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TEST METHODS FOR FIBRES IN CONCRETE -

PART 1: REFERENCE CONCRETES

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Test methods for fibres in concrete - Part 1: Reference concretes

Méthodes d'essai des fibres dans le béton - Partie 1: Bétons de référence

Prüfverfahren für Fasern in Beton - Teil 1: Referenzbetone

This European Standard was approved by CEN on 9 June 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 14845-1:2007) 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of an identical text or by endorsement, at the latest by January 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

It has been drafted by Working Group 11 “Fibres for concrete”, the secretariat of which is held by BSI.

This European Standard is one of a series dealing with test methods for assessing the performance of fibres, either steel or polymer, in concrete.

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 United Kingdom.

1 Scope

This European Standard specifies the composition and characteristics of reference concretes used to evaluate the performance of fibres in concrete.

The purpose of the reference concrete is to determine the general suitability of a fibre for use in concrete.

NOTE The end user needs to satisfy themselves about the effectiveness of the fibre in their own concrete.

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 197-1:2000, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 206-1:2000, *Concrete — Part 1: Specification, performance, production and conformity*

EN 933-2, *Tests for geometrical properties of aggregates — Part 2: Determination of particle size distribution — Test sieves, nominal size of apertures*

EN 1008, *Mixing water for concrete — Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*

EN 1766:2000, *Products and systems for the protection and repair of concrete structures — Test methods — Reference concretes for testing*

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

EN 12350-3, *Testing fresh concrete — Part 3: Vebe test*

EN 12350-4, *Testing fresh concrete — Part 4: Degree of compactability*

EN 14651, *Test method for metallic fibrered concrete — Measuring the flexural tensile strength (limit of proportionality (LOP), residual)*

EN 14845-2, *Test methods for fibres in concrete — Part 2: Effect on strength of concrete*

EN 14889-1:2006, *Fibres for concrete — Part 1: Steel fibres — Definitions, specifications and conformity*

EN 14889-2:2006, *Fibres for concrete — Part 2: Polymer fibres — Definitions, specifications and conformity*

3 Principle

This European Standard prescribes the constituents and proportions for plain reference concretes to be used to evaluate the performance of fibres in concrete under standard laboratory conditions. It has been developed from EN 1766 and should be read in conjunction with that standard.

The reference concretes shall be designed to meet a prescribed flexural tensile strength, as defined in Table 1.

The performance of a fibre shall be determined in a mandatory 16 mm or 20 mm maximum aggregate size mix using the test method described in EN 14845-2 for the effect on strength of concrete, and by one of the