INTERNATIONAL STANDARD

ISO 1140

Second edition
1990-11-01

Ropes — Polyamide — Specification

Cordages — Polyamide — Spécifications

Reference number
ISO 1140:1990(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

International Standard ISO 1140 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This second edition cancels and replaces the first edition (ISO 1140:1975), of which it constitutes a technical revision.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Ropes — Polyamide — Specification

1 Scope

This International Standard specifies the main characteristics of 3-strand laid ropes and 8-strand plaited ropes made of polyamide and gives rules for their designation.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1968:1973, *Ropes and cordage — Vocabulary.*

ISO 2307:1990, *Ropes — Determination of certain physical and mechanical properties.*

ISO 9554:1990[1], *Fibre ropes — General specification.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 1968 apply.

4 Designation

A rope shall be designated by

— the word "rope";

— the reference number of this International Standard;

— the type of rope (type A or E);

— its reference number;

— its nature.

Example of designation:

A 3-strand polyamide multifilament rope, reference number 20 (linear density 260 ktex), is designated as follows:

Rope, ISO 1140, type A, 20, polyamide

5 Types

Polyamide ropes are classified in two types:

Type A: 3-strand hawser-laid rope;

Type E: 8-strand plaited rope.

6 Characteristics

6.1 Main characteristics

The main characteristics shall be as given in table 1 and table 2 (see also ISO 9554, clause 7).

6.2 Other characteristics

Other characteristics, concerning construction, manufacture, lay, labelling, packaging, invoicing and delivery lengths, shall comply with ISO 9554.

1) To be published.

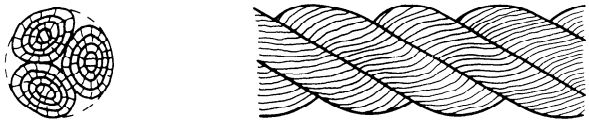

Figure 1 — Shape of a 3-strand hawser-laid rope (type A)

Table 1 — Main characteristics of 3-strand polyamide ropes

Reference number[1]	Linear density[2) 3)]		Minimum breaking force
	nominal ktex	tolerance	daN
4	10,5	± 10 %	315
6	22,5		735
8	40		1 320
10	62	± 8 %	2 040
12	89		2 940
14	122		4 020
16	158	± 5 %	5 200
18	200		6 570
20	245		8 140
22	300		9 800
24	355		11 800
26	420		13 700
28	485		15 500
30	555		17 400
32	630		19 600
36	800		24 400
40	990		29 400
44	1 200		35 100
48	1 420		41 200
52	1 660		47 900
56	1 930		54 900
60	2 210		62 600
64	2 520		70 600
72	3 190		88 200
80	3 940		107 800
88	4 770		128 400
96	5 680		151 000

1) The reference number corresponds to the approximate diameter in millimetres.

2) The linear density (in kilotex) corresponds to the net mass per metre (in grams per metre) or to the mass of rope (in kilograms) per thousand metres.

3) The linear density (net mass per metre) is measured under tensile loading for measurement "F_c" as given in ISO 2307.

Figure 2 — Shape of an 8-strand plaited rope (type E)

Table 2 — Main characteristics of 8-strand plaited polyamide ropes

Reference number[1]	Linear density[2) 3)] nominal ktex	tolerance	Minimum breaking force daN
8	40	± 10 %	1 320
12	89	± 8 %	2 940
16	158	± 5 %	5 200
20	245		8 140
24	355		11 800
28	485		15 500
32	630		19 600
36	800		24 400
40	990		29 400
44	1 200		35 100
48	1 420		41 200
52	1 660		47 900
56	1 930		54 900
60	2 210		62 600
64	2 520		70 600
72	3 190		88 200
80	3 940		107 800
88	4 770		128 400
96	5 680		151 000
104	6 660		178 500
112	7 720		206 000
120	8 870		235 400
128	10 100		266 700
136	11 400		300 100
144	12 800		335 400
160	15 800		414 000

1) The reference number corresponds to the approximate diameter in millimetres.

2) The linear density (in kilotex) corresponds to the net mass per metre (in grams per metre) or to the mass of rope (in kilograms) per thousand metres.

3) The linear density (net mass per metre) is measured under tensile loading for measurement "F_c" as given in ISO 2307.

7 Marking

The identification of the material, quality and origin of a polyamide rope conforming to this International Standard shall be marked using a yarn or tape yarn of an easily identifiable green colour placed within the article (see 7.1 and 7.2), so as to remain recognizable despite soiling, soaking and discoloration during use.

7.1 Ropes of reference number <12

A green yarn or tape yarn shall be incorporated into a strand.

7.2 Ropes of reference number ⩾12

A green tape yarn at least 3 mm wide printed with the reference number of this International Standard and a reference identifying the manufacturer shall be incorporated into a strand.

The maximum distance between two consecutive markings shall be 1 m.