भारतीय मानक **IS 14287 : 2023**

Indian Standard

वस्त्रादि — जाल बनाने के लिए पॉलीप्रोपाइलीन बहुतन्तु सुतली — विशिष्टि

(पहला पुनरीक्षण)

Textiles — Polypropylene Multifilament Netting Twines — Specification

(First Revision)

ICS 65.150; 59.080.50

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June 2023 **Price Group 5**

Textile Material for Marine/Fishing Purposes Sectional Committee, TXD 18

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft was finalized by the Textile Material for Marine/Fishing Purposes Sectional Committee and approved by the Textiles Division Council.

Twines are the basic material for making a fishing net. The twines are made of mono, twisted multi-filaments, twisted yarn, braided or wire rope/braided.

This standard was first published in 1995. This revision has been made in the light of experience gained since its publication and to incorporate the following major changes:

a) Requirement for identification of material has been incorporated;
b) Requirement for 'Conditioning of test specimens and atmospheric conditions for testing' have been incorporated;
c) All amendments have been incorporated;
d) Marking clause has been modified; and
e) References to Indian standards have been updated.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*).' The number of significant places retained in the rounded-off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — POLYPROPYLENE MULTIFILAMENT NETTING TWINES — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the constructional details and other requirements of polypropylene multifilament netting twines used in the manufacture of fishing nets.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

3 CONDITIONING OF TEST SPECIMENS AND ATMOSPHERIC CONDITIONS FOR TESTING

3.1 Conditioning of Test Specimens- Prior to the test, the test specimens shall be conditioned to moisture equilibrium in a standard atmosphere at (65 ± 2) percent relative humidity and 27 ˚C ± 2 ˚C temperature (*see also* IS 6359), unless otherwise provided for in an agreement between the buyer and the seller.

3.1.1 When the test specimens have been left in the standard atmosphere for 24 h in such a way as to expose, as far as possible, all portions of the specimens to the atmosphere, they shall be deemed to have reached moisture equilibrium.

3.2 All tests shall be carried out in standard atmospheric conditions (*see* **3.1**), unless otherwise provided for in an agreement between the buyer and the seller.

4 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5508 (Part 1) and IS 5508 (Part 10) shall apply.

5 MANUFACTURE

5.1 Yarn

Multifilament Polypropylene yarn having a minimum tenacity of 0.41 N/tex (4.5 g/denier) shall be used in the manufacture of twines. The approximate count of yarn shall be 21 tex (190 D), 42 tex (380 D), 63 tex (570 D), 84 tex (760 D) or 126 tex (1 140 D), as indicated in Table 1 subject to tolerance of ± 4 percent. The number of filaments in the yarn shall be so chosen that the twines comply with the requirements of this specification. A filament count of approximately 0.6 tex to 0.7 tex may be adopted.

5.2 Twine

The twine and its constituents shall be evenly and uniformly twisted together. The basic yarn used for marking twine may have a nominal holding twist.

6 REQUIREMENTS

6.1 Fibre Identification

The material of twine that is polypropylene filament shall be identified by the confirmatory test as specified in IS 667.

6.2 The twines shall comply with the construction details and other requirements specified in Table 1.

Table 1 Requirements of Polypropylene Multifilament Netting Twines
(*Clause* 6.2)

Sl No.	Runnage, m/kg, Tolerance ± 5	Construction Details		Turns/meter, *Min* (for Guidance only)		Breaking Load, (N) *Min*	Elongation at Break, Percent, *Max*
				Strand	Twines		
(1)	(2)	(3)		(4)	(5)	(6)	(7)
i)	20 000	21 tex × 1 × 2	(190 d × 1 × 2)	750	450	17.0	30.0
ii)	13 300	21 tex × 1 × 3	(190 d × 1 × 3)	750	360	25.0	
iii)	10 000	21 tex × 2 × 2	(190 d × 2 × 2)	570	350	34.0	
iv)	6 665	21 tex × 2 × 3	(190 d × 2 × 3)	530	260	50.0	
		42 tex × 1 × 3	(380 d × 1 × 3)				
v)	4 440	21 tex × 3 × 3	(190 d × 3 × 3)	445	240	75.5	
		63 tex × 1 × 3	(570 d × 1 × 3)				
vi)	2 220	21 tex × 6 × 3	(190 d × 6 × 3)	330	190	150.0	
		42 tex × 3 × 3	(380 d × 3 × 3)				
		63 tex × 2 × 3	(570 d × 2 × 3)				
		126 tex × 1 ×3	(1 140 d × 1 × 3)				
vii)	1 475	21 tex × 9 × 3	(190 d × 9 × 3)	290	160	226.0	35.0
		63 tex × 3 × 3	(570 d × 3 × 3)				
viii)	1 110	21 tex × 12 × 3	(190 d × 12 × 3)	285	145	300.0	
		42 tex × 6 × 3	(380 d × 6 × 3)				
		63 tex × 4 × 3	(570 d × 4 × 3)				
		84 tex × 3 × 3	(760 d × 3 × 3)				
		126 tex × 1 × 3	(1 140 d × 1 × 3)				
ix)	880	21 tex × 15 × 3	(190 d × 15 × 3)	255	135	378.0	
		63 tex × 5 × 3	(570 d × 5 × 3)				
x)	740	21 tex × 18 × 3	(190 d × 18 × 3)	235	125	453.0	
		42 tex × 9 × 3	(380 d × 9 × 3)				
		63 tex × 6 × 3	(570 d × 6 × 3)				
		126 tex × 3 × 3	(1 140 d × 3 × 3)				
xi)	550	21 tex × 24 × 3	(190 d × 24 × 3)	175	95	603.0	
		42 tex × 12 × 3	(380 d × 12 × 3)				
		63 tex × 8 × 3	(570 d × 8 × 3)				
		84 tex × 6 × 3	(760 d × 6 × 3)				
		126 tex × 4 × 3	(1 140 d × 4 ×3)				
Method of Test	Annex B	___	___	IS 5815 (Part 3)		IS 5815 (Part 4)	IS 5815 (Part 7)

7 SAMPLING

7.1 Lot

The quantity of netting twine of the same runnage and construction details delivered to the buyer against one dispatch note shall constitute a lot.

7.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of tests carried out on the sample selected from it.

7.3 Unless otherwise agreed to between the buyer and the seller, the number of cheeses/packs to be selected from a lot shall be as given below:

Lot Size	*Sample Size*
Up to 100	3
101 to 300	4
301 to 500	5
501 to 1 000	7
1 001 and above	10

7.4 The cheeses or packs selected according to **7.3** shall be tested for length, breaking load and elongation at break.

7.5 Criteria for Conformity

The lot shall be declared as conforming to the requirements of this standard if the following conditions are satisfied:

a) From the test results for length and breaking load, the average ($\bar{X}$) and the range (R) shall be determined and the value of expression $\bar{X} - 0.4\,R$ shall not fall below the maximum value specified; and

b) From the test results for elongation at break, the average ($\bar{X}$) and the range (R) shall be determined and the value of expression $\bar{X} + 0.4\,R$ shall be less than the specified limit.

8 PACKING

8.1 The Twines shall be made into hanks or cheeses as required by the buyer. In case of hanks, a suitable number of hanks of mass agreed between the buyer and the seller shall be made into pack or a bundle. A convenient number of cheeses or packs shall be placed one over the other and wrapped with a layer of waterproof packing material, such as waterproof packing paper (*see* IS 1398) or polyethylene film. These shall then be tied with twine of adequate strength and a suitable number shall be packed in a cardboard box or wooden packing case lined with layer of waterproof packing paper. If necessary, the voids may be stuffed with cushioning material to avoid damage in transit. The cardboard box or wooden packing case shall have adequate strength to bear normal hazard of transport and handling and shall be bound by box strappings.

9 Marking

9.1 The hanks or cheeses containing twines shall be marked with the following information:

a) Name of the material;
b) Lot Number;
c) Runnage;
d) Net mass;
e) Month and year of manufacture;
f) Indication of source of manufacture; and
g) Any other information required by the law in force and/or by the buyers.

9.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 667 : 1981	Methods for identification of textile fibres (*first revision*)
IS 1398 : 1982	Specification for packing paper, waterproof, bitumen-laminated (*second revision*)
IS 5508 (Part 1) : 2020	Guide for fishing gear: Part 1 General (*first revision*)
IS 5508 (Part 10) : 2015	Guide for fishing gear: Part 10 Seer gillnet (*first revision*)
IS 5815 (Part 3) : 2021	Textiles — Fishing gear materials — Methods of test: Part 3 Determination of twist (*first revision*)
IS 5815 (Part 4) : 2018	Methods of test for fishing gear materials: Part 4 Fishing nets — Determination of breaking force and knot breaking force of netting yarns (*second revision*)
IS 5815 (Part 7) : 1993	Fishing nets — Determination of elongation of netting yarns (*first revision*)
IS 6359 : 2023	Method for conditioning of textiles (*first revision*)

ANNEX B

(*Table* 1)

METHOD FOR DETERMINATION OF RUNNAGE

A-1 TEST SPECIMENS

Remove 10 m length skeins from each of the hank or cheese constituting the sample under test.

A-2 PROCEDURE

Determine the mass of a skein removed from a hank or cheese to the nearest gram. From the mass compute the runnage (m/kg).

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Textile Material for Marine/Fishing Purposes Sectional Committee, TXD 18

Organization	*Representative(s)*
Central Institute of Fisheries Technology (ICAR-CIFT), Kochi	DR M. P. REMESAN **(*Chairperson*)**
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The Marine Products Export Development Authority, Kochi	DR M. K. RAMMOHAN SHRI A. SAKTHIVEL (*Alternate*)
The Synthetic & Art Silk Mills' Research Association, Mumbai	SHRIMATI ASHWINI A. SUDAM SHRI RAVI SINGH (*Alternate*)
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