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I.S. EN 12390-7:2009

Testing hardened concrete - Part 7: Density of hardened concrete

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English Version

Testing hardened concrete - Part 7: Density of hardened concrete

Essai pour béton durci - Partie 7 : Masse volumique du béton durci

Prüfung von Festbeton - Teil 7: Dichte von Festbeton

This European Standard was approved by CEN on 27 December 2008.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 12390-7:2009) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

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

This document supersedes EN 12390-7:2000.

This standard is one of a series concerned with testing concrete.

The series EN 12390 includes the following parts:

EN 12390 Testing hardened concrete –

Part 1: Shape, dimensions and other requirements for specimens and moulds;

Part 2: Making and curing specimens for strength tests;

Part 3: Compressive strength of test specimens;

Part 4: Compressive strength - Specification for testing machines;

Part 5: Flexural strength of test specimens;

Part 6: Tensile splitting strength of test specimens;

Part 7: Density of hardened concrete;

Part 8: Depth of penetration of water under pressure.

The following amendments have been made to the 2000-10 edition of this standard:

— editorial revision

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method for determining the density of hardened concrete.

It is applicable to lightweight, normal-weight and heavy-weight concrete.

It differentiates between hardened concrete in the following states:

1) as-received;

2) water saturated;

3) oven-dried.

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

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.

EN 12390-1, *Testing hardened concrete – Part 1: Shape, dimensions and other requirements for test specimens and moulds*

3 Apparatus

3.1 Callipers and rules, capable of determining the dimensions of a specimen to within 0,5 %

3.2 Balance, equipped with a stirrup for weighing the specimen in both air and water to an accuracy of 0,1 % of the mass

3.3 Water tank, fitted with a device to maintain the water at a constant level and of sufficient size to allow the specimen on the stirrup to be fully immersed to a constant depth

NOTE If the reading of the balance is affected to within the accuracy required due to the displacement of water when immersing the specimen, then the tank should be fitted with a device to maintain the water at a constant level. The tank should be of sufficient size to allow the specimen to be fully immersed.

3.4 Ventilated oven, in which the temperature is capable of being controlled at (105 ± 5) °C.

NOTE The apparatus required depends upon the method selected for determining the volume of the specimen.

4 Test specimens

The minimum volume of a specimen shall be 0,785 l. If the nominal maximum aggregate size of specimens cast in moulds exceeds 25 mm, the minimum volume shall be not less than $50D^3$, where D is the nominal maximum size of the coarse aggregate.