percentage, the percentile P_k, of all the values of the population

3.6
specified characteristic value
characteristic value of mechanical, physical or chemical property which in the case of an upper limit is not to be exceeded or in the case of a lower limit is, as a minimum, to be reached

3.7
single result limit value
value of mechanical, physical or chemical property which – for/any single test result – in the case of an upper limit is not to be exceeded or in the case of a lower limit is, as a minimum, to be reached

3.8
spot sample
sample taken at the same time and from one and the same place, relating to the intended tests. It can be obtained by combining one or more immediately consecutive increments

Note 1 to entry: See EN 196-7.

3.9
autocontrol testing
continual testing by the manufacturer of hydraulic binder for non-structural applications spot samples taken at the point(s) of release from the factory/depot

3.10
control period
period of production and dispatch identified for the evaluation of the autocontrol test results

4 Notation

Hydraulic binder for non-structural applications is designed by the term HB. There are two strength classes of hydraulic binder for non-structural applications: 1,5 and 3,0.

5 Requirements

5.1 General

The physical, mechanical and chemical properties of hydraulic binder for non-structural applications shall be measured by test methods described in EN 413-2 and the relevant parts of EN 196. These European Standards give alternative test methods for some properties but in the event of a dispute only the reference methods shall be used. Where allowed in the relevant part of EN 196, different methods may be used provided they give correlated and equivalent values to those obtained using the reference method.

The CEN standard sand used to make the mortars for the tests required by 5.3.4 and 5.3.5 shall fulfil the requirements of EN 196-1.

All requirements are specified as characteristic values. They serve to define the performance level and classification of the hydraulic binder for non-structural applications.

5.2 Constituents and composition

Hydraulic binder for non-structural applications shall comprise Portland cement clinker, inorganic constituents and where appropriate additive(s) as given in Table 1, Calcium sulphate is added in small quantities to the other constituents of hydraulic binder for non-structural applications during its manufacture to control setting.

The inorganic constituents of hydraulic binder for non-structural applications conforming to this standard shall be materials selected from:

— Portland cement clinker meeting the requirements of EN 197-1;

— Common cement specified by EN 197-1;

— Constituents specified by EN 197-1;

— Calcium sulphate added upon grinding in such an amount that the setting process can be controlled;

— Hydrated and/or hydraulic building limes conforming to EN 459-1;

— Additives.

The production cycle and the control system shall ensure that the composition of the HB is in compliance with the limits set forth in Table 1 below.

Table 1 — Composition of hydraulic binder for non-structural applications (values given in percentage by mass)

Portland cement clinker content	Additives
≥ 20	≤ 1,0[a]
[a] The quantity of organic additives on dry basis should not exceed 0,2 % by mass of the HB. When the content exceeds 0,2 % the actual amount and types of organic additives shall be declared.	

5.3 Physical and mechanical requirements

5.3.1 Fineness (sieve residue)

The residue on a 90 µm sieve shall be not more than 15 % by mass when determined in accordance with EN 196-6.

5.3.2 Initial setting time

The initial setting time shall be not less than 60 min when determined in accordance with EN 413-2.

5.3.3 Soundness

The expansion shall be not more than 10 mm when determined in accordance with EN 196-3.

5.3.4 Fresh mortar requirements

The properties of air content and water retention of fresh mortar shall be measured in accordance with EN 413-2 on a mortar of standard consistence which shall have a value of penetration of (35 ± 3) mm using the plunger apparatus as the reference method. The flow table test is the alternative method. The water retention shall be not less than 80 % and the air content shall be between 6 % and 20 %.

5.3.5 Compressive strength

The compressive strength when determined in accordance with EN 196-1 or with EN 196-1 but using the compaction equipment and procedures given in 5.1.2.2.1 and 5.1.2.2.2 respectively of EN 459-2:2010, at fixed water/binder ratio of 0,50 shall have the values given in Table 2.

Hydraulic binders for non-structural applications (HB) are divided into two strength classes based on the lower limit of the characteristic 28-d compressive strength, respectively equal to 1,5 and 3,0 MPa.

A loading rate of (400 ± 40) N/s shall be used when testing specimens in compression.

Should it not be possible to remove the prisms from the moulds after 24 h, it is permitted to remove them at 48 h. Where the prisms are demoulded at 48 h this shall be recorded.

5.4 Chemical requirements

The properties of the HB shall conform to the requirements given in Table 2 when determined by the method indicated in this table.

The physical, mechanical requirements and chemical requirements of HB are summarized in Table 2.