

IS 271 : 2003

(Reaffirmed 2000)

भारतीय मानक

वस्त्रादि — सफेद, टोसा ओर देसी अनकट

भारतीय जूट की ग्रेडिंग

(चौथा पुनरीक्षण)

Indian Standard

**TEXTILES — GRADING OF WHITE, *TOSSA*
AND *DAISEE* UNCUT INDIAN JUTE**

(*Fourth Revision*)

ICS 55.080; 59.060.20; 91.100.15

© BIS 2003

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1950 and revised in 1969, 1975 and 1987. The original standard covered WHITE (*Corchorus Capsularis*) and TOSSA (*Corchorus Olitorius*) jute and classified them into 4 grades, namely, tops, middles, bottoms and cross(X). The first revision of the standard included DAISEE (*Corchorus Olitorius*) jute in addition to WHITE and TOSSA. The WHITE jute was classified into 8 grades, namely, W1, W2, W3, W4, W5, W6, W7 and W8; and TOSSA and DAISEE jute into 8 grades, namely, TD1, TD2, TD3, TD4, TD5, TD6, TD7 and TD8. A scoring system was also introduced to grade the fibres on the basis of the different characteristics. In the second revision, the scores for different characteristics were modified to facilitate effective, implementation of the standard. In the third revision, 'Defects' parameter in respect of grades W2 to W5 for WHITE jute and TD2 to TD5 for TOSSA and DAISEE were modified. The present revision of this standard has been taken up to incorporate the modified scores for different characteristics and maximum root content for better implementation by the jute growers and traders.

The composition of the Committee responsible for the formulation 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 : 1960 'Rules for rounding off numerical values (*revised*)'. 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 — GRADING OF WHITE, TOSSA AND DAISEE UNCUT INDIAN JUTE

(Fourth Revision)

1 SCOPE

This standard covers the grading of WHITE, TOSSA and DAISEE jute from which the roots have not been cut.

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 TERMINOLOGY

3.0 For the purpose of this standard, the following definitions along with definitions given in IS 5476 shall apply.

3.1 Jute — A multicellular fibre obtained from the bast of various species of *Corchorus*, of which the round pod jute (*Corchorus Capsularis* or WHITE jute) and the long pod jute (*Corchorus Olitorius* or TOSSA or DAISEE jute) are the most important. The fibre strands are long usually varying from 1.5 to 3.5 m.

3.2 Parcel — A consignment containing certain number of bales, bundles or drums.

3.3 Strength — The ability of the fibre to resist strain or rupture induced by external forces.

3.4 Colour — The property of a fibre which distinguishes its appearance as redness, yellowness, greyness, etc.

3.4.1 The colour description of WHITE, TOSSA and DAISEE jute in relation to the terms used for the purpose of grading is given below:

Term	Colour Description		
	WHITE Jute	TOSSA Jute	DAISEE Jute
Very good	Light creamy to white	Golden to reddish white	Reddish

Term	Colour Description		
	WHITE Jute	TOSSA Jute	DAISEE Jute
Good	Creamy pink to brownish white	Reddish to brownish white	Reddish to brownish with some light grey
Fairly good	Brownish to reddish white with some light grey	Reddish or brownish with some light grey	Brownish or light grey with some grey
Fair average	Brownish to light grey	Light grey to copper colour	Light grey
Average	Grey to dark	Grey to dark grey	Grey to dark grey

3.5 Lustre — It depends on the display of light reflected from the fibre exposed to normal light. Higher lustre in jute is generally a characteristic of a better quality fibre.

3.6 Density — Mass per unit volume of the fibre including its air-spaces. The higher density (heavy body) is a characteristic of better quality of fibre.

3.7 Fineness — A measure of diameter (width) or mass per unit length, or both, of the fibre filament. The finer the fibre, the better the spinning quality.

3.8 Reed — The fibre system from one individual jute plant.

3.9 Reed Length — The entire length of the reed including the root and tip.

3.10 Effective Reed Length — The length of the reed after the root and crop ends have been removed.

3.11 Root — The hard bark region at the lower end of the reed normally called cuttings.

3.12 Defects

3.12.1 Major

Centre root, dazed and over-retted fibre, runners, knots, mossy fibres and entangled sticks.

3.12.2 Minor

Weak cropy end, gummy fibre, loose leaf, loose sticks and specks.

3.13 Centre Root (BUK CHHAL) — The hard bark region in the middle part of the reed which requires additional softening treatment.

3.14 Dazed Fibre — Fibre which is weak in strength and dull in appearance, due to usually being stored in moist condition.

3.15 Over Retted Fibre — Fibre which has lost its strength and lustre on decomposing due to long retting.

3.16 Runners — Hard barky fibre running from the lower end to the middle region, more or less continuously.

3.17 Knots — Stiff barky spots in the body of the strand which break the continuity of fibre when opened.

3.18 Mossy Fibre — It is a type of vegetation which sometimes gets attached to the jute plant during flood conditions; some portions may remain on the jute fibre even after retting and washing. It can be separated by hand.

3.19 Sticks, Entangled Sticks and Loose Sticks — Sticks are remnants of woody part of jute plant over which fibre sheath is formed. Entangled sticks are broken sticks which are linked with fibre mass and are not easily removable. Loose sticks are broken sticks easily removable by shaking.

3.20 Croppy Fibre — Fibre with top ends rough and hard (but not barky) caused by careless retting.

3.21 Weak Croppy Fibre — Fibre over a length of about 30 cm at the top and which has become unusually weak.

3.22 Gummy Fibres — Fibres held together by undissolved pectinous matter.

3.23 Leaf, Loose Leaf — Dark grey leafy or paper like substance (remnants of loosened skin of the plant) appearing on the strand. Loose leaves are those that lie loosely on the fibre and are easily removable.

3.24 Specks — Soft barky spots in the body where fibres can be separated with some effort without breaking their continuity, though they may remain as weak spots.

3.25 Hunka — The very hard barky fibre running continuously from the lower end to almost the tip of the reed.

3.26 Natural Dust — The dust which might get associated with the fibre during the process of its production.

4 UNIT OF GUARANTEE

The unit of guarantee shall be a bale, bundle or drum made up of 'MORAHS' or 'heads'. For purposes of

appraisalment, each such bale, bundle, or drum shall be treated as a separate unit and shall, in itself, fulfil the guarantee of the grade.

5 GRADING

5.1 All *WHITE* raw jute (from which the roots have not been cut) shall be classified into following 8 grades:

W1, W2, W3, W4, W5, W6, W7 and W8

5.2 All *TOSSA* and *DAISEE* raw jute (from which the roots have not been cut) shall be classified into the following 8 grades:

TD1, TD2, TD3, TD4, TD5, TD6, TD7 and TD8.

5.3 The following quality characteristics, which have a bearing on the quality, have been taken into account in assessing the grade of jute fibres:

(a) strength, (b) defects, (c) root content, (d) colour, (e) fineness, and (f) density.

5.4 The hand and eye method may be used for the present in assessing these qualities until such time as suitable instrumental methods are available for scientific assessment of certain important characteristics.

NOTE — For comparing strength, tufts of fibre of approximately equal size may be held equal distance apart, and broken longitudinally without jerk. Good lustre also indicates good fibre strength. Root content in terms of percentage by mass may be judged by observing the extent of barks along the length. Density of heavy bodiedness of fibre may be assessed by feeling the heaviness of a bunch of fibre reeds (by raising and lowering) when held within a grip.

5.5 The requirements of each individual quality characteristic in the case of each of the 8 grades for *WHITE* jute are given in Table 1, and for *TOSSA* and *DAISEE* jute in Table 2.

5.6 Relative weightage to each of the quality characteristics has been attributed by a system of scoring scheme to the various grades. The allocation of scores for the different quality characteristics as in each grade for *WHITE* jute shall be done on the basis of Table 1. For *TOSSA* and *DAISEE* jute it shall be done on the basis of Table 2.

6 PACKING

6.1 The jute shall be so packed that *MORAHS* in any one bale, bundle or drum are of only one grade.

6.2 Each bale, bundle or drum shall have a grade-tag indicating the year of harvest, variety, grade and trade-mark.

Table 1 Requirements of Fibre Characteristics and Scoring Scheme for Different Grades of WHITE Jute (*Corchorus Capsularis*)
(Clauses 5.5 and 5.6)
(Figures in parenthesis indicate score marks)

Grade	Strength	Defects	Maximum Root-Content	Colour	Fineness	Density	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
W1	Very good (25)	Free from major and minor defects (25)	5 (20)	Very good (10)	Very fine (15)	Heavy bodied (5)	(100)
W2	Good (20)	Free from major and minor defects (25)	8 (18)	Good (7)	Fine (10)	Heavy bodied (5)	(85)
W3	Fairly good (18)	90 percent of the fibre should be free from major and minor defects and only 10 percent of the fibre should be allowed to contain loose leaf and specks (22)	15 (15)	Fairly good (5)	Fibres well separated (7)	Medium bodied (3)	(70)
W4	Fair average (15)	Free from major defects and not more than 20 percent fibre should contain specks and loose sticks (18)	20 (10)	Fair average (4)	Fibres well separated (5)	Medium bodied (1)	(53)
W5	Average (13)	Free from major defects (14)	25 (5)	Average (3)	Fibre-separated (5)	—	(40)
W6	Average (13)	Free from centre root and dazzed/ over-retted fibre (8)	30 (4)	—	—	—	(25)
W7	Weak mixed (5)	Not more than 50 percent fibre should suffer from major defects (2)	40 (3)	—	—	—	(10)
W8	Entangled or any other jute not suitable for any of the above grades but of commercial value						(0)

NOTES

1 The minimum reed length should be 150 cm, or the effective reed length should not be less than 100 cm except for W8.

2 Jute should be in dry storable condition.

3 Jute should be free from *HUNKA*, mud and other foreign materials.

4 Natural dust may be allowed in grades W3 to W8 with proportionate discount.

5 Root content will include hard barky croppy ends.

6 A parcel of jute which would not secure full marks for a particular grade shall still be considered for that grade with suitable discount to be settled between the buyer and the seller, provided its score is not less, by 50 (or more) percent of the difference, between the maximum scores for that and the next lower grade. When the score is less by 50 (or more) percent of the difference, the buyer will have option to reject or settle with a suitable discount.

Scores on the table may be taken as guidance for determining the discount.

7 For instrumental determination of various characteristics like strength, defects, root content, fineness, bulk density, etc, reference to the relevant part of IS 7032.

Table 2 Requirements of Fibre Characteristics and Scoring Scheme for Different Grades of TOSSA and DAISEE Jute (*Corchorus Olitorius*)
(Clauses 5.5 and 5.6)
(Figures in parenthesis indicate score marks)

Grade	Strength	Defects	Maximum Root-Content (Percent by Mass)	Colour	Fineness	Density	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TD1	Very good (30)	Free from major and minor defects (25)	5 (20)	Very good (10)	Very fine (10)	Heavy bodied (5)	(100)
TD2	Good (23)	Free from major and minor defect (25)	8 (18)	Good (7)	Fine (7)	Heavy bodied (5)	(85)
TD3	Fairly good (20)	90 percent of the fibre should be free from major and minor defects and only 10 percent of the fibre should be allowed to contain loose leaf and specks (22)	10 (15)	Fairly good (5)	Fibres well separated (5)	Medium bodied (3)	(70)
TD4	Fair average (18)	Free from major defects and not more than 20 percent fibres should contain specks and loose sticks (18)	15 (10)	Fair average (4)	Fibres well separated (2)	Medium bodied (3)	(55)
TD5	Average (16)	Free from major defects (14)	20 (5)	Average (3)	Fibre separated (2)	—	(40)
TD6	Average (16)	Free from centre root and dazed/over retted fibre (5)	25 (4)	—	—	—	(25)
TD7	Weak mixed (5)	Not more than 50 percent fibre should suffer from major defects (2)	35 (3)	—	—	—	(10)
TD8	Entangled or any other jute not suitable for any of the above grades but of commercial value						(0)

NOTES

1 The minimum reed length should be 150 cm, or the effective reed length should not be less than 100 cm except for TD8.

2 Jute should be in dry storable condition.

3 Jute should be free from *HUNKA*, mud and other foreign materials.

4 Natural dust may be allowed in grades TD3 to TD8 with proportionate discount.

5 Root content will include hard barky croppy ends.

6 A parcel of jute which would not secure full marks for a particular grade shall still be considered for that grade with suitable discount to be settled between the buyer and the seller, provided its score is not less, by 50 (or more) percent of the difference, between the maximum scores for that and the next lower grade. When the score is less by 50 (or more) percent of the difference, the buyer will have option to reject or settle with a suitable discount.

Scores on the table may be taken as guidance for determining the discount.

7 For instrumental determination of various characteristics like strength, defects, root content, fineness, bulk density, etc, reference to the relevant part of IS 7032.

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
5476 : 1986	Glossary of terms relating to jute (<i>first revision</i>)	(Part 4) : 1986	Defects (<i>first revision</i>)
		(Part 5) : 1986	Foreign matter (<i>first revision</i>)
7032	Physical methods of test for uncut Indian jute, Mesta and Bimli:	(Part 6) : 1986	Bulk density (<i>first revision</i>)
(Part 1) : 1986	General (<i>first revision</i>)	(Part 7) : 1986	Bundle strength (<i>first revision</i>)
(Part 2) : 1986	Reed length (<i>first revision</i>)	(Part 8) : 1986	Fineness (<i>first revision</i>)
(Part 3) : 1986	Root content (<i>first revision</i>)		

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Jute and Jute Products Sectional Committee, TX 03

<i>Organization</i>	<i>Representative(s)</i>
Office of the Jute Commissioner, Kolkata	SHRI S. MAJUMDAR, IAS (<i>Chairman</i>) SHRI R. K. BOSE (<i>Alternate</i>)
Andhra Pradesh Jute Mills Association , Hyderabad	REPRESENTATIVE
Directorate General of Supplies & Disposals, Quality Assurance Wing, New Delhi	SHRI A. K. SEHGAL SHRI M. M. DUBEY (<i>Alternate</i>)
Eskaps (India) Private Ltd, Kolkata	SHRI SHEKHAR GUHA SHRI ARBINDA KAR (<i>Alternate</i>)
Export Inspection Council of India, New Delhi	SHRI R. C. GUPTA SHRI S. BANERJEE (<i>Alternate</i>)
Food Corporation of India, New Delhi	REPRESENTATIVE
Indian Jute Industries' Research Association, Kolkata	DR D. SUR DR A. K. MUKHOPADHYAY (<i>Alternate</i>)
Indian Jute Mills Association, Kolkata	REPRESENTATIVE SHRI H. N. GHOSH (<i>Alternate-I</i>) SHRI V. K. SHARMA (<i>Alternate-II</i>) SHRI ARIJIT MITRA (<i>Alternate-III</i>)
Indian Sugar Mills Association, New Delhi	SHRI K. K. SHARMA SHRI M. N. RAO (<i>Alternate</i>)
Institute of Jute Technology, Kolkata	DR PRABIR RAY SHRI ALOK CHAKRABORTY (<i>Alternate</i>)
Markfed, Punjab	REPRESENTATIVE
Ministry of Consumer Affairs, Food and Public Distribution, New Delhi	DR R. B. DOHAREY SHRI R. P. SINGHAL (<i>Alternate</i>)
National Federation of Co-operative Sugar Co Ltd, New Delhi	SHRI VINAY KUMAR
National Institute of Research on Jute & Allied Fibres (NIRJAF)	REPRESENTATIVE
National Jute Manufacturers Corporation Ltd, Kolkata	SHRI A. GHOSH SHRI K. K. BOSE (<i>Alternate</i>)
Tea Board/Tea Industry Association, Kolkata	REPRESENTATIVE
The Fertilizer Association of India, New Delhi	SHRI R. C. GUPTA SHRI S. BANERJEE (<i>Alternate</i>)
BIS Directorate General	SHRI P. BHATNAGAR, Director & Head (TXD) [Representing Director General (<i>Ex-officio</i>)]

Member Secretary
SHRI B. L. BHARATI
Joint Director (TXD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

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 latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc : No. TX 03 (0662).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 2323 0131, 2323 33 75, 2323 9402

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :

	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110 002	{ 2323 7617 2323 3841
Eastern : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700 054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160 022	{ 60 3843 60 9285
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600 113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400 093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892
Branches : AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.	