INTERNATIONAL STANDARD

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Mixed polyolefin fibre ropes

Cordages en fibres de polyoléfines mélangées

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10572 was prepared by Technical Committee ISO/TC 38, *Textiles*.

Mixed polyolefin fibre ropes

1 Scope

This International Standard specifies requirements for 3-strand hawser-laid, 4-strand shroud-laid, 8-strand braided and 12-strand braided ropes made of mixed polyolefin fibres, 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.

ISO 1968, *Fibre ropes and cordage — Vocabulary*

ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties*

ISO 9554:2005, *Fibre ropes — General specifications*

3 Terms and definitions

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

4 Designation

Fibre ropes shall be designated by the following:

— the words “fibre rope”;

— the number of this International Standard;

— the construction or type of rope (see Clause 6);

— the reference number of the rope;

— the material from which the rope is made.

EXAMPLE Designation of a 3-strand hawser-laid rope, reference number 20 (Type A), corresponding to a linear density of 181 ktex made of mixed polyolefin fibre (PO):

Fibre rope ISO 10572 - A - 20 - PO

5 Materials

The rope shall be constructed using bi-component fibres made of a blend during extrusion of polypropylene and of polyethylene, with a minimum of 15 % and a maximum of 50 % of polyethylene.

6 General requirements

6.1 Mixed polyolefin fibre ropes shall be constructed in one of the following ways:

— type A: 3-strand hawser-laid rope (see Figure 1);

— type B: 4-strand shroud-laid rope (see Figure 2);

— type L: 8-strand braided rope (see Figure 3);

— type T: 12-strand braided rope (see Figure 4).

Figure 1 — Shape of a 3-strand hawser-laid rope (type A)

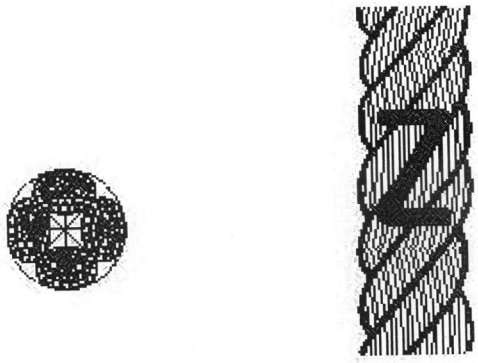

Figure 2 — Shape of an 4-strand shroud-laid rope (type B)

Figure 3 — Shape of an 8-strand braided rope (type L)

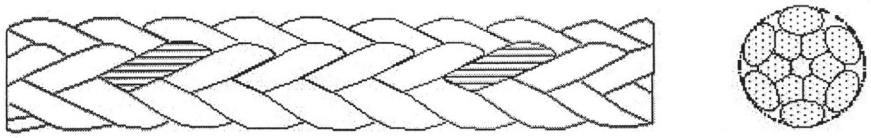

Figure 4 — Shape of a 12-strand braided rope (type T)

6.2 Construction, manufacture, lay, labelling, packaging, invoicing and delivery lengths shall conform to ISO 9554.

7 Physical properties

The linear density and minimum breaking force shall conform to Tables 1, 2 and 3.

Table 1 — Linear density and minimum breaking force of 3-strand hawser-laid mixed polyolefin fibre ropes (type A)

Reference number[a]	Linear density[bc]		Minimum breaking force[de] kN	
	Nominal ktex	Tolerance %	Unspliced ropes	Ropes with eye-spliced terminations
6	16,3	±10	6,76	6,08
8	29,0		11,7	10,5
10	45,3	±8	18,0	16,2
12	65,2		25,4	22,9
14	88,8		34,0	30,6
16	116	±5	43,5	39,2
18	147		54,5	49,0
20	181		66,2	59,6
22	219		79,1	71,2
24	261		92,8	83,5
26	306		107	96,3
28	355		123	111
30	408		140	126

Table 1 (*continued*)

Reference number[a]	Linear density[bc]		Minimum breaking force[de] kN	
	Nominal ktex	Tolerance %	Unspliced ropes	Ropes with eye-spliced terminations
32	464	±5	157	141
36	587		194	175
40	725		234	211
44	877		277	249
48	1 040		325	293
52	1 220		376	338
56	1 420		429	386
60	1 630		486	437
64	1 860		544	490
68	2 100		609	548
72	2 350		677	609
80	2 900		818	736
88	3 510		985	887
96	4 170		1 170	1 050

[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 kilometre.

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

[d] The breaking forces relate to new, dry and wet ropes.

[e] A force determined by the test methods specified in ISO 2307 is not necessarily an accurate indication of the force at which that rope might break in other circumstances and situations. The type and quality of terminations, the 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.

Table 2 — Linear density and minimum breaking force of 4-strand shroud-laid mixed polyolefin ropes (type B)

Reference number[a]	Linear density[bc]		Minimum breaking force[de] kN	
	Nominal ktex	Tolerance %	Unspliced ropes	Ropes with eye-spliced terminations
6	16,3	±10	6,08	5,47
8	29,0		10,5	9,45
10	45,3	±8	16,2	14,6
12	65,2		22,9	20,6
14	88,8		30,6	27,5
16	116		39,2	35,2
18	147		49,1	44,2
20	181		59,6	53,6
22	219		71,2	64,1
24	261		83,5	75,2
26	306		96,3	86,7
28	355		111	100
30	408		126	113
32	464		141	127
36	587		175	158
40	725	±5	211	190
44	877		249	224
48	1 040		293	264
52	1 220		338	304
56	1 420		386	347
60	1 630		437	393
64	1 860		490	441
68	2 100		548	493
72	2 350		609	548
80	2 900		736	662
88	3 510		887	798
96	4 170		1 050	945

[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 kilometre.

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

[d] The breaking forces relate to new, dry and wet ropes.

[e] A force determined by the test methods specified in ISO 2307 is not necessarily an accurate indication of the force at which that rope might break in other circumstances and situations. The type and quality of terminations, the 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.