INTERNATIONAL STANDARD

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Testing of concrete — Part 2: Properties of fresh concrete

Essais du béton — Partie 2: Caractéristiques du béton frais



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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 1920-2 was prepared by Technical Committee ISO/TC 71, Concrete, reinforced concrete and prestressed concrete, Subcommittee SC 1, Test methods for concrete.

This first edition of ISO 1920-2 cancels and replaces the first edition of ISO 4109:1980, ISO 4110:1979, ISO 4111:1979, ISO 4848:1980 and ISO 6276:1982, 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
- Part 3: Making and curing of 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

Introduction

International Standards are widely adopted at the regional or national level and applied by manufacturers, trade organizations, purchasers, consumers, testing laboratories, authorities and other interested parties. Since these standards generally reflect the best experience of industry, researchers, consumers and regulators worldwide and cover common needs in a variety of countries, they constitute one of the important bases for the removal of technical barriers to trade. However, full adoption may not be practicable in all cases for reasons such as regional or national security, protection of human health or safety, or protection of the environment, or because of fundamental climatic, geographical or technological problems. As a consequence, the corresponding technical deviations to ISO standards are permitted where required by national or regional legislation or industry convention when adopting an International Standard.

Where such national deviations are required, it is important that they are clearly identified and the reasons for the deviations stated. Depending of on the method of adoption of the International Standard, the deviations will be noted in the national introduction, in the preface or foreword (for small numbers) or as a national annex (for large numbers). See ISO/IEC Guide 21-1 for more information.

ISO/TC 71 has identified those items in this part of ISO 1920-2 that may be the subject of national or regional deviations. The items are indicated in the text by the phrase "...except where the national annex to this part of ISO 1920 requires...".

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Testing of concrete —

Part 2: Properties of fresh concrete

Caution — When cement is mixed with water, alkali is released. When sampling, prevent skin contact with wet cement or concrete by wearing suitable protective clothing (gloves, footwear, safety glasses). If wet cement or concrete enters the eye, immediately wash it out thoroughly with clean water and seek medical treatment without delay. Wash wet concrete off the skin immediately.

Caution — The use of vibrating equipment, such as vibration tables, can cause damage to joints and loss of sensation due to nerve damage. Moulds, density containers, etc. should be clamped to the table and not held in position using one's hands while they are being vibrated.

1 Scope

This part of ISO 1920 specifies procedures for testing fresh concrete. It specifies the following test methods: determination of consistence (slump test, Vebe test, degree of compactability, flow-table test and for high-fluidity concrete, the slump-flow test), determination of fresh density and determination of air content by the pressure-gauge method and by the water-column method.

2 Normative references

The following referenced documents are indispensable 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 1101:1983, Technical drawing — Geometric tolerances — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings

ISO 1920-1, Testing of concrete — Part 1: Sampling of fresh concrete

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

fresh density

mass of a quantity of fully compacted fresh concrete divided by its volume

NOTE The fresh density is expressed in kilograms per cubic metre.