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**BUREAU OF INDIAN STANDARDS**

*(New Delhi)*

**AGENDA**

**Man-made Fibres, Cotton and their Products Sectional Committee, TXD 31 32nd Meeting**

|  |  |  |
| --- | --- | --- |
| **Date/Day** | **Time** | **Venue** |
| 23 April 2024 | 1100 | Through Video Conferencing |

**CHAIRPERSON: Shri Kartikay Dhanda**

 (Textiles Committee, Mumbai)

**MEMBER SECRETARY:** Shri Mayur Katiyar

**Item 0 WELCOME AND INTRODUCTORY REMARKS BY THE CHAIRMAN**

**Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING**

**1.1** The minutes of the 31th meeting of the committee held on 09 February 2024 through VC were circulated vide BIS Directorate General letter No. TXD 31/A2.31 dated 16 February 2024. The comments received from M/s SGCCI are given in **Annex 1 (P-5 to 7).**

**1.1.1** The committee may **DECIDE**.

**Item 2 COMPOSITION AND SCOPE OF TXD 31**

**2.1** The present scope and composition of the committee is given in **Annex 2 (P-8 to 9).**

**2.1.1** The committee may **DECIDE.**

**2.2** The cooption request received from M/s SGCCI, Surat is given in **Annex 3 (P-10 to 11).**

**2.2.1** The committee may **DECIDE.**

**Item 3 ISSUES ARISING OUT OF THE PREVIOUSMEETING**

**3.1** Summary of actions taken on the various decisions of the previous meetings are given in **Annex 4 (P- 12 to 13)**.

**3.1.1** The committee may **NOTE**.

**Item 4 COMMENTS RECEIVED ON PUBLISHED STANDARDS**

**4.1** The comments received from M/s NITMA, Chandigarh on IS 3566 : 2023 are given in **Annex 5 (P- 14 to 16).**

**4.1.1** The committee may **DECIDE.**

**4.2** The comments received from M/s Shakti Cords Private Limited, Madurai and M/s Sanrhea Technical Textiles Ltd.on IS 17264 : 2022 are given in **Annex 6 (P- 17 to 20).**

**4.2.1** The committee may **DECIDE.**

**4.3** The comments received from Manak Manthan conducted by SUBO on IS 7866 **:** 1983 are given in **Annex 7 (P- 21).**

**4.3.1** The committee may **DECIDE.**

**4.4** The comments received from Manak Manthan conducted by HYBO and Prof. R Rajgopalan, Institution of Valuers India on IS 17265 **:** 2023 are given in **Annex 8 (P- 22 to 26).**

**4.4.1** The committee may **DECIDE.**

**Item 5 DRAFT STANDARDS / AMENDMENTS FOR FINALIZATION**

**5.1** As per the decision of the committee in the 31st meeting, draft amendment to IS 17261 : 2022 was issued under wide circulation for a period of 1 month for eliciting technical comments.

The wide circulation draft is given in **Annex 9 (P- 27).** No comments have been received.

**5.1.1** The committee may **DECIDE.**

**5.2** As per the decision of the committee in the 31st meeting, draft amendment to IS 17262 : 2022 was issued under wide circulation for a period of 1 month for eliciting technical comments.

The wide circulation draft is given in **Annex 10 (P- 28).** No comments have been received.

**5.2.1** The committee may **DECIDE.**

**5.3** As per the decision of the committee in the 31st meeting, draft revision of IS 7867 : 2022 for Nylon filament yarn was wide circulated for a period of 1 month. The wide circulation draft is given in **Annex 11 (P- 29 to 50).** The comments received from M/s ASFI and M/s Nylon spinners Association are given in **Annex 12 (P- 51 to 52) and Annex 13 (Attach separately)** respectively**.**

**5.3.1** The committee may **DECIDE.**

**5.4** As per the decision of the committee in the 31st meeting, the draft Indian Standard for Bedsheets, Pillow cover and Blanket cover was wide circulated for a period of 1 month. The wide circulation draft is given in **Annex 14 (P- 53 to 65).**  The comment received from Shri Babu A and Shri Manoj Kumar are given in **Annex 15 (P- 66 to 67 ).**

**5.4.1** The committee may **DECIDE.**

**5.5** As per the decision of the committee in the 31st meeting, draft revision of IS 7056 : 1989 for Cotton towelling and towels was wide circulated for a period of 1 month. The wide circulation draft is given in **Annex 16 (P- 68 to 75).** The comment received from Shri Babu A and M/s Reliance Retails Ltd. are given in **Annex 17 (P- 76 to 77).**

**5.5.1** The committee may **DECIDE.**

**Item 6 DRAFT FOR WIDE CIRCULATION**

**6.1** In the 31th meeting of TXD 31, the committee decided to constitute a panel under the convenorship of Shri Ravi Chandran, Textiles Committee to prepare the P-Draft on polypropylene continuous filament yarn. The first meeting of panel was held on 03 April 2024 and the panel finalized the P-draft. The P-Draft prepared by panel is given in **Annex 18 (P- 78 to 65).**

**6.1.1** The committee may **DECIDE**.

**Item 7 REVIEW OF INDIAN STANDARDS**

**7.1** As per procedure of BIS, standards which were published/reaffirmed five years ago or before are required to be reviewed to assess adequacy of the requirements specified. Review is carried out keeping in view the changes in technology, current industrial practices and the needs/ expectations of the consumers/users so as to decide regarding further reaffirmation/revision/ withdrawal/amendment of the standards under review. In the last meeting, the committee decided to allocate IS 17217 : 2019 Textiles – Disruptive pattern (Camouflage pattern) cloth for jungle operations made of nylon and cotton blended (NYCO) material – Specification) to member secretary for review. The review was done and circulated to the members. The review performa is given in **Annex 19 (P-86 -92).**

**7.1.1** The committee may **DECIDE.**

**Item 8 DATE AND PLACE OF NEXT MEETING**

**Item 9 ANY OTHER BUSINESS**

**ANNEX 1**

**(Item 1.1)**

**COMMENT ON THE MINUTES OF THE LAST MEETING FROM M/S SGCCI**

# Item 2 SCOPE AND COMPOSITION OF TXD 31

**2.1**The committee scrutinized the present scope and composition of the TXD 31 as given in **Annex 1** to the agenda. After detailed deliberations, the committee decided that Smt Shreyasi Nandy shall represent BTRA, Mumbai as alternate member in place of Smt Pragati Kulkarni.

**2.2** The committee scrutinized the co-option request received from M/s Sanrhea Technical Textiles Limited, M/s Geelon Industries Private Limited, and M/s Polyester Textile Apparel Industry Association, as given in **Annex 2** to the agenda.The committee also scrutinized the cooption request received fromM/s Manjushree Spntek Pvt Ltd., Bengaluru as given in **Annex 3** to the agenda. After detailed deliberation, the committee decided to not accept the requests of the above-mentioned organizations. However, the committee decided to include the above stakeholders on the BIS mailing list for circulation of draft documents for their comments.

**2.2.1** The committee also considered the request from Ministry of Textiles to include Farmer, Ginner & Spinner Associations (big and small) in TXD 31 sectional committee. After detailed deliberations, the committee decided to coopt the following organizations on the committee:

1. Central Institute for Cotton Research (CICR)
2. The Haryana Cotton Ginners Association
3. Maharashtra Cotton Ginners Association
4. Telengana Cotton Ginners Association
5. All India Cotton Farmer Producer Organization Association
6. Shri Dilip Thakare
7. Kotak & Company
8. Arvind Mills
9. Vardhman Group

**2.3** The committee noted thatas directed by DG, BIS the memberships of the following organizations which did not attend last two sectional committee meetings were terminated:

1. AYM Syntex, Silvassa
2. Gimatex Industries Pvt Ltd, Nagpur
3. Textiles Committee, Mumbai
4. South Gujarat Texturizers Welfare Association, Surat
5. The Synthetic and Rayon Textiles Export Promotion Council, Mumbai
6. Northern Indian Textiles Mills’ Association, Chandigarh
7. Cotton Association of India, Mumbai
8. The Cotton Textile Export Promotion Council of India, Mumbai
9. Office of Textile Commissioner, New Delhi
10. GBTL, Bhiwani

The committee considered the representation received from M/s Cotton Association of India, Mumbai and M/s AYM Syntex, Silvassa to reconsider the termination of the membership as given in **Annex 4** to the agenda. The committee also noted that M/s Cotton Association of India, Mumbai and M/s AYM Syntex, Silvassa have made significant contribution in the standardization work of TXD 31. Further, the chairperson also informed that due to some important official engagements, representatives of Textiles Committee were not able to attend the recent meetings of TXD 31. He further assured that representatives of Textiles Committee will attend the upcoming meetings of TXD 31. After detailed deliberations, the committee decided to recommend to TXDC to condone the absence of the following organizations:

1. AYM Syntex, Silvassa
2. Cotton Association of India, Mumbai
3. Textiles Committee, Mumbai

The committee was of the opinion that representation of regulators is important in the sectional committee. The committee also noted that Office of Textile commissioner has requested to reconsider the termination of their membership in other sectional committees. Considering the role of Office of Textile commissioner as a regulator in the committee, the committee decided to recommend to TXDC to condone the absence of the Office of Textile Commissioner on TXD 31 sectional committee.

SGCCI had requested to induct everybody in the committee giving them last fair chance.

**Item 4 COMMENTS RECEIEVD ON PUBLISHED STANDARDS**

**4.1** The committee scrutinized the comments received from the following organizations on IS 17261 : 2022 as given in **Annex 6** to the agenda.The committee also scrutinized the comments received from M/s Geelon Industries Pvt Ltd., on IS 17261 : 2022 as given in **Annex 7** to the agenda. The committee also scrutinized theadditional comments received from M/sThe Federation of Indian Art Silk Weaving Industry as given in **Annex 8** to the agenda. The committee also scrutinized the comments received from J. Korin Spinning Pvt Ltd., Surat as placed during the meeting.

1. M/s Ved Road Art Silk Scale Co. Op. Federation Ltd.,
2. M/s South Gujarat Warp Knitters Association, Surat
3. M/s The Federation of Indian Art Silk Weaving Industry (FIASWI)
4. M/s Pandesara Weavers Co. Op. Soc. Ltd.
5. M/s J Korin Spinning Pvt Ltd.

**4.1.1** The committee also scrutinized the test reports provided by NITRA, Textiles Committee, and SASMIRA for the samples of polyester FDY collected from M/s SGCCI, M/s FGWWA and M/s SGWKA as given in **Annex 9** to the agenda. The committee also scrutinized the revised reports provided by M/s NITRA as given in addendum to agenda. After detailed deliberations, the committee decided as follows:

1. The committee noted that there was significant variation in elongation test results of polyester FDY yarn. The committee also noted that this variation is due to the variation in the crystalline and amorphous region of the polymer structure of polyester fully drawn yarn. The committee also noted that elongation has a major role to play in the dyeing absorption of the filament which can adversely impact the dyeing quality of the fabric manufactured from the yarn. The committee also noted that the samples also could not meet the requirement of boiling water shrinkage as per IS 17261 : 2022.
2. The committee also decided that user/user associations, and manufacturers/manufacturers’ associations shall conduct a study on the quality parameters of the polyester FDY and its impact on the dyeing variation produced in the finished fabric and the same shall be placed before the next meeting.
3. The committee also decided that user/user associations, and manufacturers/manufacturers’ associations shall provide their inputs regarding the industry practices for grading of polyester FDY yarn packages based on the length and weight of the yarn. The same shall be placed in the next committee meeting for discussion and decision.
4. The representatives of SGCCI informed about the use of thermocol in packaging of yarns which is prevalent among some manufacturers of polyester FDY. It was also informed that thermocol is difficult to dispose. Further, representatives of Reliance Industries Ltd. informed the committee that thermocol is used as a separator, ensuring secure transit and minimizing material damage. After detailed deliberations, the committee decided that user/user associations, and manufacturers/manufacturers’ associations shall provide their detailed inputs regarding the industry practices for the use of thermocol during packaging of polyester FDY and the same shall be placed before the committee for discussion and decision.

SGCCI had also informed that the corrugated sheets should be used instead of thermocol. Using the corrugated sheet is international standard practice, earlier all the Indian manufacturers were using corrugated sheets

1. M/s SGCCI, Surat informed that there are some special varieties of polyester FDY like PBT stretch yarn, 30D sparkle diamond yarn, intimation yarn, functional yarns etc which are not currently manufactured in India. M/s SGCCI also sought an exclusion of these varieties from the scope of IS 17261 : 2022. After deliberations, the committee decided that M/s SGCCI shall provide the detailed technical requirements of these special varieties as per IS 17261 : 2022 and the same shall be placed in the next committee meeting for discussion and decision.
2. The committee also decided that user/user associations, and manufacturers/manufacturers’ associations shall provide the data/inputs on the quality parameters of the polyester fully drawn mono/mother yarn and the same shall be placed in the next committee meeting for discussion and decision. The committee also suggested that user/user associations, and manufacturers/manufacturers’ associations of polyester mono/mother yarn may collaborate to review and reassess their demand and supply data. SGCCI had requested to J K Gupta sir to instruct Textile commissioner office of head the techno-economic survey committee. J K Gupta sir agreed and instructed SGCCI to coordinate this techno-economic survey.

**ANNEX 2**

**(Item 2.1)**

**COMPOSITION AND SCOPE OF TXD 31**

**Scope & Composition of Man-made Fibres, Cotton and their Products Sectional Committee, TXD 31**

**Scope: (a)** To formulate Indian Standards for terminology, grading, packaging and specification for kapok, cotton, mill-made cotton fabrics and yarns spun on cotton system.

**(b)** To formulate for terminology, grading, packaging and specification for man-made fibres and their products.

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **NAME OF THE ORGANIZATION** | **REPRESENTED BY**  |
|  | Textiles Committee, Mumbai | Shri Kartikay Dhanda**,** Director (Labs)CHAIRMAN |
|  | All India Cotton Farmer Producer Organization Association, Mumbai | Shri Manish Pratap DagaShri Rajendra Laxman Karpe (Alternate) |
|  | Association of Synthetic Fibre Industries, New Delhi | Shri M S Verma |
|  | AYM Syntex, Dadra & Nagar Haveli | Shri Arnab Samantha |
|  | Central Institute for Cotton Research, Nagpur | Dr. G.T. BehereDr. S. Manickam (Alternate) |
|  | Coats Groups, Madurai | Shri Meril Jenson |
|  | Confederation of Indian Textile Industry, New Delhi | Smt Chandrima Chatterjee Shri Anmol Gupta (Alternate) |
|  | Consumer Guidance Society of India, Mumbai | Dr Sitaram DixitDr M S Kamath (Alternate) |
|  | Cotton Association of India, Mumbai | Atul S. GanatraShri Vinay N. Kotak(Alternate) |
|  | Defence Material and Stores Research & Development Establishment, Kanpur | Shri Ashok Kumar YadavShri Biswa Ranjan Das (Alternate) |
|  | Department of Chemicals and Petrochemicals, New Delhi | Shri O P Sharma  |
|  | Federation of Gujarat Weaver Welfare Association, Surat | Shri Ashok JirawalaShri Sanjay Desai (Alternate) |
|  | Grasim Industries Limited, Vadodara | Smt Shailley GargSmt Ashmita Panchal (Alternate) |
|  | Garden Silk Mills Pvt Ltd., Surat | Prasenjit MandalDr. Soumyen Pal (Alternate) |
|  | ICAR – Central Institute for Research on Cotton Technology, Mumbai | Dr Senthil KumarDr A Arputharaj (Alternate) |
|  | Northern India Textile Research Association, Ghaziabad | Shri Sanjeev Shukla  |
|  | Office of the Textiles Commissioner, Mumbai | Shri Sourabh Kulkarni(Shri Pranav Parashar) |
|  | Reliance Industries Limited, Mumbai | Shri Ajay GuptaShri Keshav Pareek (Alternate) |
|  | SITRA, Coimbatore | Shri V ThanabalShri S. Sivakumar (Alternate) |
|  | South Gujarat Chambers of Commerce and Industry, Surat | Shri Himanshu BodawalaShri Ashish Gujarati (Alternate) |
|  | South Gujarat Warp Knitters Association, Surat | Shri Brijesh GondaliyaShri Raman Megotia (Alternate) |
|  | Textiles Committee, Mumbai | Shri J D BarmanShri P N S Sivakumar (Alternate) |
|  | The Bombay Textile Research Association, Mumbai  | Shri R A ShaikhSmt Shreyasi Nandy (Alternate) |
|  | The Cotton Corporation of India Ltd, Navi Mumbai | Shri S K PanigrahiShri Pranjal P Joshi (Alternate) |
|  | The Southern India Mills’ Association, Coimbatore | Dr. K SelvarajuShri Nagarajan Esakkimuthu (Alternate) |
|  | The Synthetic and Art Silk Mills Research Association, Mumbai | Smt (Dr) Manisha MathurSmt Ashwini A Sudam (Alternate) |
|  | Veermata Jijabai Technological Institute, Mumbai | Smt (Dr) Suranjana GangopahyayShri S P Borkar (Alternate) |
|  | Arvind Mills | Nomination Awaited |
|  | Kotak & Company | Nomination Awaited |
|  | Maharashtra Cotton Ginners Association | Nomination Awaited |
|  | Shri Dilip Thakare | Nomination Awaited |
|  | The Haryana Cotton Ginners Association | Nomination Awaited |
|  | Telengana Cotton Ginners Association | Nomination Awaited |
|  | Vardhman Group | Nomination Awaited |

**Annex 3**

**(Item 2.2)**

**COOPTION REQUEST RECEIVED FROM M/S SGCCI**

Sub: Request inclusion of Polyester FDY Mother Yarn Manufacturers in TXD-31

Committee.

Respected Sir,

Greetings from The Southern Gujarat Chamber of Commerce & Industry, Surat.

SGCCI is proud to be the member of TXD-31 Committee of BIS on Textiles, and from our

end we have recommended earlier inclusion of representation from USER industry viz

FOGWA, SGWKA, SGTA along with us.

Many of the Polyester Mother Yarn manufacturers are also our members, who has

requested us to send in the recommendation of their inclusion in the TXD-31 Committee as

they are an important stakeholder.

We request you to kindly include below of our members in the TXD-31 Committee as

Members representing Domestic Manufacturing of Polyester FDY Mother Yarn and oblige

1) Shri Alpesh Gandhi – Geelon Industries Pvt. Ltd,

Email Id: gcplmag@gmail.com ,

Mobile Number - + 91 -9825148581

2) Shri Himanshu Jariwala , J Korin Spinnning Pvt. Ltd,

email: info@jkorin.com;

mobile number = +91 -9825116161

We have also received request to add below members from the user Industry in the

committee,

3) Shri Devesh Patel – Ved Road Art Silk Small Scale Co. op Federation

Ltd,

email id = vedroadassociation@gmail.com

Mobile Number: 9825147200

4) Shri Bharat Gandhi – Federation of Indian Art Silk Weaving Industry,

Email id: fiaswi@rediffmail.com

Mobile : +91 – 99090 12852

It is humbly requested to kindly include above as members of TXD-31 Committee and

oblige.

Thanking you,

Yours Sincerely,

Ramesh Vaghasia,

President

**ANNEX 4**

**(Item 3.1)**

**SUMMARY OF ACTIONS TAKEN ON THE MINUTES OF PREVIOUS MEETING**

|  |  |  |
| --- | --- | --- |
| **ITEM NO.**  | **DESCRIPTION OF ACTION REQUIRED** | **ACTION TAKEN**  |
| **2.1** | **SCOPE AND COMPOSITION OF TXD 32**  | Updated composition is given in **Annex 1**.  |
| **4** | **COMMENTS ON PUBLISHED STANDARD**4.1 The Committee decided to wide circulate the amendment No. 6 of IS 17261 : 20224.2 The Committee decided to wide circulate the amendment No. 5 of IS 17262 : 20224.3 The committee decided that user/user associations and manufacturers/manufacturers’ association shall provide the data/inputs on IS 17264 : 2022 4.4 The Committee decided to finalize the amendment No. 2 of IS 17265 : 20224.5 The Committee decided to wide circulate the draft revision of IS 172664.6 The committee decided that M/s NITMA Chandigarh shall provide complete data on IS 3566 4.7 The Committee decided to finalize the amendment No. 1 of IS 187 : 20224.8 (i) The Committee decided to wide circulate the draft revision of IS 7056 (ii) The committee also decided a new standard shall be formulated for bedsheets, pillow cover and blanket cover | Wide circulation period completed & coming up for discussion item no. 5.1Wide circulation period completed & coming up for discussion item no. 5.2Inputs awaitedUnder PublicationWide circulation draft under preparation.Inputs received and coming up for discussion under item 4.1 Under PublicationWide circulation period completed & coming up for discussion item no. 5.5Wide circulation period completed & coming up for discussion item no. 5.4 |
| **5** | **DRAFT REVISION FOR WIDE CIRCULATION**The Committee decided to wide circulate the draft on IS 7867  | Wide circulation period completed & coming up for discussion item no. 5.3 |
| **6** | **DRAFT STANDARD FOR FINALIZATION**The Committee decided to finalize the draft on Textiles — Elastomeric Yarn — Specification’ [Doc No.: TXD 31 (23953)]’ | Under publication  |
| **7** | **NEW WORK ITEM PROPOSAL**The committee decided to constitute the following panel to prepare the P-Draft on polypropylene continuous filament yarn. | P-draft prepared by the panel and coming up for discussion item no. 6.1 |
| **8** | **REVIEW OF INDIAN STANDARDS**The committee decided that the standard of IS 17217 : 2019 to allocate the standard to member secretary TXD 31 | Review completed and coming up for discussion under item 7.1 |
| **11** | **ANY OTHER BUSINESS**11.1 The Committee decided to finalize the amendment No. 1 of IS 175 : 2023 | Under publication  |

**ANNEX 5**

**(Item 4.1)**

**COMMENTS ON IS 3566 : 2023**

Please find below our inputs for your kind consideration

 Inputs:

“Physical property standards for VSY yarn cannot be the same for airjet & vortex machines. Formulated standards have been made according to vortex MVS machines. The same results cannot be achieved in Airjet MJS machines as spinning method is different & hence same strength, elongation & hairiness value is impossible to achieve. Please see attached table in which we have listed the values achievable in MJS. (Highlighted in black & font is white).

These are

1. CSP, min
2. Lea Breaking load CV, percent, max
3. Yarn Tenacity, cN/tex, min
4. Yarn Tenacity CV, percent, max
5. Breaking elongation, percent, min
6. Hairiness Index, max

The remaining parameters like Count CV, Uneveneness, Imperfections can be kept the same for both Airjet MJS & Vortex MVS.”

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Count of Yarn, Tex(Ne)** |  | **Method of Test, Ref to** |
|  |
| **>29.5 tex( Ne <20)** | **>29.5 tex( Ne <20)** | **>19.6 to 29.5 tex (Ne 20s -<30)** | **>19.6 to 29.5 tex (Ne 20s -<30)** | **>14.7 to 19.6 tex(Ne 30-<40)** | **>14.7 to 19.6 tex(Ne 30-<40)** | **</-14.7 tex(>/- Ne 40s** | **</-14.7 tex(>/- Ne 40s** |
| **1** | **2** | **3 - Vortex (MVS)** | **Airjet (MJS)** | **4 - Vortex (MVS)** | **Airjet (MJS)** | **5 - Vortex (MVS)** | **Airjet (MJS)** | **6 - Vortex (MVS)** | **Airjet (MJS)** | **7** |
| **i)** | **Count,Ne** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **As declared with a tolerance of +/- 3.0 percen** | **IS 1315** |
|  |  |  |  |  |  |  |  |  |  |  |
| **ii)** | **Count CV,percent,Max** | **2.2** |  | **2.2** |  | **2.2** |  | **2.2** |  | **IS 1315** |
|  |  |  |  |  |  |  |  |  |  |  |
| **iii)** | **CSP,Min** | **2048** | **1700** | **1995** | **1700** | **1959** | **1650** | **1931** | **1650** | **IS 1671** |
|  |  |  |  |  |  |  |  |  |  |  |
| **iv)** | **Lea breaking load CV, Percent,Max** | **5.2** | **5.5** | **5.2** | **5.5** | **5.5** | **6** | **5.7** | **6** | **IS 1671** |
|  |  |  |  |  |  |  |  |  |  |  |
| **v)** | **Yarn tenacity, cN/tex,Min** | **13.7** | **11.5** | **13.3** | **11.5** | **13.1** | **11** | **12.9** | **11** | **IS 1670** |
|  |  |  |  |  |  |  |  |  |  |  |
| **vi)** | **Yarn tenacity CV , percent, Max** | **8.3** | **9.5** | **9.7** | **10.5** | **10.9** | **11** | **11.9** | **11.5** | **IS 1670** |
|  |  |  |  |  |  |  |  |  |  |  |
| **vii)** | **Breaking elongation,percent,Min** | **12.0** | **11.0** | **10.0** | **9.5** | **8.0** | **9.0** | **7.0** | **9.0** | **IS 1670** |
|  |  |  |  |  |  |  |  |  |  |  |
| **viii)** | **Unevenness,percent,Max** | **10.2** |  | **11.3** |  | **12.1** |  | **12.9** |  | **IS 16576** |
|  |  |  |  |  |  |  |  |  |  |  |
| **ix)** | **Unevenness V,percent,Max** | **11.8** |  | **13.7** |  | **15.2** |  | **16.1** |  | **IS 16576** |
|  |  |  |  |  |  |  |  |  |  |  |
| **x)** | **Hairiness index,Max** | **5.2** | **6.2** | **4.5** | **5** | **4** | **4.5** | **3.8** | **4** | **Annex C** |
|  |  |  |  |  |  |  |  |  |  |  |
| **xi)** | **Imperfections/km,Max** |  |  |  |  |  |  |  |  | **IS 16576** |
| **Thin(-50%)** | **6** |  | **17** |  | **35** |  | **61** |  |
| **Thick(+50%)** | **20** |  | **44** |  | **76** |  | **116** |  |
| **Neps(+200%)** | **23** |  | **40** |  | **59** |  | **80** |  |
| **TOTAL IPI** | **49** |  | **101** |  | **170** |  | **257** |  |
| **Note -- The requirement for Hairinessindex shall be applicable for doubledyarn also.** |  |  |  |  |  |  |

**ANNEX 6**

**(Item 4.2)**

**COMMENTS RECEIVED ON IS 17264 : 2022**

1. **Comments received from M/s Shakti cords Pvt. Ltd.**

As per the first revision of the specifications of Polyester Industrial Yam published in April, 2022 under Table 3, points xi,xii the properties of HMLS and HMLS AA only provide physical parameters having minor differences which are neutralized by the tolerances given therein. The relevant portion from the above table is extracted herein below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl. No. | Type | Linear Density, Denier | Tenacity, Gpd | Elongation, percent | Hot Air Shrinkage, Percent |
|  |  | Range | Tolerance, Percent | Range | Tolerance, Percent | Range | Tolerance, Percent | Range | Tolerance, Percent |
| xi) | HMLS | 1000-3000 | ±2.5 | 7.6-8.2 | ±0.4 | 11-13 | ±2 | 3.0-4.0 | ±1 |
| xii) | HMLS AA | 1000-3000 | ±2.5 | 7.6-8.4 | ±0.4 | 11-13 | ±2 | 3.2-4.2 | ±1 |
| \*Considering the above tolerance range there are no differences in both the yarn. |

As seen from the table above, HMLS and HMLS AA yam cannot be differentiated considering that the given tolerances coincide within the specified parameters. As such, the classification of HMLS AA should be based only on special characteristics that capture its adhesive properties as defined under the First Revision of the specification of Polyester Industrial Yarn, and not its physical parameters. It is necessary to state that although Table 4 contained in First Revision of the specifications of Polyester Industrial Yarn contains the chemical requirements of the Polyester Industrial Yarn, it fails to provide adhesive activation as one of the chemical properties despite defining the properties of Adhesive Activated Yarn.

**2. Comments received from M/s Sanrhea**

Sri Deepak Mishra

Joint Secretary

Department of Chemicals & Petro-Chemicals

Ministry of Chemicals & Fertilisers

N.Delhi – 110001

Dear Deepakji,

This is the continuation to the web Meeting held on 18th March with the department and all stakeholders on the matter of implementation of BIS Approval for all Polyester Yarns into India from Foreign Suppliers even against Advance Licence Imports.

Much to the fact that implementation of BIS Standards is a good move I Strongly Oppose the implementation of the same in this impulsive and incomplete manner without even considering so many factors that are leading to hurt the industry, and actually bring greater loss to the industry and Indian Exports as well as GDP rather than any improvement !

Sir we belong to the very valued segment of Technical & Industrial Textile Segment and had been importing High Tenacity Industrial Polyester Yarns for the manufacturing of RFL Dipped Fabrics, that are required to produce various specialized Tyre, Auto, Marine, Conveyor-Belting and Engineering Components. Implementation of BIS Standards without completing the audits of the Foreign sources of Industrial Yarns and without an analysis of the availability situation in India has hurt the Technical Textile Industry in a big way and will lead to financial losses and closures, if immediate correction in not done.

**POINTS TO BE NOTED AS FAR AS INDUTRIAL POLYESTER YARN ABOVE 1000Den & ABOVE**

• There are only three suppliers of Industrial Polyester in India whose rates are almost $ 0.40 higher per Kg than international prices. How will an Indian manufacturer be able to be competitive for his onwards export of fabric manufactured in India for the International market ??

• As far as AA (Adhesive Activate) Yarn is concerned, there is only regular manufacturing of 1000 & 1500Den. These too are never readily available. Deliveries and volumes are dictated on basis of the planned production runs of the local manufacturers.

• For heavier deniers (2000 & above), a MSME buyer is asked to give a 3 monthly requirement schedule of quantity. Effectively, making it an order based supply only. --- Is this workable when the demand of the industry is variable and yarn requirements are established on basis of the orders received by the MSME. In fact 3000Den, 4000Den and 6000Den Yarns, which are regularly required (but in variant quantities) are not at all being made and supplied by any local manufacturer till date in India !

• Cabled & Twisted Yarns, High Elongation Yarns, Abrasion Resistant Yarns Dipped Cord Yarns and many more types of very specialised categories of yarn are not at-all made and supplied by any of the three Indian manufacturers. However, there has been a Blanket Across the Board implementation of BIS norms on all Industrial Yarns, due to which import of all these yarns now is not possible. How will a local MSME manufacturer procure this raw material of his ??

• Interestingly, one of the three local manufacturers deliberately and intentionally doesn't sell AA Yarn to local manufacturers, so as to hold onto its monopolistic position in the value added RFL Dipped Fabric market.

**With circumstances as highlighted above, how does the Ministry expect a local manufacturer to do business and survive competitively even in the local market, forget Exports !!**

In the interests of the Industrial & Technical Textile Industry, if the Ministry wants to implement BIS Pre-Approvals on the import of Industrial Polyester Yarns then it must first pre-establish that:

• The entire range of products required by the Indian Textile Industry, is made available freely and easily in India.

• Ensure that the prices charged by the local manufacturers are at par with International Yarn Rates.

• Adhesive Activated (AA) Yarns above 2000Den, Cabled & Twisted AA Yarns, Dipped Cord Yarns, other Specialised Yarns, that are not regularly made in India, should be immediately opened up from the restrictions of imports under the BIS regulation.

I further take the opportunity to bring forth to you a gross anomaly that has been created by this impulsive act of implementing BIS Approval on imports of Polyester Yarns into India :

**While BIS Approval has been implemented on imports of Industrial Yarns, the import of the end product — RFL DIPPED FABRICS, is being allowed freely without any sorts of restrictions or BIS Approvals !!**

This has lead to almost 600 Tons/ Month of RFL Dipped Fabrics being imported into India —Most of it being Second Grade & Non-Standard Material from China !! Bulk of these imports are Second Grade RFL Dipped Conveyor Belting Fabric which are being imported at just about $0.50-$0.70 above the international Yarn Price, which is not only killing the local manufacturers of RFL Dipped Fabrics, but is leading to the supply of lower quality Rubber Conveyor-Belts to the Indian market, where the largest users are companies like SAIL, Coal India and all the Government Mining and Power Companies !!

Effectively, we are currently cleaning up the garbage from China and bringing it into India with no restrictions !! And then we are attempting to bear the flag of improving quality standards by the implementation of BIS, of promoting the interests of MSME segment of the industry, of giving special promotion to the Technical Textile Industry in India !! The current position of things clearly do not support the contention presented. In fact it sounds hypocritical !!

SIR, AN IMMEDIATE BAN ON ALL IMPORTS OF RFL DIPPED FABRICS OTHER THAN THOSE AGAINST ADVANCE LICENCE SHOULD BE IMPLEMENTED, FAILING WHICH THE RFL DIPPED FABRIC MANUFACTURING INDUSTRY IN INDIA IS IN JEOPRODY.

Sir, I am herewith attaching, for your reference and update, letters written by me to the BIS, the various Associations concerned, The respected Textile Minister and Secretary as well as the respected Textile Commissioner, highlighting these issues, along with all supportive data.

I shall sincerely appreciate it if a realistic look is made into the matter in the interest of the Industry and immediate corrections are taken up.

Best wishes and regards,

Tushar Patel

Managing Director

**ANNEX 7**

**(Item 4.3)**

**COMMENT FROM MANAK MANTHAN ON IS 7866 : 1983**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl** | **Clause No** | **Type of Comment** | **Comment** | **Propose Change** |
| 1 | 1 Scope | Editorial | Scope does not specify whether Fancy yarns are covered in the standard | Standard to be modified so as to cover Fancy Yarns or new standard on Fancy yarns can be developed |
| 2 | 1 Scope | Editorial | For blending Rayon and linen are also used same may also be covered in the standard. | Standard/Requirements be modified to cover other Blending materials such as Rayon, linen etc. |
| 3 | 4 Classification | Editorial | Polyester content in the Blended yarn can be upto 30 percent , standard to be modified accordingly. | Standard to be modified to cover upto 30 percent Polyester content in the Blended yarn |
| 4 | 5.1.2 Count of Yarn & 5.1.3.2 | Editorial | Polyester content in the Blended yarn can be upto 30 percent, requirements of CSP for Single Yarn to be modified so as to cover Polyester blend ratio of upto 30 percent. | requirements of CSP for Single Yarn to be modified so as to cover Polyester blend ratio of upto 30 percent. |
| 5 | 5.1.5 Evenness of Yarn | Editorial | For Fancy Yarns, the values specified for parameter 'Unevenness of Yarn' are different ( higher than the values specified in the standard . Standard to be modified accordingly. | Standard to be modified to cover requirements for Fancy Yarns . |

**ANNEX 8**

**(Item 4.4)**

**COMMENTS RECEIVED ON IS 17265 : 2023**

1. **Comments received from Manak Manthan conducted by HYBO**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl | Clause No | Type of Comment | Comment | Propose Change |
| 1 | Clause 6.1 (Table 5) | Editorial | In Table 5 of IS 17265: 2023, the range of Resultant Yarn Linear Density Range of Polyester Spun Yarn should be reduced as the range given in IS 17265: 2023 seems to be very wide range (Copy of proposal given by M/s Suryalakshmi Cotton Mills Limited is enclosed). | In Table 5 of IS 17265: 2023, the range of Resultant Yarn Linear Density Range of Polyester Spun Yarn may be reduced |
| 2 | Clause 6.4 | Editorial | Most of the manufacturers are working on majority of fancy polyester yarn like Slub, Neps, Lycra Core Spun, Siro, Trilobal of different combination where fabric finish plays major role but not the imperfection. They have to be identified as fancy yarn or air jet yarn. | Most of the manufacturers are working on majority of fancy polyester yarn like Slub, Neps, Lycra Core Spun, Siro, Trilobal of different combination where fabric finish plays major role but not the imperfection. They have to be identified as fancy yarn or |
| 3 | Clause 6.4 | Editorial | In connection to Imperfection of Polyester Yarn, it should be specified in the Standard that the imperfection is for Ring Type Yarn or Cone Type Yarn. | In connection to Imperfection of Polyester Yarn, it should be specified in the Standard that the imperfection is for Ring Type Yarn or Cone Type Yarn. |
| 4 | Clause 1.1 | Editorial | Under Scope of the Standard (IS 17265: 2023), it should also be mentioned that it does not specify the requirements for Lateral Yarns | Under Scope of the Standard (IS 17265: 2023), it should also be mentioned that it does not specify the requirements for Lateral Yarns |
| 5 | Clause 1.1 | Editorial | Requirements for Slub and Fancy Yarns should be included in the Standard (IS 17265: 2023) as most of the manufacturers are working on these yarns. | Requirements for Slub and Fancy Yarns should be included in the Standard (IS 17265: 2023) as most of the manufacturers are working on these yarns. |

1. **Comments received from Shri Prof. R Rajgopalan**

Prof R. Rajagopalan/ 260 N. A. Thevar Street/Rmanathapuram(1) Post/Coimbatore 641 045/Tamil NAD State/10-2-2024

To BUREAU Of Indian Standards/Head Quarters/New Delhi 110002 100% Polyester/spun grey/white /yarns/ QUALITY Fixation 54tandards/IS 17265-2022

**YARN TESTS**

(A) YARN COUNT N e —English count only

(B) Twist/inch T. P. I.

(C) Single yarn strength test

(D) Lea strength test

(E) Yarn unevenness / USTER U %

(F) Yarn faults thin/thick/neps/Km length

(G) Yarn appearance visual test/black board test

(H) Yarn Hairiness test

**TESTING INSTRUMENTS**

YARN COUNT-LINEAR DENSITY/ N e only / wrap Reel 1.5 yds circumference motorized/ 10 RPM / TOTAL STOP 80 rotations Electronic single pan balance 0 to 10gms/0,o1 gram accuracy

STANDARD WEIGHTS /LEA IN GRAMS

|  |  |  |  |
| --- | --- | --- | --- |
| N e | wt/gms | N e | wt/gms |
| 20s | 6.4928 | 30 | 3.246 |
| 40 | 1.6232 | 30 | 1.0821 |
| 90s | 0.7214 | 100s | 06493 |
| 120s | 0.54107 |  |  |

Count C. V. % TEST SAMPLES 20 LEAS 1.5%

Twist tester S / Z /T..P. I.

Range 0 to 34 T P I / SPECIMEN LENGTH 12 INCHES Electronic motor/20 to 60 RPM /L E D Display Variable twin tensioner 50 gms dead weight

(2) page/2/Test results T.P.I. (NOT IN TURNS PER METER) STANDARD TWIST MULTIPLIER 3.085 TO 3.9 Standard T. P. I. /COUNT /Ne /war

|  |  |  |  |
| --- | --- | --- | --- |
| Count NE | T.P.I. | Count NE | T.P.I. |
| 20s | 13.8 tpi | 30s | 16.97 |
| 40s | 19.60 | 60s | 24 |
| 72s | 26.3 | 90s | 29.4 |
| 100s | 31.0 | 120s | 33.9 |

Standard T.M 3.08- 3.09

20 SAMPLES TESTED C.V.% less than 1.5

(3)Single yarn Strength/constant rate of extension Speed 3.9 inches/minute-7.8 inches/minute/adjustable Load cell 10 kg/accuracy 0.1 gram /Test specimen l2 inches

Elongation at break TOTAL TESTS 20 SAMPLES STRENGTH CV% LESS THAN 3%

(4) lea strength tester/wall mounted/specimen length Wrapped on wrap reel/80 threads/120 yds/Testing range 0 to /-500 Lbs /1 lb division/constant rate speed 11.8 inches Per minute (300 mm/minute)

Count (Ne) x lea strength product = C S P

|  |  |  |  |
| --- | --- | --- | --- |
| Count/Ne | St/lbs | COUNT/ Ne | St/lbs |
| 10 | 380 | 20 | 180 |
| 40 | 90 | 60 | 60 |
| 90 | 40 | 100 | 36 |
| 120 | 28 |  |  |
| C.S.P. Range 3800-3300 |

YARN EVENNESS USER U%

Sample/specimen/length 240 yards U% Range 12 to 13%

Instrument /capacitance principle/count rang Ne 10s-120s Testing speed 50 yards/minute

10 samples tested/its average taken

**YARN APPEAREN CE** /BY winding on black board (3) motorized — winding speed constant winding tension Constant/winder motorized/Black board 12 inches x 6 inches

Visual inspection /human error

**ASTM STANDARD BOARDS/TO BE PREPAED AND STANDARDISED FOR POLYESTER SPUN YARN to be Prepared by B. I. S**

**Yarn Faults /thick/thin/neps/test specimen** length 4 k.Mtrs Classimates fault/km less than 100/Km.This classimat instrument to be attached to AUTO CONE WINDER OPERATED AT 800 M. P.M / at least 4 tests done and average Imperfections calculated

**YARN HARINESS**//TESTER/SHIRLEY/protruding fibres from yarn surface/laser beam /numerical result yarn hair /1mm to 30 mm protruding from yarn body test length 1000 yards/capacitance principle/ speed 50 M.P.M

**ALTERNATE METHOD**

Attach gassing burning instrument in cone winder —burn protruding fibrs test specimen

Before gassing weight — after gassing weight = loss in weight Expressed as a % of original eight = hairiness index

\*\*\* All testing to be done @ 75% RH/ 28Degrees Cc temp

**GENERAL INSTRUCTIONS YARN TESTING/100% POLYESTER**

**Spun Grey yarn**

(a) Cross section test not necessary (b) mean linear density Yes/but Ne only (c) twist test S/Z/ direction oriented done/result EXPRESSEDIN T.P.I NOT t.p.i./mtr (c) single yarn strength/tenacity yes done but strength in lbs and elongation in inches (d) similarly lea strength testing yes done but result strength in lbs elongation in inches

Lea C.S.P = COUNT Ne × strength Lbs

PAGE 4/(e) YARN HAIRINESS =YES DONE /BUT 0 TO 30 MM PROTRUTION ONLY TAKEN INTO ACCOUNT/Result for 100 mtrs test length expressed (f) whiteness index not (4) necessary (g) moisture regain for 100% polyester grey yrn not necessary

**PROPERTIES TESTING INSTRUMENT**

(1)YARN COUNT (Ne) wrapreel/single panbalance

(2)Yarn lea strength wrap reel C. R. E. PENDULAM TYPE TESTER/LBS/INCHES

(3) SINGLE STRENGTH TESTER ABS /INCHES

Prepared by Prof R.Rajagopalan and sent By post on 10-2-2024

SENDER Postal address

Prof R.Rajagopalani 260 N. A. Thevar Street

Ramanathapuram Post/Coimbatore 641 045/TAMILMAD STATE

**ANNEX 9**

**(Item 5.1)**

**DRAFT AMENDMENT ON IS 17261 : 2022 UNDER WIDE CIRCULATION**

DRAFT FOR COMMENTS ONLY **DOC: TXD 31 (24947)**

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भारतीय मानक ब्यूरो

*भारतीय मानक में संशोधन का मसौदा*

**आई एस 17261 : 2022 वस्त्रादि — पालिएस्त्टर सतत तंतु पूर्ण आह्नत धागे — विशिष्टि**

( *पहला पुनरीक्षण* )

**संशोधन ६**

**BUREAU OF INDIAN STANDARDS**

*Draft Amendment to Indian Standard*

**AMENDMENT NO. 6**

**TO**

**IS 17261 : 2022 Textiles — Polyester Continuous Filament Fully Drawn Yarns — Specification**

( *First Revision* )

Last date of receipt of comments: 27 March 2024

[Page 6, Table 3, Col 4, Sl No. (i), (ii), (iii), (iv), (v), (vi), (vii)] — Substitute ‘± 3.0 percent and ± 2.0 percent’ for ‘± 3.8 percent and ± 2.5 percent’

(TXD 31)

**ANNEX 10**

**(Item 5.2)**

**DRAFT AMENDMENT ON IS 17262 : 2022 UNDER WIDE CIRCULATION**

DRAFT FOR COMMENTS ONLY **DOC: TXD 31 (24961)**

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भारतीय मानक ब्यूरो

*भारतीय मानक में संशोधन का मसौदा*

**आई एस 17262 : 2022 वस्त्रादि — पालिएस्त्टर अंशिक उन्मुख धागे ( पी ओ वाये ) — विशिष्टि**

( पहला पुनरीक्षण )

**संशोधन ५**

**BUREAU OF INDIAN STANDARDS**

*Draft Amendment to Indian Standard*

**AMENDMENT NO. 5**

**TO**

**IS 17262 : 2022 Textiles — Polyester Partially Oriented Yarn ( POY ) — Specification**

( *First Revision* )

Last date of receipt of comments: 27 March 2024

[Page 5, Table 3, Col 4, Sl No. (i)] — Substitute ‘± 3.0 percent and ± 2.0 percent’ for ‘± 3.8 percent and ± 2.5 percent’

(TXD 31)

**ANNEX 11**

**(Item 5.3)**

**DRAFT ON IS 7867 : 2022 UNDER WIDE CIRCULATION**

*DRAFT* FOR COMMENTS ONLY Doc: TXD 31 (24914) WC

भारतीय मानक ब्यूरो

*भारतीय मानक*  मसौदा

**वस्त्रादि** *—* **सतत तंतु पॉलिएमाइड (नॉइलान) के धागे** *—* **विशिष्टि**

(आई एस 7867 का *दूसरा पुनरीक्षण*)

**BUREAU OF INDIAN STANDARDS**

Draft *Indian Standard*

 **Textiles — Continuous Filament Polyamide (Nylon) Yarn —**

**Specification**

(*Second revision of* IS 7867)

**ICS 59.080.20**

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BIS or used as Standard 23 March 2024

FOREWORD

(*Formal foreword to be added later*)

This Indian Standard was originally published in 1975 and was first revised in 2022. This Indian Standard is again being revised to incorporate the following changes:

1. The requirements for Partially oriented yarn and high tenacity yarn have been incorporated in the standard.
2. The packing, marking and sampling clause has been modified to cover latest industry’s practices.
3. The requirements for identification of yarn, interlace per meter, water soluble matter, moisture regain, colour fastness properties, colour strength, colour difference, lustre/brightness, etc. have been incorporated to make the standard more realistic and end use oriented;
4. The clause for Terms and Definitions’ have been incorporated in the standard.
5. References to Indian Standards have been updated.

Nylon is a generic term used for the long chain synthetic polyamides. Nylon Filament Yarn is produced as multi-filament yarn or mono filaments in a wide range of deniers. It has excellent orientation and crystalline characteristics which imparts it with good mechanical properties. It is suitable for uses like hosiery, swimwear, upholstery, parachute cloth, sportswear, umbrella cloth, etc. It is also used for many industrial applications like tyre cords, fish-nets, ropes, seat belts etc. due to its high flexural strength and tenacity.

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.

**1. SCOPE**

**1.1** This standard specifies requirements for all types of nylon continuous single multifilament or monofilament flat yarn for various end usages. This standard covers the requirements for both dyed and undyed nylon continuous filament yarn.

**1.2** This standard does not specify requirements for parallel, tow and top, doubled or plied nylon yarns.

**1.3** This standard is not applicable to bio-degradable nylon yarns.

**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 indicated in Annex A.

**3. TERMS AND DEFINITIONS**

**3.1 Commercial Allowance** — A defined percentage to be added to the oven-dry mass of the material for the calculation of commercial mass and certain other properties. This allowance includes the moisture content and the content of the substances which can be removed during analysis, for example, spin finish, oligomers etc.

NOTE — The commercial allowance for nylon continuous filament yarn shall be 6.50 percent.

**3.2 Commercial Mass** — The mass obtained by adding to the oven-dry mass, the mass corresponding to the commercial allowance.

**3.3 Cross Section** — The shape of a fibre when viewed perpendicular to its axis.

NOTE — The shape of man-made fibres can be influenced by the spinning process and subsequent processing and treatments, such as texturizing.

**3.4 Flat Yarn** — Man-made continuous filaments that have not been twisted or textured.

**3.5 High Tenacity Yarn** — A yarn with a significantly higher breaking tenacity than others of the same generic category, generally used because of that main characteristic.

NOTE — Currently the minimum limit used for high tenacity Nylon filament yarns is 7.20 gpd (64cN/Tex).

**3.6 Industrial Filament Yarn** — Yarn intended for use in products other than non-protective clothing, household, furnishing, and floor coverings selected principally but not exclusively for their performance and properties as opposed to their aesthetic or decorative characteristics.

**3.7 Intermingled Yarn** — A multifilament yarn in which cohesion is imparted to the constituent filaments usually by passing the yarn through a turbulent air without causing entwining of the filaments and the formation of randomly distributed interlacing points (knots).

NOTE — The knots are not actually the knots tied when two threads are broken but they are the tangle knots created by opening up of filaments and mingling under the influence of air pressure. This creates compact sections in the yarn imparting cohesiveness.

**3.8 Mono Yarn** — It is continuous strand of twist less single or two filament yarn.

**3.9 Mother Yarn** — It is a continuous drawn multifilament yarn without entanglement, where its individual filament can be separated continuously at subsequent downstream process.

**3.10 Shrinkage** — The decrease in length of a test specimen caused by a specified treatment, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and during or after treatment under specified tensions.

**3.10.1 Boiling Water Shrinkage** — The decrease in length of a test specimen caused by a treatment in boiling water for specified time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and after treatment under a specified pretension.

**3.10.2 Hot Water Shrinkage** — The decrease in length of a test specimen caused by a treatment in hot water under as specified conditions of temperature and time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and after treatment under a specified pretension. The water temperature to be applied is specified between buyer and seller.

**3.10.3 Hot Air Shrinkage, After Treatment** - The decrease in length of a test specimen caused by a treatment in hot air under specified conditions of temperature and time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and after treatment under a specified pretension.

**3.10.4 Hot Air Shrinkage, During Treatment** - The decrease in length of a test specimen caused by a treatment in hot air under specified temperature and time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before (under a specified pretension) and during treatment (under a specified measuring tension).

**3.11 Oven-dry Mass -** The mass obtained by drying the filament yarn usually after removal of added products such as finish oil, moisture & extractable matters.

**4. IDENTIFICATION AND NOTATION OF POLYAMIDE (NYLON) FILAMENT YARNS**

**4.1 Identification and Notation of Polyamide (Nylon) Yarns –** The Polyamide (Nylon) filament yarns shall be identified by microscopic and dissolution test given in IS 667 and melting point of 219 °C, *Min* when tested as per method specified in Annex B. The yarn may be denoted by the notations given in Table 1.

**TABLE 1 Examples of Notation of Polyamide (Nylon) Filament Yarns**

(*Clause* 4.1)

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Factors to Identify** | **Examples** |
| **(1)** | **(2)** | **(3)** |
|  | Mono or multifilament, Denier / Filament | 20/1, 30/24, 240/12, 360/12 |
|  | Fibre Cross Section | Circular, Trilobal, Triangular, Slit, Octa lobal etc. |
|  | Filament Count | 30/24 – Filament count is 24 |
|  | Denier per filament | 30/24 DPF – 1.25 |
|  | Overall, Denier | 30/24 - 30 |
|  | Lustre | Full dull (FD), Semi dull (SD)/ Semi dull optically bright (SDOB), Optically bright (OBRT)/Bright (BRT) |
|  | Surface Characteristics | Flat |
|  | UV Resistant  | UV |
|  | Fire Retardant | FR |
|  | Anti-microbial | AM |
|  | Dope Dyed | DD (Optical, Black, Navy, Brown etc.) |
|  | Mother Yarn | MNFY |
|  | Mono Yarn | MY |
|  | High Tenacity Yarn | HT |
|  | Highly Oriented Yarn | HOY |
|  | Draw Winder Yarn | DW |

**5. REQUIREMENTS**

**5.1** The Nylon filament yarn (NFY) shall conform to the requirements specified in **Table 2, Table 3** and **Table 4** in addition to requirements specified in **4.1**, **5.2, 5.3 and 5.4** (optional).

**Table 2 Requirements for Polyamide (Nylon) Fully Drawn Yarn**

(*Clause* 5.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirements** | **Method of Test** |
| **Mono Filament** | **Multifilament** |
| **Range** | **Tolerance**  | **CV Percent, *Max*** | **Range**  | **Tolerance** | **CV Percent, *Max*** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(7)** | **(8)** | **(9)** |
|  | Cross section, Circular, Triangular, Trilobal, Slit, Hollow, Hexagonal etc. (*see* Fig 1) | As Declared | - | -  | As Declared | - | -  | Microscope with magnification of minimum 100 X |
|  | Linear Density (Denier) (*see* Note 1) | As Declared | ± 2 Percent | 1.50 | As Declared | ± 2 Percent | 1.50 | IS 7703 (Part 1) |
|  | No. of Filaments (As Declared) (*see* Note 2) | Single | - | -  | ≤ 60 > 60  | ± 1 ± 2 |  - | Visual inspection under microscope |
|  | Tenacity, gpd, (As declared) |  3.0– <7.2 | ± 0.3 | 5.0 | 3.5 – <7.2 | ± 0.3 | 5.0 | 7703 (Part 2)-Dry Method |
|  | Elongation at break, Percent, (As Declared) |  45 - 65  | ± 5 Percent | 5.0 | 40 - 65  | ± 5 Percent | 5.0 | IS 7703 (Part 2) – Dry Method |
|  | Boiling Water Shrinkage, Percent (As Declared)  | 9.0 - 13.0  | ± 1 Percent |  - | 8.0 - 13.0  | ± 1 Percent |   | Annex G of IS 17261 |
|  | Spin Finish Oil pick-up, Percent, (As declared) | 0.60 – 2.0  | ± 0.2  |  - | 0.60 – 2.0  | ± 0.2 |  - | Annex C of IS 17261 |
|  | Unevenness of Linear Density (Normal), Percent, *Max* (*see* Note 3) |  2.0  | - | -  |  2.0  | - | -  | IS 7703 (Part 5) |
|  | Lustre, Titanium Dioxide Content, Percent,(as Declared) |  | Annex F ofIS 17261 |
| Full dull (FD) | Above 1.5 | - | -  | Above 1.5 | - | -  |
| Semi dull (SD)/SDOB | Above 0.16 and up to 1.5 | - | -  | Above 0.16 and up to 1.5 | - | -  |
| Bright (BRT)/OBRT | Up to 0.16 | - | -  | Up to 0.16 | - | -  |
|  | Moisture Regain, Percent, *Max* | 4.50 | - | -  | 4.50 | - | -  | Annex B of IS 17261  |
|  | Water Soluble Matter, Percent, *Max* | 2.5 | - | - | 2.5 | - | - | IS 3456 |  |
|  | Limiting Oxygen Index, *Min* (For fire retardant yarns only) | 30 | - | - | 30 | - | - | IS 13501 |  |
|  | Ultraviolet resistance, UV-B Lamp, 144 h, Percent retained strength, *Min* (For UV resistant yarn only) | 70 | - | - | 70 | - | - | Annex FIS 16481 |  |
|  | Anti-microbial activity value, *Min* (For anti-microbial yarn only) | 2.0 | - | - | 2.0 | - | - | IS/ISO 20743 |  |
|  | Colour strength with reference to standard yarn, percent (For dope dyed yarns only) (*see* NOTE 4) | 100 | - | ±5 | 100 | - | ±5 | Annex E of IS 17261 |  |
|  | Colour difference with reference to standard yarn, measured as ΔE, *Max* (for dope dyed yarns only) (*see* NOTE 4) | 1.5 | - | - | 1.5 | - | - | Annex E of IS 17261 |  |
|  | Colour Fastness to Light (for Dope Dyed Yarns only), *Min* | 5 | - | - | 5 | - | - | IS/ISO 105-B01 Or IS/ISO 105-B02 |  |
| NOTES 1. For mono yarns made from mother yarn, the tolerance on linear density shall be ± 3 Percent.
2. For mother yarn, the tolerance for the requirement of number of filaments shall be 0.
3. For mono yarns made from mother yarn, the unevenness shall be 4.0 percent, *max.* The requirement of unevenness shall not be applicable for the mono yarn less than 20 Denier.
4. Either of the requirements indicated at xv) and xvi) needs to be complied with.
5. Interlace in nips per meter shall be 10-30 with a tolerance of ± 5 on the declared value when tested by the method prescribed in Annex B of IS 17262, except for mother yarn where interlace can be up to zero. The requirement for Interlace in nips per meter shall not be applicable for mono yarn.
 |  |

**Table 3 Requirements for Polyamide (Nylon) High Tenacity Yarn**

(*Clause* 5.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **SlNo.** | **Characteristic** | **Requirements** | **Method of Test** |
| **Mono Filament** | **Multifilament** |
| **Range**  | **Tolerance**  | **CV Percent, *Max*** | **Range**  | **Tolerance**  | **CV Percent, *Max*** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|  | Cross section, Circular, Triangular, Trilobal, Slit, Hollow, Hexagonal etc. (*see* Fig 1) | As Declared | - | -  | As Declared | - | -  | Microscope with magnification of minimum 100 X |
|  | Linear Density (Denier) (*see* Note 1) | As Declared | ± 2 Percent | 1.50 | As Declared | ± 2 Percent | 1.50 | IS 7703 (Part 1) |
|  | No. of Filaments (as Declared) (*see* Note 2) | Single | - | -  | ≤ 60 > 60  | ± 1 ± 2 |  - | Visual inspection under microscope |
|  | Tenacity, gpd, *Min*, (As declared) |  ≥7.2 | ± 0.3 | 5.0 | ≥7.2 | ± 0.3 | 5.0 | 7703 (Part 2)-Dry Method |
|  | Elongation at break, Percent, (as Declared) |  25 - 35  | ± 5 Percent | 5.0 |  25 - 35  | ± 5 Percent | 5.0 | IS 7703 (Part 2) – Dry Method |
|  | Hot Air Shrinkage, Percent (as Declared) | 6.0 - 9.0 | ± 2 Percent | -  | 6.0 - 9.0 | ± 2 Percent |   | Annex F of IS 17264  |
|  | Spin Finish Oil pick-up, Percent, (As declared) | 0.60 – 1.5  | ± 0.2  |  - | 0.60 – 1.5  | ± 0.2 |  - | Annex C of IS 17261 |
|  | Unevenness of Linear Density (Normal), Percent, *Max* (*see* Note 3) |  2.0  | - | -  |  2.0  | - | -  | IS 7703 (Part 5) |
|  | Lustre, Titanium Dioxide Content, Percent,(as Declared)  |  | Annex F ofIS 17261 |
| Full dull (FD) | Above 1.5 |  |  | Above 1.5 |  |  |
| Semi dull (SD)/SDOB | Above 0.16 and up to 1.5 |  |  | Above 0.16 and up to 1.5 |  |  |
| Bright (BRT)/OBRT | Up to 0.16 |  |  | Up to 0.16 |  |  |
|  | Moisture Regain, Percent, *Max* | 4.50 | - | -  | 4.50 | - | -  | Annex B of IS 17261  |
|  | Water Soluble Matter, Percent, *Max* | 2.5 | - | - | 2.5 | - | - | IS 3456 |  |
|  | Limiting Oxygen Index, *Min* (For fire retardant yarns only) | 30 | - | - | 30 | - | - | IS 13501 |  |
|  | Ultraviolet resistance, UV-B Lamp, 144 h, Percent retained strength, *Min* (For UV resistant yarn only) | 70 | - | - | 70 | - | - | Annex FIS 16481 |  |
|  | Anti-microbial activity value, *Min* (For anti-microbial yarn only) | 2.0 | - | - | 2.0 | - | - | IS/ISO 20743 |  |
|  | Colour strength with reference to standard yarn, percent (For dope dyed yarns only) (*see* NOTE 4) | 100 | - | +5 | 100 | - | +5 | Annex E of IS 17261 |  |
|  | Colour difference with reference to standard yarn, measured as ΔE, *Max* (for dope dyed yarns only) (*see* NOTE 4) | 1.5 | - | - | 1.5 | - | - | Annex E of IS 17261 |  |
|  | Colour Fastness to Light (for Dope Dyed Yarns only), *Min* | 6 | - | - | 6 | - | - | IS/ISO 105-B01 Or IS/ISO 105-B02 |  |
| NOTES 1. For mono yarns made from mother yarn, the tolerance on linear density shall be ± 3 Percent.
2. For mother yarn, the tolerance for the requirement of number of filaments shall be 0.
3. For mono yarns made from mother yarn, the unevenness shall be 4.0 percent, *max.* The requirement of unevenness shall not be applicable for the mono yarn less than 20 Denier.
4. Either of the requirements indicated at xv) and xvi) needs to be complied with.
 |  |

**Table 4 Requirements for Polyamide (Nylon) Partially Oriented Yarn**

(*Clause* 5.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirements** | **Method of Test, Ref to** |
| **Mono Filament** | **Multifilament** |
| **Range**  | **Tolerance**  | **CV Percent, *Max*** | **Range**  | **Tolerance**  | **CV Percent, *Max*** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(7)** | **(8)** | **(9)** |
|  | Cross section, Circular, Triangular, Trilobal, Slit, Hollow, Hexagonal etc. (*see* Fig 1) | As Declared | - | -  | As Declared | - | -  | Microscope with magnification of minimum 100 X |
|  | Linear Density, (Denier)  | As Declared | ± 2 Percent | 1.50 | As Declared | ± 2 Percent | 1.50 | IS 7703 (Part 1) |
|  | No. of Filaments as Declared | Single | - | -  | ≤ 60 > 60  | ± 1 ± 2 |  - | Visual inspection under microscope |
|  | Tenacity, gpd, (As declared) |  3.5 – 6 |  ± 0.3 | 5.0 | 3.5 – 6 | ± 0.3 | 5.0 | 7703 (Part 2)-Dry Method |
|  | Elongation at break, Percent, (as Declared) (*see* Note 1) |  45 - 65  | ± 5 Percent | 6.0 | 50 - 70  | ± 5 Percent | 6.0 | IS 7703 (Part 2) – Dry Method |
|  | Boiling Water Shrinkage, Percent, (as Declared) | 8 - 12.0  | ± 1 percent |  - | 8.0 - 12.0  | ± 1 percent |   | Annex G of IS 17261 |
|  | Spin Finish Oil pick-up, Percent | 0.50 - 1.50  | - |  - |  0.60 – 1.5 | - |  - | Annex C of IS 17261 |
|  | Unevenness of Linear Density (Normal), Percent, *Max* |  4.0  | - | -  |  2.0  | - | -  | IS 7703 (Part 5) |
|  | Lustre, Titanium Dioxide Content, Percent,(as Declared) |  | Annex F ofIS 17261 |
| Full dull (FD) | Above 1.5 | - | -  | Above 1.5 | - | -  |
| Semi dull (SD)/SDOB | Above 0.16 and up to 1.5 | - | -  | Above 0.16 and up to 1.5 | - | -  |
| Bright (BRT)/OBRT | Up to 0.16 | - | -  | Up to 0.16 | - | -  |
|  | Moisture Regain, Percent, *Max* | 4.50 | - | -  | 4.50 | - | -  | Annex B of IS 17261  |
|  | Water Soluble Matter, Percent, *Max* | 2.5 | - | - | 2.5 | - | - | IS 3456 |  |
|  | Limiting Oxygen Index, *Min* (For fire retardant yarns only) | 30 | - | - | 30 | - | - | IS 13501 |  |
|  | Ultraviolet resistance, UV-B Lamp, 144 h, Percent retained strength, *Min* (For UV resistant yarn only) | 70 | - | - | 70 | - | - | Annex FIS 16481 |  |
|  | Anti-microbial activity value, *Min* (For anti-microbial yarn only) | 2.0 | - | - | 2.0 | - | - | IS/ISO 20743 |  |
|  | Colour strength with reference to standard yarn, percent (For dope dyed yarns only) (*see* NOTE 2) | 100 | - | +5 | 100 | - | +5 | Annex E of IS 17261 |  |
|  | Colour difference with reference to standard yarn, measured as ΔE, *Max* (for dope dyed yarns only) (*see* NOTE 2) | 1.5 | - | - | 1.5 | - | - | Annex E of IS 17261 |  |
|  |  Colour Fastness to Light (for Dope Dyed Yarns only), *Min* | 6 | - | - | 6 | - | - | IS/ISO 105-B01 Or IS/ISO 105-B02 |  |
| NOTES1. For draw winder POY, elongation shall be 35 – 50 percent with a tolerance of ± 5 percent on the declared value when tested by the method prescribed in IS 7703 (Part 2) – Dry Method.
2. Either of the requirements indicated at xv) and xvi) needs to be complied with.
3. Interlace in nips per meter shall be 5-30 with a tolerance of ± 5 on the declared value when tested by the method prescribed in Annex B of IS 17262, except for mother yarn where interlace can be up to zero. The requirement for Interlace in nips per meter shall not be applicable for mono yarn. For Draw winder yarn, interlace in nips per meter shall be 5-70 with a tolerance of ± 5 on the declared value when tested by the method prescribed in Annex B of IS 17262.
 |

****

**Circular Trilobal**



**Triangle Hollow**

****

 **Slit cross section**

FIG 1: CROSSECTIONAL VIEW OF NYLON FILAMENT YARN

**5.2 Freedom from Yarn Defects** — The NFY shall be free from the following major defects:

**5.2.1 Dirt/Grease** — No soiling or grease spots shall be allowed. It is acceptable, if the spots can be cleaned off. Air strip yarn to remove dirt on the outside surface, for dirt on the ends, clean with sprayer. If dirt does not come off, reject to off grade.

**5.2.2 Wound in Waste** — None shall be allowed. Strip to correct or reject to rewind.

**5.2.3 Damaged/Bumped** — None shall be allowed. Strip to correct or reject to rewind.

**5.2.4 Finish Oil Contamination** — Dry or regular oil yarn shall not be contaminated with finish oil when viewed under a packing table UV light, unless very slight (not immediately visible). Strip to clean if possible. Otherwise reject to off-grade.

**5.2.5 Broken Filaments** — None shall be allowed.

**5.2.6 Texture Colour/Appearance** — No overly shiny or dull yarn shall be allowed.

**5.2.7 Fluorescent Oil** — If applicable, the package shall have even coverage under UV light.

**5.2.8 Crossed Ends** — Nose end crosses can be allowed unless they appear matted or too numerous to count. Up to 25 mm crosses on the tail end shall be allowed or crosses <6 mm from the tube shall be allowed.

**5.2.9** **Slubs/Loops/Kinks** — None shall be allowed.

**5.2.10 - Proper Wind** — No patterns or bands, no high or falling off edges and no excessive

hard/soft packages shall be allowed.

**5.2.11** **Ridges/Grooves** — No ridges or grooves greater than3 mm high or deep shall be allowed.

**5.2.12 Twist** — For single ply yarns only, Z twist shall rotate clockwise when allowed to relax and S twist Will rotate counter- clockwise.

**5.2.13 Proper Ply** — Count the number of ends if the yarn is three ply or more. Air strip the yarn to correct if possible. Also check the tail.

**5.2.14 Latching** — Plies that separate when winding off package shall not be allowed.

**5.2.15 Tail** — Only one tail package per layer shall be permitted. The minimum tail length shall be one wrap around the tube.

**5.3 Commercial Mass**

The commercial mass shall be obtained by adding mass corresponding to commercial allowance of 6.50 percent to the oven dry mass of the consignment when tested by the methods prescribed in IS 7703 (Part 3) and it shall not be less than the declared commercial mass of the consignment.

**5.4 Additional Requirements for Ecomark (Optional)**

For Ecomark, the product shall also comply with the additional requirements as given in Table 5.

**Table 5 Additional Requirements for ECO-Mark (Optional)**

(*Clause* 5.4)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Characteristic** | **Requirement** | **Method of Test** |
| (1) | (2) | (3) | (4) |
|  | Total Free and releasable formaldehyde, mg/kg (ppm), *Max* | 20 | IS 14563 (Parts 1 and 2) |
|  |

|  |
| --- |
| Extractable heavy metals by artificial Acidic sweat/saliva, ppm, *Max* 1. Mercury
2. Chromium III
3. Chromium VI
4. Lead
5. Cadmium
6. Copper
7. Antimony
 |
|  |

 | 0.10.1Not Detected0.20.12530 | Annex A of IS 15651 |
|  | Pentachlorophenol, ppm, *Max* | 0.5 | Annex B of IS 15651 |
|  | Pesticides, (sum parameter), ppm, *Max* | 1.0 | Annex D of IS 15651 |
|  | Banned Pesticides, ppm, *Max* | Not Detected | Annex D of IS 15651 |
|  | Banned Azo Colourants (arylamines), ppm, *Max* (For dyed yarns only) (sum parameters) | 20 | IS 15570 |

**6 PACKING**

**6.1** The continuous filament nylonyarn (NFY) shall be wound over bobbins in any mass up to 15 kg of yarn per bobbin. All such packages shall be packed in pallets or cartons, properly strapped using polypropylene/ PET straps. Packing materials should be roadworthy/airworthy/sea worthy as agreed to between the buyer and the seller.

**6.2** All wooden pallets used for packing are to be heat treated. All wooden/paper packing should be free from infestation/fungal growth.

NOTE — Container fumigation for domestic supply shall be optional.

**6.3** Each carton/ Pallet shall be marked with the grade of the package. The grade of the package is based on the tolerance on the weight of the package and length of the yarn on the package. The manufacturer shall declare the grade of the package. The different grades of the packages for different types of Nylon filament yarn is specified in the table below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Nomenclature of grade** | **POY** | **Mother Yarn**  | **FDY** | **Draw Winder** | **Mono FDY** |
|  (1) | (2)  |  (3) | (4)  | (5)  | (6)  | (7)  |
| i) | AA-Equal Length  |  ± 2% | ± 2% | ± 2% | ± 2% | ± 2% |
| A1 |  ± 1 kg |  ± 1 kg | ± 0.5 kg | ± 0.5 kg | ± 0.5 kg |
| ii) | A2 | ± 2 kg | ± 2 kg | ± 2 kg | ± 1 kg | ± 1 kg |
| iii) | A3 | > 3 kg  | > 3 kg  | > 3 kg  | >1.5 kg | >1.5 kg |
| iv) | A4 | >1 kg | >1 kg | >1 kg | > 0.5 kg  | > 0.5 kg’  |

**7 MARKING**

**7.1** Each carton/pallet of NFY shall be marked with indelible ink, the following information:

a) Name and description of the material (*see* **4.1**);

b) Commercial mass of each carton/Pallet;

c) Manufacturer’s name, address and trade-mark (if available);

d) Lot/batch/merge number;

e) Month and year of manufacture; and

f) Any other information required by the law in force.

NOTES

1. Alternatively, the above information may be captured in a QR code that shall be printed on the carton/pallet. The QR code shall lead to a webpage offering all information as specified in **7.1** above.
2. Thermocol shall not be used in packaging of yarn.

**7.2 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 product(s) may be marked with the Standard Mark.

**7.3** The declared parameters as per Table 2, Table 3 and Table 4 shall be provided in the form of a technical data sheet by either pasting on the package or provided separately linking it with lot/batch/merge no. on request for domestic supplies.

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

**8 SAMPLING AND CRITERIA FOR CONFORMITY**

**8.1 Lot** — The number of packages in all cartons/pellets of NFY and of the same description delivered to a buyer against one dispatch note shall constitute a lot.

**8.2** The number of packages to be selected at random from a lot shall be according to column 3 of Table 6. The packages shall be selected at random from different cartons/pallets to constitute the sample size. To ensure the randomness of selection, IS 4905 may be followed.

**8.3 Number of Tests and Criteria for Conformity**

**8.3.1** The number of packages to be selected for manufacturing defects shall be in accordance with column 5 of Table 6. These packages may be selected from the packages selected for non-destructive tests.

**8.3.2** All the packages selected from the lot shall be visually examined for yarn defects as specified in **5.2**. Four such defects will be considered as one major defect. A package shall be considered defective if it contains any major defect. All the packages selected for destructive tests shall be tested for the requirements as specified in **5.1**, **5.2, 5.3** and **5.4** as applicable.

**8.3.3** The lot shall be declared conforming to the requirements of this standard if the total number of defective packages does not exceed the value given in column 4 of Table 6 for yarn defects or column 6 of Table 6 for other requirements.

**Table 6 Number of Packages of Yarn to be selected**

( *Clauses* 8.2, 8.3.1 *and 8*.3.3 )

|  |  |  |  |
| --- | --- | --- | --- |
| S. No | Lot Size | Non Destructive Testing | Destructive Testing |
| No. of Packages  to be Selected | Acceptance Number | No. of Packages  to be Selected | Acceptance Number |
| (1) | (2) | (3) | (4) | (5) | (6) |
|  | Up to 280 | 131 | 1 | 8 | 0 |
|  | 281-500 | 20 | 2 | 8 | 0 |
|  | 501-1200 | 32 | 3 | 13 | 0 |
|  | 1201-3200 | 50 | 5 | 13 | 0 |
|  | 3201-10000 | 80 | 7 | 20 | 1 |
| 1 or lot size when less than 13 |

**ANNEX A**

( *Clause* 2 )

**LIST OF REFERRED INDIAN STANDARDS**

|  |  |
| --- | --- |
| *IS No.*  | *Title*  |
| 667 : 1981  | Methods for identification of textile fibres (*first revision*) (with supplement)  |
| 3456 : 1966  | Method for determination of water soluble matter of textile materials  |
| 4905 : 2015  | Random sampling and randomization procedures (*first revision*)  |
| 6359 : 1971  | Method for conditioning of textiles  |
| 7703  | Methods of test for continuous filament polyester and polyamide flat yarn  |
| (Part 1) : 1990  | Linear density (*first revision*)  |
| (Part 2) : 1990  | Dry and wet tenacity and elongation (*first revision*)  |
| (Part 3) : 1991  | Commercial mass (*first revision*)  |
| (Part 5) : 1990  | Unevenness percentage  |
| 14563  | Textiles — Determination of formaldehyde  |
| (Part 1) : 2021  | Free and hydrolysed formaldehyde water extraction method (*first revision*)  |
| (Part 2) : 2021 13501 : 1992 | Released formaldehyde vapour absorption method (*first revision*) Textiles - Determination of flammability by oxygen index  |
| 15570 : 2005  | Textiles — Method of test — Detection of banned azo colourants in coloured textiles  |
| 15651 : 2006  | Textiles — Requirements for environmental labelling — Specification  |
| 16481 : 2016  | Textiles — Synthetic micro-fibres for use in cement based matrix — Specification  |
| 17261 : 2022 | Textiles – Polyester Continuous Filament Fully Drawn Flat Yarn *(First Revision*)  |
| 17262 : 202217264:2022 | Textiles — Polyester partially oriented yarn (POY) — Specification (*first revision*)Textiles — Polyester Industrial Yarns — Specification *( First Revision )* |
| IS/ISO 105-B01 : 2014  | Textiles — Tests for colour fastness: Part B01 Colour fastness to light: Daylight  |
| IS/ISO 105-B02 : 2014  | Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test  |
| IS/ISO 20743 : 2013  | Textiles — Determination of antibacterial activity of textile product  |

**ANNEX B**

**(***Clause* 4.1**)**

**DETERMINATION OF MELTING AND GLASS TRANSITION TEMPERATURES**

**B-1 GENERAL**

This test method covers determination of melting temperatures of nylon polymers by Differential Scanning Calorimetric (DSC). It is applicable to polymers in granular form or to any fabricated shape from which it is possible to cut appropriate specimens. The normal operating temperature range is from the cryogenic region to 600°C. Certain equipment allows the temperature range to be extended.

NOTE **–**This method does not purport to address all the safety concerns, associated with its use. It is the responsibility of the user of this standard to establish appro­priate safety and health practices and determine the applicability of regulatory limitations prior to use.

**B-2 PRINCIPLE**

The test material is heated or cooled at a controlled rate under a specified purge gas at a controlled flow rate and continuously monitoring with a suitable sensing device the difference in heat input between a reference material and a test material due to energy changes in the material. A transition is marked by absorption or release of energy by the specimen resulting in a corresponding endothermic or exothermic peak or baseline shift in the heating or cooling curve.

**NOTES**

**1** Differences in heating or cooling rate as well as the final heating and cooling temperature have an effect on the mea­sured results. Therefore, departure from conditions specified for a given polymer is not permitted.

**2** The presence of impurities is known to affect the transition temperature, particularly if an impurity tends to form solid solutions or to be miscible in the melt phase.

**3** Uncertain radiation losses at temperatures higher than 400 °C have been known to affect the accuracy of results at time.

**4** Since particle size has an effect upon detected transition temperatures, the specimens to be compared shall be approxi­mately the same particle size.

**5** In cases that specimens react with air during the temperature cycle, provision shall be made for running the test under an inert gas blanket to avoid any incorrect measurement. Since some materials degrade near the melting region. care must be used to distinguish between degradation and transition.

**6** Since very small quantities of specimen are used. it is essential to ensure that specimen are homogeneous and representative.

**7** It is possible that toxic or corrosive effluents are released when heating the material which may be harmful to the personnel or to the apparatus.

**B-3 APPARATUS**

**B-3.1 Differential Scanning Colorimeter (DSC)**

**B-3.1.1 DSC Test Chamber** - composed of the following:

**B-3.1.1.1 Furnaces** to provide uniform controlled heating (cooling) of a specimen and reference to a constant temperature or at a constant rate within the applicable cryogenic to 600oC temperature.

**B-3.1.1.2 Temperature Sensor** to provide specimen temperature to an accuracy of ± 0.01°C.

**B-3.1.1.3 Differential Sensor** to detect heat flow difference between the specimen and reference equivalent to I mW

**B-3.1.1.4 Means of sustaining a Test Chamber Environment** - of purge gas; at a purge flow rate of 10 to 50 ± 5 ml/min

NOTE **–** Typically, 99+ percent pure nitrogen, argon or helium arc em­ployed when oxidation in air is a concern. Unless effects of moisture are to be studied, use of dry purge gas is recommended and is essential for operation at sub-ambient temperatures.

**B-3.1.2 Temperature Controller**, ca­pable of executing a specific temperature program by operating the furnace between selected temperature limits at a rate of temperature change of 0.5°C to 20°C/min constant to ± 0.1°C/ min or at an isothermal temperature constant to ± 0.1°C.

**B-3.1.3 Recording Device**, capable of recording and display­ing any fraction of the heat flow signal (DSC curve) including the signal noise as a function of temperature.

**B-3.1.4 Software,** for integrating areas under endothermic valleys or exothermic peaks, or both.

**B-3.1.5 Containers** (pans, crucibles and so forth) that are inert to the specimen and reference materials, and which are of suitable structural shape and integrity to contain the specimen and reference in accordance with the specific requirements of this method.

**B-3.1.6** Cooling capability to hasten cool down from elevated temperatures, to provide constant cooling rates of 0.5°C – 20°C/min to obtain repeatable crystallization temperature to achieve sub-ambient operation or to sustain an isothermal sub-ambient temperature or combination thereof.

**B-3.2 Balance** capable of weighing to ± 10 µg.

**B-4 TEST SPECIMENS**

**B-4.1** Powdered or Granular Specimens-Avoid grinding if the preliminary thermal cycle as outlined in **J-6.1.3** is not performed. Grinding or similar techniques for size reduction often introduce thermal effects because of friction or orienta­tion or both, and thereby change the thermal history of the specimen.

**B-4.2 Molded or Pelleted Specimens** - Cut the specimens with a microtome, razor blade, hypodermic punch, paper punch, or cork borer (size No.2 or 3) or other appropriate means to appropriate size, in thickness or diameter and length that will best fit the specimen container, as in **B-3.1.5** and will approxi­mately meet the desired weight in the subsequent procedure.

**B-4.3 Film or Sheet Specimens** – For films thicker than 40 µm see **B-4.2**. Fur thinner films, cut slivers to fit in the specimen capsules or punch disks, if the circular specimen capsules are used.

**B-4.4** Use any shape or form listed in **B-4.1** to **B-4.3** except when conducting referee tests that shall be performed on films as specified in **B-4.3**.

**B-5 CALIBRATION**

**B-5.1** The purge gas sha11 be used during calibration.

**B-5.2** Calibrate the DSC temperature signal using a heating rate of 10°C/min.

**B-5.3** Calibrate the DSC heat flow signal using heating rate of 10°C/min.

**B-5.4** Some instruments allow for the temperature and heat flow calibration to be performed simultaneously. In such cases, use the same heating rate for this method (10°C/min) and follow the manufacturer's instruction.

**B-6 PROCEDURE**

**B-6.1 Melting Temperature**

**B-6.1.1** The purge gas shall be used during testing. The flow rate of the gas shall be the same as used in the calibration (10°C/min).

**B-6.1.2** Use a specimen mass appropriate for the material to be tested, In most cases, a 5 mg specimen mass is satisfactory. Avoid overloading. Weigh the specimen to an accuracy of

± 10µg.

**B-6.1.2.1** Intimate thermal contact between the pan and specimen is essential for reproducible results. Crimp a metal Cover against the pan with the sample sandwiched in between to ensure good heat transfer. Take care to ensure flat pan bottoms.

**B-6.1.3** Perform and record a preliminary thermal cycle by heating the sample at a rate of 10°C/min. from at least 50°C below to 30°C above the melting temperature to erase previous thermal history.

NOTE – In some cases it is possible that the preliminary thermal cycle will interfere with the transition of interest, causing an incorrect transition or eliminating a transition. Where it has been shown that this effect is present, omit the preliminary thermal cycle.

**B-6.1.4** Hold the temperature for 5 min **(B-6.1.3)**

**B-6.1.5** Cool to at least 50°C below the peak crystallization temperature at a rate of 10°C/min and record the cooling curve.

**B-6.1.6** Hold the temperature for 5 min.

**B-6.1.7** Repeat the heating at a rate of 10°C/min and record the heating curve.

**B-6.1.8** Measure the melting temperatures on the curve (that is melting extrapolated onset temperature, melting extrapolated end temperature and melting peak temperature.

**B-6.2 Glass Transition Temperature**

**B-6.2.1** The purge gas shall be used during testing. The flow rate of the gas shall be the same as used in the calibration.

**B-6.2.2** Use a specimen mass appropriate for the material to be tested. In most cases, a 10 to 20 mg specimen mass is satisfactory. Weigh the specimen to an accuracy of ± 10 µg.

**B-6.2.3** Perform and record a preliminary thermal cycle by heating the sample at a rate of 20°C/min from at least 50°C below to 30°C above the melting temperature to erase previous thermal history.

**B-6.2.4** Hold the temperature for 5 min.

**B-6.2.5** Quench cool to at least 50°C below the transition temperature of interest.

**B-6.2.6** Hold the temperature for 5 min.

**B-6.2.7** Repeat heating at a rate of 20°C/min and record the heating curve until all desired transitions have been completed.

**B-6.2.8** The glass transition is more pronounced at faster heating rates. A heating rate of 20°C/min is used for Tg measurements. The instrument shall be calibrated at this heating rate. If both first and second-order transition (Tm and Tg respectively) arc to be determined in the same run, use procedure **B-6.1** and determine results from the second heating step (**B-6.1.7**).

**B-6.2.9** Measure Tg (extrapolated onset temperature, midpoint temperature and extrapolated end temperature)

**ANNEX 12**

**(Item 5.3)**

**COMMENT ON WIDE CIRCULATION DRAFT OF IS 7867**

**Comments from ASFI on Draft *Indian Standard* ‘Textiles — Continuous Filament Polyamide (Nylon) Yarn - Specification (*Second revision of* IS 7867) [Doc: TXD31(24914)]WC**

1. Page 1, FOREWORD, 2nd Para, 4th Sentence – Replace the existing by the following:

“It is suitable for uses like saree, dupatta, dress materials, ethnic wear, hosiery, swimwear, sportswear, upholstery, laces, parachute cloth and umbrella cloth, etc.

2. Page 3, Clause 3.8 – Substitute the existing by the following:

 “3.8 Mono Yarn - It is continuous strand of twist less single filament yarn.”

3. Page 4, Clause 4.1, 3rd Line – The melting point should be 215 °C, Min as Nylon 6 Melting point range is 215 to 2200 C

4. Page 4, Sl.No. xii and xiii - The Notations for Mother Yarn and Mono Yarn should be MY

    MONO as per industrial practice.

5, Page 4, Clause 4.1 Identification and Notation of Polyamide (Nylon) Yarns **–** Substitute the existing by the following:

 **“**The Polyamide (Nylon) filament yarns shall be identified by the dissolution test given in IS 667 and melting point which shall be 219 °C, *Min* when tested as per method specified in Annex B. The yarn may be denoted by the notations given in Table 1.”

6. Page 5, Table 2, Heading – Replace the existing by the following:

“**Requirements for Polyamide (Nylon) Fully Drawn Yarns (FDY, HOY, DW, DT)**”

7. Page 5, Table 2 Sl.No. iii, Col 7 – Tolerance on Number of filaments should not be negative.

8. Page 5, Sl.No. iv, Tenacity, gpd, (As declared), Col 4 - Tolerance should be ± 10 Percent.

9. Page 5, Sl.No.v, Elongation at break, Percent, Col 6 – For multifilament yarns the range should be 40 to 70

10. Page 5, Sl.No. ii, Linear Density, Mono Yarns  - The tolerance should be ± 7 percent when made from Mother Yarn by split route and + 5 percent for HOY route.

11. Page 5, Sl.No. ii, Linear Density, Multifilament Yarns – The tolerance should be, if ± 4.0 percent for Denier < 100  and ± 2.5 percent for Denier > 100

12. Page 5, page7 and page 10, Tables 2, 3 and 4, Sl.No. v, Elongation at break  -   The tolerance should be ± 5 and not ± 5 percent.

13. Page 5 and page7, Tables 2 and 3, Sl.No. vi, Boiling Water Shrinkage –The tolerance should be ± 2 and not ± 1 percent.

14. Page 10, Table 4, Sl.No. vi, Hot Air Shrinkage – The tolerance should be ± 2 not ± 1 percent.

15. Clause 5.2.5, Broken Filaments – Substitute the existing by the following:

“A maximum of 1 broken filament per kg shall be allowed.”

16. Clause 5.2.9, Slubs/Loops/Kinks – A maximum of 1.5 loops per kg shall be allowed.

17. Page 6, Sl.No. xvii, Colour Fastness to Light (for Dope Dyed Yarns only), Mono and Multifilament - It should be > 4 in case of Nylon as only in Polyester it is possible to get 5 and not in other polymers.

**ANNEX 14**

**(Item 5.4)**

**WIDE CIRCULATION DRAFT FOR NWIP OF TEXTILES- BEDSHEET, PILLOW COVER AND BLANKET COVER - SPECIFICATIONS**

*DRAFT* FOR COMMENTS ONLY Doc: TXD 31 (24913) WC

भारतीय मानक ब्यूरो

*भारतीय मानक*  मसौदा

**वस्त्रादि — चादर, तकिया कवर और राजाई कवर — विशिष्टि**

**BUREAU OF INDIAN STANDARDS**

Draft *Indian Standard*

**Textiles — Bedsheets, Pillow cover and Blanket Cover — Specifications**

**ICS : 59.080.30**

Not to be reproduced without permission of Last date for receipt of comment is

BIS or used as Standard 23 March 2024

**FOREWORD**

*(Formal foreword shall be added later)*

In the area of bedding essentials, bedsheet, pillow cover and blanket cover stands play a multifaceted role in our daily lives. These are essential components for a sound sleep. This standard covers requirements important constructional and performance requirements of bedsheets, pillow cover and blanket covers. Efforts has been made to align the requirements of the standard with the need of Indian Railways. Considerable assistance has also been drawn from the data of the requirements of the bedsheets, pillow cover and blanket cover used in Indian railways.

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.

**1 SCOPE**

**1.1** This standard prescribes constructional details and other particulars of bedsheets, pillow covers and blanket covers scoured, bleached, dyed or printed.

**1.2** The standard does not specify general appearance, feel shade, etc. (*see* also **5.1**).

**2 REFERENCES**

**2.1** 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 indicated in Annex A.

**3 REQUIREMENTS**

**3.1 Constructional and performance requirements**

The fabric shall conform to the requirements given in Table 1 and Table 2. Colour fastness rating of dyed and printed fabric or dyed yarn used in the fabric for bedsheets, pillow covers and blanket covers shall conform to those given in Table 3. There shall be a pair of tapes with twill weave on all the four corners of the blanket cover to tie the blanket. The tapes shall be 15 cm - 18 cm long and 10 -12 mm wide.

**3.2 Fabric Content**

The fabric shall be manufactured from 65 percent cotton and 35 percent polyester. The warp shall be 100% cotton ring combed spun yarn and weft shall be 100% polyester continuous filament yarn.

**3.3 Freedom from Defects**

The fabric when visually examined shall be free from spinning, weaving and processing defects (*see* Annex B). The selvedges shall be firm and straight. The bleached fabric shall have a full bleach finish and shall be free from blueing or optical whitening agents, if required by the buyer.

**3.4 Sewing Thread**

If agreed to between the buyer and the seller, either one of the following 2 sewing threads may be used:

1. Cotton sewing thread of 60 s/3 cotton count (100 dtex × 3) conforming IS 1720 shall be used.
2. Polyester sewing thread of 3ply 24 tex, *Min* shall be used. The count of the yarn for polyester sewing thread shall be tested as per IS 1315.

Note — In case of dyed fabric, the thread shall be of a similar shade.

**3.5 Hems**

Each transverse end of sheet shall have a 1 cm, *Min* hem. Minimum of 0.5 cm of the raw edge shall be turned in. There shall be 1 cm, *Min* hem on all four sides.

**3.6 Sewing**

The sewing shall be of even tension and the loose ends shall be finished securely and neatly. The number of stitches shall not be less than 4 per cm.

**3.7 Dimensions**

The finished dimensions of bedsheets shall be as specified in Table 4 subject to a tolerance of + 2/-0 cm and +2/-0 cm on width and length respectively. If agreed to between the buyer and the seller bedsheets of any other dimensions may also manufactured subject to the tolerance of + 2/-0 cm and +2/-0 cm on width and length respectively. The dimensions of pillow cover and bedsheet cover shall be as agreed to between the buyer and seller subject to the tolerance of + 2/-0 cm and +2/-0 cm on width and length respectively. The dimensions shall be tested as per the method prescribed in IS 1954.

**3.8 Soil release efficiency**

The soil release efficiency after 50 washes shall be Grade 3, *Min* when tested as per method prescribed in Annex C.

**3.9 Antimicrobial Activity**

If agreed to between the buyer and the seller, the fabric shall have anti-bacterial activity value (initially and after 50 washes) greater than 2 when tested by the absorption method prescribed in ISO 20743. The fabric shall be washed as per the procedure specified in **C-5.1.**

**3.10 Whiteness index**

If agreed to between the buyer and the seller, the whiteness index of the undyed fabric shall not be less than 135 before wash and not less than 120 after 50 wash cycles when tested as per the method prescribed in Annex J of IS 17263. The fabric shall be washed as per the procedure specified in **C-5.1.**

**Table 1 Construction Particulars**

(*Clause* 3.1)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Variety No.** | **Fibre Content** | **Count of Yarn**  | **Weave** | **Ends/ cm** | **Picks/ cm** | **Mass g/m2, *Min*** (*see* Note 2) | **Remarks** |
| **Warp** | **Weft** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| i) | 1 | 65 % cotton and 35 % polyester | 63s  | 82 D | 4/1 Sateen | 75 | 43 | 114 | Used for bedsheet and pillow covers |
| ii) | 2 | 65 % cotton and 35 % polyester | 63s  | 103 D | 1/1 plain | 65 | 33 | 104 | Used for blanket cover |
| iii) | 3 | 65 % cotton and 35 % polyester | 63s | 82 D | 1/1 plain | 74 | 43 | 120 | Used for bedsheet and pillow covers |
| iii) | Tolerance | ± 3 units | ± 5 percent | ± 5 percent | - | ± 5 percent | ± 5 percent | - | - |
| ix) | Method of Test | IS 667 and IS 3416 | IS 3442 | IS 7703 (Part 1) | Visualmethod | IS 1963 | IS 1963 | IS 1964 | - |
| NOTES**1** The fabric may be rotary printed with reactive dyes as agreed to between the buyer and the seller.**2** The average mass shall meet the requirements as indicated in the table however, it is permissible for applying a tolerance of ± 2.5 percent on individual values when tested. |

**Table 2 Performance Requirements for Fabrics**

(*Clauses* 3.1)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Variety No.** | **Breaking Load on 5 × 20 cm Strip (Ravelled Strip Method), *Min*** | **Tear Strength, *Min*** | **Fabric skew, Percent, *Max*** | **Fabric Bow, Percent, *Max*** | **Dimensional Change (Shrinkage or Elongation), Percent, *Max*** | **Scouring****Loss,****Percent,****Max** | ***pH* Value** | **Resistance to Pilling, For 1000 cycles,*****Min*** |
| **Warpway** | **Weftway** | **Warpway** | **Weftway** | **Warpway** | **Weftway** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (7) | (8) | (9) | (10) | (11) |
|  | kgf | kgf | kgf | kgf |  |
| i) | 1 | 45 | 55 | 1 | 2 | 2.5 | 2.5 | 2.0 | 2.0 | 2.0 | 6.0 to 8.0 |  3 |
| ii) | 2 | 45 | 55 | 0.8 | 1.8 | 2.5 | 2.5 | 2.0 | 2.0 | 2.0 | 6.0 to 8.0 |  3 |
| iii) | 3 | 45 | 55 | 0.8 | 1.8 | 2.5 | 2.5 | 2.0 | 2.0 | 2.0 | 6.0 to 8.0 |  3 |
| iii) | Methodof Test | IS 1969 (Part 1) | IS 6489 (Part 1) | IS 13015 | IS 13015 | IS 2977 | IS 1383 | IS 1390 | IS 10971 |
| NOTE — One newton (N) is approximately equal to 0.102 kgf. |

**Table 3 Colour Fastness Requirement**

(*Clauses* 3.1.2 *and* 3.5)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Agency** | **Minimum Rating** | **Method of Test** |
| (1) | (2) | (3) | (4) |
| i) | Lighta) Warp directionb) Weft direction | 4 or better4 or better | IS/ISO 105-B02 |
| ii) | Washinga) Change in colourb) Staining of adjacent fabrics | 4 or better3 or better | IS/ISO 105- C10 |
| iii) | Bleaching: Hypochlorite | 4 or better | IS/ISO 105-N01 |
| iv) | Rubbing: a) Dry b) Wet | 4 or better3 or better | IS/ISO 105-X12 |
| v) | Perspiration, acidic and alkalinea) Change in colourb) Staining of adjacent fabrics | 4 or better4 or better | IS/ISO 105-E04 |

**Table 4 Dimensions of Bedsheets**

(*Clause* 4.6)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Size** | **Width, cm** | **Length, cm** |
| (1) | (2) | (3) | (4) |
| i) | 1 | 135 | 215 |
| ii) | 2 | 135 | 230/240 |
| iii) | 3 | 150 | 215 |
| iv) | 4 | 150 | 230/240 |
| v) | 5 | 175 | 255 |
| vi) | 6 | 230 | 230 |
| vii) | 7 | 230 | 275 |
| viii) | 8 | 275 | 275 |
| ix) | 9 | 120 | 229 |
| x) | 10 | 127 | 222 |
| xi) | Method of test | IS 1954 | IS 1954 |

**5 SEALED SAMPLE**

**5.1** If, in order to illustrate indeterminable characteristics such as general appearance, lustre, feel and shade, a sample has been agreed upon and sealed, the supply shall be it conformity with the sample in such respects.

**5.1.1** The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

**6 MARKING**

**6.1** The sheeting, ticking, bedsheets, pillow covers and blanket covers shall be marked with the following:

a) Name of material;

b) Variety number;

c) Blend composition;

d) Length (m) and width (cm);

e) Indication of the source of manufacture; and

f) Other information required as per law in force.

**6.1.1** The bedsheets, pillow covers and blanket covers may also be marked with the Standard Mark.

**6.2 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 product(s) may be marked with the Standard Mark.

**7 PACKING**

**7.1** Unless otherwise agreed upon by the buyer and seller, 5-10 bedsheets or pillows covers or blanket cover of the same variety shall be folded together and packed in PVC bag and placed one over the other. The complete material shall be packed in Laminated HDPE waterproof woven fabric and stitched in bale form secured by means of plastic strappings or hoops suitable for land, air and sea transit and storage.

**8 SAMPLING**

**8.1 Lot**

The quantity of the bedsheets, pillow cover and blanket covers delivered to the buyer against one dispatch note shall constitute a lot.

**8.2** The conformity of the lot to the various requirements specified in the standard shall be determined on the basis of tests carried out on the sample selected from the lot.

**8.3** Unless otherwise agreed, the number of pieces selected at random for inspection shall be in accordance with Table 5.

**8.3.1** For selection of samples at random from the lot, procedure given in IS 4905 may be followed.

**Table 5 Sample Size and Permissible Number of Non-conforming product(s)**

(*Clauses* 8.3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Lot Size Sample** | **Sample Size** | **Permissible Number of Non-Conforming product** | **Sub-sample Size** |
| (1) | (2) | (3) | (4) | (5) |
| i) | Up to 90 | 5 | 0 | 3 |
| ii) | 91 to 150 | 8 | 0 | 3 |
| iii) | 151 to 500 | 13 | 1 | 5 |
| iv) | 501 to 1 200 | 20 | 1 | 5 |
| v) | 1 201 to 10 000 | 32 | 2 | 8 |
| vi) | 10 001 to 35 000 | 50 | 3 | 8 |
| vii) | 35 001 to 5 00 000 | 80 | 5 | 13 |
| viii) | 5 00 001 and above | 125 | 7 | 13 |

**8.4 Number of Samples and Criteria for Conformity**

It shall be as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| *Sl No.* | *Characteristics* | *Number of Samples* | *Criteria for conformity* |
| (1) | (2) | (3) | (4) |
| i) | Ends, picks, length, width and freedom from defects, count | According to col (2) ofTable 5 | Number of non-conforming pieces shall not exceed the corresponding number given in col (3) of Table 5 |
| ii) | Mass, dimensional change, *p*H value, colour fastness, blend composition, fibre content, scouring loss, pillingresistance, breaking load, hemming, sewing, Fabric Bow, Fabric skew, Tear strength | According to col (4) ofTable 5 | All the test pieces shall meet therequirement |

**ANNEX A**

(*Clause* 2)

**LIST OF REFERRED STANDARDS**

|  |  |
| --- | --- |
| IS No. | Title |
| IS 171 : 1993 | Textiles **—** Ring spun grey cotton yarn for weaving **—** Specification (*fourth* *revision*) |
| IS 293 : 1980 | Code of seaworthy packaging of cotton yarn and cloth (*third revision*) |
| IS 667 : 1981 | Methods for identification of textile fibres (*first* *revision*) |
| IS 1315 : 1977 | Method for determination of linear density of yarns spun on cotton system (first revision) |
| IS 1347 : 1972 | Specification for inland packaging of cotton cloth and yarn (*first revision*) |
| IS 1383 : 1977 | Methods for determination of scouring loss in grey and finished cotton textile materials (*first revision*) |
| IS 1390 : 2022 | Textiles **—** Determination of *p*H of aqueous extract (*third revision*) |
| IS 1720 : 1978 | Specification for cotton sewing threads (*first* *revision*) |
| IS 1954 : 1990 | Determination of length and width of woven fabrics **—** Methods (*second revision*) |
| IS 1963 : 1981 | Methods for determination of threads per unit length in woven fabrics (*second* *revision*) |
| IS 1964 : 2001 | Textiles **—** Methods for determination of mass per unit length and mass per unit area of fabrics (*second* *revision*) |
| IS 1969 (Part 1) :2018 | Textiles **—** Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method (*fourth revision*) |
| IS 2977 : 1989 | Fabrics (other than wool) **—** Method for determination of dimensional changes on soaking in water (*first* *revision*) |
| IS 3442 : 2023 | Method for determination of crimp and linear density of yarn removed from fabrics (*second revision*) |
| IS 3919 : 1966 | Methods for sampling cotton fabrics for determination of physical characteristics |
| IS 5463 : 2022 | Methods for sampling of cotton fabrics for chemical tests (*first revision*) |
| IS 7866 : 1993 | Textiles **—** Ring spun polyester blended grey yarn **—** Specification (*first**revision*) |
| IS 10971 (Part 1) : 2022 | Textiles **—** Determination of fabric propensity to surface fuzzing and topilling: Part 1 Pilling box method (*second revision*) |
| IS 11195 : 1985 | Specification for blend compositions of textiles |
| IS/ISO 105-B01 : 2014 | Textiles **—** Tests for colour fastness: Part B01 Colour fastness to light:Daylight |
| IS/ISO 105-N01 : 1993 | Textiles **—** Tests for colour fastness: Part N01 Colour fastness tobleaching: Hypochlorite |
| IS/ISO 105-C10 : 2006 | Textiles **—** Tests for colour fastness: Part C10 Colour fastness to washingwith soap or soap and soda |
| IS/ISO 105-X12 : 2016 | Textiles **—** Tests for colour fastness: Part X12 Colour fastness to rubbing(*first revision*) |
| IS/ISO 105-E04 : 2008 | Textiles **—** Tests for colour fastness: Part E04 Colour fastness toperspiration |
| IS/ISO 105-B02 : 2014 | Textiles **—** Tests for colour fastness: Part B02 Colour fastness to artificiallight: Xenon arc fading lamp test |

**ANNEX B**

(*Clause* 3.3)

**LIST OF MAJOR FLAWS**

a) One or more ends missing in the body of the material throughout its length, more than three ends missing at a place and running over 60 cm, or prominently noticeable double ends running throughout the piece;

b) Undressed snarls noticeable over a length exceeding 5 percent of the length of the piece;

c) Smash definitely rupturing the texture of the fabric;

d) Hole, cut or tear;

e) Read marks prominently noticeable over a length exceeding 5 percent of the piece;

f) Defective or damaged selvedge noticeable over a length exceeding 5 percent of the length of the piece;

g) Skewing of weft;

h) Weft crack or two or more missing picks across the width of the fabric;

j) Warp or weft bar due to difference in raw material, count, twist, lustre, colour, shade or spacing of adjacent groups of yarns (starting mark);

k) More than two adjacent ends running parallel, broken or missing and extending beyond 10 cm;

m) Noticeable warp or weft float in the body of the fabric;

n) Noticeable oil or other stain in the fabric;

p) Oily weft in the fabric;

q) Prominently noticeable slub;

r) Conspicuous broken pattern;

s) Gout due to foreign matter, usually lint or waste, woven into the fabric;

t) Prominent selvedge defect;

u) Significant shading or listing having a gradual change in tone or depth of shade (excluding in selvedge);

v) Coloured flecks;

w) Blurred or dark patch;

y) Patchy, streaky or uneven dyeing;

z) Dye bar; and

aa) Fuzzy appearance.

**Annex C**

(*Clause* 3.8)

**METHOD OF TEST FOR SOIL RELEASE: OILY STAIN RELEASE METHOD**

**C-1 PRINCIPLE**

A stain is applied to a test specimen. An amount of the staining substance is forced into the fabric by using a specified weight. The stained fabric is then laundered in a prescribed manner and the residual stain rated on a scale from 5 to 1 by comparison with a stain release replica showing a graduated series of stains.

**C-2 APPARATUS AND MATERIALS**

**C-2.1** White Blotting Paper

**C-2.2** Corn oil (*See* IS 4055)

**C-2.3** Glassine Paper or Equivalent

**C-2.4** Timer

**C-2.5** Weight, cylinder 6.4 cm diameter, 2.268 ± 0.045 kg (stainless is preferable).

**C-2.6** Amber bottle, with medicine dropper.

**C-2.7** Washer, automatic as specified in IS 15370.

**C-2.8** Dryer, automatic as specified in IS 15370.

**C-2.9** Granular commercial detergent, home wash as specified in IS 15370.

**C-2.10** Ballast of (92 × 92) ± 3 cm hemmed pieces of bleached cotton sheeting (Ballast wash load Type 1) or 50 / 50 polyester / cotton bleached mercerized plain weave (Ballast wash load Type 3).

**C-2.11** Lighting and Evaluation Area

**C-2.12** Table with non-glare black top 61 × 92 cm and 89 ± 3 cm high

**C-2.13** Stain Release Replica

**C-2.14** Thermometer, 0 to 100°C, Least count - 1°C.

**C-2.15** Balance or scale appropriate for the weights required having a least count of 0.01 g.

**C-3 TEST SPECIMENS**

Use two test specimens (38 x 38) ± 1 cm for each determination. Condition the test specimens for a minimum of 4 h at 27 ± 2°C and 65 ± 5 percent RH prior to application of stains.

**C-4 STAINING PROCEDURE**

**C-4.1** Place the unstained specimen flat on a single thickness of white textile blotting paper on a smooth, horizontal surface.

**C-4.2** Using the medicine dropper, place 5 drops (approximately 0.2 ml) of corn oil in the approximate centre of the test specimen.

**C-4.3** Place a 7.6 × 7.6 cm of glassine paper over the stained area.

**C-4.4** Place the weight (*see* C-2.5) on the glassine paper over the stained area.

**C-4.5** Allow weight to sit undisturbed for 60 ± 5 s. Then removed the weight and discard the glassine sheet.

**C-4.6** Do not allow stained test specimens to contact each other in a manner which would transfer stains. Wash within 20 ± 5 min after staining.

**C-5 WASHING PROCEDURE**

**C-5.1** Subject the specimens to washing as per procedure 5A and reference detergent specified in 4.1.2 of IS 15370 and followed by drying as per 8.5 of IS 15370.

**C-5.2** Remove specimens from dryer immediately on completion of the cycle and lay flat to prevent formation of wrinkles or creases which can affect the stain release rating. Rate residual stains within 4 h after drying.

**C-6 EVALUATION**

**C-6.1** Mount the stain release replica on the mounting board, with the centre of the standard 114 ± 3 cm from the floor.

**C-6.2** Place the test specimen flat with face up in the center of the non-glare black topped table with one edge of the table touching the mounting board. The fabric shall be rotated to be viewed from the direction which produces the lowest rating.

**C-6.3** Viewing distance shall be 76 ± 3cm from the back mounting board, with the eye at 157 ± 15 cm from the floor. The rater should stand directly in front of the specimen. Varying the viewing angle either horizontally or vertically can affect grades obtained on the same fabrics.

**C-6.4** Each rater shall independently compare the residual stain on the test specimen with the stains on the stain release replica and rate each test specimen to the nearest 0.5 grade as follows:

Grade 5 — Stain equivalent to Standard Stain 5

Grade 4 — Stain equivalent to Standard Stain 4

Grade 3 — Stain equivalent to Standard Stain 3

Grade 2 — Stain equivalent to Standard Stain 2

Grade 1 — Stain equivalent to Standard Stain 1

NOTE — Grade 5 represents the best stain removal and Grade 1 the poorest stain removal.

**C-7 Report**

**C-7.1** Calculate the average of 4 grades for each fabric (2 judgments on each of 2 specimens), to nearest 0.1. This is the unit of measure for this test method.

**C-7.2** Report whether the stain release replica or the 3 M stain release rating scale was used.

**C-7.3** Report water hardness of the washing procedure in terms of parts per million (ppm).

**C-7.4** Report the type ballast material used.

**ANNEX 15**

**(Item 5.4)**

**COMMENT ON WIDE CIRCULATION DRAFT ON “TEXTILES — BEDSHEETS, PILLOW COVER AND BLANKET COVER — SPECIFICATIONS”**

1. **Comments received from Shri A Babu**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNo.** | **Clause / Subclause No.** | **Paragraph No./Figure No./Table No.** | **Type of Comment** | **Attachment** |
| 1 | 3.8 | 1 | Editorial | N/A |
| **Comments/Suggestions along with Justification for the Proposed Change** | The soil release efficiency after 50 washes shall be Grade 3, Min when tested as per method prescribed in Annex C. - except turmeric and ink 1. It contains strong yellow pigment, which is known as Curcuminoids ,This is responsible Yellow Ting by Turmeric on the fabric .

In the RGB color Space , Turmeric contains 79 % Red , 73% Green & 28 % Blue Turmeric has 53 Deg Hue ,64 % Saturation & 79 % in HSV ( Hue saturation Value ) color space |
| **Proposed Change/Modified Wordings** | The soil release efficiency after 50 washes shall be Grade 3, Min when tested as per method prescribed in Annex C. - except turmeric(1 to 2 )  and ink 2 |

1. **Comments received from Shri Manoj Kumar**

सेवा में,

श्रीमान सदस्य सचिव

भारतीय मानक ब्यूरो

मानक भवन, 9 बहादुर शाह जफर मार्ग

नई दिल्ली – 110002

विषय - नए मानक के संबंध में

महोदाय निवेदन है कि आप नए मानक जो कि बैड शीट, पिलोकवर एव टावल के लिए आप तैयार कर रहे हैं उससे दर्शाया गया है कि सूत बाजार में उपलब्ध ही नहीं है तो माल को कैसे तैयार किया जाएगा तथा इसमें एंड्स पीक्स बहुत अधिक है। आपसे अनुरोध है कि किसी का पक्ष न लेते हुए सामान्य मानक तैयार करें ताकि कच्चा माल बाजार से मिल सके और सस्ते रेटों पर माल सरकार को उपलबध हो सके और किसी का एक छत्र राज न बन सके और सभी को काम मिल सके।

**ANNEX 16**

**(Item 5.5)**

**WIDE CIRCULATION DRAFT FOR IS 7056 FOR COTTON TOWELLING AND TOWELS**

*DRAFT* FOR COMMENTS ONLY Doc: TXD 31 (21853)WC

भारतीय मानक ब्यूरो

*भारतीय मानक*  मसौदा

**सूती तौलियों के कपडे और तौलिये - विशिष्टि**

(आई एस 7056 का *दूसरा पुनरीक्षण*)

**BUREAU OF INDIAN STANDARDS**

Draft *Indian Standard*

**C****otton Towelling and Towels — Specification**

(*Second revision of* IS 7056)

**ICS 59.080.30**

Not to be reproduced without permission of Last date for receipt of comment is

BIS or used as Standard 23 March 2024

**FOREWORD**

(*Formal clause to be added later*)

This standard was first published in the year 1973. It was first revised in the year 1989 to specify the requirements of towels in a single specification amalgamating IS 7057 : 1973 'Specification for cotton turkish towels'. This standard is being revised again to incorporate the following:

1. Requirements of an additional variety of cotton towel of different GSM which is extensively used in Indian Railways.
2. Incorporating the requirements for identification of material, whiteness index and colour fastness to hypochlorite.

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.

**1 SCOPE**

**1.1** This standard prescribes constructional and performance requirements of cotton terry (turkish) and huck-a-back towelling and towels; bleached, dyed, printed or striped.

**1.2** The standard does not specify design, general appearance, feel, finish or shade, etc (*see* also **5.1**).

**2 REFERENCES**

**2.1** 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 indicated in Annex A.

**3 REQUIREMENTS**

**3.1 Fabric Constructional requirements**

Terry towelling shall meet the construction particulars given in Table 1, huck-a-back fabric shall conform to the construction particulars given in Table 2. The cotton yarn used shall be evenly spun (*see* IS 171).

**3.2 Fabric performance requirements**

**3.2.1** The fabric shall conform to the performance requirements given in Table 3.

Note — Dyed yarn used in stripes, dyed fabric or printed fabric shall conform to the colour fastness ratings given in Table 3.

**3.2.1** In case of undyed or white towels, the whiteness index shall not be less than 140 when tested as per the method prescribed in Annex J of IS 17263.

**3.3 Freedom from Defects**

The fabric when visually examined shall be free from spinning, weaving and processing defects (*see* IS 14466). The bleached fabric shall have a full bleach finish and shall be free from blueing or optical whitening agents, if required by the buyer. In case of dyed fabric the fabric shall be thoroughly scoured prior to dyeing so that the maximum absorbency is obtained. The dyeing shall be uniform without stains, streaks, patches, etc. and shall match the required shade.

**3.4 Sizes**

Dimensions of towels shall be as given in Table 4.

**3.5 Heading**

The maximum depth of plain heading at each end of the towel shall be as specified in Table 4.

**3.6 Sewing Thread**

If agreed to between the buyer and the seller, either one of the following 2 sewing threads may be used:

1. Cotton sewing thread of 60s/6 cotton count (Ne) (9.8 tex × 6) conforming to IS 1720 shall be used.
2. Polyester sewing thread of 3ply 24 tex, *Min* shall be used. The count of the yarn for polyester sewing thread shall be tested as per IS 1315.

Note — In case of dyed towels the thread shall be of similar shade.

**3.7 Transverse Ends or End Hems**

Each transverse end of towel shall have a 7.5 mm hem, *Min* with a full turn-in at each end.

**3.8 Side Edges**

The side edges shall be either selvedge which shall be firm and straight or shall have a 7.5 mm, *Min* hem with a full turn-in.

**3.9 Stitching**

The stitching shall be of even tension and the loose ends shall be finished securely and neatly. The number of stitches shall not be less than 4 per centimetre.

**4 SEALED SAMPLE**

**4.1** If, in order to illustrate indeterminable characteristics such as general appearance, lustre, feel and shade, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

**4.1.1** The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

**Table 1 Construction Particulars of Terry Towelling**

(*Clause* 3.1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Varity No.** | **Count of Yarn, Ne** | **Threads per dm,*****Min*** | **Mass,*****Min*****g/m2** | **Terry****Ratio,*****Min*** |
| **Warp****Ground** | **Pile** | **Weft** | **Warp****Ground** | **Pile** | **Weft** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| i) | 1 | l6s/2 | 16s | 14s | 100 | 100 | 200 | 390 | 6:1 |
| iii) | 2 | 20/2s  | 20/2s  | 12s | 145 | 145 | 170 | 550 | 4.5:1 |
| iv) | Tolerance, Percent | ± 5 | ± 5 | ± 5 | - | - | - |
| v) | Method ofTest | IS 1315 | IS 1963 | IS 1964 | Annex B |

**Table 2 Construction Particulars of Huck-a-Back Towelling**

(*Clause* 3.1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** |  | **Count of Yarn, Ne****(Approx), (*see* Note), For guidance only** | **Threads per dm*****Min*** | **Mass,*****Min*****g/m2** |
| **Warp** | **Weft** | **Ends** | **Picks** |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| i) |  | 14s (42 tex) (*see* Note) | 6s (98 tex) | 360 | 135 | 290 |
| ii) | Method ofTest | — | IS 1963 | IS 1964 |
| Note — Two warp threads work as one in the loom. |

**Table 3 Performance Requirement for Fabric**

(*Clauses* 3.2.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristics** | **Requirements** | **Method of Test** |
| **Terry (Variety 1)** | **Terry (Variety 2)** | **Huck-a-Back** |
| (1) | (2) | (3) | (4) | (5) | (6) |
| i) | Identification of material (*see* Note 2) | 100% cotton | 100% cotton | 100% cotton | IS 667 |
| ii) | Breaking load on 5.0 × 20 cmstrips (ravelled strip method),*Min*1. Warpway
2. Weftway
 | 310 N (32 kgf)340 N (35 kgf) | 345 N (35 Kgf)295 N (30 Kgf) | 590 N (60 kgf)330 N (34 kgf) | IS 1969 (Part 1) |
| iii) | Scouring loss, percent, *Max* | 2.0 | 2.0 | 2.0 | IS 1383(Mild method) |
| iv) | Shrinkage or elongation, percent, *Max* | 3.0 | 3.0 | 3.0 | IS 2977 |
| v) | *p*H value | 6.0 to 8.5 | 6.0 to 8.0 | 6.0 to 8.5 | IS 1390 |
| vi) | Wettability, *Max* | 5 s | 5 s | 5 s | IS 2349 |
| vii) | Minimum colour fastness rating to:a) Light (*see* Note 1)b) Washing: Test 4 Change in colour Staining of adjacent fabricc) Hypochlorite Change in colour | 5444 | —5444 | 5444 | IS/ISO 105-B02IS/ISO 105-Cl0IS/ISO 105-N01 |
| NOTE **1** In case of 'sulphur dyes', the minimum colour fastness rating to light shall be 4.**2** Impurities of less than 0.2 percent shall be permitted. |

**Table 4 Dimensions of Towels**

(*Clauses* 3.4 and 3.5)

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Minimum Dimensions** | **Maximum Heading****Depth****cm** |
| **Width****cm** | **Length****cm** |
| (1) | (2) | (3) | (4) |
| i) | 40 | 60 | 6.5 |
| ii) | 50 | 100 | 6.5 |
| iii) | 61 | 122 | 6.5 |
| iv) | 66 | 112 | 6.5 |
| v) | 75 | 150 | 6.5 |
| vi) | 80 | 155 | 6.5 |

**5 MARKING**

**5.1** The towelling or towels shall be marked with the following particulars:

a) Length and width;

b) Manufacturer's name, initials or trademark, if any.

c) Month and year of manufacture; and

d) Any other information as required by the buyer or the law in force.

**5.1.1** ***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 product(s) may be marked with the Standard Mark.

**6 PACKING**

**6.1** Unless otherwise agreed upon by the buyer and the seller*,* the towelling or towels shall be packed in bales or cases in conformity with the procedure laid down in IS 1347 or in IS 293 as required.

**7 SAMPLING**

**7.1 Lot**

The quantity of the towels delivered to the buyer against one dispatch note shall constitute a lot.

**7.2** The conformity of the lot to the various requirements specified in the standard shall be determined on the basis of tests carried out on the sample selected from the lot.

**7.3** Unless otherwise agreed, the number of pieces selected at random for inspection shall be in accordance with Table 5.

**7.3.1** For selection of samples at random from the lot, procedure given in IS 4905 may be followed.

**Table 5 Sample Size and Permissible Number of Non-conforming product(s)**

(*Clauses* 7.3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Lot Size Sample** | **Sample Size** | **Permissible Number of Non-Conforming towels** | **Sub-sample Size** |
| (1) | (2) | (3) | (4) | (5) |
| i) | Up to 90 | 5 | 0 | 3 |
| ii) | 91 to 150 | 8 | 0 | 3 |
| iii) | 151 to 500 | 13 | 1 | 5 |
| iv) | 501 to 1 200 | 20 | 1 | 5 |
| v) | 1 201 to 10 000 | 32 | 2 | 8 |
| vi) | 10 001 to 35 000 | 50 | 3 | 8 |
| vii) | 35 001 to 5 00 000 | 80 | 5 | 13 |
| viii) | 5 00 001 and above | 125 | 7 | 13 |

**7.4 Number of Samples and Criteria for Conformity**

It shall be as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| *Sl No.* | *Characteristics* | *Number of Samples* | *Criteria for conformity* |
| (1) | (2) | (3) | (4) |
| i) | Ends, picks, length, width and freedom from defects, count | According to col (2) ofTable 5 | Number of non-conforming pieces shall not exceed the corresponding number given in col (3) of Table 5 |
| ii) | Mass, Shrinkage or elongation, *p*H value, colour fastness, identification of material, scouring loss, breaking load, hemming, sewing | According to col (4) ofTable 5 | All the test pieces shall meet therequirement |

**ANNEX A**

(*Clause* 2.1)

**LIST OF REFERRED STANDARDS**

|  |  |
| --- | --- |
| IS No. | Title |
| IS 171 : 1985 | Cotton and cotton regenerated cellulosic fibre blended grey yarn (*third revision*) |
| IS 293 : 1980 | Code for seaworthy packaging of cotton yarn and cloth (*third revision*) |
| IS 667 : 1981 | Methods for identification of textile fibres (first revision) |
| IS 1315 : 1977 | Method for determination of linear density of yarns spun on cotton system (first revision) |
| IS 1347 : 1972 | Inland packaging of cotton cloth and yarn (*first revision*) |
| IS 1383 : 1977 | Scouring loss in grey and finished cotton textile materials (*first revision*) |
| IS 1390 : 1983 | *p*H value of aqueous extract of textile materials (*first revision*) |
| IS 1720 : 1978 | Cotton sewing threads (*second revision*) |
| IS 1963 : 1981 | Threads per unit length in woven fabrics (*second revision*) |
| IS 1964 : 1970 | Weight per square metre and weight per linear metre of fabrics (*first revision*) |
| IS 1969 (Part 1) : 2018 | Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method (fourth revision) |
| IS 2349 : 1963 | Wettability of cotton fabrics |
| IS 2977 : 1964 | Dimensional changes in woven fabrics (other than wool) on soaking in water |
| IS/ISO 105-B02 : 2014 | Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test |
| IS/ISO 105-C10 : 2006 | Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda |
| IS/ISO 105-N01 : 1993 | Textiles — Tests for colour fastness: Part N01 Colour fastness to bleaching: Hypochlorite |
| IS 14466 : 1997 | Fabrics — Description of defects — Vocabulary |

**ANNEX B**

(*Table* 1)

**DETERMINATION OF TERRY RATIO**

**B-1** Cut out a 10 cm × 10 cm specimen from the fabric and condition the specimen in the standard atmosphere for testing. Remove warp threads from the specimen so as to provide 10 threads each from the specimen of ground warp and of terry warp. Determine the mean straightened length of each group of 10 threads.

Express the terry ratio as the ratio of the mean straightened length of the terry warp threads to the mean straightened length of the ground warp threads.

**ANNEX 17**

**(Item 5.5)**

**COMMENT ON WIDE CIRCULATION DRAFT ON IS 7056 FOR COTTON TOWELLING AND TOWELS**

1. **Comments received from Shri Babu A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNo.** | **Clause / Subclause No.** | **Paragraph No./Figure No./Table No.** | **Type of Comment** | **Attachment** |
| 1 | 3.2.1 | iv) | Editorial | [cmt\_1711132691\_65fdd013d2207.pdf](https://www.services.bis.gov.in/tmp/cmt_1711132691_65fdd013d2207.pdf) |
| **Comments/Suggestions along with Justification for the Proposed Change** | Shrinkage or elongation, percent, mx gvien as 3%. this can be elongation 1% in both warp and weft. shrinkage will be warp minus 7% and weft miuns 6%. terry towel shriankg is diffrent from woven fabric. this is bcause of low EPI, PPI, coarser count yarn, low TPI used to get softness in fabric.  |
| **Proposed Change/Modified Wordings** |  Elongation warp, weft max allowed plus 1%.shrinakge allowed max 7% in warp and 6% in weft |
| 2 | 3.8 Side Edges | 1 | Editorial | [cmt\_1711132691\_65fdd013d2207.pdf](https://www.services.bis.gov.in/tmp/cmt_1711132691_65fdd013d2207.pdf) |
| **Comments/Suggestions along with Justification for the Proposed Change** | The side edges shall be either selvedge which shall be firm and straight or shall have a 7.5 mm, Min hem with a full turn-in. above statement mentioend in proposed draft. modern mills uses latest automatic stitching machines where  this length hem ( side edges) will have double needle lock stich with 4 to 8mm. this is highly secured.  |
| **Proposed Change/Modified Wordings** | Side edges can be single neelde lock stitch where edged turned in as hem. or double needle lock stitch from 4 mm to 8mm depend upon hem and machines.  |

1. **Comments received from M/s Reliance retails**

Dear Sir

Reference to the below email, pls find our comments for your review

Following comments we have highlighted during BIS meeting which need to be corrected.

Point 1

As per BIS protocol

Warp and weft shrinkage given as -3 %.

Alok comments, we need following shrinkage tolerance which is industry best achieved.

Warp + 1%, - 7%

Weft + 1%, - 5%.

Point 2

Stitching style as per approved samples.

Length hem will be fixed of 7mm double needle chain stitch.

Cross hem will be half inch.

Best wishes

Aditya kalani

**ANNEX 18**

**(Item 6.1)**

**DRAFT ON POLYPROPYLENE CONTINUOS FILAMENT YARN**

For BIS Use Only

*Preliminary Draft Indian Standard*

**Textiles - Continuous Filament Polypropylene Yarns - Specification**

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FOREWORD

(*Formal foreword to be added later*)

Polypropylene filament yarns are synthetic fibers made from polypropylene, a thermoplastic polymer. It is a lightweight material, making the filament yarns suitable for various applications where weight is a concern. Polypropylene is resistant to many chemicals, making it suitable for applications where exposure to harsh substances is expected. Polypropylene filament yarns are commonly used in the textile industry for making various products such as ropes, twines, mats, geotextiles etc.

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.

**1. SCOPE**

* 1. This standard specifies requirements for all types of polypropylene continuous single ply multifilament yarn for various end usages. This standard covers the requirements for both dyed and undyed polypropylene continuous filament yarn.
	2. This standard covers the requirements for flat, twisted and intermingled polypropylene single multifilament yarn.

**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 indicated in Annex A.

**3. TERMS AND DEFINITIONS**

**3.1 Cross Section** — The shape of a fibre when viewed perpendicular to its axis.

NOTE — The shape of man-made fibres can be influenced by the spinning process and subsequent processing and treatments, such as texturizing.

**3.2 Flat Yarn** — Man-made continuous filaments that have not been twisted or textured.

**3.3 Intermingled Yarn** — A multifilament yarn in which cohesion is imparted to the constituent filaments usually by passing the yarn through a turbulent air without causing entwining of the filaments and the formation of randomly distributed interlacing points (knots).

NOTE — The knots are not actually the knots tied when two threads are broken but they are the tangle knots created by opening up of filaments and mingling under the influence of air pressure. This creates compact sections in the yarn imparting cohesiveness.

**3.4 Shrinkage** — The decrease in length of a test specimen caused by a specified treatment, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and during or after treatment under specified tensions.

**3.4.1 Boiling Water Shrinkage** — The decrease in length of a test specimen caused by a treatment in boiling water for specified time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and after treatment under a specified pretension.

**3.4.2 Hot Water Shrinkage** — The decrease in length of a test specimen caused by a treatment in hot water under as specified conditions of temperature and time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured before and after treatment under a specified pretension. The water temperature to be applied is specified between buyer and seller.

**3.5 Oven-dry Mass -** The mass obtained by drying the filament yarn usually after removal of added products such as finish oil, moisture & extractable matters.

**4. REQUIREMENTS**

**4.1** The Polypropylene filament yarn (PFY) shall conform to the requirements specified in **Table 1 and Table 2** in addition to requirements specified in **4.2, 4.3, 4.4 and 4.5** (optional).

**Table 1 Physical requirements for Polypropylene Fully Drawn Yarn**

(*Clause* 4.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirements** | **Method of Test** |
| **Range** | **Tolerance**  |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
|  | Linear Density (Denier)  | As Declared | ± 2.0 Percent | IS 7703 (Part 1) |
|  | No. of Filaments (As Declared)  | ≤ 60> 60 | ± 1 | Visual inspection under microscope |
|  | Tenacity, gpd, (As declared) |  6.1 – 7.5 | ± 5 percent on declared value | 7703 (Part 2)-Dry Method |
|  | Elongation at break, Percent, (As Declared) |  17 - 25  | ± 5 Percent on declared value | IS 7703 (Part 2) – Dry Method |
|  | Twist per meter, (As declared) (For Twisted yarns only) | 50 - 250 | ± 5 Percent on declared value | IS 832 (Part 1) |
|  | Number of Nips per meter, (For intermingled yarns only) | 10 - 35 | ± 5 Percent on declared value | Annex B of IS 17262 |
|  | Boiling Water Shrinkage, Percent (As Declared) , *Max* | 3.0 | - | Annex G of IS 17261 |
|  | Hot Air Shrinkage, Percent (as Declared), *Max* | 3.0 | - | Annex F of IS 17264  |
|  | Unevenness of yarn (Normal), Percent, *Max* | 2.0 | - | IS 7703 (Part 5) |

**Table 2 Chemical requirements for Polypropylene Fully Drawn Yarn**

(*Clause* 4.1)

|  |  |  |  |
| --- | --- | --- | --- |
| **SlNo.** | **Characteristic** | **Requirements** | **Method of Test** |
| **Range** | **Tolerance** |
| (1) | (2) | (3) | (4) | (5) |
|  | Spin Finish Oil pick-up, Percent, (As declared) | 0.40 – 1.3 | ± 0.2 | Annex C of IS 17261 |
|  | Moisture Regain, Percent, *Max* | 0.2 | - | Annex B of IS 17261  |
|  | Phosphorus content, percent, *Min* (For fire retardant yarn only) | 0.65 |  | Annex D of IS 17261 |  |
|  | Ultraviolet resistance, UV-B Lamp, 144 h, Percent retained strength, *Min* (For UV resistant yarn only) | 90 | - | Annex FIS 16481 |  |
|  | Colour strength with reference to standard yarn, percent (For dope dyed yarns only) (*see* NOTE) | 100 | ± 4 | Annex E of IS 17261 |  |
|  | Colour difference with reference to standard yarn, measured as ΔE, *Max* (for dope dyed yarns only) (*see* NOTE) | 1.0 | - | Annex E of IS 17261 |  |
|  | Colour Fastness to Light (for Dope Dyed Yarns only), *Min* | 5 | - | IS/ISO 105-B02 |  |
| NOTES **1** The manufacturer shall declare the L, a, and b values of the color coordinates of the standard yarn.**2** Either of the requirements indicated at v) and vi) needs to be complied with. |  |

**4.2 Freedom from Yarn Defects** — The PFY shall be free from the following major defects:

**4.2.1 Dirt/Grease** — No soiling or grease spots shall be allowed. It is acceptable, if the spots can be cleaned off. Air strip yarn to remove dirt on the outside surface, for dirt on the ends, clean with sprayer. If dirt does not come off, reject to off grade.

**4.2.2 Wound in Waste** — None shall be allowed. Strip to correct or reject to rewind.

**4.2.3 Damaged/Bumped** — None shall be allowed. Strip to correct or reject to rewind.

**4.2.4 Finish Oil Contamination** — Dry or regular oil yarn shall not be contaminated with finish oil when viewed under a packing table UV light, unless very slight (not immediately visible). Strip to clean if possible. Otherwise reject to off-grade.

**4.2.5 Broken Filaments** — None shall be allowed.

**4.2.6 Texture Colour/Appearance** — No overly shiny or dull yarn shall be allowed.

**4.2.7 Fluorescent Oil** — If applicable, the package shall have even coverage under UV light.

**4.2.8 Crossed Ends** — Nose end crosses can be allowed unless they appear matted or too numerous to count. Up to 25 mm crosses on the tail end shall be allowed or crosses <6 mm from the tube shall be allowed.

**4.2.9** **Slubs/Loops/Kinks** — None shall be allowed.

**4.2.10 - Proper Wind** — No patterns or bands, no high or falling off edges and no excessive

hard/soft packages shall be allowed.

**4.2.11** **Ridges/Grooves** — No ridges or grooves greater than3 mm high or deep shall be allowed.

**4.2.12 Twist** — For single ply yarns only, Z twist shall rotate clockwise when allowed to relax and S twist Will rotate counter- clockwise.

**4.2.13 Proper Ply** — Count the number of ends if the yarn is two ply or more. Air strip the yarn to correct if possible. Also check the tail.

**4.2.14 Latching** — Plies that separate when winding off package shall not be allowed.

**4.2.15 Tail** — Only one tail package per layer shall be permitted. The minimum tail length shall be one wrap around the tube.

**4.3 Commercial Mass**

The commercial mass shall be obtained by adding mass corresponding to commercial allowance of 6.50 percent to the oven dry mass of the consignment when tested by the methods prescribed in IS 7703 (Part 3) and it shall not be less than the declared commercial mass of the consignment.

**4.4 Identification of Polypropylene Yarns –** The polypropylene filament yarns shall be identified by microscopic and dissolution test given in IS 667 and melting point of 160 °C, *Min* when tested as per method specified in Annex H of IS 16481.

**4.5 Additional Requirements for Ecomark (Optional)**

For Ecomark, the product shall also comply with the additional requirements as given in Table 3.

**Table 3 Additional Requirements for ECO-Mark (Optional)**

(*Clause* 4.5)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Characteristic** | **Requirement** | **Method of Test** |
| (1) | (2) | (3) | (4) |
|  | Total Free and releasable formaldehyde, mg/kg (ppm), *Max* | 20 | IS 14563 (Parts 1 and 2) |
|  |

|  |
| --- |
| Extractable heavy metals by artificial Acidic sweat/saliva, ppm, *Max* 1. Mercury
2. Chromium III
3. Chromium VI
4. Lead
5. Cadmium
6. Copper
7. Antimony
 |
|  |

 | 0.10.1Not Detected0.20.12530 | Annex A of IS 15651 |
|  | Pentachlorophenol, ppm, *Max* | 0.5 | Annex B of IS 15651 |
|  | Pesticides, (sum parameter), ppm, *Max* | 1.0 | Annex D of IS 15651 |
|  | Banned Pesticides, ppm, *Max* | Not Detected | Annex D of IS 15651 |
|  | Banned Azo Colourants (arylamines), ppm, *Max* (For dyed yarns only) (sum parameters) | 20 | IS 15570 |

**5 PACKING**

**5.1** The continuous filament polypropylene yarn (PFY) shall be wound over bobbins in any mass up to 15 kg of yarn per bobbin. All such packages shall be packed in pallets or cartons, properly strapped using polypropylene/PET straps. Packing materials should be roadworthy/airworthy/seaworthy as agreed to between the buyer and the seller.

**5.2** All wooden pallets used for packing are to be heat treated. All wooden/paper packing should be free from infestation/fungal growth.

NOTE — Container fumigation for domestic supply shall be optional.

**6 MARKING**

**6.1** Each carton/pallet of PFY shall be marked with indelible ink, the following information:

a) Name and description of the material;

b) Commercial mass of each carton/Pallet;

c) Manufacturer’s name, address and trade-mark (if available);

d) Lot/batch/merge number;

e) Month and year of manufacture; and

f) Any other information required by the law in force.

**6.2 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 product(s) may be marked with the Standard Mark.

**6.3** The declared parameters as per Table 1, Table 2 and Table 3 shall be provided in the form of a technical data sheet by either pasting on the package or provided separately linking it with lot/batch/merge no. on request for domestic supplies.

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

**7 SAMPLING AND CRITERIA FOR CONFORMITY**

**7.1 Lot** — The number of packages in all cartons/pellets of PFY and of the same description delivered to a buyer against one dispatch note shall constitute a lot.

**7.2** The number of packages to be selected at random from a lot shall be according to column 3 of Table 4. The packages shall be selected at random from different cartons/pallets to constitute the sample size. To ensure the randomness of selection, IS 4905 may be followed.

**7.3 Number of Tests and Criteria for Conformity**

**7.3.1** The number of packages to be selected for manufacturing defects shall be in accordance with column 5 of Table 4. These packages may be selected from the packages selected for non-destructive tests.

**7.3.2** All the packages selected from the lot shall be visually examined for yarn defects as specified in **4.2**. Four such defects will be considered as one major defect. A package shall be considered defective if it contains any major defect. All the packages selected for destructive tests shall be tested for the requirements as specified in **4.1**, **4.2, 4.3** and **4.4 and 4.5** (optional)as applicable.

**7.3.3** The lot shall be declared conforming to the requirements of this standard if the total number of defective packages does not exceed the value given in column 4 of Table 4 for yarn defects or column 6 of Table 4 for other requirements.

**Table 4 Number of Packages of Yarn to be selected**

( *Clauses* 7.2, 7.3.1 *and* 7.3.3 )

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No** | **Lot Size** | **Non Destructive Testing** | **Destructive Testing** |
| **No. of Packages**  **to be Selected** | **Acceptance** **Number** | **No. of Packages**  **to be Selected** | **Acceptance** **Number** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
|  | Up to 280 | 131 | 1 | 8 | 0 |
|  | 281-500 | 20 | 2 | 8 | 0 |
|  | 501-1200 | 32 | 3 | 13 | 0 |
|  | 1201-3200 | 50 | 5 | 13 | 0 |
|  | 3201-10000 | 80 | 7 | 20 | 1 |
| 1 or lot size when less than 13 |

**ANNEX A**

( *Clause* 2 )

**LIST OF REFERRED INDIAN STANDARDS**

|  |  |
| --- | --- |
| *IS No.*  | *Title*  |
| 667 : 1981  | Methods for identification of textile fibres (*first revision*) (with supplement)  |
| 4905 : 2015  | Random sampling and randomization procedures (*first revision*)  |
| 832 (Part 1) : 2021 | Textiles — Determination of twist in yarns: Part 1 Direct counting method |
| 7703  | Methods of test for continuous filament polyester and polyamide flat yarn  |
| (Part 1) : 1990  | Linear density (*first revision*)  |
| (Part 2) : 1990  | Dry and wet tenacity and elongation (*first revision*)  |
| (Part 3) : 1991  | Commercial mass (*first revision*)  |
| (Part 5) : 1990  | Unevenness percentage  |
| 14563  | Textiles — Determination of formaldehyde  |
| (Part 1) : 2021  | Free and hydrolysed formaldehyde water extraction method (*first revision*)  |
| (Part 2) : 2021 | Released formaldehyde vapour absorption method (*first revision*)  |
| 15570 : 2005  | Textiles — Method of test — Detection of banned azo colourants in coloured textiles  |
| 15651 : 2006  | Textiles — Requirements for environmental labelling — Specification  |
| 16481 : 2016  | Textiles — Synthetic micro-fibres for use in cement based matrix — Specification  |
| 17261 : 2022 | Textiles — Polyester Continuous Filament Fully Drawn Flat Yarn *(First Revision*)  |
| 17262 : 202217264:2022 | Textiles — Polyester partially oriented yarn (POY) — Specification (*first revision*)Textiles — Polyester Industrial Yarns — Specification *( First Revision )* |
| IS/ISO 105-B02 : 2014  | Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test  |

**Annex 19**

**(Item 7.1)**

**REVIEW PERFORMA FOR IS 17217 : 2019**

**REVIEW ANALYSIS OF INDIAN STANDARD**

**(To be submitted to the Sectional Committee)**

1. **Sectional Committee No. & Title:** TXD 31 (Man-made Fibres, Cotton and their Products Sectional Committee)
2. **IS No:** IS 17217 : 2019
3. **Title:** Textiles — Disruptive pattern (Camouflage pattern) cloth for jungle operations made of nylon and cotton blended (NYCO) material — Specification
4. **Date of review:** 09 April 2024
5. **Review Analysis**
6. **Status of standard(s), if any from which assistance had been drawn in the formulation of this IS.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard****(No. & Title)** | **Whether the standard has since been revised** | **Major changes** | **Action proposed** |
| NA | NA | NA | NA |

1. **Status of standards referred in the IS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Referred standards****(No. & Title)** | **IS No. of this standards since revised** | **Changes that are of affecting the standard under review** | **Action proposed** |
| IS 1390 : 1983Methods for determination ofpH value of aqueous extracts oftextile materials (first revision) | IS 1390 : 2022ISO 3071 : 2020Textiles Determination of pH of aqueous extract (third revision) | This standard is superseded to IS 1390 : 2022 | Latest version of the standard i.e. IS 1390 : 2022 shall be referred. |
| IS 1954 : 1990 Determination of length andwidth of woven fabrics (secondrevision) | IS 1954 : 2024ISO 22198 : 2006Textiles — Fabrics — Determination of width and length third revision | This standard is superseded to IS 1954 : 2024 | Latest version of the standard i.e. IS 1390 : 2022 shall be referred. |
| IS 1963 : 1981 Methods for determination of threads per unit length in woven fabric (second revision) | Same Version | NA | NA |
| IS 1964 : 2001 Textiles — Methods for determination of mass per unit length and mass per area of fabrics (second revision) | Same Version | NA | NA |
| IS 1969 (Part 1) : 2018/ ISO 13934-1 : 2013Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method (fourth revision) | Same Version | NA | NA |
| IS 2005 : 1988 Methods for quantitative chemical analysis of binary mixtures of nylon 6 or nylon 6.6 fibres and certain other fibres (first revision) | Same Version | NA | NA |
| IS 2194 : 1963 Code for seaworthy packaging of man-made fibre fabrics | Same Version | NA | NA |
| IS 2195 : 1964 Code for inland packaging of man-made fibre fabrics and man-made fibre yarns | Same Version | NA | NA |
| IS 2454 : 1985 Methods for determination of colour fastness of textile materials to artificial light (xenon lamp) (first revision) | IS/ISO 105-B02 : 2014Textiles — Tests for colour fastness — Part B02 Colour fastness to artificial light: Xenon arc fading lamp test | This standard is superseded to IS/ISO 105-B02 : 2014 | Latest version of the standard i.e. IS/ISO 105-B02 : 2014 shall be referred. |
| IS 2977 : 1989 Fabrics (other than wool) — Method for determination of dimensional changes on soaking in water (first revision) | Same Version | NA | NA |
| IS 4905 : 2015/ISO 24153 : 2009 Random sampling and randomization procedures (first revision) | Same Version | NA | NA |
| IS 6489 : (Part 1 ) : 2011/ISO 13937-1 : 2000Textiles — Tear properties of fabrics: Part 1 Determination of tear force using ballistic pendulum method (Elmendorf) (second revision) | Same Version | NA | NA |
| IS 10971 (Part 1) : 2011/ ISO 12945-1 : 2000 Textiles — Determination of fabric propensity to surface fuzzing and pilling: Part 1 Pilling box method (first revision) | IS 10971 (Part 1) : 2022ISO 12945-1:2020Textiles — Determination of fabric propensity to surface pilling fuzzing or matting Part 1: Pilling box method (second revision) | This standard is superseded to IS 10971 (Part 1) : 2022 | Latest version of the standard i.e. IS 10971 (Part 1) : 2022 shall be referred. |
| IS 11056 : 2013 Textiles — Determination of permeability of the fabrics to air (first revision) | Same Version | NA | NA |
| IS 12170 : 1987 Method for determination of dimensional stability of textile materials to dry heat treatments | Same Version | NA | NA |
| IS 12673 (Part 2) : 2014/ ISO 12947-2 : 1998 Textiles — Determination of the abrasion resistance of fabrics by the Martindale method: Part 2 Determination of the specimen breakdown (first revision) | IS 12673 (Part 2) : 2022ISO 12947-2:2016Textiles — Determination of the abrasion resistance of fabrics by the Martindale method Part 2: Determination of specimen breakdown (second revision) | This standard is superseded to IS 12673 (Part 2) : 2022 | Latest version of the standard i.e. IS 12673 (Part 2) : 2022 shall be referred  |
| IS 13510 : 2000 Textile — Duck, Polyester/ cotton blended, rip-stop — Specification (first revision) | Same Version | NA | NA |
| IS 14466 : 1997/ ISO 8498 : 1990 Fabrics — Description of defects — Vocabulary | Same Version | NA | NA |
| IS 16390 : 2015 Agro textiles — Nylon knitted seamless gloves for tobacco harvesters — Specification | Same Version | NA | NA |
| IS 16575 : 2016/ ISO 9867 : 2009 Textiles — Evaluation of the wrinkle recovery of fabrics — Appearance method | Same Version | NA | NA |
| IS/ISO 105-C10 : 2006 Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda | Same Version | NA | NA |
| IS/ISO 105-E02 : 1994 Textiles — Tests for colour fastness: Part E02 Colour fastness to sea water | IS/ISO 105-E02 : 2013Textile — Tests for colour fastness Part E02 Colour fastness to sea water | This standard is superseded to IS/ISO 105-E02 : 2013 | Latest version of the standard i.e. IS/ISO 105-E02 : 2013 shall be referred  |
| IS/ISO 105-E04 : 2008 Textiles — Tests for colour fastness: Part E04 Colour fastness to perspiration | IS/ISO 105-E04 : 2013Textiles — Tests for Colour Fastness Part E04 Colour Fastness to Perspiration | This standard is superseded to IS/ISO 105-E04 : 2013 | Latest version of the standard i.e. IS/ISO 105-E04 : 2013 shall be referred  |
| IS/ISO 105-X11 : 1994 Textiles Tests for colour fastness: Part X11 Colour fastness to hot pressing | Same Version | NA | NA |
| IS/ISO 105-X12 : 2001 Textiles — Tests for colour fastness: Part X12 Colour fastness to rubbing | IS/ISO 105-X12 : 2016Textiles — Tests for colour fastness Part X12 Colour fastness to rubbing (first revision) | This standard is superseded to IS/ISO 105-X12 : 2016 | Latest version of the standard i.e. IS/ISO 105-X12 : 2016 shall be referred  |

1. **Any other standards available related to the subject & scope of the standard being reviewed (International/regional/other national/association/consortia, etc or of new or revision of existing Indian Standard)**

|  |  |  |
| --- | --- | --- |
| **Standard****(No. & Title)** | **Provisions that could be relevant while reviewing the IS** | **Action proposed** |
| NA | NA | NA |

1. **Technical comments on the standard received, if any**

|  |  |  |  |
| --- | --- | --- | --- |
| **Source** | **Clause of IS** | **Comment** | **Action proposed** |
| NA | NA | NA | NA |

1. **Information available on technical developments that have taken place (on product/processes/practices/use or application/testing/input materials, etc)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Source** | **Development** | **Relevant clause of the IS under review that is likely to be impacted** **(Clause & IS No.)** | **Action proposed** |
| NA | NA | NA | NA |

1. **Issues arising out of changes in any related IS or due to formulation of new Indian Standard**

|  |  |  |  |
| --- | --- | --- | --- |
| **Related IS and its Title****(revised or new)** | **Provision in the IS under review that would be impacted & the clause no. or addition of new clause/provision** | **Changes that may be necessary in the Standards under review** | **Action proposed** |
| NA | NA | NA | NA |

1. **Any consequential changes to be considered in other IS**

|  |  |
| --- | --- |
| **Related IS to get impacted** | **Requirements to be impacted** |
| NA | NA |

**Recommendations:**

Based on the above observations, this standard may be reaffirmed for a further period of 5 years without any changes, the committee may decide.