

Tsemendi katsemeetodid. Osa 5: Putsolaantsemendi putsolaansuskatse

Methods of testing cement - Part 5: Pozzolanicity test for pozzolanic cement

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 196-5:2011 sisaldab Euroopa standardi EN 196-5:2011 ingliskeelset teksti.

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English Version

Methods of testing cement - Part 5: Pozzolanicity test for pozzolanic cement

Méthodes d'essais des ciments - Partie 5: Essai de pouzzolanité des ciments pouzzolaniques

Prüfverfahren für Zement - Teil 5: Prüfung der Pozzolانيتät von Pozzolanzementen

This European Standard was approved by CEN on 20 February 2011.

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Foreword

This document (EN 196-5:2011) 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of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

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 196-5:2005.

This European Standard on the methods of testing cement comprises the following Parts:

- 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*;
- CEN/TR 196-4, *Methods of testing cement — Part 4: Quantitative determination of constituents*;
- EN 196-5, *Methods of testing cement — Part 5: Pozzolanicity test for pozzolanic cement*;
- EN 196-6, *Methods of testing cement — Part 6: Determination of fineness*;
- 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 196-10, *Methods of testing cement — Part 10: Determination of the water-soluble chromium (VI) content of cement*.

NOTE A previous part, EN 196-21: *Methods of testing cement — Part 21: Determination of the chloride, carbon dioxide and alkali content of cement*, has been revised and incorporated into EN 196-2.

This edition introduces the following technical changes based on comments received by the secretariat:

- a) the procedure, reagents and layout of the standard have been aligned with the relevant clauses of EN 196-2;
- b) the procedure for preparation of a test sample has been clarified;

- c) Patton and Reeders reagent has been included as an additional, optional indicator for visual determination of EDTA titrations;
- d) the specification for apparatus has been extended to include a balance of specified accuracy; apparatus for measuring the absorbance of a solution whilst being stirred and a pH meter of specified accuracy.

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

1 Scope

This European Standard specifies the method of measuring the pozzolanicity of pozzolanic cements conforming to [1] EN 197-1. This standard does not apply to Portland pozzolana cements or to pozzolanas.

This method constitutes the reference procedure.

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

EN ISO 385:2005, *Laboratory glassware — Burettes (ISO 385:2005)*

EN ISO 835:2007, *Laboratory glassware — Graduated pipettes (ISO 835:2007)*

3 Principle

The pozzolanicity is assessed by comparing the concentration of calcium ion, expressed as calcium oxide, present in the aqueous solution in contact with the hydrated cement, after a fixed period of time, with the quantity of calcium ion capable of saturating a solution of the same alkalinity. The cement is considered to satisfy the test, i.e. gives a positive result, if the concentration of calcium ion in the solution is lower than the saturation concentration.

NOTE Experiment has shown that a mixture of 20 g of cement and 100 ml of water at 40 °C achieves equilibrium after a period of between 8 d and 15 d. If the cement satisfies the test at 8 d (see 10.2) it is not necessary to continue to 15 d.

4 General requirements for testing

4.1 Number of tests

Where the determination is one of a series subject to statistical control, determination by a single test shall be the minimum required.

Where the determination is not part of a series subject to statistical control, the number of tests shall be two (see also 10.1).

In the case of dispute, the number of tests shall be two.

4.2 Repeatability and reproducibility

Repeatability and reproducibility in this document are expressed as repeatability standard deviation(s) and reproducibility standard deviation(s).