INTERNATIONAL STANDARD

ISO 1920-4

First edition
2005-07-15

Testing of concrete —

Part 4: Strength of hardened concrete

Essais du béton —

Partie 4: Résistance du béton durci

Reference number
ISO 1920-4:2005(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1920-4 was prepared by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 1, *Test methods for concrete*.

This first edition of ISO 1920-4:2005 cancels and replaces the first editions of ISO 4012:1978, ISO 4013:1978 and ISO 4108:1980, which have been technically revised.

ISO 1920 consists of the following parts, under the general title *Testing of concrete*:

— *Part 1: Sampling of fresh concrete*

— *Part 2: Properties of fresh concrete* [1)]

— *Part 3: Making and curing test specimens*

— *Part 4: Strength of hardened concrete*

— *Part 5: Properties of hardened concrete other than strength*

— *Part 6: Sampling, preparing and testing of concrete cores*

— *Part 7: Non-destructive tests on hardened concrete*

The following parts are under preparation:

— *Part 8: Determination of drying shrinkage of concrete*

— *Part 9: Determination of creep of concrete*

This series of Draft International standards was based on existing and draft ISO standards and on draft CEN standards dealing with testing concrete.

1) To be published.

Testing of concrete —

Part 4:
Strength of hardened concrete

1 Scope

This part of ISO 1920 specifies procedures for testing the strength of hardened concrete.

2 Normative references

The following referenced documents are essential 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.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 679, *Methods of testing cement — Determination of strength*

ISO 1920-3, *Testing of concrete — Part 3: Making and curing test specimens*

ISO 2781, *Rubber, vulcanized — Determination of density*

ISO 3310-1, *Test Sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 4662, *Rubber — Determination of rebound resilience of vulcanizates*

EN 316:1999, *Wood Fiberboards — Definition, Classification and Symbols*

EN 12390-4:2000, *Testing Hardened Concrete — Part 4: Compressive Strength — Specification for Testing Machines*

3 Determination of compressive strength

3.1 Test specimens

The test specimen shall be a cube or a cylinder meeting the requirements of ISO 1920-3 or cores meeting the requirements of ISO 1920-6.

Damaged specimens shall not be tested.

Specimens that are badly honeycombed shall not be regarded as being representative of the quality of concrete supplied. In general, standard cube and cylinder specimens should not be tested if they are badly honeycombed as this is an indication of poor specimen making. When such specimens are tested, the test report shall include the fact that the specimen was honeycombed.