

Methods of testing cement —

Part 7: Methods of taking and preparing samples of cement

The European Standard EN 196-7:1989 has the status of a
British Standard

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This British Standard, having been prepared under the direction of the Technical Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 June 1992

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National foreword

This British Standard has been prepared under the direction of the Technical Sector Board for Building and Civil Engineering. It is the English language version of EN 196-7:1989 “Methods of testing cement; Methods of taking and preparing samples of cement”, published by the European Committee for Standardization (CEN). EN 196-7 was drawn up by Technical Committee 51, Cement and building limes, as Part 7 of a series on testing cement which was accepted by CEN on 3 October 1989. The UK gave a positive vote at the final voting stage and, thus, the European test procedure has been introduced into the 1991 revisions of British Standards for cement BS 12, BS 146, BS 4027, BS 4246, BS 6588 and BS 6610. This British Standard supersedes BS 4550-1 which is withdrawn.

The European Standard includes important definitions relating to the various types of samples associated with the assessment of the quality of cements and provides details of how these samples are required to be taken.

The European Standard also covers the preparation and storage of laboratory samples for subsequent testing. Representative samples for the various tests which may be required are obtained by means of a sample divider or by quartering.

A suitable form for the sampling report specified in clause 10 is given in national annex NA.

Since the draft European Prestandard for cement, ENV 197-1, does not deal with acceptance inspection at delivery, EN 196-7 does not specify the relationship between sample size/type and the size of the lot sampled. In consequence national annex NB retains the UK conditions relating to acceptance inspection.

National annex NC gives the committees responsible for the UK participation in the preparation of this standard.

National annex ND gives details of corresponding British Standards for international standards referred to in the European Standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Cements, tests, sampling, samples, packing

English version

Methods of testing cement; Methods of taking and preparing samples of cement

Méthodes d'essais des ciments; Méthodes de prélèvement et d'échantillonnage du ciment

Prüfverfahren für Zement; Verfahren für die Probenahme und Probenauswahl von Zement

This European Standard was approved by CEN on 1989-06-16. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Brief history

This European Standard was drawn up by the Technical Committee CEN/TC 51 “Cement” the Secretariat of which is held by IBN.

In accordance with the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Foreword

The standard EN 196 on methods of testing cement consists of the following Parts:

- Part 1: Determination of strength;
- Part 2: Chemical analysis of cement;
- Part 3: Determination of setting time and soundness;
- Part 4: Quantitative determination of constituents;
- Part 5: Pozzolanicity test for pozzolanic cements;
- Part 6: Determination of fineness;
- Part 7: Methods of taking and preparing samples of cement;
- Part 21: Determination of the chloride, carbon dioxide and alkali content of cement.

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1 Object and field of application

This European Standard describes only the equipment to be used, the methods to be followed and the provisions to be complied with for taking samples of cement representative of given lots for testing to assess the quality of products prior to, during or after delivery.

The provisions of this standard are only applicable when samples of cement are requested for verifying the compliance of either:

- a) current production of a cement at any time with a standard (for example to meet the needs of the manufacturer's auto-control or again in response to the requirements of a certification procedure); or
- b) a delivery or a lot with a standard, the provisions of a contract or the specification in an order.

The standard is applicable to the taking of samples of all types of cements¹⁾ defined by EN 197²⁾ whether they are:

- a) contained in silos;
- b) contained in bags, canisters, drums or any other packages;
- c) transported in bulk in road vehicles, railway wagons, ships, etc.

2 References

- EN 196-1:1987, *Methods of testing cement — Determination of strength*.
 EN 196-2:1987, *Methods of testing cement — Chemical analysis of cement*.
 EN 196-3:1987, *Methods of testing cement — Determination of setting time and soundness*.
 ENV 196-4, *Methods of testing cement — Quantitative determination of constituents*.
 EN 196-5:1987, *Methods of testing cement — Pozzolanicity test for pozzolanic cements*.
 EN 196-6:1989, *Methods of testing cement — Determination of fineness*.
 EN 196-21:1989, *Methods of testing cement — Determination of the chloride, carbon dioxide and alkali content of cement*.
 EN 197²⁾, *Cement — Composition, specifications and conformity criteria*.

¹⁾ The requirements of this standard can also, by agreement between the parties, be followed for acceptance inspections for all non-standardized hydraulic binders.

²⁾ At present at the draft stage.

3 Definitions

For the purpose of this European Standard, the following definitions apply.

3.1 order

quantity of cement covered by a single requisition placed with the same manufacturer (or distribution depot). It may consist of one or more *consignments* spread over a period of time

3.2 consignment

quantity of cement delivered at a given time by a manufacturer (or distribution depot). It may consist of one or more *lots*

3.3 lot

quantity of cement produced under conditions presumed uniform. After specified tests (mainly by EN 197²⁾) this quantity is regarded as a whole “complying” or “not complying” with standards or contract requirements

3.4 increment

quantity of cement taken in a single operation of the sampling equipment used

3.5 sample (general term)

quantity of cement taken at random, or in accordance with a sampling plan, from a larger quantity (silo, stock of bags, wagons, trucks, etc.) or from a fixed lot, relating to the intended tests. A sample may consist of one or more *increments*

3.6 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*

3.7 composite sample

homogeneous mixture of *spot samples* taken:

- a) at different points or
- b) at different times

from a larger mass of the same cement, obtained by thoroughly mixing the combined spot samples and, if necessary, reducing the size of the resulting mixture