SLOVENSKI STANDARD
oSIST prEN 12390-15:2016

01-april-2016

Preskušanje strjenega betona - 15. del: Adiabatska metoda za ugotavljanje toplote, ki se sprosti med procesom strjevanja betona

Testing hardened concrete - Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process

Prüfung von Festbeton - Teil 15: Adiabatisches Verfahren zur Bestimmung der Wärme, die während des Erhärtungsprozesses von Beton freigesetzt wird

Essai pour béton durci - Partie 15: Méthode adiabatique de détermination de la chaleur dégagée par le béton au cours de son processus de durcissement

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Testing hardened concrete - Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process

Essai pour béton durci - Partie 15

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European Foreword

This document (prEN 12390-15:2016) 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.

This standard is one of a series on testing concrete.

EN 12390, *Testing hardened concrete*, consists of 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 13: Determination of secant modulus of elasticity*

— *Part 14: Semi-adiabatic method for the determination of heat released by concrete during its hardening process*

— *Part 15: Adiabatic method for the determination of heat released by concrete during its hardening process*

— *Part xx: Determination of shrinkage (in preparation)*

— *Part xy: Determination of creep (in preparation)*

1 Scope

This European Standard specifies the procedure for the determination of heat released by concrete during its hardening process in adiabatic condition.

The test is suitable for specimens having a declared value of D of the coarsest fraction of aggregates actually used in the concrete (D_{max}) not greater than 32 mm.

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 12350-1, *Testing fresh concrete - Part 1: Sampling*

EN 12390-2, *Testing hardened concrete - Part 2: Making and curing specimens for strength tests*

3 Terms, definitions, symbols and scripts

3.1 Terms and definitions

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

3.1.1
adiabatic equipment
equipment whose error of adiabatism, as defined in 3.2, is less than 0,05 °C/h at least in the temperature range 20 – 70 °C, and the ratio between the heat capacity of calorimeter and the heat capacity of the sample $\frac{C_{cal}}{C_{con}}$ is less or equal than 0,1

3.1.2
adiabatism error
(α)
rate of decrease in temperature (°C /h) of a fully hydrated reference concrete sample

Note 1 to entry: A concrete sample can be considered to be fully hydrated when cured for 12 months in accordance with EN 12390–2.

3.1.3
intrinsic temperature rise
(ΔT_c^*)
temperature rise in concrete in the absence of heat transfer from the concrete sample to the surrounding environment

3.1.4
adiabatic heat release
(q)
calculated value of heat released by concrete during its hydration in adiabatic conditions