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# BUREAU OF INDIAN STANDARDS

**MINUTES**

**Man-Made Fibres, Cotton and their Products**

# Sectional Committee, TXD 31 31th Meeting

|  |  |  |
| --- | --- | --- |
| **Day and Date** | **Time** | **Venue** |
| 09 February 2024 | 1430 h | Through Video Conferencing |

**PRESENT:**

|  |  |  |
| --- | --- | --- |
|  | Shri Kartikay Dhanda | Textile Committee, Mumbai (**Chairman**) |
|  | Shri M S Verma | Association of Synthetic Fibre Industries, New Delhi |
|  | Shri Amit Malhotra | Bombay dyeing, Mumbai |
|  | Dr Sitaram Dixit | Consumer Guidance Society of India, Mumbai |
|  | Shri Anmol Gupta | Confederation of Indian Textile Industry, New Delhi |
|  | Smt Chandrima Chatterjee | -do- |
|  | Shri Rishi Babu | Directorate of Ordnance (Coordination and Services), Kolkata |
|  | Shri O P Sharma | Department of Chemicals and Petrochemicals, New Delhi |
|  | Shri Ashok Jirawala | Federation of Gujarat Weavers Welfare Association, Surat |
|  | Shri Alpesh Gandhi | Geelon Industries, Surat |
|  | Smt Ashmita Panchal | Grasim Industries Limited, Nagda |
|  | Dr T. Senthil Kumar | ICAR – Central Institute for Research on Cotton Technology, Mumbai |
|  | Shri Rajesh Kumar | Northern Railway, New Delhi |
|  | Shri Sandeep Kumar | -do- |
|  | Shri Himanshu Jariwal | J. Korin spinning Pvt Ltd, Surat |
|  | Shri Sanjeev Shukla | Northern India Textile Research Association, Ghaziabad |
|  | Shri P M Jain | M Ashoka Suitings Pvt Ltd, Pune |
|  | Shri Dhiren Jain | -do- |
|  | Shri V Mathivanan | Ordnance Clothing Factory, Shahjahanpur |
|  | Shri Ajay Gupta | Reliance Industries Limited, Mumbai |
|  | Shri Keshav Pareek | -do- |
|  | Shri Aditya Kalani | Reliance Retails Ltd., Thane |
|  | Shri Brijesh Gondaliya | South Gujarat Warp Knitters Association, Surat |
|  | Shri Raman Megotia | -do- |
|  | Shri Ashish Gujarati | SGCCI, Surat |
|  | Shri R A Shaikh | The Bombay Textile Research Association, Mumbai |
|  | Shri S K Panigrahi | The Cotton Corporation of India Ltd, Navi Mumbai |
|  | Dr. K Selvaraju | The Southern India Mills’ Association, Coimbatore |
|  | Shri Nagarajan Esakkimuthu | -do- |
|  | Dr. V Thanabal | The South India Textile Research Association (SITRA), Coimbatore |
|  | Dr Manisha Mathur | The Synthetic and Art Silk Mills Research Association, Mumbai |
|  | Shri Swapan Sardar | Trident Group, Ludhiana |
|  | Shri Udit Raj | -do- |
|  | Shri Shubham | -do- |
|  | Shri Alok Sahu | -do- |
|  | Shri Sunil Arora | -do- |
|  | Shri Gaurav Sharma | -do- |
|  | Shri Pankaj Saxena | -do- |
|  | Shri Vipin Yadav | -do- |
|  | Shri Kavish | -do- |
|  | Dr Suranjana Gangopahyay | Veermata Jijabai Technological Institute, Mumbai |
|  | Dr. Neha Mehra | -do- |
|  | Shri Hemant Manocha | Vardhman Group, Ludhiana |
|  | Smt Anu Handa | -do- |
|  | Shri Beenu Singh | Welspun Pvt Ltd., Mumbai |
|  | Shri Prathamesh | -do- |
|  | Smt Rajinder Kaur |  |
|  | Shri K S Bala |  |
|  | Shri Nimesh Jariwala |  |
|  | Shri Suresh Singal |  |

**BIS DIRECTORATE GENERAL**

|  |  |  |
| --- | --- | --- |
| 1 | Shri J. K. Gupta | Bureau of Indian Standards, New Delhi |
| 2 | Shri Mayur Katiyar | -do- |

# Item 0 WELCOME & INTRODUCTORY REMARKS

* 1. Shri J K Gupta, HTXD welcomed the chairman and all the members of the committee. He requested the members to provide their precise inputs on the agenda points.
  2. The chairman extended a warm welcome to all the members of TXD 31 who were present at the meeting. He urged the members to stick to the agenda and provide comments based on technical backing and data so as to enable the committee to take informed decision.

# Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

* 1. In view of no comments received, the committee CONFIRMED the minutes of the 30th meeting of the committee held on 09 November 2023 as circulated vide BIS Directorate General letter No. TXD 31/A2.30 dated 24 November 2023.

# 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.

# Item 3 ISSUES ARISING OUT OF PREVIOUS MEETING OF TXD 31

* 1. The committee NOTED the summary of actions taken on the various decisions of the 30th meeting as given in **Annex 5** of the agenda.

**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.
5. 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.
6. 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.
7. Based on the analysis of the test results of the samples of polyester FDY yarns, the committee also decided to incorporate the following change in the tolerances for linear density (Denier) of yarn:

[*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’

The committee also decided that a draft amendment shall be prepared by BIS after incorporating the above change and the same shall be issued under wide circulation for a period of 1 month for eliciting technical comments. BIS may carry out editorial changes, if any.

**4.2** The committee scrutinized the comments received from the following organizations on IS 17262 : 2022 as given in **Annex 10** to the agenda:

1. M/s The Federation of Indian Art Silk Weaving Industry (FIASWI)
2. M/s Pandesara Weavers Co. Op. Soc. Ltd.
3. M/s South Gujarat Warp Knitters Association, Surat

**4.2.1** The committee also scrutinized the test reports provided by NITRA, Textiles Committee, and SASMIRA for the samples of polyester POY collected from M/s SGCCI, M/s FGWWA and M/s SGWKA as given in **Annex 11** to the agenda. After detailed deliberations, the committee decided as follows:

1. The committee noted that there was significant variation in elongation test results of polyester POY 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.
2. The committee also decided that user/user associations, and manufacturers/manufacturers’ associations shall provide their inputs regarding the industry practices for grading of polyester POY 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.
3. The representatives of SGCCI informed about the use of thermocol in packaging of yarns which is prevalent among some manufacturers of polyester POY. 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 POY and the same shall be placed before the committee for discussion and decision.
4. Based on the analysis of the test results of the samples of polyester POY yarns, the committee also decided to incorporate the following change in the tolerances for linear density (Denier) of yarn:

[*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’

The committee also decided that draft amendment shall be prepared by BIS after incorporating the above change and the same shall be issued under wide circulation for a period of 1 month for eliciting technical comments. BIS may carry out editorial changes, if any.

**4.3** The committee scrutinized the comments received from the following organizations on IS 17264 : 2022 as given in **Annex 12** to the agenda.

1. Office of the Textile Commissioner
2. M/s Pix Transmissions LTD, Nagpur
3. M/s Vinko Auto Industries Limited, Jalandhar
4. M/s BLSX Limited, Hyderabad
5. M/s Sanrhea Technical Textiles Limited, Ahmadabad

The representatives of Reliance industries Ltd. informed the committee that presently adequate production capacity of adhesive activated polyester industrial yarn is available in the country. Regarding the quality issue of adhesive activated industrial polyester yarn, the committee decided that user/user associations and manufacturers/manufacturers’ association shall provide the data/inputs regarding the various technical requirements of adhesive activated yarn as per IS 17264 : 2022 and the same shall be placed before the committee for discussion and decision.

**4.4** The committee scrutinized thecomments received from Manak Manthan organized by Chandigarh branch office and M/s Suryalakshmi Cotton Mills Limited, Amanagallu on IS 17265 : 2023 as given in **Annex 13** to the agenda.After detailed deliberations, the committee noted that dyed yarn is covered under the scope of IS 17265 : 2023. The committee also decided that a separate table for the requirements of dyed polyester spun yarn shall be incorporated in IS 17265 : 2023. The committee also requested M/s NITMA and M/s SIMA to provide the inputs for the same. The inputs so received shall be discussed during the next meeting of the TXD 31.

The committee also finalized the following amendment:

[*Page* 15, *Table* 5, *Sl No*. (i), *Col* 2] – Substitute ‘up to 16s Ne (37 tex or coarser)’ *for* ‘6s Ne to up to 16s Ne (37 tex to 98 tex)

[*Page* 1, *Clause* 1.2, (*See* Amendment 1)] – Substitute the following for existing:

**‘1.2** Fancy spun yarns such as slub yarn, thick and thin yarn, and core spun yarns are excluded from the scope of this standard.’

The Committee also DECIDED to waive off the wide circulation of the above amendment as per provisions laid down under Rule 22 (4) of BIS Rules 2018 notified vide GSR 584(E) dated 25 June 2018, as the matter is urgent. BIS may carry out editorial changes, if any.

**4.5** The committee scrutinized the comments received from the following organizations on IS 17266 for Textiles – Viscose staple fibres – Specification as given in **Annex 14** to the agenda:

1. M/s Ganga Acrowools Limited
2. M/s Wool & Woollens Export Promotion Council

After detailed deliberations, the committee decided as follows:

1. The committee decided that M/s Wool & Woollens Export Promotion Council and M/s Ganga Acrowools Limited shall provide complete data of their product as per the requirements specified in IS 17266 : 2019 after getting the product tested in an independent NABL accredited lab.
2. The committee noted the decision made during the 28th meeting of TXD 31 where the committee agreed to incorporate a method for calculating the shirley faults by using carding machine method in the draft revision of IS 17266. The committee also noted that the method of test for measuring the requirement of Shirley faults by carding machine is not a popular industry practice in the country. Accordingly, the committee decided not to incorporated the method in the draft revision of IS 17266. The committee further decided that the draft revision of IS 17266 shall be prepared by BIS after incorporating all other decisions of the committee and the same shall be wide circulated for a period of 2 months for eliciting technical comments.

**4.6** The committee scrutinized the comments received from M/s NITMA, Chandigarh on IS 3566 : 2023 as given in **Annex 15** to the agenda. The committee noted that the data provided by M/s NITMA was not complete. After detailed deliberations the committee decided that M/s NITMA Chandigarh shall provide complete data for the separate requirements of airjet and airvortex viscose spun yarn long with supporting test reports. The same shall be placed in the next committee meeting for discussion and decisions.

**4.7** The committee scrutinized the comments received from CMD-II, BIS on IS 187 : 2022 as given in **Annex 16** to the agenda. After detailed deliberations, the committee decided to finalize the following amendment:

(*Cover, Title*) — Substitute the following for existing English title:

‘Textiles — Long Cloth made of cotton, manmade fibres and their blends — Specification *( Third Revision )*’

(*Cover*, *Title*) — Substitute the following for existing Hindi title:

‘वस्त्रादि — सूती, मानव निर्मित रेशों एवं उनके मिश्रणों से बने बने लट्ठे के कपडे — विशिष्टि (*तीसरा पुनरीक्षण*)’

(*Page* 1, *Title*) — Substitute the following for existing title:

‘Textiles — Long Cloth made of cotton, manmade fibres and their blends — Specification *( Third Revision )*’

(*Page* 1, *clause* 1.1, *line* 3) — Substitute ‘long cloth’ *for* ‘cotton long cloth’

(*Page* 1, *clause* 4.3, *sentence* 1) — Substitute ‘long cloth’ *for* ‘cotton long cloth’

The Committee also DECIDED to waive off the wide circulation of the above amendment as per provisions laid down under Rule 22 (4) of BIS Rules 2018 notified vide GSR 584(E) dated 25 June 2018, as the matter is urgent. BIS may carry out editorial changes, if any.

**4.8** The committee scrutinized the comments received from M/s Indian Railways on IS 7056 : 1989 and IS 175 : 1989 as given in **Annex 17** to the agenda.The committee also scrutinized the draft revision ofIS 7056 : 1989 and IS 175 : 1989 as prepared by BIS after incorporating the inputs received from M/s Indian Railways as given in **Annex 18** to the agenda. After detailed deliberations, the committee decided as follows:

1. The committee decided that the draft revision of IS 7056 for cotton towels as given in Annex A to the minutes shall be wide circulated for period of 1 month for eliciting technical comments. BIS may carry out editorial changes, if any.
2. The committee also decided that based on the comments received from M/s Indian Railways, a new standard shall be formulated for bedsheets, pillow cover and blanket cover as the requirements proposed by Indian Railways is not appropriately covered under the scope of IS 175. The draft standard based on the inputs from M/s Indian Railways is given in Annex B to the minutes. The committee decided that the draft given in Annex B shall be wide circulated for a period of 1 month for eliciting technical comment. BIS may carry out editorial changes, if any.

**Item 5 DRAFT REVISION FOR WIDE CIRCULATION**

**5.1** The committee scrutinized thedraft revision of IS 7867 for nylon continuous filament yarn submitted by the panel constituted under the convenorship of Shri Ravi Chandran, Textiles Committee as given in **Annex 19** to the agenda. After detailed deliberations the committee decided to wide circulate the draft for a period of 1 months for eliciting technical comments after incorporating the following changes:

(*Clause* 6.2) — Insert the following clause after the existing clause:

**‘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:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S.N** | **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’ |

(*Clause* 7.1) — Insert the following notes

‘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.’

BIS may carryout editorial changes, if any.

**Item 6 DRAFT STANDARDS FOR FINALIZATION**

**6.1** The committee scrutinized the comments received from M/s SASMIRA, Mumbai and M/s BTRA, Mumbai on wide circulation draft of **Textiles** — **Elastomeric Yarn** — **Specification’** [**Doc No.: TXD 31 (23953)]’**given in **Annex 21** to the agenda. After detailed deliberations, the committee finalized the draft for publication without any change. BIS may carry out editorial changes, if any.

**Item 7 NEW WORK ITEM PROPOSAL**

**7.1** The committee scrutinized the new work item proposal for formulation of new standard on polypropylene continuous filament yarn as given in **Annex 22** to the agenda. The committee also scrutinized the working draft on Polypropylene continuous filament yarn along with the supporting data as placed during the meeting. After detailed deliberations, the committee decided to constitute the following panel to prepare the P-Draft on polypropylene continuous filament yarn.

1. Dr. Ravi Chandran Convenor

Textiles Committee, Mumbai

1. Representative from Indospun Indian Ltd., Mumbai Member
2. Representative from Techfab India Pvt Ltd., Mumbai Member
3. Representative from Tufropes Pvt Ltd., Silvassa Member
4. Jaycorp Ltd., Silvassa Member
5. Shri Mayur Katiyar Member Secretary

The draft so prepared by the panel shall be placed in the sectional committee for discussion and decision.

**Item 8 REVIEW OF INDIAN STANDARDS**

**8.1** The committee considered IS 17217 : 2019 for Textiles – Disruptive pattern (Camouflage pattern) cloth for jungle operations made of nylon and cotton blended (NYCO) material – Specification and decided to allocate the standard to member secretary TXD 31 for review within next 15 days.

**Item 9 REPRESENTATION RECEIVED ON QUALTIY CONTROL ORDER**

**9.1** The committee scrutinized the representations received from various organizations regarding the Quality Control Order on polyester yarns, viscose fibre and yarn is given in **Annex 23** to the agenda. The committee noted that all these representations are regarding the extension of QCOs, exemptions from QCO and other regulatory issues and does not fall under the domain of the technical committee. The committee further noted that relevant regulators are also cognizant of these issues.

**Item 10 DATE AND PLACE OF NEXT MEETING**

**10.1** The committee decided that the next meeting of TXD 31 shall be held preferably in the month of March 2024 through Video conferencing.

**Item 11 ANY OTHER BUSINESS**

**11.1** It has been observed that in Table 1 of IS 175 : 2023, the tolerance of Mass was inadvertently missed. In view of the above the committee decided to issue the following amendment:

(*Page* 2, *Table* 1, *Col* 8, *Heading*)— Substitute ‘Mass, *Min* g/m2 (*see* Note 2)’ *for* ‘Mass, g/m2 (*see* Note 2)’

The Committee also DECIDED to waive off the wide circulation of the above amendment as per provisions laid down under Rule 22 (4) of BIS Rules 2018 notified vide GSR 584(E) dated 25 June 2018, as the matter is non-controversial. BIS may carry out editorial changes, if any.

**11.2** The committee noted that the R&D project on IS 171 : 1993 was referred back by the review committee. After detailed deliberations, the committee decided not to take up the R&D project on IS 171 : 1993 currently.

**11.3** The committee scrutinized the query received from Hyderabad branch office regarding the requirement of L colour value in IS 17263 : 2022 as placed during the meeting. After detailed deliberations, the committee noted that the requirement of L-Colour value as given in IS 17263 : 2022 is applicable for dyed yarn also.

**11.4** There being no other business, the meeting ended with a vote of thanks to and from the chairman.

**Annex A**

**(Item 4.8)**

**COTTON TOWELLING AND TOWELS – SPECIFICATIONS**

(*Second revision of IS 7056*)

**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 of  Test | 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 of  Test | — | | 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 cm  strips (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 fabric  c) Hypochlorite  Change in colour | 5  4  4  4 | —  5  4  4  4 | 5  4  4  4 | IS/ISO 105-B02  IS/ISO 105-Cl0  IS/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) of  Table 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) of  Table 5 | All the test pieces shall meet the  requirement |

**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 B**

**(Item 4.8)**

**TEXTILES - BEDSHEETS, PILLOWCOVER AND BLANKET COVER - SPECIFICATIONS**

**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) | Visual  method | 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) | Method  of 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) | Light  a) Warp direction  b) Weft direction | 4 or better  4 or better | IS/ISO 105-B02 |
| ii) | Washing  a) Change in colour  b) Staining of adjacent fabrics | 4 or better  3 or better | IS/ISO 105- C10 |
| iii) | Bleaching: Hypochlorite | 4 or better | IS/ISO 105-N01 |
| iv) | Rubbing:  a) Dry  b) Wet | 4 or better  3 or better | IS/ISO 105-X12 |
| v) | Perspiration, acidic and alkaline  a) Change in colour  b) Staining of adjacent fabrics | 4 or better  4 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) of  Table 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, pilling  resistance, breaking load, hemming, sewing, Fabric Bow, Fabric skew, Tear strength | According to col (4) of  Table 5 | All the test pieces shall meet the  requirement |

**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 to  pilling: 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 to  bleaching: Hypochlorite |
| 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-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 to  perspiration |
| IS/ISO 105-B02 : 2014 | Textiles **—** Tests for colour fastness: Part B02 Colour fastness to artificial  light: 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.