Testing sprayed concrete - Part 3: Flexural strengths (first peak, ultimate and residual) of fibre reinforced beam specimens

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 14488-3:2006 sisaldab Euroopa standardi EN 14488-3:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 29.05.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14488-3:2006 consists of the English text of the European standard EN 14488-3:2006. This document is endorsed on 29.05.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of European Standard specifies a method for the determination of the flexural (first peak, ultimate and residual) strength of beam specimens of hardened sprayed concrete.	**Scope:** This part of European Standard specifies a method for the determination of the flexural (first peak, ultimate and residual) strength of beam specimens of hardened sprayed concrete.

ICS 91.100.30

Võtmesõnad: concretes, construction, construction materials, defects, fibre reinforced, flaws, material, methods, mortars, remaining compression strength, residual strength, sprayed concrete, strength of materials, test equipment, test pieces, test reports, testing

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English Version

Testing sprayed concrete - Part 3: Flexural strengths (first peak, ultimate and residual) of fibre reinforced beam specimens

Essais pour béton projeté - Partie 3 : Résistances à la flexion (au premier pic, ultime et résiduelle) d'éprouvettes parallélépipèdiques en béton renforcé par des fibres

Prüfung von Spritzbeton - Teil 3: Biegefestigkeiten (Erstriss-, Biegezug- und Restfestigkeit) faserverstärkten balkenförmigen Betonprüfkörpern

This European Standard was approved by CEN on 27 February 2006.

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

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Contents

Page

Foreword

This European Standard (EN 14488-3:2006) 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 October 2006, and conflicting national standards shall be withdrawn at the latest by December 2007.

This European Standard is part of a series concerned with testing sprayed concrete.

This series EN 14488 Testing sprayed concrete includes the following parts:

— Part 1: Sampling fresh and hardened concrete

— Part 2: Compressive strength of young sprayed concrete

— Part 3: Flexural strengths (first peak, ultimate and residual) of fibre reinforced beam specimens

— Part 4: Bond strength of cores by direct tension

— Part 5: Determination of energy absorption capacity of fibre reinforced slab specimens

— Part 6: Thickness of concrete on a substrate

— Part 7: Fibre content of fibre reinforced 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, 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 part of European Standard specifies a method for the determination of the flexural (first peak, ultimate and residual) strength of beam specimens of hardened sprayed 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 12390-1:2000, *Testing hardened concrete — Part 1: Shape, dimensions and other requirements for specimens and moulds*

EN 12390-4:2000, *Testing hardened concrete — Part 4: Compressive strength — Specification for testing machines*

EN 14487-1, *Sprayed concrete — Part 1: Definitions, specifications and conformity*

EN 14488-1, *Testing sprayed concrete — Part 1: Sampling fresh and hardened concrete*

3 Principle

Prismatic beam specimens are subject to a bending moment by the application of load through upper and lower rollers. The first peak, maximum and residual loads sustained are recorded and the corresponding flexural strengths calculated.

A fibre reinforced prism specimen, sawn from a test panel in accordance with EN 14488-1 is subject to a bending moment by the application of load through upper and lower rollers under deflection control to obtain its load/deflection response (the latter exclusive of non-bending deformations). The first peak, ultimate and residual flexural strengths are determined from the load/deflection curve.

4 Apparatus

4.1 Testing machine

The test shall be carried out using a testing machine conforming to 4.2 and 4.3 of EN 12390-4:2000.

The stiffness and control system of the testing machine shall be such that the test can be deflection controlled. The stiffness of the load system (including frame, load cell, loading block and support frame) shall be at least 200 kN/mm.

A steel or aluminium yoke (Figure 1).

A calibrated electronic transducer with a resolution of at least 0,02 mm.

An electronic data logger or XY plotter.