



उत्पाद मैनुअल
Textiles – Polyester or polyamide mosquito nets – Specification

IS 14953:2006 के अनुसार

PRODUCT MANUAL
FOR Textiles – Polyester or polyamide mosquito nets – Specification
ACCORDING TO IS 14953:2006

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	उत्पाद Product	: IS 14953:2006
	शीर्षक Title	: Textiles – Polyester or polyamide mosquito nets – Specification
	संशोधनों की संख्या No. of amendments	: NIL
2.	नमूना दिशानिर्देश Sampling Guidelines	
a)	कच्चा माल Raw material	The nettings shall be made from Polyamide (Nylon 6 or Nylon 6.6) multifilament yarns of 40 denier for Variety 1 and polyester multifilament yarns of 75 denier for Variety 2 or 100 denier for Variety 3. The denier of multifilament yarns as specified above shall be within +10 percent tolerance. The reinforcement at bottom, tying loops shall also be made of the same materials. The stitching shall be made by using spun polyester sewing thread of matching shade conforming to Table 2. Conformity of materials shall be established through test certificate of supplier or test reports of BIS recognized/empaneled labs, other accredited labs, or in

			house testing or combination thereof
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer Annex-A
c)	नमूने का आकार Sample Size	:	2 mosquito nets
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	a) Manufacture and Workmanship (Clause 4) b) No. of holes (Clause 3.2, Table 1) c) Bursting Strength (Clause 3.2, Table 1) d) pH Value (Clause 3.2, Table 1)		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 14953:2006 with the following scope:		
	Name of the product	Polyester or polyamide mosquito nets	
	Variety of Netting	Variety 1/Variety 2/Variety 3	
	Type of mosquito nets	Single/Double/Family/X-Family	
	Flame resistance (optional)	With/without flame resistance	

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ANNEX-A

GROUPING GUIDELINES

For grant of licence/change in scope of licence, following grouping guidelines shall apply:

1. Samples of mosquito nets made of each variety of netting (Variety 1/2/3) shall be tested to cover the respective varieties
2. Samples of mosquito nets of each type (Single/Double/Family/X-Family) shall be tested to cover the respective types
3. In case flame resistance (optional requirement) is intended to be covered in the scope of licence, the sample(s) shall also be tested for flame resistance.
4. The Scope of Licence may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
5. During the operation of the Licence, BO shall ensure that all the Varieties covered in the Licence are tested in rotation to the extent possible

ANNEX – B

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

SI No.	Tests used in with Clause Reference	Test Equipment
1	Identification of fibers(Clause 3.1.2)	- Phenol - m cresol -
2	Dimension &Mass (No. of holes along base), (Bursting Strength) (Clause 3.2) (Table – 1)	- Scale Steel - Measuring Tape - Humidity Chamber - Right Angle (T Square) - Weighing Bottle - Table for testing - Bursting strength equipment - Pressure Gauge - Weighing Balance0.001 - Scissor - Knife - Square of 250 x 250mm - Oven
3	(pH Value) (Clause 3.2) (Table – 1)	- pH Meter - Weighing Balance - Beaker - Standard Buffer Tablet - Magnetic Stirrer - Potassium Chloride - Potassium Hydrogen Phosphate - Dipotassium Hydrogen Ortho Phosphate - Distilled water - Buffer solu 4, 7 &9 - Glass Rod
4	(Water Soluble Percent) (Clause 3.2) (Table – 1)	- Weighing Balance - Weighing Bottle - Hot Air Oven - Reflux Condensor - Distilled water conforming to IS 1070 - Potassium Chloride - Water Cooled Condensor - Conditioning chamber

5	(Color Fastness) (table 1cl 3.2) , (table 2, cl 4.4) Colour fastness to light IS/ISO 105-B01/ 105 –B02	- Blue wool standard 1-8 - Exposer rack - Opaque card board - Grey scale - Colour matching lamps - Assessment cabinet - Xenon arc lamp chamber - Glass Stoppered Bottle -
6	(Colour fastness to washing) IS/ISO105 – N01 (Clause 3.2) (Table – 1)& (Clause 4.4) (Table -2)	- Glass Stoppered Bottle - Stainless steel ball 6 mm dia - Soap Solution as per Cl 5.1 of IS/ISO 105-C10 - Mechanical Stirrer 1000 rpm - Adjacent Fabric - Grey Scale - Laundering Device (Washing Machine) - Grade 3 water
7	(Tenacity) (Clause 4.4) (Table -2)	- Scale Steel - Humidity chamber - Weighing Bottle - Table for testing - Tensile Testing machine - Scissor - Knife - Square of 250 x 250mm
8	(Elongation) (Clause 4.4) (Table -2)	- Weighing Balance - Humidity Chamber - Weighing Bottle - Hot Air Oven - Water tight tray or container - Glass sheet 600 x 600mm - Sodium Hexa Meta Phosphate - Towel
9	(Residual Shrinkage) (Clause 4.4) (Table -2)	- Weighing Balance - Weighing Bottle - Hot Air Oven - Potassium Iodide - Conical Flask - Reflux Condensor - Pipette - Volumetric Flask - Potassium Dichromate - Sulphuric Acid - Ferrous Ammonium sulphate

		- Phenyl Antranilic acid - Filter Paper - Acetic Acid - Funnel
10	Dimensions (Clause 5.2) (Table – 3)	- Scale Steel - Measuring Tape - Humidity Chamber - Right Angle (T Square) - Table for testing - Scissor - Knife
11	Colour Shade (Clause 5.3)	- Grey Scale
12	(Flame Resistance) (Clause 5.5) (Table – 4)	- Flammability test apparatus as per IS 11871
13.	Glass ware & other	- Flat bottom flask - Volumetric flask 25 ml , 50ml,100ml , 200ml , 250 ml, 500ml , 1000ml - Thermohygrometer - Stop watch - Glass thermometer - Hot plate - Graduated pipette 1ml, 5 ml, 10 ml - Beaker 50 ml, 100ml, 250 ml, 500ml, 1000ml - Conical flask 50ml, 250ml, 500ml - Vacuum filtration assembly - Spatula - Hand gloves - Filter paper

The list above is indicative only and may not be considered as exhaustive

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. **LABORATORY-** A laboratory shall be maintained, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the method given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipment.

2. **TEST RECORD-** The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. **PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on the cloth label attached to each mosquito net and also on the package containing the net(s) provided always that the material so marked conforms to each requirement of the specification.

3.2 Packing and Marking shall be done as per the requirements of the standard. In addition, the following shall be marked on the label or on the package:

a) BIS licence number and "For BIS certification details please visit www.bis.gov.in"

5. **CONTROL UNIT-** For the purpose of this scheme, entire quantity of mosquito nets made from the same variety of netting and of the same type, manufactured under similar conditions in a week, shall be taken as one control unit.

6. **LEVELS OF CONTROL :-** The tests as indicate in Table 1 and at the levels of controls in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with paragraph 2 above.

6.1 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

7. **REJECTION** - Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3.1	Material of netting		IS 14953 : 2006 / IS 7703 (Part1) / IS 667	S	1	Each Consignment	No further testing is required if accompanied with Test Certificate from supplier
3.2	Requirement of netting as per Table 1	Table 1	IS 14953 : 2006	R	1	Each control unit	
i.	Width		IS 1954	R	1	-do-	
ii.	Mass, g/cm2		IS 1964	R	1	-do-	
iii.	No. of holes along base plus bias	Annex A	IS 1431	R	1	-do-	
iv.	Bursting Strength		IS 1966	R	1	-do-	

v.	pH Value		IS 1390	R	1	-do-	
vi.	Water soluble matter		IS 3456	R	1	-do-	
vii.	Colour fastness to washing		IS 764	R	1	-do-	
viii.	Colour fastness to light		IS 2454	S	1	Once in six months	
4	Manufacture and Workmanship						
4.1	Wall and Top		IS 14953		Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.2	Reinforcement at Bottom		IS 14953		-do-		
4.3	Tying Loops		IS 14953		-do-		
4.4	Stitching		IS 14953				

i)	Type of stitching and number of stitches per dm		IS 14953	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
ii)	Material of sewing thread		IS 14953	S	1	Each consignment	No further testing is required if accompanied with Test Certificate from supplier
Table 2	Requirement of Sewing threads used for stitching nets						
i.	Tenacity		IS 7703 (Part 2)	S	1	Each consignment	
ii.	Elongation at break		IS 7703 (Part 2)	S	1	-do-	
iii.	Residual Shrinkage at 150°C	A-3	IS 9543	S	1	-do-	
iv.	Colour fastness rating (applicable to coloured threads only) a) Light b) Washing: Test 3 1) Change in colour 2) Staining of Adjacent fabrics		a) IS/ISO B02 : 2014 b) IS/ISO 105-F04 : 2001	S	1	Once in six months or whenever there is a change in source of material	
5	Netting Requirements						
5.1	General Make up	Fig. 1	IS 14953 : 2006	R	Firm to have adequate in-process controls to check compliance of this parameter as per the		

					tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity	
5.2	Dimensions	Table 3	IS 1954	R	-do-	
5.3	Colour and Shade	Table 3	IS 1954	R	-do-	
5.4	Joined Nets	Table 3	IS 1954	R	-do-	
5.5	Flame Resistance	Method A	IS 11871	S	As agreed between purchaser and supplier	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.