**IS 1579 : 2024**

**Doc.No: TXD 08 (24921)**

***भारतीय मानक***

**वस्त्रादि — हथकरघा सूती टवील — विशिष्टि**

*( दूसरा पुनरीक्षण )*

*Indian Standard*

**Textiles** — **Handloom Cotton Twills** — **Specification**

*( Second Revision )*

ICS 59.080.30

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**B U R E A U OF I N D I A N S T A N D A R D S**

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**September 2024 Price Group**

Handloom and Khadi Sectional Committee, TXD 08

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Handloom and Khadi Sectional Committee had been approved by the Textiles Division Council.

Handloom cotton twill is a fabric crafted by hand on traditional looms using cotton yarns, employing a twill weave technique. This weaving style creates diagonal ridges on the fabric's surface, lending it a distinctive texture. Renowned for its durability and versatility, handloom cotton twill finds extensive use in clothing like pants, jackets, and skirts, as well as in home textiles such as curtains, upholstery, and bedding. Its production through the painstaking handloom process imbues each piece with a special charm, appealing to aficionados of traditional craftsmanship and artisanal textiles.

This standard was originally published in 1960 and subsequently revised in 1979. The standard has again been revised to incorporate the following changes:

a) Marking clause has been modified;

b) References to Indian Standards have been updated;

c) Test method for identification of material has been incorporated;

d) Amendment has been incorporated; and

e) Sampling clause has been modified.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

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, 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.

*Indian Standard*

**TEXTILES** — **HANDLOOM COTTON TWILLS** — **SPECIFICATION**

*(Second Revision)*

**1 SCOPE**

**1.1** This standard prescribes the constructional particulars and otherrequirements of five varieties of handloom cotton twills, bleached ordyed.

**1.2** This standard does not specify the general appearance, feel, finish, etc of the cloth (*see* *also* **4.3**).

**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 MANUFACTURE**

**3.1 Yarn**

The cotton yarn used in the manufacture of cloth should be satisfactory in evenness and reasonably free from neps and spinning defects. The yarn shall conform to IS 171.

**3.2 Cloth**

The cloth shall be free from dressing and filling materials and from substances liable to cause subsequent tendering.

**4 REQUIREMENTS**

**4.1** The constructional particulars of cloth shall conform to those given in Table 1.

**4.2** The colour fastness ratings and other requirements of the cloth shall conform to those given in Table 2.

**Table 1 Constructional Particulars of Handloom Cotton Twills**

(*Clause* 4.1)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Variety No.** | **Count of Yarn**  **[Cotton Count (Universal Count)]** | | **Ends/cm** | **Picks/cm** | **Length**  m | **Width**  cm | **weave** |
| Warp | Weft |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| i) | 1 | 18s (33 tex) | 24s (25 tex) | 25 | 20 | 20 or as agreed | 75 or as agreed | 2/2 Twill |
| ii) | 2 | 20s (30 tex) | 16s (37 tex) | 24 | 17 |
| iii) | 3 | 20s (30 tex) | 30s (20 tex) | 26 | 24 |
| iv) | 4 | 24s (25 tex) | 24s (25 tex) | 28 | 20 |
| v) | 5 | 80s/2 (7.4 tex × 2) | 36s (16.5 tex) | 35 | 32 |
| Tolerance, percent | — | ± 5 | ± 5 | ± 5 | ± 5 | — | ± 5 | — |
| Method of Test, Ref to | — | IS 3442 | | IS 1963 | | IS 1954 | | Visual |
| NOTE — Count of yarn is given for guidance only. | | | | | | | | |

**Table 2 Requirements of Handloom Cotton Cloth Twills**

(*Clause* 4.2)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirement** | **Method of Test, Ref to** |
| (1) | (2) | (3) | (4) |
| i) | Colour fastness to:  a) Light  b) Washing Test 4  c) Bleaching | 5 or better  4 or better  3 or better | IS/ISO 105-B01  or  IS/ISO 105-B02  IS/ISO 105-C10  IS/ISO 105-N01 |
| ii) | Dimensional change, percent, *Max* | 4 | IS 2977 |
| iii) | Scouring loss, percent, *Max* | 2.5 | IS 1383 |
| iv) | *p*H value of aqueous extract | 6.0 to 8.5 | IS 1390 or Annex B |
| v) | Fiber identification | 100 percent cotton | IS 667 |

**4.3 Sealed Sample**

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

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

**5 INSPECTION**

**5.1** The cloth when visually inspected should be reasonably free from the following defects:

1. More than two adjacent ends running parallel, broken or missing and extending beyond 20 cm;
2. Weft crack or more than two missing picks across the width of the material;
3. Prominently noticeable weft bar due to the difference in raw material, count, twist, lustre, etc;
4. Noticeable selvedge defects;
5. Noticeable warp or weft float in the body;
6. Noticeable oil or other stains;
7. Noticeable hole, cut or tear up to 3 mm size;
8. Smash rupturing the texture of the fabric;

j) Undressed snails noticeable throughout the piece;

k) Conspicuous gout due to foreign matter, usually lint or waste woven into cloth;

m) Conspicuous broken pattern; and

n) Any other flaw which would mar the appearance or affect the serviceability and/or durability of the cloth.

**5.1.1** A reference may be made to IS 14466 for details of these defects.

**6 SAMPLING**

**6.1** The quantity of handloom cotton twill cloth of the same variety delivered to a buyer against a despatch not shall constitute a lot.

**6.2** To ascertain the conformity of the lot to the requirements of this standard, samples shall be drawn and inspected from each lot separately.

**6.3** The number of pieces to be selected at random for inspection shall be in accordance with Table 3.

**Table 3 Sample Size and Permissible Number of Non-Conforming Pieces**

(*Clause* 6.3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Lot Size** | **Sample Size** | **Permissible No. of Non-Conforming Pieces** | **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 1200 | 20 | 1 | 5 |
| v) | 1201 to 10000 | 32 | 2 | 8 |
| vi) | 10001 to 35000 | 50 | 3 | 8 |
| vii) | 35001 to 500000 | 80 | 5 | 13 |
| viii) | 500001 and above | 125 | 7 | 13 |

**6.4 Number of Tests and Criterion for Conformity**

|  |  |  |  |
| --- | --- | --- | --- |
| *Sl No.* | *Characteristic(s)* | *No. of Tests* | *Criterion for Conformity* |
| (1) | (2) | (3) | (4) |
| i) | Count of yarn, length, width, ends, picks and weave | According to co1 (3) of  Table 3 | Permissible number of non-conforming piece does not exceed the corresponding number given in co1 (4) of Table 3 |
| ii) | Colour fastness, dimensional changes, scouring loss, *p*H and fibre identification | According to co1 (5) of  Table 3 | All the test specimens meet the relevant requirements |

**7 MARKING**

**7.1** The cloth shall be suitably marked or labelled with the following information:

a) Name of the material;

b) Manufacturer's name, initials or trade-mark;

c) Length and width;

d) Count of warp and weft yarn;

e) Indication of the source of manufacture; and

f) Other declarations required as per law in force.

**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 may be marked with the Standard Mark.

**8 PACKING**

Unless otherwise agreed between the buyer and the seller, the cloth shall preferably be packed in bales or cases in conformity with the procedure laid down in IS 1347 or IS 293.

**ANNEX A**

(*Clause* 2)

**LIST OF REFFERED STANDARDS**

|  |  |
| --- | --- |
| *IS No.* | *Title* |
| IS 171 : 1993 | Textiles — Ring spun grey cotton yarn for weaving — Specification  (*fourth 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 1070 : 2023 | Reagent Grade Water Specification |
| IS 1347 : 1972 | Specification for inland packaging of cotton cloth and yarn (*first revision)* |
| IS 1383 : 2023 | Methods for determination of scouring loss in grey and finished cotton textile materials (*second revision*) |
| IS 1390 : : 2022/  ISO 3071 : 2020 | Textiles Determination of *p*H of aqueous extract (*third revision*) |
| IS 1954 : 2024/  ISO 22198 : 2006 | Textiles — Fabrics — Determination of width and length (*third* *revision*) |
| IS 1963 : 1981 | Methods for determination of threads per unit length in woven fabrics (*second revision*) |
| IS 2977 : 1989 | Fabrics (other than wool) — Method for determination of dimensional changes on soaking in water (*first revision*) |
| IS 3442 : 2023 | Textiles method for determination of crimp and linear density of yarn  removed from fabric |
| IS 14466 : 1997/  ISO 8498 : 1990 | Fabrics — Description of defects — Vocabulary |
| IS/ISO105-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 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 |

**ANNEX B**

(*Table* 2)

**METHOD FOR DETERMINATION OF *p*H VALUE OF AQUEOUS EXTRACT**

**B-1 APPARATUS**

**B-1.1 Erlenmeyer Flask**

**B-1.2 Reflux Condenser**

**B-2 REAGENTS**

**B-2.1 Distilled Water**

(*see* IS 1070).

**B-2.2 Indicator *p*H Papers**

**B-3 PROCEDURE**

**B-3.1** Draw from each piece in the test sample at least two test specimens each weighing 5 g.

**B-3.2** Rinse the Erlenmeyer flask with distilled water. Take one test specimen and cut it into small bits. Put the bits in the Erlenmeyer flask and add 50 ml of distilled water. Boil the contents for one hour under the reflux condenser. Stopper the flask and cool the contents. Decant the supernatant extract in a test-tube.

**B-3.3** Take the *p*H indicator paper. Dip it in the extract and compare the colour of the moistened indicator paper with those printed on the booklet or dispenser containing the indicator paper. Designate the number written on a particular colour shade with which the moistened indicator paper matches, as *p*H of the extract.

**B-3.4** Similarly, test the remaining test specimen(s).

**B.4 REPORT**

**B-4.1** Report the *p*H value of the extract as determined above.

**ANNEX C**

(*Foreword*)

**COMMITTEE COMPOSITION**

Handloom and Khadi Sectional Committee, TXD 08

|  |  |
| --- | --- |
| *Organization* | *Representative(s)* |
| Weavers Service Centre, Delhi | Shri Vishesh Nautiyal (***Chairperson***)  Shri Vikas Kumar (*Alternate*) |
| Central Pollution Control Board, New Delhi | Shri P. K. Mishra  Shri Rishabh Srivastav (*Alternate*) |
| Center of Excellence for Khadi (COEK)-NIFT, New Delhi | Representative |
| CRPF, New Delhi | Shri D. P. Upadhyay  Shri Sanjeev Kumar Singh (*Alternate*) |
| Department of Handlooms & Textiles, Chennai | Representative |
| Fabindia, New Delhi | Representative |
| Flag Foundation of India, New Delhi | Representative |
| Gandhigram Rural Institute, Dindigul | Dr B. Senthil Kumar |
| Haryana Khadi Gramodyog Sangh, Karnal | Shri Pawan Garg  Shri R. S. Yadav (*Alternate*) |
| ICAR – Central Institute for Research on Cotton Technology, Mumbai (CIRCOT) | Dr Sujata Saxena  Dr A.S.M. Raja (*Alternate*) |
| Indian Institute of Handloom Technology, Jodhpur | Dr J. Sivagnanam |
| Indian Institute of Handloom Technology, Salem | Dr P. Thennarasu |
| Indian Institute of Handloom Technology, Varanasi | Representative |
| Indian Institute of Technology, Delhi | Representative |
| Indo Tibetan Border Police, New Delhi | Shri Uttam Kumar  Shri Anand Kumar (*Alternate*) |
| Jan Sewa Ashram, Aligarh | Shri R. K. Sharma  Shri Akhilesh Kumar Awasthi (*Alternate*) |
| Karnatka Khadi Gramodyog Samyuktha Sangha, Hubli | Shri K. V. Pattar  Shri Shivananda S. Mathapati (*Alternate*) |
| Khadi Dyers & Printers, Mumbai | Shri D. N. Bhatt  Shri V. D. Joshi (*Alternate*) |
| Khadi Gramodyog Mandal, Rampur | Shri Rakesh Chaudhary  Shri Prince Chaudhary (*Alternate*) |
| Kshetriya Khadi Gramodyog Samiti, Dausa | Shri R. K. Singh |
| Khadi and Village Industries Commission, Mumbai | Representative |
| Madhya Bharat Khadi Sangh, Gwalior | Shrimati Neelu Mekle  Shri Harish Mekle (*Alternate*) |
| Mahatma Gandhi Institute for Rural Industrialization, Wardha | Shri Mahesh kumar  Dr Tapan Ranjan Kar (*Alternate*) |
| Metpalli Khadi Gramodyog Pratisthan, Metpalli | Shri G. Madhav |
| Ministries of Defence (DGQA), New Delhi | Shri Arvind Compathane  Shri N. Senthil Kumar (*Alternate*) |
| Ministries of Health, New Delhi | Representative |
| National Handloom Development Corporation Ltd., Gautam Budh Nagar | Dr Sakthivel Perumal Samy  Shri Jitendra Tolambiya (*Alternate*) |
| Northern Railways, New Delhi | Shri Sanjeev Kumar Jain  Shri Rajesh Kumar (*Alternate*)  Shri Sandeep Kumar Singh  (Young Professional) |
| Northern India Textile Research Association, Ghaziabad | Dr M. S. Parmar  Shri Sanjeev Shukla (*Alternate*) |
| Office of the Development Commissioner for Handlooms, New Delhi | Shri Siddharth Singh  Shri Vinay Kumar (*Alternate*) |
| Orient Processes Pvt. Ltd., Guwahati | Shri Robin Chandra Goswami  Shri Raj Buragohain (*Alternate*) |
| Rastriya Khadi Gramodyog Federation, Moradabad | Shri Anil Kumar Singh  Shri Kuldeep Singh (*Alternate*) |
| Swastik Gramodyog Samiti, Delhi | Shri M. L. Pathak  Shri Abhishek Dixit (*Alternate*) |
| The Cotton Textiles Export Promotion Council (TEXPROCIL), Mumbai | Dr Siddhartha Rajagopal  Shri Rajesh Satam (*Alternate*) |
| The Handloom Export Promotion Council, Chennai | Dr M. Sundar  Shri N. Sreedhar (*Alternate*) |
| The Tamil Nadu Handloom Weavers' Cooperative Society Ltd, Chennai | Shri T. N. Venkatesh, I.A.S.  Shri K. Kathiresan (*Alternate*) |
| BIS Directorate General | Shri J. K. Gupta, Scientist ‘E’/ Director and Head (Textiles) [Representing Director General (*Ex-officio*)] |

*Member Secretary*

SHRI SWAPNIL

Scientist ‘B’/ Assistant Director

(Textiles), BIS