

**Fibres for concrete - Part 1: Steel fibres  
- Definitions, specifications and  
conformity**

Fibres for concrete - Part 1: Steel fibres - Definitions,  
specifications and conformity

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14889-1:2006 sisaldab Euroopa standardi EN 14889-1:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.09.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14889-1:2006 consists of the English text of the European standard EN 14889-1:2006.</p> <p>This document is endorsed on 20.09.2006 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><b>Käsitlusala:</b> This Part 1 of EN 14889 specifies requirements for steel fibres for structural or non-structural use in concrete, mortar and grout.</p>	<p><b>Scope:</b> This Part 1 of EN 14889 specifies requirements for steel fibres for structural or non-structural use in concrete, mortar and grout.</p>
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English Version

## Fibres for concrete - Part 1: Steel fibres - Definitions, specifications and conformity

Fibres pour béton - Partie 1 : Fibres d'acier - Définitions, spécifications et conformité

Fasern für Beton - Teil 1: Stahlfasern - Begriffe, Festlegungen und Konformität

This European Standard was approved by CEN on 26 June 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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**Contents**

Page

Foreword..... 3

1 Scope ..... 4

2 Normative references ..... 4

3 Terms and definitions ..... 4

4 Symbols ..... 5

5 Requirements ..... 5

5.1 General..... 5

5.2 Dimensions and tolerances ..... 6

5.3 Tensile strength of fibres ..... 8

5.4 Modulus of elasticity ..... 8

5.5 Ductility of fibres..... 9

5.6 Mixing..... 9

5.7 Effect on consistence of concrete ..... 9

5.8 Effect on strength of concrete..... 9

5.9 Release of dangerous substances..... 9

6 Evaluation of conformity..... 9

6.1 General..... 9

6.2 Initial type testing ..... 10

6.3 Factory production control (FPC) ..... 11

Annex A (normative) Conditions for switching between the control regimes T-N-R ..... 15

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive for Construction Products (89/106/EEC) ..... 17

ZA.1 Scope and relevant characteristics ..... 17

ZA.2. Procedure(s) for the attestation of conformity of products ..... 19

ZA.3 CE Marking and labelling ..... 22

Bibliography ..... 26

## Foreword

This document (EN 14889-1:2006) has been prepared by Technical Committee CEN/TC 104 "Concrete and related products", the secretariat of which is held by DIN. It has been developed by working group 11, "Fibres for concrete", the secretariat of which is held by BSI.

This standard comprises two parts:

Part 1 dealing with steel fibres for concrete;

Part 2 dealing with polymer fibres.

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 February 2007, and conflicting national standards shall be withdrawn at the latest by May 2008.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the Construction Products Directive.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard should be given the status of a national standard.

No existing European Standard is superseded.

Not all fibre characteristics that may be relevant to the performance of a fibre concrete, structural or non-structural, such as early age effects, creep and chemical attack, have been addressed in this standard due to the difficulties of formulating meaningful and reproducible standardised test methods.

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 1 of EN 14889 specifies requirements for steel fibres for structural or non-structural use in concrete, mortar and grout.

NOTE Structural use of fibres is where the addition of fibres is designed to contribute to the load bearing capacity of a concrete element. This standard covers fibres intended for use in all types of concrete and mortar, including sprayed concrete, flooring, precast, in-situ and repair concretes.

## 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 10002-1, *Metallic materials – Tensile testing – Part 1: Method of test at ambient temperature*

EN 10218-1, *Steel wire and wire products - General – Part 1: Test methods*

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

prEN 14845-1, *Test methods for fibres in concrete – Part 1: Reference concretes*

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

## 3 Terms and definitions

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

### 3.1

#### **steel fibres**

straight or deformed pieces of cold-drawn steel wire, straight or deformed cut sheet fibres, melt extracted fibres, shaved cold drawn wire fibres and fibres milled from steel blocks which are suitable to be homogeneously mixed into concrete or mortar

### 3.2

#### **length**

distance between the outer ends of the fibre

#### 3.2.1

#### **developed length (for deformed fibres with irregular cross section)**

length of the deformed fibres after straightening the fibre without deforming the cross section

### 3.3

#### **equivalent diameter**

diameter of a circle with an area equal to the mean cross sectional area of the fibre. For circular fibres, the equivalent diameter is equal to the diameter of the fibres

### 3.4

#### **aspect ratio**

ratio of length ( $l$ ) to equivalent diameter of the fibre