|     | Cement<br>Časť 2: Preukazovanie zhody | STN<br>EN 197-2 |
|-----|---------------------------------------|-----------------|
| STN |                                       | 72 2101         |

Cement - Part 2: Assessment and verification of constancy of performance

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/20

Obsahuje: EN 197-2:2020

Oznámením tejto normy sa ruší STN EN 197-2 (72 2101) z marca 2016 STN EN 197-2: 2020

# EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 197-2

March 2020

ICS 91.100.10

Supersedes EN 197-2:2014

#### **English Version**

# Cement - Part 2: Assessment and verification of constancy of performance

Ciment - Partie 2: Evaluation et vérification de la constance de la performance

Zement - Teil 2: Bewertung und Überprüfung der Leistungsbeständigkeit

This European Standard was approved by CEN on 27 October 2019.

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.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

| Cont       | <b>ontents</b> Pa  |    |  |
|------------|--|----|--|
| Europ      | uropean foreword4  |    |  |
| 1          | Scope  | 5  |  |
| 2          | Normative references   | 5  |  |
| 3          | Terms and definitions  | 5  |  |
| 4          | Factory production control   |    |  |
| 4<br>4.1   | General requirements   |    |  |
| 4.1.1      | Concept  |    |  |
| 4.1.2      | Works' quality documentation   |    |  |
| 4.1.3      | Quality management system  |    |  |
| 4.1.4      | System of documentation  |    |  |
| 4.2        | Internal quality control   |    |  |
| 4.2.1      | Process control  |    |  |
| 4.2.2      | Measuring and testing  | 9  |  |
| 4.2.3      | Handling, storage, packaging and delivery  | 9  |  |
| 4.3        | Autocontrol testing of samples   | 9  |  |
| 4.3.1      | Sampling and testing   | 9  |  |
| 4.3.2      | Corrective action  |    |  |
| 4.3.3      | Measuring and test equipment for autocontrol testing                                 |    |  |
| 4.3.4      | Quality records  | 10 |  |
| 5          | Tasks for the purpose of certification   | 10 |  |
| 5.1        | Assessment of the performance of the cement  |    |  |
| 5.2        | Initial inspection of the manufacturing plant and of factory production control      |    |  |
| 5.2.1      | Inspection of a new factory  |    |  |
| 5.2.2      | Inspection of an existing factory  |    |  |
| 5.2.3      | Criteria for the assessment of the production equipment                              |    |  |
| 5.2.4      | Criteria for the assessment of laboratories  |    |  |
| 5.3        | Continuing surveillance, assessment and evaluation of factory production control     | 12 |  |
| 5.3.1      | Inspection of the factory and the factory production control                         | 12 |  |
| 5.3.2      | Evaluation of the results of autocontrol testing of samples                          |    |  |
| 5.4        | Audit-testing of samples taken at the factory/depot                                  |    |  |
| 5.4.1      | Sampling   |    |  |
| 5.4.2      | Testing  |    |  |
| 5.4.3      | Evaluation of test results   |    |  |
| 5.5        | Reports  |    |  |
| 5.6        | Actions to be taken in the event of non-conformity                                   | 14 |  |
| 5.6.1      | Following inspection of the factory production control and evaluation of the results |    |  |
|            | of autocontrol testing   |    |  |
| 5.6.2      | Following evaluation of the results of the audit-testing                             | 14 |  |
| 6          | Procedure for certification of constancy of performance of the product               | 14 |  |
| Annex      | A (normative) Evaluation of the representativeness and the accuracy of the 28 day    |    |  |
|            | strength test results  | 17 |  |
| <b>A.1</b> | General  | 17 |  |
| A.2        | Sets of results considered   | 17 |  |
| A 3        | Fyaluation procedure   | 17 |  |

# EN 197-2:2020 (E)

| A.3.1  | Introduction   | 17 |
|--------|--|----|
| A.3.2  | Symbols  | 17 |
| A.3.3  | Evaluation of whether set A and set B belong to the same population (sampling error check)                         | 18 |
| A.3.4  | Comparison between set B and set C in order to check the accuracy of the autocontrol testing (testing error check) | 19 |
| A.3.5  | Masonry cement   | 19 |
| A.3.6  | Calcium aluminate cement   | 19 |
| Annex  | B (informative) Procedure for certification of constancy of performance of cement                                  | 20 |
| Biblio | graphy   | 21 |

## **European foreword**

This document (EN 197-2:2020) 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 September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 197-2:2014.

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

Compared to the version EN 197-2:2014, the following major changes have been made in this document:

- a) use of the terminology given by the Delegated Regulation (EU) No 568/2014 amending Annex V to Regulation (EU) No 305/2011 (Construction Products Regulation), in particular adoption of the tasks defined in the Delegated Regulation for AVCP system 1+ for a re-arrangement of the clauses of this document;
- b) numbering of the clauses according to the order of the tasks specified in this Delegated Regulation;
- c) removal of the rules for dispatching centres;
- d) clarification/specification of the rules for depots;
- e) replacement of the term "Works' quality manual" by "Works' quality documentation";
- f) replacement of the term "management representative" by "quality manager";
- g) deletion of informative Annex C "Comparison of terminology according to the CPD and the CPR" as this annex was considered to be no longer necessary;
- h) editorial revision of the document.

EN 197, *Cement*, is currently composed of the following parts:

- Part 1: Composition, specifications and conformity criteria for common cements
- Part 2: Assessment and Verification of Constancy of Performance

Annex A of this document is normative, Annex B is informative.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### 1 Scope

This document specifies the scheme for the assessment and verification of constancy of performance (AVCP) of cements, including certification of constancy of performance.

The document provides technical rules for factory production control, further testing of samples taken at the manufacturing plant (autocontrol testing) and assessment of the performance of the cement, initial inspection of the manufacturing plant and of factory production control, continuing surveillance, assessment and evaluation of factory production control and audit-testing of samples. It also provides rules for actions to be followed in the event of non-conformity and requirements for depots.

In this document, the word "cement" is used to refer both to common cements as defined in EN 197-1 and to other cements and binders for which the relevant product specification standard makes reference to this document and which are submitted for certification. Such a cement is produced at a given factory and belongs to a particular type and a particular strength class, as defined and specified in the relevant product specification standard.

The guidelines given in the Technical Report CEN/TR 14245 [1] contain information for the application of this document.

This document is linked with the Annexes ZA of European Standards covering cements and binders, i.e. EN 197-1, EN 14216, EN 14647, EN 413-1 and EN 15743.

NOTE The reason for having drafted this separate document is that the provisions it includes are applicable to different products covered by different European Standards.

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

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

EN 413-1, Masonry cement — Part 1: Composition, specifications and conformity criteria

EN 14647, Calcium aluminate cement — Composition, specifications and conformity criteria

EN 15743, Supersulfated cement — Composition, specifications and conformity criteria

koniec náhľadu – text ďalej pokračuje v platenej verzii STN