INTERNATIONAL STANDARD

ISO 1346

Third edition
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Fibre ropes — Polypropylene split film, monofilament and multifilament (PP2) and polypropylene high tenacity multifilament (PP3) — 3-, 4- and 8-strand ropes

Cordages en fibres — Film fibrillé, monofilament et multifilament de polypropylène (PP2) et multifilament de polypropylène haute ténacité (PP3) — Cordages à 3, 4 et 8 torons

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.

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ISO 1346 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in collaboration with Technical Committee ISO/TC 38, *Textiles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 1346:1990), which has been technically revised.

Fibre ropes — Polypropylene split film, monofilament and multifilament (PP2) and polypropylene high tenacity multifilament (PP3) — 3-, 4- and 8-strand ropes

1 Scope

This International Standard specifies requirements for 3-strand hawser-laid and 4-strand shroud-laid ropes and 8-strand braided ropes for general service made of polypropylene 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 — Terms and definitions*

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

ISO 9554:—[1)], *Fibre ropes — General specification*

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 words “fibre rope”;

— the number of this International Standard;

— the construction type of rope (see Clause 5);

— the reference number of the rope;

— the material from which the rope is made:

  — PP2: polypropylene split film, monofilament and multifilament,

  — PP3: polypropylene high tenacity multifilament.

EXAMPLE Designation of an 8-strand braided rope (type L) with a linear density of 1630 ktex corresponding to the reference number 60 made of polypropylene monofilament (PP2):

Fibre rope ISO 1346 - L - 60 - PP2.

1) To be published. (Revision of ISO 9554:1991)

5 General requirements

5.1 Polypropylene ropes shall be made in one of the following constructions:

— 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).

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

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

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

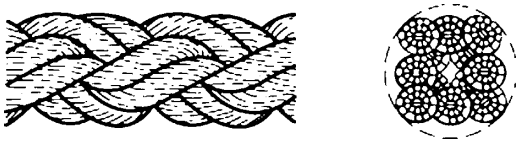

Figure 3 — Shape of an 8-strand braided rope (type L)

6 Physical properties

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 polypropylene ropes (type A)

Reference number [a]	Linear density [b, c]		Minimum breaking force [d, e, f] kN	
	Nominal ktex	Tolerance %	Split/Mono/ Multi PP2	High tenacity Multi PP3
4	7,23	± 10	2,78	3,19
4,5	9,15		3,47	3,97
5	11,3		4,23	4,82
6	16,3		5,92	6,72
8	28,9		10,1	11,6
9	36,6		12,6	14,4
10	45,2	± 8	15,4	17,5
12	65,1		21,6	24,7
14	88,6		28,9	32,9
16	116	± 5	37,0	42,1
18	146		46,2	52,5
20	181		56,1	64,0
22	219		67,1	76,4
24	260		78,8	89,6
26	306		91,5	104
28	354		105	119
30	407		119	136
32	463		134	154
36	586		167	191
40	723		204	233
44	875		243	278
48	1 040		286	327
52	1 220		332	379
56	1 420		381	436
60	1 630		433	495
64	1 850		488	558
72	2 340		608	692
80	2 890		740	850
88	3 500		887	1 010
96	4 170		1 040	1 190
104	4 890		1 210	1 380
112	5 670		1 390	1 580
120	6 510		1 580	1 800
128	7 410		1 780	2 040
136	8 360		2 000	2 290
144	9 370		2 220	2 520
160	11 600		2 720	3 070

[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 ISO 2307.

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

[e] Minimum values stated in individual standards 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 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 might break at a significantly lower force. A knot or other distortion in a rope might significantly reduce the breaking force.

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

Reference number [a]	Linear density [b, c]		Minimum breaking force [d, e, f] kN	
	Nominal ktex	Tolerance %	Split/Mono/ Multi PP2	High tenacity Multi PP3
10	45,2	± 8	13,9	15,8
12	65,1		19,4	22,2
14	88,6		26,0	29,6
16	116		33,3	37,9
18	146		45,1	47,3
20	181		50,5	57,6
22	219		60,4	68,8
24	260		70,9	80,6
26	306		82,3	93,6
28	354		94,5	107
30	407		107	122
32	463		121	138
36	586		150	172
40	723		184	210
44	875		219	250
48	1 040		257	294
52	1 220	± 5	299	341
56	1 420		343	392
60	1 630		390	446
64	1 850		439	502
72	2 340		547	623
80	2 890		666	765
88	3 500		798	909
96	4 170		936	1 070
104	4 890		1 090	1 240
112	5 670		1 250	1 420
120	6 510		1 420	1 620
128	7 410		1 600	1 840
136	8 360		1 800	2 060
144	9 370		2 000	2 270
160	11 600		2 450	2 760

[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 ISO 2307.

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

[e] Minimum values stated in individual standards 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 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 might break at a significantly lower force. A knot or other distortion in a rope might significantly reduce the breaking force.

Table 3 — Linear density and minimum breaking force of 8-strand braided polypropylene ropes (type L)

Reference number [a]	Linear density [b, c]		Minimum breaking force [d, e, f] kN	
	Nominal	Tolerance	Split/Mono/	High tenacity
	ktex	%	Multi PP2	Multi PP3
16	116		37,0	42,1
18	146		46,2	52,5
20	181		56,1	64,0
22	219		67,1	76,4
24	260		78,8	89,6
26	306		91,5	104
28	354		105	119
30	407		119	136
32	463		134	154
36	586		167	191
40	723		204	233
44	875		243	278
48	1 040		286	327
52	1 220	± 5	332	379
56	1 420		381	436
60	1 630		433	495
64	1 850		488	558
72	2 340		608	692
80	2 890		740	850
88	3 500		887	1 010
96	4 170		1 040	1 190
104	4 890		1 210	1 380
112	5 670		1 390	1 580
120	6 510		1 580	1 800
128	7 410		1 780	2 040
136	8 360		2 000	2 290
144	9 370		2 220	2 520
160	11 600		2 720	3 070

[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 ISO 2307.

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

[e] Minimum values stated in individual standards 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 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 might break at a significantly lower force. A knot or other distortion in a rope might significantly reduce the breaking force