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Preskušanje strjenega betona - 7. del: Gostota strjenega betona

Testing hardened concrete - Part 7: Density of hardened concrete

Prüfung von Festbeton - Teil 7: Dichte von Festbeton

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

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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

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (prEN 12390-7:2017) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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

This document will supersede EN 12390-7:2009.

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

This series EN 12390, *Testing hardened concrete*, includes the following parts:

- *Part 1: Shape, dimensions and other requirements of 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*
- *Part 11: Determination of the chloride resistance of concrete, unidirectional diffusion*
- *Part 12: Determination of the potential carbonation resistance of concrete: Accelerated carbonation method*
- *Part 13: Determination of secant modulus of elasticity in compression*
- *Part 14: Semi-adiabatic method for the determination of heat released by concrete during its hardening process (in preparation)*
- *Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process (in preparation)*

The following amendments have been made to the 2009 edition of this standard:

- editorial revision.

prEN 12390-7:2017 (E)

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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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

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 declared value of D of the coarsest fraction of aggregates actually used in the concrete (D_{\max}) exceeds 25 mm, the minimum volume (in mm^3) shall be not less than $50 D^3$, where D is the declared coarsest fraction of the aggregate in mm.

Normally, the entire specimen as received shall be used for the determination. If the shape or size of a specimen is such that it is not possible to use all of it, a smaller specimen may be broken or sawn from the original.

Capped specimens shall not be used.