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Testing of concrete —

Part 5: Density and water penetration depth

Essais du béton —

Partie 5: Caractéristiques du béton durci autres que la résistance

Reference number
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Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Determination of density of hardened concrete ... **1**
4.1 General ... 1
4.2 Apparatus ... 2
4.3 Test specimens ... 2
4.4 Procedures ... 2
4.4.1 General ... 2
4.4.2 Mass of as-received specimen ... 2
4.4.3 Mass of water-saturated specimen ... 3
4.4.4 Mass of oven-dried specimen ... 3
4.4.5 Volume obtained by water displacement ... 3
4.4.6 Volume, using actual measurements ... 4
4.4.7 Volume, using checked designated dimensions ... 4
4.4.8 Test result ... 4

5 Determination of water penetration under pressure ... **6**
5.1 Principle ... 6
5.2 Apparatus ... 6
5.3 Test specimen ... 8
5.4 Procedure ... 8
5.4.1 Preparation and conditioning of the test specimen ... 8
5.4.2 Application of water pressure ... 8
5.4.3 Examination of specimen ... 8
5.5 Test result ... 9

6 Test report ... **9**
6.1 General ... 9
6.2 Test report for density ... 9
6.3 Test report for water penetration depth ... 10

Annex A (informative) **Precision for the method of determination of the density** ... **11**

Annex B (informative) **Example of test reports** ... **12**

Bibliography ... **15**

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 1920-5:2004), which has been technically revised. The main changes compared to the previous edition are as follows:

— density of irregular shape specimens can also be determined using this document;

— as-received, saturated or oven-dried specimens (cast in laboratory or cores extracted from sites) can be tested for the determination of water penetration under pressure using this document.

A list of all parts in the ISO 1920 series can be found on the ISO website.

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Testing of concrete —

Part 5:
Density and water penetration depth

1 Scope

This document specifies methods for testing the density and depth of water penetration of hardened concrete.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1920-3, *Testing of concrete — Part 3: Making and curing test specimens*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
density
ratio of the mass of a given quantity of hardened concrete to its volume

Note 1 to entry: The density is expressed in kilograms per cubic metre.

4 Determination of density of hardened concrete

4.1 General

This test method is applicable to lightweight, normal-weight and heavy-weight concrete.

It differentiates between hardened concrete in the following states:

— as-received;

— saturated;

— oven-dried.

The mass and the volume of the specimen of hardened concrete are determined and the density calculated.

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