



SLOVENSKI STANDARD
SIST EN 13417-3:2002
01-september-2002

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Reinforcement - Specifications for woven fabrics - Part 3: Specific requirements

Verstärkung - Spezifikationen für Gewebe - Teil 3: Besondere Anforderungen

Renfort - Spécification des tissus - Partie 3: Exigences spécifiques

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Ta slovenski standard je istoveten z: EN 13417-3:2001

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ICS:

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13417-3

October 2001

ICS 59.100.01

English version

Reinforcement - Specifications for woven fabrics - Part 3: Specific requirements

Renfort - Spécification des tissus - Partie 3: Exigences
spécifiques

Verstärkung - Spezifikationen für Gewebe - Teil 3:
Besondere Anforderungen

This European Standard was approved by CEN on 16 August 2001.

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

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

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Contents

	page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 Specification.....	5
4.1 Obligatory specified parameters.....	5
4.2 Other obligatory information to be included in the specification.....	5
4.3 Optional specified parameters	5
4.4 List of existing products	6
Annex A (informative) Glass fabrics: Bi directional.....	7
Annex B (informative) Glass fabrics: Uni directional	8
Annex C (informative) Carbon fabrics.....	9
Annex D (informative) Aramid fabrics	10
Annex E (informative) Glass fabrics: ROVINGS.....	11
Bibliography	12

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Foreword

This European Standard 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 April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

EN 13417 consists of the following parts, under the general titre "*Reinforcement – Specifications for woven fabrics*":

- *Part 1 : Designation*
- *Part 2 : Methods of test and general requirements*
- *Part 3 : Specific requirements*

Annexes A, B, C, D and E are informative.

This standard includes a Bibliography.

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

SIST EN 13417-3:2002

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EN 13417-3:2001 (E)**1 Scope**

1.1 This Part 3 of EN 13417 defines a specification for woven fabrics made from continuous filament reinforcement yarns, tows and rovings, which may be used as the basis for specifications.

The specification defines those parameters which shall be specified plus other parameters which may be specified if required for a particular application or processing method.

1.2 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.

1.3 The parameters which shall always be defined in any woven reinforcement fabric specification are defined in 4.1. In 4.2 the manufacturer shall define other obligatory information to be included in the specification. Other parameters can be included in the specification by agreement between manufacture 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 2078, *Textile glass - Yarns – Designation*

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

EN ISO 13002, *Carbon fibre – Designation system for filament yarns (ISO 13002:1998)*

ISO 472, *Plastics – Vocabulary.*

ISO 1268, *Plastics - Preparation of glass fibre reinforced, resin bonded, low-pressure laminated plates or panels for test purposes.*

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

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

ISO 2113, *Reinforcement fibres - Woven fabrics - Basis for a specification.*

ISO 3374, *Reinforcement products – Mats and fabrics - Determination of mass per unit area.*

ISO 4602, *Reinforcements – Woven fabrics – Determination of number of yarns per unit length of warp and weft.*

ISO 4603, *Textile glass - Woven fabrics - Determination of thickness.*

ISO 4604, *Textile glass - Woven fabrics - Determination of conventional flexural stiffness - Fixed angle flexometer method.*

ISO 5025, *Reinforcement products - Woven fabrics - Determination of width and length.*

ISO 11567, *Carbon fibre - Determination of filament diameter and cross-sectional area.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions given in ISO 472 apply.

4 Specification

4.1 Obligatory specified parameters

For each woven reinforcement fabric manufactured in accordance with this specification, the manufacturer shall define the nominal values of all the parameters included in Tables 1 and 2. These parameters are divided into two groups. Those given in Table 1 shall be defined and are subject to control by the manufacturer to the defined tolerances. Those given in Table 2 are required for the designation only and shall be defined but are not subject to control and testing by the manufacturer.

Table 1 — Parameters to be defined and controlled

Parameter	Test Method	Tolerance on Nominal	
		Individual ^a	Lot Average ^a
Mass/unit area	ISO 3374	± 10 %	± 5 %
Length	ISO 5025	± 2 %	/
Width	ISO 5025	- 0 ; +012 mm	/
No of yarns warp & weft	ISO 4602	± 10 %	± 5 %

^a The customer specification may specify what is the minimum. It essentially depends on the woven fabrics application

Table 2 — Parameters to be defined but not controlled

Parameter	Test Method
Filament Diameter	ISO 1888/ISO 11567
Reinforcement type	EN ISO 2078/ EN ISO 13002
Weave type	ISO 2113
Yarn type (lin. density, twist, eg.)	EN ISO 2078

4.2 Other obligatory information to be included in the specification

The manufacture shall state in the specification the following:

- the resin/polymer/matrix compatibility of the finish or size system eg polyester, phenolic etc.

4.3 Optional specified parameters

For each woven reinforcement fabric manufactured in accordance with this specification, the manufacturer may define the nominal values of the parameter described below. When specified these parameters shall be tested in accordance with the methods stated and controlled within the tolerances defined.

Laminates used for the determination of mechanical properties should be made in accordance with ISO 1268.

Optional parameters may be included in the specification by agreement between the manufacturer and customer to meet specific circumstances of the intended application.

The following properties are mainly referred to:

- combustible matter content (to be determined according to ISO 1887);
- moisture content (to be determined according to EN ISO 3344);
- stuffbess (to be determined according to ISO 4604);

EN 13417-3:2001 (E)

— thickness (to be determined according to ISO 4603).

4.4 List of existing products

Annexes A, B, C,D, and E tabulate the currently available standard products; this list is not exhaustive.

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Annex A (informative)

Glass fabrics: Bi directional

CROSS REFERENCES										
US style	WLB N° LN 9169	AFNOR	BS 3396	Weight g/m ²	Warp Ends/cm	Weft Picks/cm	Warp yarn tex	Weft yarn tex	Weave pattern	Fabric Designation
106				25	22,0	22,0	EC5 5,5	EC5 5,5	Plain	EN 13417 [G/E] [EC5 5.5 / EC5 5.5 / 22 / 22 / PL] [25]
1080	8.4503.60	B38-211		48	23,6	18,5	EC5 11	EC5 11	Plain	EN 13417 [G/E] [EC5 11 / EC5 11 / 23.6 / 18.6 / PL] [48]
1610	8.4505.60			80	12,4	11,2	EC9 34	EC9 34	Plain	EN 13417 [G/E] [EC9 34 / EC9 34 / 12.4 / 11.2 / PL] [80]
120	8.4544.60	B38-230	S 13 / 11	105	24,0	23,0	EC5 11x2	EC5 11x2	Crowfoot Satin	EN 13417 [G/E] [EC5 11x2 / EC5 11x2 / 24 / 23 / CR] [105]
2116		B38-212		104	24,0	23,0	EC7 22	EC7 22	Plain	EN 13417 [G/E] [EC7 22 / EC7 22 / 24 / 23 / PL] [104]
116	8.4510.60	B38-213		108	23,6	22,8	EC5 11x2	EC5 11x2	Plain	EN 13417 [G/E] [EC5 11x2 / EC5 11x2 / 23.6 / 22.8 / PL] [108]
				163	12,0	11,5	EC9 68	EC9 68	2x2 Twill	EN 13417 [G/E] [EC9 68 / EC9 68 / 12 / 11.5 / 22TW] [163]
7630	8.4515.60	B38-214		163	12,0	11,5	EC9 68	EC9 68	Plain	EN 13417 [G/E] [EC9 68 / EC9 68 / 12 / 11.5 / PL] [163]
		B38-250		163	12,0	11,5	EC9 34x2	EC9 34x2	Plain	EN 13417 [G/E] [EC9 34x3 / EC9 34x2 / 12 / 11.5 / PL] [163]
3715				163	6,0	5,8	EC9 136	EC9 136	Plain	EN 13417 [G/E] [EC9 136 / EC9 136 / 6.0 / 5.8 / PL] [163]
				191	14,0	14,0	EC9 68	EC9 68	2x2 Twill	EN 13417 [G/E] [EC9 68 / EC9 68 / 14 / 14 / 22TW] [191]
7628		B38-216	P 41/68	203.4	17,4	12,0	EC9 68	EC9 68	Plain	EN 13417 [G/E] [EC9 68 / EC9 68 / 17.4 / 12 / PL] [203]
181	8.4565.60		S 2/22	286	22,0	21,0	EC7 22x3	EC7 22x3	8 Shaft Satin	EN 13417 [G/E] [EC9 22x3 / EC7 22x3 / 22 / 21 / 8SS] [286]
				290	7,0	7,0	EC9 68x3t0	EC9 68x3t0	2x2 Twill	EN 13417 [G/E] [EC9 68x3t0 / EC9 68x3t0 / 7 / 7 / 22TW] [290]
	8.4.551.60			280	7,0	6,5	EC6 68x3t0	EC9 204	2x2 Twill	EN 13417 [G/E] [EC9 68x3t0 / EC9 204 / 7 / 6.5 / 22TW] [280]
				280	7,0	6,5	EC6 68x3t0	EC9 204	Plain	EN 13417 [G/E] [EC9 68x3t0 / EC9 204 / 7 / 6.5 / PL] [280]
1581		B38-241		305	23,6	21,5	EC6 68	EC6 68	8 Shaft Satin	EN 13417 [G/E] [EC9 68 / EC9 68 / 23.6 / 21.5 / 8SS] [305]
7781	8.4568.60	B38-242		396	22,4	21,5	EC6 68	EC9 68	8 Shaft Satin	EN 13417 [G/E] [EC6 68 / EC6 68 / 22.4 / 21.5 / 8SS] [296]
1581	8.4567.60	B38 240	S 2/34	296	22,4	21,2	EC9 34x2	EC9 34x2	8 Shaft Satin	EN 13417 [G/E] [EC9 34x2 / EC9 34x2 / 22.4 / 21.2 / 8SS] [296]
3784				600	10,0	10,0	EC13 300	EC13 300	8 Shaft Satin	EN 13417 [G/E] [EC13 300 / EC13 300 / 10.0 / 10.0 / 8SS] [600]
				865	16,5	14	EC9 136x2	EC9 136x2	8 Shaft Satin	EN 13417 [G/E] [EC9 68x2 / EC9 136x2 / 16.5 / 14 / 8SS] [865]
				390	6,0	6,6	EC9 68x5t0	EC9 136x2t0	2x2 Twill	EN 13417 [G/E] [EC9 68x5t0 / EC9 68x5t0 / 6 / 6.6 / 22TW] [390]
	8.4555.60			390	6,0	6,6	EC9 68x5t0	EC9 272	2x2 Twill	EN 13417 [G/E] [EC9 68x5t0 / EC9 272 / 6 / 6.6 / PL] [390]
				390	6,0	6,6	EC9 68x5t0	EC9 136x2t0	Plain	EN 13417 [G/E] [EC9 68x5t0 / EC9 136x2t0 / 6 / 6.6 / PL] [390]
	8.4555.60			390	6,0	6,6	EC9 68x5t0	EC9 272	Plain	EN 13417 [G/E] [EC9 68x5t0 / EC9 272 / 6 / 6.6 / PL] [390]