# INTERNATIONAL STANDARD

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## Cement — Test methods — Chemical analysis

Ciments - Méthodes d'essai - Analyse chimique



Reference number ISO 680:1990(E)

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#### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

International Standard ISO 680 was prepared by Technical Committee ISO/TC 74, *Cement and lime*.

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International Organization for Standardization

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### **Cement — Test methods — Chemical analysis**

#### 1 Scope

This International Standard describes the procedures for the chemical analysis of cement.

It gives the reference procedures and, in certain cases, an alternative method which can be considered as giving equivalent results.

If other methods are used, it is necessary to show that they give results equivalent to those given by the reference methods. In case of dispute, only the reference procedures may be used.

This International Standard applies to cements, and also to their constituent materials such as clinker and blastfurnace slag.

Standard specifications state which methods are to be used.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards. ISO 3534:1977, Statistics – Vocabulary and symbols.

EN 196-7:1987, Methods for testing cement; methods of taking and preparing samples of cement.

#### **3** General requirements for testing

#### 3.1 Number of tests

The number of tests for the various determinations (clause 7 to clause 13) is fixed at two (see also 3.3).

#### 3.2 Repeatability and reproducibility

The standard deviation of repeatability gives the closeness of agreement between successive results obtained with the same method on identical material tested under the same conditions (same operator, same apparatus, same laboratory and short time interval).

The standard deviation of reproducibility gives the closeness of agreement between individual results obtained with the same method on identical material but tested under different conditions (different operators, different apparatus, different laboratories and/or different times).

These deviations are exactly defined in ISO 3534.

The standard deviations of repeatability and reproducibility are expressed in absolute percentages.<sup>1)</sup>

<sup>1)</sup> The values of the standard deviation for repeatability and standard deviation for reproducibility given are to be considered as provisional. These values will subsequently be stipulated according to experience acquired in laboratories.