भारतीय मानक

Indian Standard

IS 12171 : 2024

रुई की गाँठें — विशिष्टि

(चौथा पुनरीक्षण)

Cotton Bales — Specification

(Fourth Revision)

ICS 59.060

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
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January 2024 **Price Group 5**

Man-Made Fibres, Cotton and their Products Sectional Committee, TXD 31

FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Man-Made Fibres, Cotton and their Products Sectional Committee had been adopted by the Textile Division Council.

This standard was first published in 1987 and subsequently revised in 1999, 2013 and 2019. The standard has been revised again to incorporate the following major changes in the standard:

a) Requirements of trash content and moisture content have been modified;
b) Tolerances of staple length and strength of the fibre have been modified;
c) An alternate variety of cotton has been incorporated in the standard to facilitate trade of cotton; and
d) All the amendments have been incorporated.

The composition of the Committee responsible for the preparation of this standard is given in Annex B.

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.

Indian Standard

COTTON BALES — SPECIFICATION

(Fourth Revision)

1 SCOPE

This standard prescribes various requirements of bales of ginned cotton as well as the requirements of materials used for packing of bales.

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 these standards.

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply:

3.1 Trash — Foreign matter present in bales of raw cotton, excluding abnormal items, such as, stone, timber, pieces of old iron, etc.

NOTES

1 Normal whole seeds, either ginned or unginned, are frequently excluded from this category, but broken portions of them and also whole or broken undeveloped seeds are usually regarded as trash.

2 The main component of trash is chaff including bits of seeds, leaves and stem. Dirt in the form of soil or sand is another component of trash. Fragments of foreign fibres/materials, such as sisal, jute, hemp, polypropylene ropes, plastic string/ film/cover, feather, hair, fabric bits etc. are sometimes regarded as trash but usually receive special reference when easily recognizable.

3.2 Moisture Content — The mass of moisture in a textile material, expressed as a percentage of the total mass.

Example:

If 100 parts by mass of material contains 20 parts by mass of moisture, the moisture content is 100 × 20/100 = 20 percent.

3.3 Moisture Regain — The mass of moisture present in a textile material, expressed as a percentage of the oven-dry mass.

Example:

If 100 parts by mass of material contains 20 parts by mass of moisture, the moisture regain is 100 × 20/80 = 25 percent.

3.4 Span Length — The minimum length spanned by a specified percentage of the fibres in a randomly aligned representative tuft. Thus, 2.5 percent span length is the length exceeded by only 2.5 percent of the total number of fibres in the tuft; similarly, 50 percent span length is the length exceeded by 50 percent of fibres.

3.5 Staple Length — 2.5 percent span length determined as per IS 233 (Part 4) shall be the measure of staple length.

4 CLEANING

If necessary, the kapas may be pre-cleaned suitably before ginning. In case of excessive trash in kapas, a lint cleaner may be used after ginning and before pressing.

5 REQUIREMENTS

5.1 Ginned Cotton in Pressed Bales

5.1.1 *Staple Length*

The cotton shall be classified in the following grades on the basis of 2.5 percent span length.

a) Extra long staple — Staple length above 32 mm;

b) Long staple — Staple length above 27 mm to 32 mm;

c) Superior medium staple — Staple length above 25 mm to 27 mm;

d) Medium staple — Staple length above 20 mm to 25 mm; and

e) Short staple — 20 mm and less.

The staple length shall be tested by the method prescribed in IS 233 (Part 4). A tolerance of ± 1 mm shall be applicable on the declared value.

5.1.2 *Trash Content*

The maximum trash content (excluding invisible loss) for various staple length categories of cotton shall be as under when tested by the method prescribed in IS 4871:

a) Extra long staple — 2 percent;

b) Long and superior medium staple — 3 percent (*see* Note 1);

c) Medium and short staple (including *Bengal Deshi*) — 4 percent;

d) *CJ-73*, *Kalagin*, *Waghad* and similar closed boll cotton, irrespective of the staple length — 6 percent (*see* Note 2).

NOTES

1 For cotton grown in Punjab, Haryana and Rajasthan, the trash content for superior medium staple shall be 4 percent, *Max*

2 For V-797 cotton, the trash content shall not be more than 12 percent irrespective of the staple length.

3 As agreed to between the buyer and the seller, trash content more than that specified above may also be allowed subject to appropriate discounting.

5.1.3 *Moisture Content*

The moisture content of the ginned cotton in the pressed bale shall not exceed 8.0 percent when tested by the method prescribed in IS 199.

NOTES

1 As agreed to between the buyer and the seller**,** moisture content more than that specified above may also be allowed subject to appropriate discounting.

2 For quick measurement of the moisture content, handheld moisture meter working on the principle of measuring the electrical resistance which changes with change in moisture content in the material may be used. However, in case of disputes, the moisture content tested by the oven-dry method shall be accepted.

5.1.4 *Strength of Fibre*

The average strength of the fibre (g/tex) shall be tested by the method prescribed in IS 3675. A tolerance of ± 2 g/tex shall be applicable on the declared value.

5.1.5 *Micronaire Value*

The micronaire value shall be tested by the method prescribed in IS 3674. A tolerance of ± 0.2 shall be applicable on the declared value.

5.1.6 *Alternate Variety of the ginned cotton*

The following requirements shall be applicable for the alternate variety of the ginned cotton which has been affected by natural calamity like floods, drought, hailstorm, cyclone, fire, extreme weather conditions etc:

a) All the parameters and the tolerances of the special variety of ginned cotton as specified in **5.1.1** to **5.1.5** shall be as agreed to between the buyer and the seller.

NOTE — The above alternate variety has been incorporated in the standard to facilitate the trade of cotton, which is a naturally grown product.

5.2 Pressed Bales

5.2.1 *Dimensions*

The recommended nominal dimensions of the banded bales (full pressed) are given below:

Sl No.	*Length* mm	*Width* mm	*Height* mm
(1)	(2)	(3)	(4)
i)	1 060	530 or	780
ii)	1 400	530 or	700
iii)	1 240	480	480

5.2.2 *Mass* (*Weight*)

The mass of bale shall be 170 kg subject to a tolerance of ± 10 kg throughout the season except for CJ-73, V-797, *Kalagin*, *Waghad* and similar closed boll cotton varieties in which case mass of bale shall be 155 kg subject to a tolerance of ± 7 kg throughout the season.

5.2.3 *Baling/Pressing*

The bales shall be fully covered with cotton fabric and no portion of cotton shall be exposed. The bales shall be securely strapped with a minimum of 9 wraps of baling hoops/straps. The cotton fabric shall be stitched using a 6 ply cotton twine. The stitches shall be evenly spaced and properly made. The distance between two stitches shall not exceed 30 mm.

NOTE — As per agreement between buyer and seller, the bale with mass of 220 kg can be supplied subject to a tolerance of ± 10 kg.

5.2.3.1 The materials used for packing of bales shall conform to the requirements given below:

a) *Cotton fabric* — Cotton knitted or woven fabric of 120 g/m^2 ± 10 g/m^2, when tested as per IS 1964.

b) *Baling hoops* — Hot-rolled steel strip (baling) conforming to IS 1029 having minimum width of 12.5 mm and thickness of 0.9 mm or polyester strapping of 19.05 mm wide and 1.02 mm thick and 19.05 mm wide and 1.27 mm thick conforming to Type II of IS 15559.

c) *Cotton twine* — Having linear density of 600 to 800 tex and minimum breaking load of 6 kgf. The breaking load shall be tested

at a speed of 250 mm/min ± 50 mm/min and at a gauge length of 400 mm. Average of 5 test samples shall be reported.

6 MARKING

6.1 A non-detachable starched cotton cloth label of minimum size 400 mm × 250 mm, placed securely below the baling hoops shall bear the following information:

a) Name of the variety of cotton;
b) Name and address of the ginning and pressing factory;
c) Bale running number;
d) Mass (weight) of the pressed bale (kg), at the time of baling;
e) Crop year;
f) Station;
g) Country (in case of export only); and
h) Any other information required by law in force.

NOTE — The letters used for marking shall be approximately 12 mm in height.

6.2 The following quality parameters shall be provided through a test certificate along with all the information given in **6.1**:

a) Staple length of fibre (mm);
b) Strength of fibre (g/ tex);
c) Micronaire value;
d) Trash percent; and
e) Moisture content, percent, at the time of baling.

6.3 BIS Certification Marking

The bales may also be marked with the Standard Mark. The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations made thereunder. The details of the conditions under which the licence for use of the Standard Mark may be granted to manufactures or producers may be obtained from the Bureau of Indian Standards.

7 SAMPLING

7.1 Lot

In any consignment, the bales of a particular variety of cotton ginned under similar conditions shall constitute a lot.

7.2 For every 100 bales or its part thereof, 2 bales shall be drawn for testing of all the parameters specified in the standard. To ensure the randomness of selection of the bales, IS 4905 may be used. All the samples shall meet the requirements as specified in the standard.

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 199 : 1989	Textiles — Estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile material (*third revision*)
IS 233 (Part 4) : 2020	Textiles — Methods for determination of length parameters of cotton fibres: Part 4 Estimation of length, uniformity ratio and uniformity index by the optical scanning method (*second revision*)
IS 1029 : 1970	Specification for hot-rolled steel strip (baling) (*first revision*)
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per area of fabrics (*second revision*)
IS 3674 : 2020	Textiles — Cotton fibres — Determination of micronaire value (*first revision*)
IS 3675 : 2020	Textiles — Cotton fibres — Determination of breaking tenacity of flat bundles (*first revision*)
IS 4871 : 1968	Method for determination of lint and trash content of cotton by means of mechanical — Pneumatic machines
IS 4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (*first revision*)
IS 15559 : 2004	Polyester strapping — Specification

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Man-made Fibres, Cotton and their Products Sectional Committee, TXD 31

Organization	*Representative(s)*
Textiles Committee, Mumbai	SHRI KARTIKAY DHANDA (***Chairperson***)
Association of Synthetic Fibre Industries, New Delhi	SHRI M. S. VERMA
AYM Syntex, Dadra & Nagar Haveli	SHRI ARNAB SAMANTHA
Confederation of Indian Textile Industry, New Delhi	SHRIMATI CHANDRIMA CHATTERJEE SHRI ANMOL GUPTA (*Alternate*)
Consumer Guidance Society of India, Mumbai	DR SITARAM DIXIT DR M. S. KAMATH (*Alternate*)
Cotton Association of India, Mumbai	SHRI ATUL S. GANATRA SHRI VINAY N. KOTAK (*Alternate*)
Defence Material and Stores Research & Development Establishment, Kanpur	SHRI ASHOK KUMAR YADAV SHRI BISWA RANJAN DAS (*Alternate*)
Federation of Gujarat Weaver Welfare Association, Surat	SHRI ASHOK JIRAWALA SHRI SANJAY DESAI (*Alternate*)
GBTL Limited, Bhiwani	SHRI VIKAS AGGARWAL SHRI AMREEK SINGH (*Alternate*)
Grasim Industries Limited, Vadodara	SHRIMATI SHAILLEY GARG SHRIMATI ASHMITA PANCHAL (*Alternate*)
Gimatex Industries Pvt Ltd, Nagpur	SHRI ATUL KUMAR JAIN
ICAR – Central Institute for Research on Cotton Technology, Mumbai	DR SENTHIL KUMAR DR A. ARPUTHARAJ (*Alternate*)
JCT Limited, Phagwara	SHRI KHUSHWINDER SINGH DHILLON SHRI ARWINDER SINGH (*Alternate*)
Northern India Textile Mills' Association, Chandigarh	SHRI SANJAY GARG SHRI SIDHARTHA KHANNA (*Alternate*)
Northern India Textile Research Association, Ghaziabad	SHRI SANJEEV SHUKLA
Office of the Textile Commissioner, Mumbai	SHRI SOURABH KULKARNI SHRI PRANAV PARASHAR (*Alternate*)
Reliance Industries Limited, Mumbai	SHRI AJAY GUPTA SHRI KESHAV PAREEK (*Alternate*)
South India Textile Research Association, Coimbatore	SHRI V. THANABAL SHRI S. SIVAKUMAR (*Alternate*)
South Gujarat Chambers of Commerce and Industry, Surat	SHRI HIMANSHU BODAWALA SHRI ASHISH GUJARATI (*Alternate*)
South Gujarat Warp Knitters Association, Surat	SHRI BRIJESH GONDALIYA SHRI RAMAN MEGOTIA (*Alternate*)
South Gujarat Texturisers Welfare Association, Surat	SHRI MURARI SHARAF SHRI SUMIT AGRAWAL (*Alternate*)
Textiles Committee, Mumbai	SHRI J. D. BARMAN SHRI P. N. S. SIVAKUMAR (*Alternate*)

Organization	*Representative(s)*
The Bombay Textile Research Association, Mumbai	SHRI R. A. SHAIKH SHRIMATI PRAGATI KULKARNI (*Alternate*)
The Cotton Corporation of India Ltd., Navi Mumbai	SHRI S. K. PANIGRAHI SHRI PRANJAL P. JOSHI (*Alternate*)
The Cotton Textile Export Promotion Council, Mumbai	SHRI SIDDARTHA RAJGOPAL
The Southern India Mills' Association, Coimbatore	DR K. SELVARAJU SHRI NAGARAJAN ESAKKIMUTHU (*Alternate*)
The Synthetic & Rayon Textile Export Promotion Council, Mumbai	SHRI S. K. KHANDELIA SHRI PRAVEEN KUMAR S. SADH (*Alternate*)
The Synthetic and Art Silk Mills Research Association, Mumbai	DR MANISHA MATHUR SHRIMATI ASHWINI A. SUDAM (*Alternate*)
Veermata Jijabai Technological Institute, Mumbai	DR SURANJANA GANGOPAHYAY SHRI S. P. BORKAR (*Alternate*)
BIS Directorate General	SHRI J. K. GUPTA, SCIENTIST 'E'/DIRECTOR AND HEAD (TEXTILES) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI MAYUR KATIYAR
SCIENTIST 'B'/ASSISTANT DIRECTOR
(TEXTILES), BIS

Bureau of Indian Standards

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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