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# INTERNATIONAL STANDARD



# 1141

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Three-strand polyester multifilament ropes

*Cordages en multifilaments de polyester à trois torons*

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[ISO 1141:1975](https://standards.iteh.ai/catalog/standards/sist/65ced4de-c279-45e7-9fc1-8c1f27de347e/iso-1141-1975)

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Ref. No. ISO 1141-1975 (E)

**Descriptors** : ropes, synthetic fibres, polyester fibres, characteristics, specifications, tests, diameters, linear density, mechanical properties, breaking load.

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 38 has reviewed ISO Recommendation R 1141 and found it technically suitable for transformation. International Standard ISO 1141 therefore replaces ISO Recommendation R 1141-1969 to which it is technically identical.

[https://standards.iteh.ai/catalog/standards/sist/65ced4de-c279-45e7-9fc1-](https://standards.iteh.ai/catalog/standards/sist/65ced4de-c279-45e7-9fc1-8c1f27de347e/iso-1141-1975)

ISO Recommendation R 1141 was approved by the Member Bodies of the following countries :

Belgium	Iran	Romania
Czechoslovakia	Ireland	South Africa, Rep. of
Denmark	Israel	Spain
Egypt, Arab Rep. of	Japan	Sweden
France	New Zealand	Switzerland
Germany	Norway	Turkey
Hungary	Poland	United Kingdom
India	Portugal	U.S.S.R.

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Australia  
Brazil\*  
Italy  
Netherlands

No Member Body disapproved the transformation of ISO/R 1141 into an International Standard.

\* Subsequently, this Member Body approved the Recommendation.

# Three-strand polyester multifilament ropes

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the essential characteristics of three-strand ropes consisting of continuous multifilaments belonging to the polyester group, of a relative density of approximately 1,38. It applies to ropes of this type whose net mass per metre is between 14 and 7 400 g and whose nominal diameters are from 4 to 96 mm inclusive.

## 2 REFERENCE

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

## 3 MANUFACTURE

### 3.1 Construction

The ropes shall be formed of strands manufactured from new material. The ropes and strands shall be continuous without splices.

When agreed between the purchaser and supplier, ropes of nominal diameter equal to 20 mm (net mass per metre of 320 g) or more may have a core in the strands consisting of continuous multifilaments without twist.

Polyester ropes, unless otherwise specified, shall be made of strands twisted together with a Z lay, these strands themselves being made with an S lay.

The number of yarns, or yarns and untwisted multifilaments, shall be the same for all the strands in the rope.

### 3.2 Treatment

Ropes shall be heat treated to set the lay and obtain dimensional stability.

Polyester ropes are generally supplied in the natural state, i.e. without any impregnation or coating treatment. At the request of the purchaser they may be coated or impregnated in order to give special characteristics.

The nature of the coating or impregnation substance shall be left to the discretion of the manufacturer. The treatment applied shall not reduce the tensile strength of the rope.

The amount of substance applied shall not increase the mass per metre given in the table by more than 5 % unless specially agreed between manufacturer and purchaser.

## 4 REQUIRED CHARACTERISTICS AND TOLERANCES

The main characteristics of three-strand polyester multifilament ropes shall be as given in the table.

The pitch of these ropes shall be as given in the table, except when otherwise agreed between purchaser and supplier.

Other characteristics, for example the elongation of the rope under given tensile conditions, may also be specified by agreement between manufacturer and purchaser, possibly on the presentation of a sample.

## 5 METHODS OF TEST

The characteristics given in clause 4 shall be measured under the conditions indicated in ISO 2307.

## 6 MARKING AND PACKING

### 6.1 Marking

Ropes of a nominal diameter of 16 mm (net mass per metre of 205 g) or more shall include a green man-made multifilament marker yarn in each of two strands. Smaller ropes shall have no marker yarns, unless otherwise agreed between purchaser and manufacturer.

### 6.2 Packing

Ropes shall be invoiced on the net mass basis, which includes lashings but not packing materials. Coil lashing shall be man-made fibre material.

TABLE – Main characteristics of three-strand polyester multifilament ropes

(1) Linear density in kilotex (or net mass <sup>1)</sup> per metre in grams)	(2) Tensile force applied for the measurement of the net mass		(3) Minimum breaking force		(4) Pitch : maximum length of ten lays	(5) Circumference <sup>2)</sup>	(6) Diameter <sup>2)</sup>
	kgf	daN	kgf	daN	mm	in	mm
14,6	2	2	295	290	140	1/2	4
20	3	3	400	392	178	5/8	5
30	4	4	565	554	203	3/4	6
40	6	6	770	755	229	7/8	7
51	8	8	1 020	1 000	254	1	8
66	10	10	1 270	1 250	267	1 1/8	9
81	13	13	1 590	1 560	292	1 1/4	10
97	15	15	1 910	1 880	318	1 3/8	11
116	18	18	2 270	2 230	356	1 1/2	12
135	21	21	2 720	2 670	381	1 5/8	13
157	25	24	3 180	3 120	406	1 3/4	14
205	30	29	4 060	3 980	457	2	16
260	40	39	5 080	4 980	521	2 1/4	18
320	50	49	6 350	6 230	571	2 1/2	20
384	60	59	7 620	7 470	610	2 3/4	22
460	70	69	9 140	8 960	686	3	24
630	95	93	12 200	12 000	787	3 1/2	28
820	120	118	15 700	15 400	914	4	32
1 040	150	147	19 300	19 000	1 016	4 1/2	36
1 280	180	176	23 900	23 500	1 143	5	40
1 550	215	210	28 400	27 900	1 270	5 1/2	44
1 850	250	240	33 500	32 900	1 372	6	48
2 150	295	290	39 100	38 400	1 498	6 1/2	52
2 510	335	330	44 700	43 900	1 600	7	56
2 880	385	380	49 800	48 900	1 727	7 1/2	60
3 280	430	420	57 900	56 800	1 829	8	64
4 150	540	530	72 100	70 700	2 057	9	72
5 120	660	650	88 400	86 700	2 286	10	80
6 140	785	770	106 000	104 000	2 515	11	88
7 360	925	910	125 000	123 000	2 743	12	96

1) The net mass shall be measured under the force indicated in the second column of the table.

2) Circumferences and diameters are given for information only.