**PM/17265/9**
**January 2025**

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# उत्पाद मैन्युअल
# वस्त्रादि - 100 प्रतिशत पालिएस्टर कते हुये कोरा एवं सफ़ेद धागे - विशिष्टि
# IS 17265:2023 के अनुसार

# PRODUCT MANUAL
# FOR Textiles - 100 Percent Polyester Spun Grey and White Yarns - Specification ACCORDINGTO IS 17265:2023

**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 uniformity 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.**

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| 1. | मानक संख्या<br>**IS No.** | : | IS 17265: 2023 |
| | शीर्षक<br>**Title** | : | Textiles - 100 Percent Polyester Spun Grey and White Yarns - Specification |
| | संशोधनों की संख्या<br>**No. of amendments** | : | 02 |
| 2. | नमूना दिशानिर्देश<br>**Sampling Guidelines** | | |
| a) | कच्चा माल<br>**Raw material** | : | The 100 percent polyester spun single spun yarns shall be manufactured from polyester staple fibre conforming to IS 17263.<br>(No testing is required if the polyester staple fibre is ISI Marked)<br><br>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) | समूहीकरण दिशानिर्देश<br>**Grouping Guidelines** | : | Please refer Annex-A |

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| c) | **नमूने का परिमाण**<br>**Sample Quantity** | : | 2 kg of yarn in cone. For Yarn faults-6 cones x 600gOther physical parameter: Each 10 cones x 300g<br><br>Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market) |
| 3. | **परीक्षण उपकरणों की सूची**<br>**List of Test Equipment** | : | Please refer to Annex-B |
| 4. | **निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing** | : | Please refer to Annex-C |
| 5. | **एक दिन में संभावित परीक्षण**<br>**Possible tests in a day** | | |
| | a) Mean linear density<br>b) Elongation, percent, average<br>c) Average Single yarn tenacity (RKM)<br>d) Average Count strength product, CSP<br>e) Twist per meter<br>f) Moisture regain<br>g) Unevenness Percent and Imperfections of Yarn<br>h) Objectionable Faults (Classimat Faults)<br>i) Freedom from yarn defects<br><br>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor. | | |
| 6. | **लाइसेंस का दायरा /Scope of the Licence:** | | |
| | "Licence is granted to use Standard Mark as per IS 17265: 2023 with the following scope: | | |
| | **Name of the product उत्पाद का नाम** | | Textiles - 100 Percent Polyester Spun Grey and WhiteYarns |
| | **Type of yarn (Based on no. of folds)** | | Single and/or Double (Two fold) yarn and/or Multifoldyarn |
| | **Type of yarn (based on material and process)** | | Virgin polyester yarn: Ring Spun/Air jet/Air vortex |
| | | | Recycled/blended: polyester Ring Spun/Air jet/Air vortex |
| | **Type of yarn Based on Cross-Section/Construction** | | • Cross sectional view - Circular, Profiled i.e. Triangular, Lobal (Trilobal), Serrated, Oval (beanshaped), Ribbon Like etc.<br>• Cross Sectional Area - Solid or Hollow etc. |
| | | | • Multi Component Fibres – Concentric Cover-<br>• Core,Matrix, Sheath-Core etc. |
| | **Type of Yarn Based on Lustre** | | Full Dull (FD), Semi Dull (SD), Bright (BRT), SuperBright (SBRT), Semi Dull Optically Bright (SDOB), Optically Bright (OB) |

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| | **Type of Yarn Based on Dyeing Method** | • Disperse Dyeable [Conventional Dyeable (COD)/Stock Dyeable (STD/Easy Dyeable (ED)]<br>• Cationic Dyeable (CD)/Easy Dyeable Cationic(EDCD);<br>• Dope Dyed (DD) /Optically White (OW); |
| | **Yarn Linear density range Declared** | In Ne or Tex |
| | **Optional/Additional Requirements** | • Flame Retardant/Non-Flame Retardant;<br>• Anti-Microbial/Non Anti-Microbial;<br>• Ultra Violet light Resistant/Non-UltraViolet light Resistant;<br>• Moisture Management Yarn/Not MoistureManagement Yarn |

**BUREAU OF INDIAN STANDARDS**
**MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,**
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## ANNEX-A

## GROUPING GUIDELINES

The firm shall declare the types of PSY and range of linear density of PSY intended to be covered within the scope of their licence . Based on the classification and identification of Polyester Spun Yarn (PSY), the following grouping guidelines shall apply for Grant of Licence and Change in Scope of Licence

Based on the number of folds, PSY are classified into single, double (two fold) and multifold yarn. Samples of each type of yarn i.e single, double (two fold) and multifold yarn intended to be covered in the scope shall be tested.

Based on the material, PSY are classified into virgin and recycled/blended yarn. Separate samples of virgin and recycled/blended yarn shall be tested. However, the samples may be of any type process i.e. Ring Spun/Air jet/Air vortex based on which the remaining process types may be covered.

Based on linear density range of resultant yarn, PSY shall be classified into five groups as follows

| GROUP | LINEAR DENSITY RANGE OF RESULTANT YARN |
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| Group I | 37 tex or coarser (Up to 16s Ne) |
| Group II | 18.5 tex to below 37 tex (Above 16s Ne to up to 32s Ne) |
| Group III | 12 tex to below 18.5 tex (Above 32s Ne to up to 50s Ne) |
| Group IV | 7.9 tex to below 12 tex (Above 50s Ne to up to 75s Ne) |
| Group V | Below 7.9 tex (Above 75s Ne) |

One Sample of PSY of any Linear Density shall be drawn and tested from each group to cover the entire linear density range in that group intended to be covered in the scope of licence.

One sample of PSY of any type of yarn based on cross section/construction (Cross sectional view, Cross Sectional Area, Multi Component Fibres) shall be tested to cover all types of yarn based on cross section/construction intended to be covered in the licence

However, samples of each type of yarn based on lustre, dyeing method and optional/additional requirements shall be tested to cover the respective types.

The scope of the Licence may be restricted based on the Manufacturing capability and Testing facilities of the manufacturer

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

***(INDICATIVE LIST, FOR GUIDANCE ONLY)***

| Sl. No. | Tests Used In With Clause Reference | Test Equipment/Chemical |
|---|---|---|
| 1 | Identification and Description, Cl. 5.2 | 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 as per IS 667<br>and<br>Determination of Melting Temperature as per Annex H of IS 16481: Differential Scanning Colorimeter (DSC), Balance, capable of weighing to ± 10 µg<br>or<br>Staining Test as per IS 667: Mixture of dyestuffs (e.g. Shirlastain A, Detex, Fibre Stain etc.), Known Dyed Samples |
| 2 | Mean linear density (Count), Cl. 6.1, Table 3 | For the purpose of this test any of the following apparatus may be used depending upon the availability-<br>• Any Special Balance<br>• Pan Balance - capable of measuring to an accuracy of 1 mg.<br>• Wrap Reel — having 1 372 m ( 1.5 yd ) or 1 m girth and capable of reeling known lengths of yarn<br>• Yarn Tensioning Device<br>• Skein Gauge - The sensitivity of the skein gauge shall be sufficient to permit rejection of skeins falling outside ± 0.25percent tolerances. |
| 3 | Twist per metre, Average, Cl. 6.1, Table 3 and ply twist in folded yarn, Cl. 6.2.4 | Twist counter, Dissecting needle, Means for magnifying the specimen being tested., quipment for reeling laboratorysample skeins (optional) as per IS 832 (Part 1)<br>Or<br>Twist counter or twist tester as per IS 832 (Part 2) |
| 4 | Average Single yarn tenacity (RKM) and Elongation, Average , Cl. 6.1, Table 3 | As per IS 1670:1991:- A single-strand tensile testing machine working on one of the following principles: a) Constant-rate-of-traverse ( CRT ), b) Constant-rate-of loading ( CRL ), and c) Constant-rate-of-extension ( CRE ), with clamps to grip the sample and means for adjusting the distance between the clamps and for application of pre- tension Distilled water |

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| 5 | Average Count strength product (CSP), Cl.6.1, Table 3 and lea breaking strength of folded yarn, Cl. 6.2.3 | As per IS 1671: Skein breaking load testing machine working on constant- rate-of-traverse (CRT) principle, with clamps to grip the sample and means for adjusting the distance between the clamps. Wrap-Reel - having a girth of l-372 m (1.5 yd) or 1 m and capable of reeling known length of yarn. Yarn Tensioning Device Skein Gauge - The sensitivity of the skein gauge shall be sufficient to permit rejection of skeins falling outside ± 0.25 percent tolerances. |
| 6 | Yarn hairiness index, Cl.6.1, Table 3 | Hairiness Index tester as per Annex B of IS 17265 |
| 7 | Whiteness index of polyester spun yarn, Cl.6.1, Table 3 | a) Colorimeter instrument;<br>b) Square standard tiles (white, blue, yellow, pink, grey and green) with the instruments;<br>c) Working standard white square plate;<br>d) Pressure device;<br>e) Source of air at 2.10 kg/cm2 ± 0.35 kg/cm2 (regulated);<br>f) Sample holder with glass cover plate and clear plastic disc; and<br>g) Air blender. |
| 8 | Moisture regain (Clause 6.1, Table 4) | - Precision Balance(L.C .... 0.1mg)<br>- Stainless Steel Vessels<br>- Hot Air Oven Capable of Maintaining at 110 ± 5°C<br>- Forceps<br>- Wrap Reel |
| 9 | Isophthalic acid content (Clause 6.1, Table 4) | - PPE's like safety goggles, apron, surgical hand gloves<br>- Gas chromatograph,<br>- capillary column<br>- Dispensette or pipette<br>- Volumetric Flask<br>- Beaker, Funnel, 50ml flask,<br>- Heating Mental<br>- AR grade Dimethyl Isophthalate, Benzyl Alcohol, Chloroform, Isopropyl Titnate, Dimethyl Suburate |
| 10 | Water Soluble Matter (Clause6.1, Table 4) | - Water Cooled Condensor<br>- Distilled Water<br>- Hot Air Oven<br>- Flat Bottom Flasks |

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| 11 | Phosphorus Content(for flame retardant Yarn Only) (Clause 6.1, Table 4) | - Sulphuric Acid<br>- 2000ml Beaker<br>- Demineralized Water<br>- 1000ml flask<br>- Ammonium Molybdate<br>- 500ml and 100ml Volumetric Flask<br>- Hydroquinone<br>- Sodium Sulphite<br>- Zinc Oxide<br>- Whatman Filter Paper No. 1 |
| 12 | UV Resistance(For UV Resistance Yarn Only) Clause 6.1, Table 4) | - Conditioning Chamber<br>- Xenon Arc Type Apparatus equipped with inner and outer borosilicate filter glass<br>- Tensile Testing m/c |
| 13 | Anti-Microbial Activity Value (For anti-microbial yarn only) (Clause 6.2, Table 4) | Apparatus/Equipments as per IS/ISO 20743:-<br>- Spectrophotometer<br>- Incubator<br>- Water baths<br>- Mixer<br>- Stomacher<br>- Clean Bench<br>- Washing Machine<br>- Humidity chamber<br>- Luminescence Photometer<br>- Printing Apparatus<br>- Refrigerator<br>- Freezer<br>- Balance<br>- Filtering Apparatus<br>- Pipette, Vials, Glass Bottles<br>- Petri Dishes<br>- Glass Rod<br>- Anti Bumping Granules<br>- Erlenmeyer Flask<br>- Cutting template<br>- Disposable Plastic Bag<br>- Tweezers<br>- Stainless Steel Cylinders<br>- Metal Wire Basket<br>- Aluminium Foil<br>- Reciprocal Incubation Shaker<br>- Autoclave<br>- Reagents and Culture media as per clause 6<br>- Reference Strains as per clause 7 |
| 14 | Wettability of woven or knitted fabrics (about 150 gsm) made from the yarn, (For moisture management yarns only) | An apparatus consisting of a base on which are fixed:<br>a) an arm which carries:<br>1) a boss holding a small burette which is provided preferably with a metal edge, that is, a tip of external diameter 1.2 mm; and<br>2) a housing containing an electrical lamp.<br>b) a viewing ring which is adjustable for height corresponding to the length of the specimen to be |

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| | | examined.<br>Wooden Embroidery Frame – 15 cm in diameter.<br>Stop-Watch — reading correct to one-tenth of a second..<br>Burette<br>Distilled water |
| 15 | Wicking characteristic of wovenor knitted fabrics (about 150 gsm) made from the<br>yarn, (for moisture managementyarns only) | • Woven fabric made out from 100 percent polyester spun yarns 2/30s Ne, plain weave, 150 g per square meter. Knitted fabric made out from 100 percent polyester spun yarns, 1/30s Ne, single jersey, 150 g per square meter.<br>• Vertical Wicking Apparatus<br>• Measuring Glass Beaker<br>• Measuring Scale<br>• Metallic Clip, about 3g of weight to hold the<br>• specimen straight in water.<br>• Vertical Stand, with clamp and platform<br>• Distilled Water<br>• Conditioning chamber |
| 16 | Resultant count of yarn and CV percentage , Cl. 6.2.2 | Any Special Balance — to indicate the linear density directly when a skein of known length of yarn is placed or hung on one side of the balance<br><br>Pan Balance – capable of measuring to an accuracy of 1 mg<br><br>Wrap Reel — having 1 372 m ( 1.5 yd ) or 1 m girth ( see Appendix B ) and capable of reeling known lengths of yarn.<br><br>Yarn Tensioning Device — an adjustable tensioning device capable of giving a reeling tension that will result in skeins of the specified length when measured on a skein gauge.<br><br>Skein Gauge — a gauge for checking the length of the skein under a load of 0.5 gf/tex ( 5 mN/tex ) and expressing the length as a plus or minus deviation from the nominal length. |
| 17 | Freedom from Yarn Defects(Clause 6.3) | - Packing Table UV Light(Clause 6.3.4 and 6.3.7)<br>- Vernier Calliper<br>- Eye Piece Lens(Clause 5.3.15)<br>- Bottom weights(1g to 15g)<br>- Stop watch |

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| 18 | Yarn Unevenness and Yarn Imperfections (Clause 6.4) | Different types of apparatus are in use for measuring strands made of staple fibres and filament yarns.<br><br>- The apparatus consists of the following elements:<br><br>a) measuring device, featuring: — a condenser assembly suitable for strands of varying linear density; – yarn guiding and pretensioning devices; – an adjustable-speed motor to advance the strand;<br><br>b) signal processing unit, which: — computes and indicates the values of CVu or Uu and may also calculate the variance-length curve and present a graph of the periodic variations of linear density; — also counts the number of imperfections in most instruments. The unit shall be able to operate at the threshold level of +50 %, above which thick places are counted, and the level of -50 %, below which thin places are counted; — reports a reading for neps which shall be a product of the length, expressed in millimetres, of the nep and the percent excess over the average linear density of the yarn (for example, 4 mm·50 %). Levels of +200 % and +280 %, above which neps are counted, shall be available; – other levels (for the three imperfection types) are also usually available;<br><br>c) printer (optional), which provides a plot of the linear density of the strand;<br><br>twisting device for testing untwisted or low-twist filament yarns |
| 19 | Objectionable Faults (Clause 6.5) | • Electronic Measuring Device – A capacitance or optical unit with guide alignment of the yarn in a straight path through the measuring zone.<br><br>• Control Unit — A device that supplies the signal to operate the measuring device, and, also in turn receive the registration signal from the measuring device, stores the information received, responds to this information according to a predetermined setup and outputs computed data at the end of the test.<br><br>• Winder – A power driven take-up device equippedwith a winding drum of uniform diameter and capable of operating at constant take-up speed.<br>• Yarn Tensioning Device — A unit for control of the yarn in the measuring zone so that the yarn travels in a straight path, free from kinks, without stretchingthe yarn |

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| 20 | Commercial Mass, Clause 6.6. | - Balance/Weighing instruments<br>- Air tight vessels/Desiccator<br>- Hot air oven/Ventilated air oven<br>- Laboratory Reagents (for cleaning specimens) |
| 21 | Colour Fastness Properties of PSY | -For Colour Fastness to artificial light (as per IS/ISO 105-B02 : 2014)<br><br>- Reference materials<br>- Humidity test control fabric<br>- Light Source (xenon arc lamp)<br>- black-standard thermometer or a black-panel thermometer<br>- Humidity chamber<br>- Covers<br>- Colour matching lamps<br>- Assessment cabinet<br>- Sample mounting card<br>- Assessment mask<br><br>For Colour fastness to rubbing (as per IS/ISO 105-X12 : 2016)<br><br>- Suitable testing device for determining the colour fastness to rubbing, using a reciprocating straight line rubbing motion and two alternative sizes of rubbing fingers.<br>- Cotton rubbing cloth, desized, bleached, without finish, cut into 50 mm squares (±2 mm) for the finger used<br>- Soft-back waterproof abrasive paper, or grating of stainless steel wire 1 mm in diameter and mesh width about 20 mm<br>- Grey scale, for assessing staining, in accordance with ISO 105-A03<br><br>For Colour Fastness to Washing test 2 (as per IS/ISO 105-C10 : 2006) (optional)<br><br>• Suitable Mechanical Laundering Device<br>• Weighing Balance with LC 0.01 grams<br>• Mechanical Stirrer<br>• Non-Corrodible (Stainless Steel) Balls, 6 mm dia<br>• Hot plate<br>• Polyester & Cotton Fabric<br>• Standard Soap & Anhydrous Sodium Carbonate<br>• Soap Solution |

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| | | • Grade 3 Water<br>• Adjacent Fabric (Multifibre and Two Single Fibre)<br>• Non-Dyeable Fabric<br>• Sewing Machine<br>• Grey Scale for Colour & Staining<br>• Viewing Cabinet<br><br>For Colour Fastness to perspiration (acidic and alkaline) as per IS/ISO105-E04:2008 (optional)<br>- Test Devices as per Clause 4.1 of IS/ISO 105-E04<br>• Oven maintained at (37±2) ºC<br>• Alkaline Solution as per Clause 4.3 of IS/ISO105-E04<br>Acid Solution as per Clause 4.4 of IS/ISO 105- |

## 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 100 Percent polyester spun gray and white yarn, of each type and variety processed 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/package of polyester spun 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/package of polyester spun yarn:

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

3.3 The declared parameters as per Table 3 shall be provided in the form of a technical datasheet by either pasting on the package or provided separately linking it with lot/batch no. on request.

3.4 Instructions for transportation and handling of the material shall also be provided by the manufacturer for proper care of the product.

**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. Non-conforming material shall be clearly identified and labeled as "rejection"and it shall be segregated and stored separately by manufacturers in India. Such rejected material shall be disposed of suitably by manufacturers in India in such a way so as to ensure that there is no violation of provisions of BIS Act,2016 and the applicable Quality Control Order. Appropriate records of such rejection shall be maintained.

**TABLE 1**
***(ONLY FOR GUIDANCE PURPOSE)***

**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 Clause Reference** | | | **No. of Sample** | **Frequency** | **Remarks** |
| 4.1, 4.2 | Cross-Section | 4.1,4.2 | IS 17265 | S | 6 | Each consignment (in case fibre is procured from outside) Or each control unit | Samples of each type and variety to be drawn and tested. |
| 5.2 | Identification and Description | | IS 667, Annex H of IS 16481 | S | 06 Bobbins | Each month | In addition, each consignment of raw material shall be accompanied by test certificate of supplier |
| 6.1 | Physical Requirements of Polyester Spun Yarn (Table 3) | | | | | | |
| 6.1 | Input Material (Polyester Staple Fibre) | | IS 17263 | S | One | Each consignment | No testing is required if PSF is ISI marked |

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| i) | Mean linear density (Count) | | IS 1315 | R | 6 bobbins | Each Control Unit | Samples of each type, variety and each range of density as specified in IS, to be tested |
| ii) | Twist per metre, Average | | IS 832 (Part 1) or IS 832 (Part 2) | R | 6 bobbins | Each Control Unit | Samples of each type, variety and each range of density as specified in IS, to be tested |
| iii) | Average Single yarn tenacity (RKM) | | IS 1670 | S | 6 bobbins | Each month | -do- |
| iv) | Elongation, Average | | IS 1670 | S | 6 bobbins | Each month | -do- |
| v) | Count strength product (CSP), Average | | IS 1671 | R | 6 bobbins | Each Control Unit | -do- |
| vi) | Yarn hairiness index | Annex B | IS 17265 | S | 6 bobbins | Once in 3 months | -do- |
| vii) | Whiteness index of polyester spun yarn | Annex J | IS 17263 | S | 06 bobbins | Once in 3 months | -do- |
| 6.1, Table 4 | Chemical Requirements of Polyester Spun | | | | | | |
| i) | Moisture regain, | Annex C | IS 17265 | R | 2 bobbins | Each Control Unit | Samples of each type and variety to be drawn |
| ii) | Isophthalic acid(IPA) content | Annex C | IS 16481 | S | 06 Bobbins | Each month | -do- |

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| iii) | Water solublematter | | IS 3456 | S | 06 Bobbins | Once in a month | -do- |
| iv) | Phosphorus content(For fire retardant yarn only) | Annex D | IS 17265 | S | 6 bobbins | Once in a month | -do- |
| v) | Ultraviolet resistance, 500 h Percent retained strength (For UV resistant yarn only) | | IS 13162 (Part 2) | S | 6 bobbins | Once in a month | -do- |
| vi) | Anti-microbial activity value (For anti-microbial yarnonly) | | IS/ISO 20743 | S | 6 bobbins | Once in a month | -do- |
| vii) | Wettability of woven or knitted fabrics (about 150 gsm) made from the yarn (For moisture management yarns only) | | IS 2349 | S | 6 bobbins | Once in a month | -do- |
| viii) | Wicking characteristic of woven or knitted fabrics (about 150 gsm) made from theyarn, height in cm, *Min* (for moisture management yarns only) | Annex E | IS 17265 | S | 6 bobbins | Once in a month | -do- |
| 6.2.2 | Resultant count of yarn and CV percentage of resultant count | | IS 1315 | R | 6 bobbins | Each Control Unit | -do- |
| 6.2.3 | Lea breaking strength of folded yarn and CV percentage | | IS 1671 | R | 6 bobbins | Each Control Unit | -do- |
| 6.2.3 | Count strength product of folded | 6.2.3 | IS 17265 | R | 6 bobbins | Each Control Unit | -do- |

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|---|---|---|---|---|---|---|---|
| | yarn | | | | | | |
| 6.2.4 | Tolerance on ply twist in folded yarn | | IS 832 Part 1/IS 832 Part 2 | R | 6 bobbins | Each Control Unit | -do- |
| 6.3 | Freedom from Yarn Defects | 6.3 | IS 17265 | R | Each Bobbins | Each Control Unit | -do- |
| 6.4 | Yarn Unevenness and Yarn Imperfections | | IS 16576 | **S** | 06 Bobbins | Each Control Unit | -do- |
| 6.5 | Objectionable Faults | Annex F | IS 17265 | S | 06 Bobbins | Once in a month | -do- |
| 6.6 | Commercial Mass | | IS 7703 (Part 3) | 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 | | |
| 6.7 | Colour Fastness Properties of PSY | | | | | | |
| i) | Light - Change in colour | | IS/ISO 105-B01 or IS/ISO 105- B02 | S | 06 Bobbins | Once in a Year | Sample of each type and variety to be drawn and tested |

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| ii) | Washing test 2<br>Change in colour<br>Staining (Optional) | | IS/ISO 105-C10 | S | As per agreement between purchaser and manufacturer | |
| iii) | Rubbing<br>a) Dry<br>b) Wet<br>(optional) | | IS/ISO 105-X12 | S | As per agreement between purchaser and manufacturer | |
| iv) | Perspiration (acidic and alkaline) (optional)<br>a) Change in colour<br>b) Staining | | IS/ISO 105-E04 | S | As per agreement between purchaser and manufacturer | |