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I.S. EN 12636:1999

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PRODUCTS AND SYSTEMS FOR THE PROTECTION AND REPAIR OF CONCRETE STRUCTURES - TEST METHODS - DETERMINATION OF ADHESION CONCRETE TO CONCRETE

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on:

November 5, 1999

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12636

May 1999

ICS 91.100.30

English version

Products and systems for the protection and repair of concrete structures - Test methods - Determination of adhesion concrete to concrete

Produits et systèmes pour la protection et la réparation des structures en béton - Méthodes d'essais - Détermination de l'adhérence béton sur béton

Produkte für den Schutz und die Instandsetzung von Betontragwerken - Prüfverfahren - Bestimmung der Verbundwirkung Beton-Beton

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 104 "Concrete (performance, production, placing and compliance criteria)", 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of an identical text or by endorsement, at the latest by november 1999, and conflicting national standards shall be withdrawn at the latest by november 1999.

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

It has been prepared by Sub-Committee 8 "Products and systems for the protection and repair of concrete structures" (Secretariat AFNOR).

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1 Scope

This European Standard describes methods for the measurement of the adhesion of structural bonding agents between fresh or hardened concrete and a hardened concrete substrate.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 196-1, *Methods of testing cement - Part 1 : Determination of strength.*

EN 1542:1999, *Products and systems for the protection and repair of concrete structures - Test methods - Pull-off test.*

prEN 1766, *Products and systems for the protection and repair of concrete structures - Test methods - Reference concretes for testing.*

EN 12189, *Products and systems for the protection and repair of concrete structures - Test methods - Determination of open time.*

3 Test method

3.1 Hardened concrete-to-hardened concrete

The adhesion between hardened concrete substrates is measured using the results from tensile bending tests performed on pairs of concrete test prisms which have been bonded using the bonding agent under test.

For satisfactory performance of the bonding agent, the tensile bending test should result in fracture in the concrete. When fracture occurs within the bond line it is considered that the structural bonding agent has not performed satisfactorily.

Alternatively, the tensile bending test can be performed in the presence of a longitudinal clamping force where the intended use involves the application of longitudinal prestress.

3.2 Fresh concrete-to-hardened concrete

The method for the determination of the bond strength of fresh concrete adhesively bonded to hardened concrete involves coring through the fresh concrete overlay beyond the bonded surface and into the hardened concrete substrate, and then performing a pull off test.

For satisfactory performance of the bonding agent the pull off test should result in fracture in the concrete. When fracture occurs within the bond line it is considered that the structural bonding agent has not performed satisfactorily.

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