

# Cement —

## Part 2: Conformity evaluation

ICS 91.100.10

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# Committees responsible for this Draft for Development

The preparation of this Draft for Development was entrusted to Technical Committee B/516, Cement and lime, upon which the following bodies were represented:

- British Aggregate Construction Materials Industries
- British Cement Association
- British Precast Concrete Federation
- British Ready Mixed Concrete Association
- Cement Admixtures Association
- Cementitious Slag Makers' Association
- County Surveyors' Society
- Department of the Environment (Building Research Establishment)
- Department of Transport (Highways Agency)
- Mortar Producers' Association
- National Rivers Authority
- Quality Ash Association
- Society of Chemical Industry
- Water Services Association of England and Wales

This Draft for Development, having been prepared under the direction of the Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 February 1996

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The following BSI reference relates to the work on this Draft for Development:  
Committee reference B/516

ISBN 0 580 25369 4

## Amendments issued since publication

| Amd. No. | Date | Comments |
|----------|------|----------|
|          |      |          |
|          |      |          |
|          |      |          |
|          |      |          |

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## National foreword

This Draft for Development has been prepared by Technical Committee B/516 and is the English language version of ENV 197-2 *Cement — Part 2: Conformity evaluation*, to complement ENV 197-1 *Cement — Composition, specifications and conformity criteria — Part 1:1995 Common cements*, both published by the European Committee for Standardization (CEN).

Both documents have the status of a prestandard because some of their technical requirements are only agreed provisionally. Further consideration will be given by CEN/TC 51, during the 3 year period of validity in order to refine these requirements so that they can be transformed into full European Standards. In particular, work has been in progress to review the clause on conformity criteria in the June 1989 draft of ENV 197-1, which has been retained in DD ENV 197-1. That clause formed the basis of Annex A to the current British Standard specifications for cement but contained details which are considered inappropriate for the manufacture of cement in the UK. A revised version, which excludes the terms “defect” and “major defect”, appears as a normative Annex C to this publication and it is this annex (not clause 9 in DD ENV 197-1:1995) that forms the basis for conformity evaluation. CEN/TC 51 also intends to monitor the national procedures for conformity evaluation and the implementation of ENV 197-2.

It may be noted that the recommendation, in the current British Standard specifications, for UK purchasers “to specify cement manufactured and supplied to a nationally recognized third party product certification scheme” has now been incorporated into the requirements of ENV 197-2 which describes the scheme for evaluation of conformity with the requirements of ENV 197-1. This scheme includes tasks (and procedures in the event of non-conformity) for the manufacturer as well as for the “approved body”. This term is defined in Annex B as a certification body, inspection body or testing laboratory designated by a member state or recognized through a mutual recognition agreement.

The need for adequate homogenization of cements is referred to in 3.1.4. Such homogenization is normally achieved either by intergrinding or by dry blending the cement constituents. Resulting cements conforming to current British Standards, conform to DD ENV 197-1.

Since this conformity is judged on the basis of the cement producer’s autocontrol test results, DD ENV 197-2 specifies that, in addition, audit samples are taken at the factory/depot, under the responsibility of the inspection body. These are tested by an approved testing laboratory as well as by the manufacturer’s laboratory in order to evaluate the representativeness and the accuracy of the 28 day strength test results. Furthermore, DD ENV 197-2 requires that the approved testing laboratory carries out regular proficiency testing in respect of, at least, compressive strength.

DD ENV 197-2 also gives additional requirements for dispatching centres where an intermediary has full responsibility for the cement quality.

It should be noted that the European Prestandards do not deal with acceptance at delivery. Acceptance inspection procedures are given in British Standards for cement, BS 12, BS 146, BS 4027, BS 4246, BS 6588, BS 6610 and BS 7583.

There is not at present a British Standard for conformity evaluation. The BSI Kitemark Scheme for cement, which has been operated since 1 May 1992, is one of the schemes which now take DD ENV 197-2 as their base document.

This Draft for Development requires that the results for all specified autocontrol properties, including composition, are evaluated against statistical criteria and against limit value criteria. Procedures for the evaluation of the audit sample results are, at present, however given only for 28 day strength. The UK is considering the need for corresponding criteria for other relevant properties for incorporation at the EN stage.

During the lifetime of these European Prestandards, the existing national standard specifications for cements will be kept in force.

**This publication is not to be regarded as a British Standard.**

It is being issued in the Draft for Development series of publications and is of a provisional nature because some of its requirements are not fully agreed. It should be applied on this provisional basis so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion to a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its 3 year life. The commencement of the review period will be notified by an announcement in *BSI News*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee B/516 at BSI, 389 Chiswick High Road, London, W4 4AL giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

**Cross-references**

| Publication referred to | Corresponding British Standard                                                                                     |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|
|                         | BS EN 196 <i>Methods of testing cement</i>                                                                         |
| EN 196-1:1994           | Part 1:1995 <i>Determination of strength</i>                                                                       |
| EN 196-2:1994           | Part 2:1995 <i>Chemical analysis of cement</i>                                                                     |
| EN 196-3:1994           | Part 3:1995 <i>Determination of setting time and soundness</i>                                                     |
| EN 196-5:1994           | Part 5:1995 <i>Pozzolanicity test for pozzolanic cements</i>                                                       |
| EN 196-7:1989           | Part 7:1992 <i>Methods of taking and preparing samples of cement</i>                                               |
| EN 196-21:1989          | Part 21:1992 <i>Determination of the chloride, carbon dioxide and alkali content of cement</i>                     |
| ENV 197-1:1992          | DD ENV 197 <i>Cement — Composition, specifications and conformity criteria</i>                                     |
|                         | Part 1:1995 <i>Common cements</i>                                                                                  |
| EN ISO 9002:1994        | BS EN ISO 9002:1994 <i>Quality systems — Model for quality assurance in production, installation and servicing</i> |
| EN 45001:1989           | BS 7501:1989 <i>General criteria for the operation of testing laboratories</i>                                     |
| EN 45011:1989           | BS 7511:1989 <i>General criteria for certification bodies operating product certification</i>                      |
| ISO 2854:1976           | BS 2846 <i>Guide to statistical interpretation of data</i>                                                         |
|                         | Part 4:1976 <i>Techniques of estimation and tests relating to means and variances</i>                              |

**Summary of pages**

This document comprises a front cover, an inside front cover, pages i to iv, the ENV title page, pages 2 to 20, 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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ICS 91.100.10

Descriptors: Cements, composition: property, mechanical properties, physical properties, chemical properties, specifications

English version

Cement —  
Part 2: Conformity evaluation

Ciment — Partie 2: Evaluation de la conformité    Zement — Teil 2: Bewertung der Konformität

This European Prestandard (ENV) was approved by CEN on 1994-06-30 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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**CEN**

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

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## Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 51, Cement and building limes, of which the secretariat is held by IBN.

Reference is made to ENV 197-1:1992. However, a revised version of clause 9, Conformity criteria of ENV 197-1:1992 has been prepared by CEN/TC 51 and references made in this prestandard to clause 9 of ENV 197-1 are to this revised version of the clause. The revised version of the clause is included in this prestandard in normative Annex C.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to announce this European Prestandard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European Prestandard describes the scheme for the evaluation of conformity of cement complying with ENV 197-1<sup>1)</sup>.

NOTE During the prestandard stage this document is intended to assist in the convergence of existing national schemes for conformity evaluation.

## 2 Normative references

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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

EN 196-21, *Methods of testing cement — Part 21: Determination of the chloride, carbon dioxide and alkali content of cement*.

ENV 197-1:1992, *Cement — Composition, specifications and conformity criteria — Part 1: Common cements*<sup>1)</sup>.

EN ISO 9002, *Quality systems — Model for quality assurance in production, installation and servicing*.

EN 45001, *General criteria for the operation of testing laboratories*.

EN 45011, *General criteria for certification bodies operating product certification*.

ISO 2854:1976, *Statistical interpretation of data — Techniques of estimation and tests relating to means and variances*.

## 3 Definitions

### 3.1 Specific definitions

#### 3.1.1

##### certificate of conformity

document issued under the rules of this scheme for the evaluation of conformity indicating that adequate confidence is provided that cement is in conformity with ENV 197-1<sup>1)</sup>

#### 3.1.2

##### conformity mark

protected mark applied on the basis of the certificate of conformity (see 3.1.1). Cements bearing the conformity mark are considered fit for their intended use, i.e. they have such characteristics that the works in which they are incorporated can, if properly designed and built, satisfy the essential requirements given in the Construction Products Directive

#### 3.1.3

##### certified cement

cement which is produced at a particular factory and for which a certificate of conformity (see 3.1.1) has been issued

#### 3.1.4

##### factory

facility used by a manufacturer for the production of cement using equipment which is suitable for continuous mass production of cement, in particular for adequate grinding and homogenization, allowing control of production with sufficient accuracy to ensure that the requirements of ENV 197-1<sup>1)</sup> are met

#### 3.1.5

##### new factory

factory which is not already producing cement(s) certified under this scheme

#### 3.1.6

##### existing factory

factory which is already producing cement(s) certified under this scheme

#### 3.1.7

##### depot

bulk cement handling facility (not located at the factory) used for the storage and dispatch of cement (whether in bulk or bagged) where the manufacturer has full responsibility for all aspects of the quality of the cement. The depot may be operated either by the manufacturer or by a person (natural or legal) approved by the manufacturer

<sup>1)</sup> The normative reference to ENV 197-1:1992 does not apply to clause 9 "Conformity criteria". For this clause, Annex C (normative) of this European Prestandard applies.