

Methods of testing cement —

Part 3: Determination of setting times and soundness

ICS 91.100.10

National foreword

This British Standard is the UK implementation of EN 196-3:2005+A1:2008. It supersedes BS EN 196-3:2005 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted by Technical Committee B/516, Cement and lime.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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31 October 2009	Implementation of CEN amendment A1:2008

English Version

Methods of testing cement - Part 3: Determination of setting times and soundness

Méthodes d'essais des ciments - Partie 3: Détermination du temps de prise et de la stabilité

Prüfverfahren für Zement - Teil 3: Bestimmung der Erstarrungszeiten und der Raumbeständigkeit

This European Standard was approved by CEN on 29 December 2004 and includes Amendment 1 approved by CEN on 23 October 2008.

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Foreword

This document (EN 196-3:2005+A1:2008) 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of an identical text or by endorsement, at the latest by May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

This document includes Amendment 1 approved by CEN on 2008-10-23.

This document supersedes  EN 196-3:2005. .

The start and finish of text introduced or altered by amendment is indicated in the text by tags  .

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 time and soundness*

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

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*

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.

Another document, ENV 196-4 *Methods of testing cement — Part 4: Quantitative determination of constituents*, has been drafted and will be published as a CEN Technical Report.

 Amendment A1:2008 contains an alternative method for testing the setting times of slow setting cements. .

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

- a) requirement for the laboratory relative humidity is reduced to a minimum of 50 % from a minimum of 65 % (4.1);
- b) drinking water is permitted for storing and boiling test specimens (4.2.5); drinking water is no longer permitted in the production of paste since such water varies in quality between places and even with time in the same laboratory (4.2.5);
- c) the Vicat mould is permitted to be cylindrical in addition to truncated conical shape (5.1);

- d) the time permitted for scraping paste from the sides and bottom of the mixing bowl is increased from 15 s to 30 s (5.2.1);
- e) the end-point for the determination of standard consistence is increased to (6 ± 2) mm from (6 ± 1) mm (5.2.3);
- f) the determination of setting time is carried out whilst the specimen is immersed in water (Clause 6);
- g) in the determination of setting time the tolerance on storage temperature for specimens is reduced to $(20,0 \pm 1,0)$ °C from (20 ± 1) °C (6.1.3);
- h) in the determination of setting time automatic apparatus conforming to the requirements of the reference method is permitted (6.1.1);
- i) the end-point for the determination of initial setting time is increased to (6 ± 3) mm from (4 ± 1) mm (6.2.2);
- j) the end-point for the determination of final setting time is required to be confirmed by testing in two additional positions in the test specimen (6.3.1);
- k) the material of construction of the Le Chatelier apparatus for determination of soundness is extended to any non-corrodible spring metal (7.1.1);
- l) the minimum relative humidity in which specimens for determination of soundness are to be stored is reduced to 90 % from 98 % (7.1.3);
- m) the determination of soundness is carried out once (7.2);
- n) where a retest of the determination of soundness is required the relative humidity at which the cement sample is stored is reduced to 50 % from 65 % (7.4).

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