



SLOVENSKI STANDARD

SIST EN 14020-3:2003

01-maj-2003

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Reinforcements - Specification for textile glass rovings - Part 3: Specific requirements

Verstärkungsfasern - Spezifikation für Textilglasrovings - Teil 3: Besondere Anforderungen

Renforts - Spécification des stratifils (rovings) de verre textile - Partie 3: Exigences spécifiques

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SIST EN 14020-3:2003

Ta slovenski standard je istoveten z: EN 14020-3:2002

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ICS:

59.100.10 Materiali iz steklenih vlaken Textile glass materials

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14020-3

December 2002

ICS 59.100.10

English version

Reinforcements - Specification for textile glass rovings - Part 3: Specific requirements

Renforts - Spécification des stratifils (rovings) de verre
textile - Partie 3: Exigences spécifiques

Verstärkungsfasern - Spezifikation für Textilglasrovings -
Teil 3: Besondere Anforderungen

This European Standard was approved by CEN on 7 November 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14020-3:2002) has been prepared by Technical Committee CEN /TC 249 "Plastics", the secretariat of which is held by IBN.

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 June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

This document is one part of EN 14020 which is structured as follows:

- Part 1 : *Designation*
- Part 2 : *Test methods and general requirements*
- Part 3 : *Specific requirements*

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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EN 14020-3:2002 (E)**1 Scope**

This part of this European Standard gives a technical specification for rovings that are made from continuous filament textile glass. It defines those parameters which shall be specified plus other parameters which may be specified if required for a particular application or processing method.

The specification does not define absolute or nominal values for any parameter. The value of a specified parameter is to be defined by the manufacturer but this specification defines the method of test to be used to determine the value of each specified parameter and the tolerance about which the parameter shall be controlled by the manufacturer.

The parameters which shall always be defined in any roving specification are defined in clause 4.1 and 4.2. The other parameters which are included in a specification shall either be nominated by the manufacturer or agreed between manufacturer and customer. These parameters are defined in clause 4.3.

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 (including amendments).

EN ISO 472:2001, *Plastics - Vocabulary (ISO 472:1999)*.

EN ISO 1889, *Reinforcement yarns - Determination of linear density (ISO 1889:1997)*.

EN ISO 2078, *Textile glass - Yarns - Designation (ISO 2078:1993)*.

EN ISO 3344, *Reinforcement products - Determination of moisture content (ISO 3344:1997)*.

EN ISO 9163, *Textile glass - Rovings - Manufacture of test specimens and determination of tensile strength of impregnated rovings (ISO 9163:1996)*.

EN ISO 14130, *Fibre-reinforced plastic composites - Determination of apparent interlaminar shear strength by short-beam method (ISO 14130:1997)*.

ISO 1887, *Textile glass - Determination of combustible-matter content*.

ISO 1888, *Textile glass - Staple fibres or filaments - Determination of average diameter*.

ISO 3341, *Textile glass - Yarns - Determination of breaking force and breaking elongation*.

ISO 3597-4, *Textile-glass-reinforced plastics - Determination of mechanical properties on rods made of roving-reinforced resin - Part 4: Determination of apparent interlaminar shear strength*.

ISO/DIS 15039, *Textile-glass rovings - Determination of solubility of sizing*.

3 Terms and definitions

For the purposes of this part of this European Standard, the terms and definitions given in EN ISO 472:2001 apply with the following additions:

3.1**characteristic properties**

properties of the glass fibre roving that are not normally subject to the planned quality control in the production process

3.2**controlled properties**

quantitative properties of the glass fibre roving that are subject to the planned quality control in the production process

3.3**visual properties**

qualitative properties of the glass fibre roving that are not necessarily subject to routine quality control in the production process

4 Specification**4.1 Mandatory specified parameters**

For each textile glass roving manufactured in accordance with this specification, the manufacturer shall define nominal values of all properties included in Table 1.

Table 1 — Controlled properties, mandatory for all rovings

Property	Test method	Tolerance on nominal value of individual measurement	Tolerance on nominal value of mean value of measurements (*)
Loss on ignition (%) when nominal value ≥ 1 %	ISO 1887	± 20 %	± 10 %
Loss on ignition (%) when nominal value < 1 %	ISO 1887	+ 50 % - 35 %	± 20 %
Linear density (tex)	EN ISO 1889	± 20 %	± 10 %

For the moisture content in the roving product a maximum value is specified for individual measurements in Table 2.

Table 2 — Controlled property moisture content, mandatory for all rovings

Property	Test method	Maximum value for each measurement
Moisture content (%)	EN ISO 3344	0.25 %

Depending on the application, the properties as given in Table 3 are optional to be controlled.

Table 3 — Controlled properties, optional for specific applications

Property	Test method	Indicative application	Tolerance on nominal value of individual measurement	Tolerance on nominal value of mean value of measurements ^a
Tensile strength (cN/tex)	ISO 3341	Weaving	- 20 %	- 5 %
Acetone solubility (%)	ISO/DIS 15039	Spray-up, SMC	- 20 %	- 10 %
Impregnated strength (MPa)	EN-ISO 9163	Pultrusion, Filament winding	- 20 %	- 5 %
Impregnation and composite characteristics (ILSS) (MPa)	ISO 3597-4 or EN ISO 14130	Weaving, Pultrusion, Filament winding	- 10 %	- 5 %

^a Mean value of measurements is to be determined from a batch in accordance with statistical techniques agreed between the interested parties or in accordance with the manufacturers control system. A batch is defined as one or more pallets with textile glass roving product. Suitable ISO statistical standards include ISO 2859 and ISO 3951.

For all rovings the following design properties apply. Because these properties are not to be controlled, therefore no tolerances are given.

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Table 4 — Designated parameters (not normally subject to planned quality control), for all rovings

Property	SIST EN 14020-3:2003	Test method or classification
Filament diameter (µm)	https://standards.iteh.ai/catalog/standards/sist/1cf7b03f-6da4-4994-a244-9b9dcbf3313a/sist-en-14020-3-2003	ISO 1888
Glass type (-)		EN ISO 2078

4.2 Parameters which may be included in the specification

4.2.1 Matrix compatibility

The resin/polymer/matrix compatibility of the size system, e.g. polyester, epoxy, polypropylene, polyamide, etc.

4.2.2 Visual properties

Acceptance standards for such of the visual properties listed in Clause 4 of Part 2 of this standard as are applicable to the particular product and its intended application.

4.2.3 Application performance

The application for which the specified roving product has been designed, e.g. for filament winding, pultrusion, spray-up, long-fibre reinforced thermoplastic, etc.

Acceptance standards for such of the application performance characteristics listed in Clause 5 of Part 2 of this standard as are applicable to the particular product and its intended application.