

**Testing sprayed concrete - Part 5:
Determination of energy absorption
capacity of fibre reinforced slab specimens**

Testing sprayed concrete - Part 5: Determination of
energy absorption capacity of fibre reinforced slab
specimens

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14488-5:2006 sisaldab Euroopa standardi EN 14488-5:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.05.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14488-5:2006 consists of the English text of the European standard EN 14488-5:2006.</p> <p>This document is endorsed on 29.05.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This part of European Standard specifies a method for the determination of the load/deflection response of a slab specimen in order to calculate the energy absorption capacity up to a specified deflection.</p>	<p>Scope:</p> <p>This part of European Standard specifies a method for the determination of the load/deflection response of a slab specimen in order to calculate the energy absorption capacity up to a specified deflection.</p>
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ICS 91.100.30

Võtmesõnad:

ICS 91.100.30

English Version

Testing sprayed concrete - Part 5: Determination of energy absorption capacity of fibre reinforced slab specimens

Essais pour béton projeté - Partie 5: Détermination de la capacité d'absorption de l'énergie d'une dalle-éprouvette renforcée par des fibres

Prüfung von Spritzbeton - Teil 5: Bestimmung der Energieabsorption bei faserverstärkten plattenförmigen Prüfkörpern

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

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 14488-5:2006) 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 of standards concerning 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 load/deflection response of a slab specimen in order to calculate the energy absorption capacity up to a specified deflection.

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

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

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

3 Principle

A fibre reinforced slab specimen, sprayed in accordance with EN 14488-1 is subject to a load, under deflection control, through a rigid steel block positioned at the centre of the slab.

The load-deflection curve is recorded and the test is continued until a deflection of at least 30 mm is achieved at the centre point of the slab.

From the load-deflection curve a second curve is calculated giving the absorbed energy as a function of the slab deflection.

4 Apparatus

4.1 Testing machine

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

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

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

4.1.4 An electronic data logger or XY plotter.

4.2 Load application

The device for applying the load shall consist of:

- A frame with a rigid square support (20 ± 1) mm thick and (500 ± 2) mm x (500 ± 2) mm internal dimension supporting the slab.
- A rigid steel square loading block having a contact surface of (100 ± 1) mm x (100 ± 1) mm and thickness of (20 ± 1) mm, positioned at the centre of the upper face of the slab (see Figure 1).