SLOVENSKI STANDARD
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Poliamidne vlaknene vrvi - Dvopramenska pletena struktura

Polyamide fibre ropes - Double braid construction

Polyamide-Faserseile - Doppelgeflechtausführung

Cordages en fibres de polyamide - Cordages coaxiaux

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Polyamide fibre ropes - Double braid construction

Cordages en fibres de polyamide - Cordages coaxiaux

Polyamide-Faserseile - Doppelgeflechtausführung

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This document (EN 14685:2004) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies requirements for double braided ropes and for higher strength double braided ropes made of polyamide and gives rules for their designation.

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 ISO 1968:2004, *Fibre ropes and cordage — Vocabulary (ISO 1968:2004)*.

prEN ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties (ISO/DIS 2307:2003)*.

prEN ISO 9554:2003, *Fibre ropes — General specifications (ISO/DIS 9554:2003)*.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 1968:2004 apply.

4 Designation

Fibre ropes shall be designated by

— the words "fibre rope";

— number of this document;

— reference number of the rope;

— material from which the rope is made;

— level of performance of rope: double braided rope or higher strength *(hs)* double braided rope.

EXAMPLE 1 Designation of a double braided rope, reference number 20, corresponding to a linear density of 249 ktex made of polyamide:

Fibre rope EN 14685 - 20 - PA

EXAMPLE 2 Designation of a higher strength *(hs)* double braided rope, reference number 20, corresponding to a linear density of 249 ktex made of polyamide:

Fibre rope EN 14685 - 20 - PA *(hs)*

5 Material

The mixing of polyamide fibre types and grades shall not be permitted.

6 General requirements

6.1 Construction

Ropes produced according to this document shall be made in the following construction:

The rope (see Figure 1) shall be a double braided construction wherein an inner braid of hollow structure manufactured in a separate operation shall serve as the core, while a cover (outer braid) is braided over it in a second operation. The weight of either the inner braid or the outer braid shall not exceed 55 % of the total weight of the rope. It shall also conform to prEN ISO 9554.

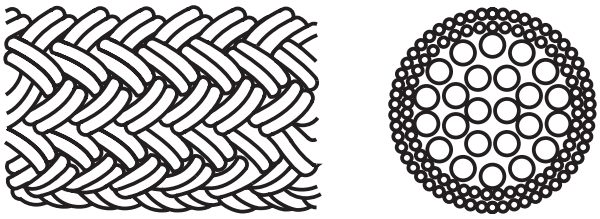

Figure 1 — Shape of a polyamide double braided rope and of a polyamide higher strength double braided rope

6.2 Number of strands

For ropes of reference number from 6 to 16: the minimum number of strands of outer braid shall be 16.

For ropes of reference number greater than 16: the minimum number of strands of outer braid shall be 24.

6.3 Manufacture, labelling and packaging

Manufacture, labelling, packaging, invoicing and delivery lengths shall conform to prEN ISO 9554.

6.4 Strand interchange

6.4.1 Strand interchange shall be the overlapping continuation of a single interrupted strand (or multiple strand) with another identical strand which follows the identical path in the braid. Although it is desirable that no strand interchange be present in the core or the cover of any size and length of rope, some methods of manufacture impose limitations. To compensate for these limitations, strand interchange shall be in accordance with 6.4.2 to 6.4.4.

6.4.2 To allow for a braider malfunction, one strand interchange shall be permitted in the core and one in the cover for standard length of 200 m or less.

6.4.3 For lengths greater than 200 m, additional strand interchanges shall be permitted if deemed necessary by the manufacturer.

6.4.4 In producing the strand interchanges the distance of the overlapping shall be equivalent to 8 times the rope size number but not less than 600 mm for ropes whose reference numbers are 72 and less. Strand interchanges shall be at least 12 m apart measured from interchange centre to interchange centre.

6.4.5 Because strand interchanges within the core are difficult to detect after application of the cover, a record of verifiable information attesting to the number of strand interchanges shall be available to an inspector.

7 Physical properties

Linear density and minimum breaking force shall conform to Table 1.

Table 1 — Polyamide double braided rope and polyamide higher strength double braided rope

Reference number [a]	Linear density [b] [c]		Minimum breaking force kN [d] [e] [f]	
	Nominal ktex	Tolerance	Double braided rope	Higher strength double braided rope
6	22,4	± 10 %	6,58	7,89
8	39,8		11,7	14,0
10	62,2		18,2	21,8
12	89,6	± 8 %	26,1	31,3
14	122		35,4	42,5
16	159		46,1	55,3
18	202		58,3	69,9
20	249		71,8	86,2
22	301		86,7	104
24	358		103	124
26	420		121	145
28	488		140	168
30	560		161	193
32	637		183	219
36	806		231	277
40	995		284	341
44	1 200		343	412
48	1 430		408	490
52	1 680	± 5 %	478	574
56	1 950		554	665
60	2 240		635	762
64	2 550		723	867
72	3 220		917	1 100
80	3 980		1 130	1 350
88	4 820		1 360	1 630
96	5 730		1 620	1 940
104	6 730		1 890	2 270
112	7 800		2 190	2 630
120	8 960		2 520	3 020
128	10 200		2 860	3 430
144	12 900		3 620	4 340
168	17 600		4 890	5 870
192	22 900		6 390	7 670
216	29 000		8 040	9 650
240	35 800		9 920	11 900

[a] The reference number corresponds to the approximate diameter in millimetres.

[b] The linear density (in kilotex) corresponds to the net mass per length of the rope, expressed in grams per metre or in kilograms per thousand metres.

[c] The linear density is under reference tension and is measured as specified in prEN ISO 2307.

[d] The breaking forces quoted above relate to new dry ropes. In wet conditions, these values may be lowered.

[e] Minimum values shall be reduced by 10 % in the case of a rope with eye spliced terminations.

[f] A force determined by the test methods as specified in prEN ISO 2307 is not necessarily an accurate indication of the force at which that rope might break in other circumstances and situations. Type and quality of termination rate of force application, prior conditioning and previous force applications to the rope can significantly influence the breaking force. A rope bent around a post, capstan, pulley or sheave may break at a significantly lower force. A knot or other distortion in a rope may significantly reduce the breaking force.