

वस्त्रादि — उच्च घनत्व पॉलीएथिलीन
मोनोफिलामेंट (एचडीपीई) एकतंतु
मच्छरदानी, गोल जाली — विशिष्टि
(दूसरा पुनरीक्षण)

**Textiles — High Density
Polyethylene (HDPE) Monofilament
Mosquito Netting, Round Mesh —
Specification**

(Second Revision)

ICS 59.080.30

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textiles Protective Clothing Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1981 and was subsequently revised in 1996. This revision has been brought out in the light of experience gained since last revision and to incorporate the following major changes:

- a) Method for identification of polyethylene has been incorporated in the standard;
- b) Packaging clause has been modified;
- c) Marking clause has been updated;
- d) Method of test for count of yarn has been incorporated; and
- e) References to Indian Standard given in [Annex A](#) has 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 — HIGH DENSITY POLYETHYLENE (HDPE) MONOFILAMENT MOSQUITO NETTING, ROUND MESH — SPECIFICATION

(*Second Revision*)

1 SCOPE

1.1 This standard prescribes constructional details and other requirements of HDPE monofilament mosquito netting, round mesh.

1.2 This standard does not specify the general appearance, feel, shade, etc, of the netting.

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 edition of these standards.

3 MANUFACTURES

3.1 Yarn

The monofilament yarn used for the manufacture of the netting shall be made out of HDPE of designation HDPE LAN A50 T012, or HDPE LAN A57 T012, or HDPE LAN A50 T022 or HDPE LAN A57 T022 according to IS 7328. However, the density of the material used shall not be more than 955 kg/m³ at 27 °C and the melt flow rate (MFR) - 190/50 of the material shall be between 1.3 g/10 min to 2.4 g/10 min. The filament shall be uniform and reasonably free from defects.

3.2 Netting

The shade of the netting shall be as agreed to between the buyer and the seller and the netting shall be free from knitting and other defects.

4 REQUIREMENTS

4.1 Construction

The netting shall comply with the requirements

specified in [Table 1](#). The linear density of filament is given for guidance only.

4.2 Colour Fastness

The colour fastness rating of netting shall comply with the requirements specified in [Table 2](#).

4.3 The polyethylene in the monofilament mosquito netting shall be identified by the method prescribed in IS 667.

5 MARKING

5.1 The netting shall be marked with the following:

- a) Name of the material;
- b) Width and length of the piece;
- c) Source of manufacture; and
- d) Year of manufacture

5.2 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.

6 PACKING

Each roll or bundle of mosquito netting shall be packed in low density polyethylene film of 60 gm thickness (150 gauge) or any other suitable material as agreed to between the buyer and the seller. The rolls or bundles shall again be packed in bales or cases. The packaging shall be roadworthy, airworthy and seaworthy.

Table 1 Particulars of HDPE Monofilament Mosquito Netting, Round Mesh

(Clause 4.1)

SI No.	Linear Density of Filament	Number of Holes per cm ²	Mass, g/m ²	Bursting Strength, <i>Min</i> N (or kgf/m ²)	Width, cm	Length, m
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	18 tex to 19 tex (or 160 denier to 170 denier)	16 to 20	80 percent ± 5 percent	83 (or 8.5)	122 or as agreed ± 1	As agreed
Method of Test	IS 3442	Annex B	IS 1964	IS 1966 (Part 1)		IS 1954

Table 2 Colour Fastness

(Clause 4.2)

SI No.	Colour Fastness Rating	Requirement	Method of Test
(1)	(2)	(3)	(4)
i)	Light (change in colour), <i>Min</i>	5	IS/ISO 105-B01 or IS/ISO105-B02
ii)	Washing, test 2 (change in colour and staining), <i>Min</i>	4	IS/ISO 105-C10

7 SAMPLING**7.1 Lot**

The number of pieces of mosquito netting delivered to a buyer against one despatch note shall constitute a lot.

7.2 For assessing the conformity of the lot to the

requirements of the standard, the samples as given in [Table 3](#) shall be drawn at random from the lot for inspection. To ensure the randomness of selection, methods given in IS 4905 shall be followed.

7.3 The lot shall be considered as conforming to the requirements of this standard if all the samples meet the requirements specified in the standard.

Table 3 Sample Size

(Clause 7.2)

SI No.	Number of Pieces in the Lot	Number of Pieces to be Inspected for		
		Length, Width and Number of Holes	Mass and Bursting Strength	Colour Fastness
(1)	(2)	(3)	(4)	(5)
i)	Up to 100	8	3	2
ii)	101 to 150	13	5	2
iii)	151 to 300	20	5	2
iv)	301 and above	32	8	3

ANNEX A

(Foreword and Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS/ISO 105-B01 : 2014	Textiles — Tests for colour fastness: Part B01 Colour fastness to light: Daylight	IS 1966 (Part 1) : 2022/ISO 13938-1 : 2019	Textiles — Bursting properties of fabrics: Part 1 Hydraulic method for determination of bursting strength and bursting distension (<i>third revision</i>)
IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test	IS 3442 : 2023	Textiles — Method for determination of crimp and linear density of yarn removed from fabric (<i>second revision</i>)
IS/ISO 105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda	IS 4905 : 2015/ISO 24153 : 2009	Random sampling and randomization procedures (<i>first revision</i>)
IS 667 : 1981	Methods for identification of textile fibres (<i>first revision</i>)	IS 7328 : 2020	Specification for polyethylene material for moulding and extrusion (<i>third revision</i>)
IS 1954 : 2024/ ISO 22198 : 2006	Textiles — Fabrics — Determination of width and length (<i>third revision</i>)		
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per unit area of fabrics (<i>second revision</i>)		

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ANNEX B

(Table 1)

MEASUREMENT OF NUMBER OF HOLES

B-1 APPARATUS

B-1.1 Template

- a) A metal plate of about 0.5 mm thickness with a square hole of 2 cm × 2 cm cut accurately in the centre.

or

- b) A rigid transparent plastic sheet with a square of 2 cm × 2 cm marked in the centre.

B-2 METHOD

Lay the netting flat without stretching on a flat surface of contrast colour. Count the number of holes in the square marked on/cut in the template in such a way that holes of more than half in size are counted as full hole and holes which are less than half in size are ignored. Divide the number of holes thus counted by 4. Count the number of holes at 5 different places and calculate the average.

ANNEX C

(Foreword)

COMMITTEE COMPOSITION

Textiles Protective Clothing Sectional Committee, TXD 32

<i>Organization</i>	<i>Representative(s)</i>
Northern India Textile Research Association, Ghaziabad	DR ARINDAM BASU (<i>Chairperson</i>)
Aeronav Industrial Safety Appliances, Noida Arvind Limited, Ahmedabad	SHRI SANDEEP HORA SHRI PABITRA SAHOO SHRIMATI PALAK KAKKAR (<i>Alternate</i>)
Avient Protective Materials Limited, Pune	SHRI HARSH WARDHAN SHARMA SHRI RAKESH GAIKWAD (<i>Alternate</i>)
Border Security Force, New Delhi	SHRI SATISH CHANDRA SHRI TARUN RAVI (<i>Alternate</i>)
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Indian Institute of Technology Delhi, New Delhi	PROF ABHIJIT MAJUMDAR DR BIPIN KUMAR (<i>Alternate</i>)

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Indo Tibetan Border Police, New Delhi	SHRI M. KUMAR SHRI UTTAM KUMAR (<i>Alternate</i>)
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National Forensic Sciences University, Gandhinagar	SHRI S. K. KHANDELWAL SHRI SAURABH KUMAR (<i>Alternate</i>)
National Security Guard, New Delhi	SHRI MANU LOCHAB
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