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उत्पाद मैनुअल
वस्त्रादि — सतत बहुतंतु पॉलीप्रोपाइलीन के धागे
IS 18892: 2024 के अनुसार

PRODUCT MANUAL
FOR Textiles — Continuous Multifilament Polypropylene Yarns
ACCORDING TO IS 18892: 2024

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता 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 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 18892: 2024
	शीर्षक Title	:	Textiles — Continuous Multifilament Polypropylene Yarns
	संशोधन संख्या No. of Amendments	:	NIL
2.	नमूनाकरण दिशानिर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	No Specific Requirement Note: This section indicates the requirements for raw material(if specified in the IS)for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.
b)	समूहिकरण दिशानिर्देश Grouping guidelines	:	Please refer to Annex-A
c)	नमूने का परिमाण Sample Size	:	05 kg approx. in 03 bobbins

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	i. Type of Yarn ii. Dyeing Method iii. Linear Density iv. Optional Requirements: - Flame Retardant/Non-Flame Retardant - Ultra Violet light Resistant/ Non-Ultra Violet light Resistant Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-B
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day:		
	- Linear Density (Denier) (Clause 4.1 and Table 1) - No. of Filaments (Clause 4.1 and Table 1) - Tenacity and Yarn Elongation at Break (Clause 4.1 and Table 1) - Twist per metre (Clause 4.1 and Table 1) - No. of nips per meter (Clause 4.1 and Table 1) - Boiling water Shrinkage (Clause 4.1 and Table 1) - Hot air shrinkage (Clause 4.1 and Table 1) - Unevenness of yarn (Clause 4.1 and Table 1) - Moisture Regain (Clause 4.1 and Table 2) - Colour Strength for Dope Dyed Yarn (Clause 4.1 and Table 2) - Freedom from yarn defects (Clause 4.2) - Commercial Mass (Clause 4.1) - Identification and description (Clause 4.4)		
6.	लाइसेंस का कार्यक्षेत्र/ Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 18892:2024 with the following scope:		
	उत्पाद का नाम Name of the product		Textiles — Continuous Multifilament Polypropylene Yarns
	Type of Yarn		Flat/Twisted/Intermingled
	Dyeing Method		Dope Dyed/ Undyed
	Declared Values (range) of		Linear Density
	Optional Requirement		- Flame Retardant/Non-Flame Retardant - Ultra Violet light Resistant/ Non-Ultra Violet light Resistant

ANNEX A

GROUPING GUIDELINES

1. Based on the classification and identification of the product, the following grouping guidelines shall apply for Grant of Licence and Change in Scope of Licence:
 - i. The sample of each type of Yarn (Flat/Twisted/Intermingled) shall be drawn and tested to cover the same in the scope of licence.
 - ii. If sample of twisted or intermingled yarn is drawn and tested, flat yarn may also be covered.
 - iii. The range of values of linear density of Continuous Multifilament Polypropylene Yarn intended to be covered in the scope of licence shall be declared by the manufacturer. One Sample of Continuous Multifilament Polypropylene Yarn of any declared value of Linear Density shall be drawn and tested to cover the entire range of linear density values intended to be covered in the scope of licence
 - iv. The standard cover Dope dyed and undyed variety. If the dope dyed is drawn and tested, undyed may also be covered in the scope of licence.
 - v. Scope of licence shall be restricted based on the manufacturing and testing facilities available.
 - vi. During operation of licence, samples of each variety covered in the scope of licence, shall be tested in rotation, to the extent possible

ANNEX B

List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment/Chemical
1.	Linear density, Clause 4.1 and Table 1	• Weighing Balance (L.C.- 0.1 mg) • Drying Oven (105 ± 3 °C, L.C. 1°C) • Desiccator with a suitable desiccant • Sealed Containers • Wrap Reel
2.	No. of filaments, Clause 4.1 and Table 1	Microscope
3.	Tenacity(gpd) and Elongation at Break, Clause 4.1 and Table 1	Tensile Strength Testing Machine either of CRT, CRL or CRE type, with clamps to grip the sample and means for adjusting the distance between the clamps and for application of pre-tension.
4.	Twist per metre, Clause 4.1 and Table 1 (for twisted yarn only)	• Twist counting device • Dissecting needle • Magnifying glass
5.	Number of nips per meter, Clause 4.1 and Table 1 (for Intermingled yarn only)	Determination of Interlace in Filament Yarn by Needle Insertion Method: • Automatic needle pull entanglement tester, Rapid Automatic Pin Insertion Detector and automatic yarn entanglement tester • Conditioning Chamber • Standard Laboratory weights Or Optical Scanning Principle Method: • Nips Stability Tester Or Determination Of Interlace of Filament Yarn in Nips Per Meter by Water Bath Method: • Water bath with hooks at both ends for tying the yarn. • One meter stainless steel scale with 1 mm least count
6.	Boiling water shrinkage, Clause 4.1 and Table 1	• Hot Water Bath with capacity to completely immerse the magazine. • Magazine to hold the hanks/skeins. • Weights of 50 g to 500 g.

		- Stainless Steel Scale of one metre length - Wrap reel to prepare skein. - Metal hooks to take lengths L1 and L2 readings.
7.	Hot Air shrinkage, Clause 4.1 and Table 1	Dry Hot Air Thermal Tester as per Annex F of IS 17264.
8.	Unevenness of linear density (normal), Clause 4.1 and Table 1	- Capacitance type Unevenness testing Instrument (such as Uster unevenness tester) with packing holders, guides, tension devices and take up mechanism, Recorder. - Conditioning Chamber (for 65 ± 2 RH and $27 \pm 2^{\circ}\text{C}$)
9.	Spin finish oil pick-up, Clause 4.1 and Table 2	- Precision Balance (L.C.- 0.1mg) - Stainless Steel Vessels - Conical Flasks - Forceps - Petroleum Ether/Methanol - Soxhlet Apparatus - Bowls
10.	Moisture regain, Clause 4.1 and Table 2	- Precision Balance (L.C- 0.1 mg) - Stainless Steel Vessels - Hot Air Oven Capable of Maintaining at $110 \pm 5^{\circ}\text{C}$ - Forceps - Wrap Reel
11.	Phosphorus Content, Clause 4.1 and Table 2 (for flame retardant Yarn Only)	- Sulphuric Acid 2000ml Beaker - Demineralized Water 1000ml flask - Ammonium Molybdate 500ml and 100ml Volumetric Flask - Hydroquinone - Sodium Sulphite - Zinc Oxide - Whatman Filter Paper No. 1 - Di-sodium Hydrogen Ortho Phosphate Dihydrate - Weighing Balance (LC- 1mg) - Hot Plate - Silica Crucible - Muffle Furnace - Pipettes-10ml and 05ml - UV Spectro-photometer
12.	Ultraviolet resistance, UV-B lamp, 144 h, Clause 4.1 and Table 2	- Fluorescent UV-B lamp - Tensile Testing machine

	(for UV resistant yarn only)	
13.	Colour strength with reference to standard yarn, (for dope dyed yarns only)	• Card Winding Machine with uniform tension control system • Knitting Machine • Colour Spectrophotometer • Card (Aluminium or cardboard) • Clean Cotton Cloth
14.	Colour fastness to light, Clause 4.1 and Table 2 (for dope dyed yarns only)	For Colour Fastness to artificial light (as per IS/ISO 105-B02: 2014 (Superseding IS 2454: 1985)) • Reference materials • Humidity test control fabric • Light Source (xenon arc lamp) • Black-standard thermometer or a black- panel thermometer • Humidity chamber • Covers • Colour matching lamps • Assessment cabinet • Sample mounting card • Assessment mask
15.	Freedom from yarn defects, Clause 4.2	• Packing Table UV Light (Clause 5.2.4 and 5.2.7) • Vernier Calliper
16.	Commercial Mass, Clause 4.3	• Balance/Weighing Instruments (LC- 0.1mg) • Air tight vessels/Desiccator • Hot air oven/Ventilated air oven • Laboratory reagents for Cleaning Specimens
17.	Identification PP Yarns through cross section and dissolution test, Clause 4.4	Microscopic and dissolution test given in IS 667: Compound Microscope (100X-500X), Dissecting Needles, glass slides, cover glasses, and cross sectioning device and laboratory reagents (Cuprammonium Hydroxide, Cyclohexanone, Decalin, 80% H₂SO₄, 100% HNO₃, Acetone, 90% Phenol or m-cresol) as per IS 667. Determination of Melting Temperature as per Annex H of IS 16481: Differential Scanning Colorimeter (DSC), Balance, capable of weighing to $\pm 10 \mu\text{g}$
18.	General Lab Conditioning	Air Conditioner and Humidity chamber with provisions to control temperature and relative humidity. OR Air Conditioner and Conditioning room.

ANNEX C
SCHEME OF INSPECTION AND
TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: the entire quantity of Continuous Multifilament Polypropylene yarn, of each type and variety manufactured under similar conditions in a single day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as "R" or other tests which can be subcontracted as "S". Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as "R" in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each carton/pallet of Continuous Multifilament Polypropylene Yarn, provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each carton/pallet of Continuous Multifilament Polypropylene Yarn:

a) “For BIS certification details please visit www.bis.gov.in”

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

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1 & Table1	Physical Requirements for Polypropylene Fully Drawn Yarn						
i	Linear density	--	IS 7703 (Part 1)	R	At least 06 Bobbins	Each Control Unit	Samples of each type and variety to be drawn and tested.
ii	No. of Filaments	--	Visual	R	06 Bobbins	Each Control Unit	-do-
iii	Tenacity	--	IS 7703 Part 2 (Dry Method)	R	06 Bobbins	Each Control Unit	-do-
iv	Elongation at Break	--	IS 7703 Part 2 (Dry Method)	R	06 Bobbins	Each Control Unit	-do-
v	Twist per Metre (for twisted yarns only)	--	IS 832 (part 1)	R	05 Bobbins	Each Control Unit	-do-
vi	Number of nips per meter	Annex B	IS 17262	R	06 Bobbins	Each Control Unit	-do-
vii	Boiling water Shrinkage	Annex G	IS 17261	R	06 Bobbins	Each Control Unit	-do-
viii	Hot air Shrinkage	Annex F	IS 17264	R	06 Bobbins	Each Control Unit	-do-
ix	Unevenness of yarn	--	IS 7703 (Part 5)	R	06 Bobbins	Each Control Unit	-do-

4.1 & Table 2 Chemical Requirements for Polypropylene Fully Drawn Yarn							
i	Spin finish oil pick up	Annex C	IS 17261	R	06 Bobbins	Each Control Unit	Samples of each type and variety to be drawn and tested.
ii	Moisture regain	Annex B	IS 17261	R	06 Bobbins	Each Control Unit	-do-
iii	Phosphorus Content (for fire retardant yarn only)	Annex D	IS 17261	R	06 Bobbins	Each Control Unit	-do-
iv	Ultraviolet resistance, UVB lamp, 144 h (for UV resistant yarn only)	Annex F	IS 16481	S	06 Bobbins	Once in a month	-do-
v	Colour strength with reference to standard yarn, percent (for dope dyed yarns only)	Annex E	IS 17261	R	06 Bobbins	Each Control Unit	Sample of each type and variety to be drawn and tested but Either of the requirements indicated at v) and vi) needs to be complied with
vi	Colour difference with reference to standard yarn, measured as ΔE , (for dope dyed yarns only)	--	IS 17261	R	06 Bobbins	Each Control Unit	Sample of each type and variety to be drawn and tested but Either of the requirements indicated at v) and vi) needs to be complied with
vii	Colour fastness to light (for dope dyed yarns only)	--	IS/ISO 105-B02	S	06 Bobbins	Once in 6 months Or Whenever there is change in raw material.	Samples of each type and variety to be drawn and tested.
4.2	Freedom from yarn defects	CI 4.2	IS18892	R	All Bobbins	Each Control Unit	-do-
4.3	Commercial Mass,	CI 4.3	IS 7703 (Part 3)	R	06 Bobbins	Each Control Unit	-do-

4.4	Identification and Description	CI 4.4	IS 18892 / IS 667	S	06 Bobbins	Each month	In addition, each consignment of raw material shall be accompanied by test certificate of supplier.
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