For BIS Use Only

BUREAU OF INDIAN STANDARDS

AGENDA

Jute & Jute Products Sectional Committee, TXD 03 **40th Meeting**

Date/ Time	Venue
12 March 2024 (Tuesday) 1100 h	Lal C Verman Conference Hall, Bureau of Indian Standards Manak Bhavan, 9 Bahadur Shah Zafar Marg New Delhi – 110 002

CHAIRMAN: Shri Moloy Chandan Chakraborthy, IDAS, Jute Commissioner, Ministry of Textiles, Govt. of India

MEMBER SECRETARY: Shri Dharmbeer, Scientist D/Joint Director, Textiles, BIS HQ, New Delhi

Item 0 WELCOME & INTRODUCTORY REMARKS

Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

1.1 The minutes of the 39th meeting of the Committee held on 01 September, 2023 through hybrid mode were circulated vide BISDG letter no. TXD 03/A 2.39 dated 29 September, 2023.

1.2 Comments received on minutes of meeting (Item 4.1 Jute and PP Union Bag) from Shri Bhudipta Saha, IJMA, Shri Tanmoy Singha, Gloster Jute Mills, Smt. Vemula Sridevi, Food Corporation of India, New Delhi Smt. Bharati Balaji, ISMA New Delhi and Shri Raghavendra Gupta, IJMA, vide email/letter dated 05 October 2023, 06 October 2023, 09 October 2023, 22 November 2023 and 30 November, 2023 respectively are given at **Annex 1 (Pages 6-15).**

1.2.1 Committee may consider and confirm the minutes accordingly.

Item 2 SCOPE AND COMPOSITION OF TXD 03

2.1 The present scope and composition of the Committee is given at **Annex 2 (Pages 16-18).**

2.1.1 The Committee may **REVIEW**.

Item 3 ISSUES ARISING OUT OF PREVIOUS MEETING OF TXD 03

3.1 Summary of actions taken on the various decisions of the 39th meeting is given at **Annex 3 (Pages 19-20)**.

3.1.1 The Committee may **NOTE**.

Item 4 PRELIMINARY DRAFT FOR APPROVAL FOR WIDE CIRCULATION

4.1 TEXTILES – JUTE SHOPPING BAG - SPECIFICATION

In the 39th meeting of TXD 03, the committee decided that based on the recommendation of panel, preliminary draft standard of Jute Shopping Bag shall be prepared by BIS. The updated preliminary draft has been given at **Annex 4 (Pages 21-44).**

4.1.1 The committee may **DECIDE.**

Item 5 COMMENTS ON PUBLISHED STANDARDS

5.1 In the last meeting of TXD 03, the committee decided to constitute a panel under Convenorship of Shri Soumyadipta Datta, Office of the Jute Commissioner, Kolkata to deliberate the comments received during *manak manthan* and safety stitch on the following published standards: -

i) IS 18161 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 50 kg Mustard Seed, Niger Seed and Ragi — Specification
ii) IS 18162 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 50 kg Pulses and Soyabean — Specification
iii) IS 18163 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 35 kg Groundnut with Shell — Specification

The comments were discussed during the panel meetings held on 16 October, 2023 at Office of Jute Commissioner, Kolkata through Hybrid mode. The minutes of the panel meeting is given at **Annex 5 (Pages 45-53).**

5.1.1 The committee may **DECIDE.**

5.2 The comments on the following published standard were received from KKBO-1 during Manak Manthan through portal dated 12 January, 2024: -

1) IS 3344 : 2023, Textiles — D.W. Tarpaulin Jute Bags for Packing (Mint) Coins — Specification (First Revision)

The comments received are given at **Annex 6 (Page 54).**

5.2.1 The committee may **DECIDE.**

5.3 Shri Bhudipta Saha, Technical Head, Indian Jute Mills Association vide email dated 08 January, 2024 informed that IJMA have developed two bags for packing 50 kg sugar on Shuttleless Looms. It was requested to include both the bags in the existing IS 15138:2010 as Type D & Type E. Type D is a natural bag whereas Type E is a natural bag with a polyliner.

The test reports received IJIRA are given at **Annex 7 (Pages 55-58).**

The modified draft received from IJMA after incorporating above changes are given at **Annex 8 (Pages 59-66).**

The comments were also received from KKBO-1 of BIS on IS 15138 :2010 dated 17 January, 2024 through portal which are given at **Annex 9 (Page 67).**

5.3.1 The committee may **DECIDE.**

Item 6 REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS

6.1 As per procedure of BIS, standards which were published/reaffirmed five years ago or earlier are required to be reviewed to assess adequacy of the requirements specified. Review is carried out keeping in view the changes in technology, current industrial practices and the needs/expectations of the consumers/users so as to decide regarding further reaffirmation/revision/withdrawal/amendment/archive of the standards under review.

The following Indian Standards is due for review in 2023-2024: -

Sl No	IS No.	Title	Due Date
1	IS 271 : 2020	Textiles - Grading of White, Tossa and Daisee Uncut Indian Jute (Fifth Revision)	March 2025

Shri Raghvendra Gupta, Chairman Indian Jute Mills Association and Shri Bhudipta Saha, Technical Head, Indian Jute Mills Association vide email dated 12 January 2024 and 07 February 2024 requested to include 6 grades in the existing IS 271 instead of 5 grade.

The comments received from IJMA are given at **Annex 10 (Page 68-69).**

The modified draft received from IJMA is given at **Annex 11 (Pages 70-76).**

6.1.1 The committee may **DECIDE.**

6.2 In the last meeting of TXD 03, the committee decided that the following stakeholders shall send their suggestion/comments on the standard of their domain areas : -

Sl. No.	IS No	Title	Decision of the committee
1)	IS 14342 : 1996	Textiles - Jute yarn/twine - Packaging code	Indian Jute Mills Association shall review the standard in consultation with the user and submit a proposal for revision of the standard.
2)	IS 1943 : 1995	Textiles – A-twill jute bags (second revision).	Indian Sugar Mills Association and Indian Jute Mills Association shall review the standard and provide suggestion/comments for revision of the standard.
3)	IS 2566 : 1993	Textiles – B-twill jute bags for packing food-grains – Specification (third revision)	Indian Jute Mills Association shall review the standard in consultation with user and provide suggestion/comments for revision of the standard.
4)	IS 3667 : 1993	Textiles – B-twill jute cloth – Specification (second revision)	Indian Jute Mills Association shall reviewthe standard in consultation with user and provide suggestion/comments for revision of the standard.
5)	IS 9685 : 2002	Textiles – Sand bags – Specification (first revision)	Indian Jute Mills Association shall review the standard in consultation with DGQA/other user and provide suggestion/comments for revision of the standard.
6)	IS 3790 : 1991	Textiles – Hessian bags – Specification (second revision)	SGS, Kolkata shall review the standard in consultation with other stakeholder and provide suggestion/comments for revision of the standard.
7)	IS 4744 : 1991	Textiles – Packaging of jute products in rolls – Specification (first revision)	SGS, Kolkata shall review the standard in consultation with other stakeholder and provide suggestion/comments for revision of the standard.
8)	IS 4900 (Part 1 to 3) : 1984	Specification for jute carpet backing fabric (first revision)	-do-

9)	IS 11596 : 1986	Specification for grading of uncut Indian Bimli	Jute Corporation of India shall review the standard in consultation with the user agencies and submit a proposal for revision of the standard. It is further informed that this standard has been taken as R & D Project after approval of TXD 03.
10)	IS 9846 : 1981	Grading of uncut Indian MESTA	Jute Corporation of India shall review the standard in consultation with the user agencies and submit a proposal for revision of the standard. It is further informed that this standard has been taken as R & D Project after approval of TXD 03.
11)	IS 2873 : 1991	Textiles – Packaging of jute products in bales – Specification (second revision)	Indian Jute Mills Association shall review the standard in consultation with user and provide suggestion/comments for revision of the standard. It is further informed that this standard has been taken as R & D Project after approval of TXD 03.

The word copy of draft standards (Sl No. 1 to 8) are given at **Annex 12 (Pages 77-124).**

The comments received from Office of Jute Commissioner/IJMA and SGS are given at **Annex 13 (Pages 125-127).**

6.2.1 The Committee may **CONSIDER** and **DECIDE**.

Item 7 DATE AND PLACE OF NEXT MEETING

Item 8 ANY OTHER BUSINESS

ANNEX 1
(Item 1.2)

COMMENTS ON MINUTES OF THE 39TH MEETING OF JUTE & JUTE PRODUCTS TXD 03 HELD ON 01 SEPTEMBER, 2023

a) Shri Bhudipta Saha, IJMA,

In reference of the meeting of TXD 03 held on 29.09.2023, we like to draw your kind attention to Page 11 of the minutes where it is written

"After deliberation, the committee decided the following:-
i) It was agreed that all the comments given in the agenda were deliberated, resolved and agreed by all stakeholders except....."

In this context, we like to inform that all the comments given in the adenda were deliberated, but all the comments were neither agreed nor resolved by all the stakeholders. There were many issues in the agenda which were discussed but no concrete solutions were derived and also many comments were disputed by stakeholders.

Kindly place this comments on record.

b) Shri Tanmoy Singha, Gloster Jute Mills,

Here as per your minutes dated 29.09.2023 of the 39th meeting of Jute & Jute products Sectional Committee, TXD 03 held on 01.09.2023 some comments added by me

1. In these minutes on page no. 11 it was described with confidence that all the comments are resolved in agenda. Here my question to you sir when and where all comments were resolved? There were so many issues in this agenda which were discussed but no strong solutions were obtained and all the comments were not fully agreed or accepted by all the stakeholders. So, it's still open for discussion and debate.

2. Most of the valuables points which is against this bag are suppressed in this agenda like sustainability, bio degradability issues.

3. Also the field study report of this bag not clear to us.

   There are so many discrepancy.

   Kindly place my comments on record.

c) Smt. Vemula Sridevi, Food Corporation of India, New Delhi

Para No. 4.1

1) TXD 03 (21242), Textiles — Jute and polypropylene blended bags for packing 50 kg food grains — Specification

Food Corporation of India (FCI), New Delhi:

i) The quality aspect and strength of Jute/polypropylene union bag was found satisfactory during trial at different locations of FCI over a period of 2-2½ years.

ii) It was informed that there have been instances in the past with demand and supply gap of Jute Sacking Bags at FCI/SPAs(State Procuring Agencies) and many times DFPD/FCI have to ask for a dilution up to an extent of 30 percent due to dearth of jute sacking bags.

iii) The preference for packaging of food grain shall always be given to Jute sacking bag and in case of shortage of supply, as an alternate, the use of Jute/PP union Bag may be permitted.

iv) As an alternative packaging, Jute and polypropylene union bag, will benefit the end-user and also save the cost of the bag.

d) SMT. BHARTI BALAJI, ISMA NEW DELHI

Subject: Exemption of sugar from Jute Packaging Materials Act (JPMA)

Sir,

The Jute Packaging and Materials Act was enacted in 1987, and included four products, namely, food grains, fertilizers, sugar & cement. Cement was exempted from JPMA in 1998 followed by fertilizers in 2001. Currently, only food grains and sugar continue to be under JPMA. Packaging of food grains in jute bags is mostly done by Government agencies including FCI for which the subsidies, if any, are borne by the Government. This is not the case for sugar, where the commodity is produced and sold by the private sector and cooperative sector mills, with no subsidies from Government.

Your kind attention is invited to the following facts: -

(1) Packaging reservation has been detrimental to jute industry

Any kind of reservation, if continued for too long becomes detrimental to the growth, modernization and diversification of any industry. This is exactly what seems to have happened

in the case of jute industry in India. Several reports, internationally as well as domestically, including by Ministry of Textiles, Jute Commissioner, CACP etc., have stated that packaging reservation for jute bags in the food grains and sugar sector, has been the main reason for the lack of modernization, growth and diversification of this industry. Data would clearly confirm that the other high value products, which could have been made out of jute, have not picked up in India and it is either been flat in the last 25-30 years or only gone down, whereas production of jute bags, which has the benefit of reservation and have a guaranteed buyer in the food grains and sugar, has increased.

(2) <u>Quality of jute bags is hurting sugar and its consumers</u>

Jute bags carry moisture anything between 25% during dry time to 40% during rainy days. Jute, having moisture is not good for sugar packing without inner liner in today's modern requirements at client end, be it food industry or others.

Also, the large gaps in the jute bags, both A-Twill/ B-Twill allow leakage of sugar and moisture regain and hence the possibility of fibres getting mixed in sugar which then effects the quality of sugar packed. Bad quality of sugar then under FSSAI attracts penalties. Also, since jute being hygroscopic, has a tendency to gain more moisture than a plastic bag and air and moisture are to be absolutely avoided, given that the sugar deteriorates on exposure to moisture, jute bags are certainly not the best option, to avoid the formation of lumps and loss in colour.

The jute fibre very easily gets mixed into the sugar, which is unacceptable to the sugar consumers, especially, the bulk consumers who are very quality conscious, like beverage manufacturers, confectioners, juice makers, ice-cream makers, bakeries etc. Also, to soften the jute, batching oil is used, which then very easily gets mixed into sugar, when sugar is packed in such jute bags. Unlike food grains, which are cleaned, washed and only then cooked, sugar is directly consumed, and, therefore, such batching oil and jute fibre gets mixed with the food products made out of jute or directly by us.

Jute bags are not allowed in international trade as well.
In earlier history, when Jute bags were used in 100 Kg, loose inner liner was used and tied inside. Outer Jute bags were stitched. But with 50 Kg, insertion of loose inner liner and tying inside is not possible and stitching inner liner will gunny bag will not at its best. Alternate idea of inner laminated bags (if available need to be tested for strength and reliability for multiple handling). Also, if it is loose liner with adjustment of bag length and inner liner, stitching head for jute bags and inner liner cannot be the same and it is not effective.

On enquiry in the market, it is found that availability of laminated Jute bags is an issue.

Also sugar season last for 6 months and sugar produced in these 6 months is sold in next 12-14 months. Therefore, in monsoon season, jute cloth being porous attracts moisture from air and sugar becomes moist thereby falling below 'SS grade, resulting in reprocessing. Thus, causing huge financial loss.

Export packaging plays a vital role to enhance the amiability of sugar in different climatic conditions. It is pertinent to highlight here that in the international market, PP/HDPE bags are adopted as a practice for packaging of sugar. There are specifications particularly prescribed for packaging of sugar in such PP/HDPE bags, as per the export contracts. The reason for preferring such PP/HDPE bags commonly across the world is due to its properties of moisture-proof, water-proof & thus ensuring good quality besides cost-effective. By making jute packaging mandatory, the sugar exported to different countries will be affected thereby causing a huge economic loss not only to the nation as a whole but even to the farmers and the industry. Thus, the jute bags are non-suitable for packaging of sugar even as per international standards practice.

Please find enclosed herewith a chart showing the packaging material used for sugar packing in the world as ANNEXURE 1

Hence, jute bags need to be totally avoided. However, in case of food grains, air is good to avoid deterioration in their quality. Hence, if lute bagging is required to be made compulsory, it should be done for food grains and not sugar, **sugar being hygroscopic by nature**.

(3) Inadequate availability of jute bags

The Ministry of Food which administers both food grains and sugar, has been continuously, in the last three years, recommending for major relaxation in package of food grains in jute bags and also full exemption of sugar from the jute packaging. Yet, for reasons which can be best explained by the Textiles Ministry, which has been recommending 90% reservation of food grains and 20% reservation of sugar for jute packaging, recommendations of Food Ministry have been regularly ignored.

During the last 14 years, production of food grains increased from 198 million tonnes in 2004-05 to approx. 315 million tonnes (estimated) in 2021-22 i.e., an increase of 59%. Similarly, sugar production also increased from 12.7 million tonnes in 2004-05 to more than 35.8 million tonnes in 2021-22 till 30th Sep, 2022, i.e., an increase of 176%. As compared to an increase in food grains and sugar production by 59% and 176% respectively, the jute production in the same period has remained almost unchanged.

In view of the above, it is an established fact that Jute Industry shall not be able to meet the entire combined demand of food grains and sugar, both, **that too laminated jute bags even it succeed after testing.**
On enquiry in the market, it is found that availability of laminated Jute bags is an issue.

(4) High prices of jute bags

A 50 kg. jute bag costs approximately Rs 50 against the cost of PP/HDPE bags which is Rs 15-16. In other words, the cost of jute bags is three times the price of PP/HDPE bags. This unnecessary huge burden of Rs. 35 for 50.kg bag or Rs 70 per quintal on sugar for a bag, which is not even suitable for its packing and harmful to the sugar consumers, results in a loss of Rs. 350 crore to the sugar industry annually even at 20% packaging. The question is why should the

sugar industry or the sugarcane farmers subsidize the jute industry for their inefficiency and incur losses? **Industry need to spend money for inner liner as well.**

(5) <u>Recommendations of various committees</u>

There are several committees and Government authorities which have recommended for full exemption of sugar from packaging in jute bags. The Ministry of Food, as mentioned above, has been continuously representing for full exemption of sugar in the last three years. Similarly, CACP, which is on record showing that compulsory packing does not encourage jute industry to develop and diversify into high value products, has recommended for total exemption in case of sugar sector. The Rangarajan Committee set up by the then Hon'ble Prime Minister in 2012, and senior Government officials including the Chief Economic Adviser, Food Secretary and CACP Chairman, had recommended that sugar should be exempted from JPMA.

Sir, the Competition Commission of India, while concluding that the jute mills and gunny traders have been cartelizing to charge higher price for jute bags from the sugar industry, not only imposed a penalty on them, but had advocated to the Government on October 2015, that the Government should consider removing sugar from compulsory packing in jute bags. The CCI had concluded that compulsory packing of sugar in jute bags is undoubtedly against the principle of competitive neutrality and that such a policy not only restricts the choice of consumers, but it may also lead to escalation of cost which ultimately borne by the end consumers i.e common people.

2. Sir, in addition to the above problems, we are also now faced with strong requirements/procedures on the quality of sugar, including its safety for the consumers. FSSAI already has prescribed the procedure to be followed to ensure safety of sugar in our sugar processing and production in our mills. However, once such top quality of sugar is produced, but is then forcibly packaged in jute bags, which not only allows contamination with jute fibre and batching oil, exposes the sugar to moisture and open air, because of the large gaps in jute bags, will certainly invite lot of criticism very soon not only from the FSSAI, but the conscious consumers.

3. In view of the above submissions, especially the need to maintain good quality of sugar at reasonable prices, as well as to ensure that the jute industry is able to complete on its own, its high time that sugar is totally exempted from JPMA. The reservation under JPMA is 30 years old now and such a reservation for any industry, which is at the cost of any other sector and farmers, should be discontinued without any delay in time.

4. Sir, our humble request to you is to remove sugar totally from JPMA.

e) Shri Raghavendra Gupta, IJMA

Re: Purported email communication dated 23rd November, 2023 bearing the subject: "Jute & Jute Products Sectional Committee, TXD 03 – Item no. 4.1, TXD 03 (21242),

Textiles – Jute and polypropylene union bags for packing 50kg food grains – Specification" ("said communication")

Sir,

We write to you with reference to the captioned said communication, in respect whereof, we state and submit as follows:

1. The Divisional Council of the Bureau of Indian Standards ("BIS") has purported to review the Minutes of the 39th Meeting of the TXD-03 Committee and has held that the said Committee purportedly exceeded its mandate by making a recommendation for seeking legal opinion and that the decision of the Divisional Council as to the subject of the jute and polypropylene blended smart jute bags being within the domain of the TXD-03 Committee was final. Such decision of the Divisional Council is without reason, taken in excess and in abuse of its jurisdiction and suffers from procedural impropriety and fair play inasmuch as neither we nor any other member of the Committee was consulted or conferred with prior to arriving at such decision. The said communication does not provide any insight into the rationale of the Divisional Council or state any basis for such decision of the Divisional Council.

2. The Divisional Council does not possess such claimed veto power that too without providing any reason or consulting any stakeholder. The impugned action of the Divisional Council also amounts to usurpation of the jurisdiction of TXD-03 Committee.

3. We are further shocked and alarmed to discover that BIS is proceeding to issue the draft Indian Standard for jute and polypropylene blended smart jute bags ("draft IS") for publication without any further consultation and without addressing any of the grave and pertinent issues concerning its non-recyclability, biodegradability and non-feasible disposal protocol, the economic non-viability of the manual segregation of jute and polypropylene yarns, the impossibility of manufacturing smart jute bags with existing machinery as available with jute mills, the limited availability of higher grade jute to be used for manufacturing the said smart jute bags and the onerous liability of jute mills as manufacturers to dispose of the said smart bags under Extended Producer Responsibility Guidelines ("EPR" Guidelines). We draw your kind attention to the report of a reputed and independent organisation The Energy and Research Institute ("TERI"), the Minutes of the 36th to the 39th Meetings of the TXD-03 Committee and the comments of the West Bengal Pollution Control Board ("WBPCB") and the Jute Commissioner ("JC") therein in this regard.

4. Furthermore, we beseech you to consider that smart jute bags as per their present specifications are neither jute bags nor jute packaging material nor jute textiles for the purposes of the Jute Packaging Materials (Compulsory Use in Packing Commodities) Act, 1987 ("JPM Act"), the Jute Textiles Control Order, 2016 ("JTCO 2016") and the notifications and orders issued by the Ministry of Textiles and the JC. The Government of India has laid down the composition and standards of quality of jute and jute products for compulsory packaging of food grains and other essential commodities as follows:

(i) The mandatory jute packaging orders issued by the Ministry of Textiles under Section 3(1) of the JPM Act from time to time stipulate that jute packaging materials used for compulsory packaging of food grains have to be manufactured in India and from raw jute produced in India.

(ii) Section 2(c) of the JPM Act defines *"jute packaging material" as "jute, jute yarn, jute twine, jute sacking cloth, hessian cloth, jute bags or any other packaging material containing not less than seventy-five percent, by weight, of jute."*

(iii)Paragraph 2(d) of the JTCO *defines "jute textiles" as "yarn, twine, sacking cloth, bags or sacks and other articles made, wholly from raw jute, or partly from raw jute and partly from any other material or materials where raw jute constitutes more than fifty per cent. of its weight."*

(iv) Paragraph 2(f) of JTCO defines *"raw jute" as "the fibre of jute also known as pat, patsan, bimli or mesta."*

(v) Paragraph 2(h) of JTCO defines *"unfair practices",* in relation to a Production Control Order issued under paragraph 4 of JTCO as including *"misappropriation of jute bags, non-supply or default in supply of jute bags, supply of used or old jute bags or underweight jute bags or imported jute bags, jute bags manufactured with imported raw jute or jute yarn or fabric, unbranded or incompletely branded or wrongly branded jute bags or jute bags which do not conform to the BIS standards or the specifications mentioned in the production control order."*

(vi) The classes of goods or articles made of raw jute as also the quality of jute to be used in manufacturing such goods or articles which must conform to the IS laid down by the Respondent No. 2 vide the Jute Bags (Quality Control) Order, 2022, are as follows:

Sl. No.	**Goods or Article**	**Indian Standard**	**Title of Indian Standard**
(1)	A-twill jute bags	IS 1943 : 1995	Textiles-A-twill jute bags - Specification
(2)	B-twill jute bags for packing foodgrains	IS 2566:1993	Textiles-B-twill jute bags for packing foodgrains- Specification
(3)	Jute bags for packing 50 kg foodgrains	IS 12650:2018	Textiles-Jute bags for packing 50 kg foodgrains-Specification
(4)	Jute bags for packing 50 kg sugar	IS 15138:2010	Textiles-Jute bags for packing 50kg sugar-Specification
(5)	Light weight jute sacking bags for packing 50 kg foodgrains	IS 16186:2014	Textiles-Light weight jute sacking bags for packing 50 kg foodgrains Specification
(6)	Jute bags for packing up to 30 kg foodgrains	IS 16372:2015	Textiles-Jute bags for packing up to 30 kg foodgrains-Specification

5. Thus, as would be evident from the aforesaid statutory provisions as also the notifications and orders issued by the Ministry of Textiles and the JC, the type of jute bags which are required to be manufactured by jute mills for compulsory packaging of essential commodities are made of jute packaging materials manufactured in India and wholly from raw jute produced in India. In any event and assuming without admitting that the jute packaging material used for compulsory packaging of essential commodities is only seventy-five percent, by weight, of raw jute, as regards the remaining twenty-five percent, i.e., the non-raw jute component, the same must constitute more than fifty per cent raw jute in terms of weight thereof. As such, the non-jute component in the jute bags used for compulsory packaging of essential commodities such as food grains must have raw jute as its constituent by more than fifty per cent of its weight.

6. It is not in doubt that the jute and polypropylene blended smart jute bags which is sought to be introduced by BIS does not meet the legal requirements and the raw jute component of the non-jute material is not more than fifty percent, by weight. This is in contravention of the provisions of the JPM Act, JTCO, 2016 and notifications and orders issued thereunder from time to time. Further, inasmuch as the said smart jute bags have been categorized by the Ministry of Environment, Forest and Climate Change ("MoEFCC") as "multi-layered plastic packaging" within the meaning of Rule 3(n) of the Plastic Waste Management Rules, 2016 ("PWM Rules, 2016"), the same cannot possibly contemplate within its fold jute or raw jute or jute products. As such, the smart jute bags as sought to be introduced by BIS are neither jute bags nor jute packaging material nor jute textiles for the purposes of the JPM Act, JTCO, 2016 and notifications and orders issued thereunder from time to time.

7. Under any circumstance, the smart jute bags will not come within the definition of "jute textiles" under paragraph 2(d) of the JTCO 2016 since the "other material", in this case "polypropylene" does not have any raw jute in its composition. Since neither JTCO 2016 nor JPM Act will have any application it would have far reaching consequences.

8. In light of the above concerns, there is no jurisdiction of the said Committee to frame draft IS for jute and polypropylene blended smart jute bags since the jurisdiction of the TXD-03 Committee is limited only to framing IS for jute and jute products and nothing further. It is in exercise of such concerns and in the interest of seeking legal clarity that the Committee in its 39th Meeting unanimously resolved to seek further legal opinion from senior legal practitioners and high ranking government law officers on such issue of jurisdiction of the Committee. As would be evident from the Minutes of the 39thMeeting, the Committee felt compelled by the contents of the legal opinion which we had placed before TXD-03 Committee in its 39th Meeting as also the TERI report. We remind you that legal opinion was taken in light of the concerns raised by the JC in the 38th Meeting of the TXD-03 Committee.

9. Further, the proposed introduction of the smart jute bags would create a situation of impossibility and unworkability in the Indian jute industry since the circular looms/machinery infrastructure for manufacturing of jute and polypropylene blended smart jute bags is not presently available with the jute industry and jute mills will be fastened with the onerous liability of disposing and recycling of smart jute bags which are neither biodegradable nor recyclable. The unworkability and economical non-viability of the situation for Indian jute mills would be further exacerbated by the fact that without there being any mechanism for manual segregation

of jute and polypropylene yarns, no recycling of the polypropylene component of the said smart jute bags is possible. Furthermore, the proposed introduction of smart jute bags would create a situation of import dependency, which is contrary to the object and purpose of the JPM Act, since the higher grade of jute (being TD2 or higher) required for manufacturing of the said smart jute bags is available in a limited quantity of 7 to 8% in India. Moreover, Indian climatic conditions mostly permit the cultivation of inferior grade jute and are not favourable for growing of such higher grade jute. Therefore, adoption of smart jute bags would result in the wholesale and overnight obsolescence of the Indian jute industry and would afford primacy to polluting plastic-based industries at the expense of the ecologically sustainable and fully biodegradable jute industry. Such proposed adoption would also entail the imposition of impossible and onerous obligations upon the Indian jute industry which is already suffering from significant economic instability and uncertainty.

10. It has become apparent to us that BIS is proceeding with unseemly haste to finalise and publish the draft IS for the jute and polypropylene blended smart jute bags, without any third-party study or consultation and without deciding on the grave and pertinent issues and concerns raised in respect thereof by us as also the WBPCB and the JC and without providing or communicating any
reason therefor. Such act is unreasonable, unfair and in wanton breach and disregard for procedural fairness and propriety by failing to consider the interests of the Indian jute industry at large and all stakeholders therein.

11. In any event, by purporting to issue the said communication, you have acted in gross abuse of authority and jurisdiction. We respectfully state that the Divisional Council does not have the jurisdiction to override the decisions of the TXD-03 and the same in any manner is not permissible under the BIS Act. The BIS Act permits the TXD-03 to finalise the draft IS after giving due consideration to the comments that may be received in respect thereof and it is only upon submission of such finalized Indian Standards ("IS") that the Divisional Council is bound to publish the same.

12. By acting and/or purporting to act as aforesaid, you have also acted mala fide by failing and/or neglecting and/or omitting to consider the interests of the Indian jute industry at large and all stakeholders therein. We remind you that all stakeholders of the Indian jute industry constitute an inalienable and integral class of stakeholders in the framing of IS for jute bags for packaging of food grains and other essential commodities and have at all material times played a crucial role in the framing of such IS.

13. We state that the proposed introduction of jute and polypropylene blended smart jute bags, as per its present specifications, will irrecoverably disrupt and upend the business of the Indian jute industry to the irreparable detriment and prejudice of the livelihood and welfare of millions of jute cultivators and jute mill workers and the functioning of Indian jute mills will come to a complete and total standstill.

14. We stress that as a statutory authority established under the Bureau of Indian Standards Act, 2016, BIS is mandatorily required by law to act reasonably, fairly, transparently and in accordance with the principles of procedural fairness and propriety in discharging its public

duties and functions under the BIS Act and all the fetters which apply to any act by a public authority under public law, apply to BIS in law. BIS discharges public duties and functions by framing IS which is in public interest.

15. Accordingly, we humbly request you that the publication of IS for the jute and polypropylene blended smart jute bags be kept on hold till the aforesaid issues are addressed with due and proper consultation of all concerned stakeholders and upon taking requisite legal opinion. Any publication of IS in haste without proper consultation of all stakeholders is contrary to the object of the BIS Act and would be in breach of the public duties and functions discharged by your good office.

16. Kindly treat this as a demand for justice.

17. This issues without prejudice to our rights and contentions in the matter.

ANNEX 2
(Item 2.1)

Scope & Composition of Jute & Jute Products Sectional Committee, TXD 03

Scope: To formulate Indian Standards for terminology, grading, specifications and packaging for jute, Mesta and other related bast fibres and their products.

Meetings held	**Date and Place**
38th Meeting	28 March 2023, BIS HQ New Delhi (Hybrid Mode)
39th Meeting	01 September 2023, BIS EROL Kolkata (Hybrid Mode)

SL NO.	ORGANIZATION REPRESENTED	NAME OF THE REPRESENTATIVE PRINCIPAL/(ALTERNATE)	ATTENDANCE
1.	Office of the jute commissioner, Kolkata	**Shri Moloy Chandan Chakraborthy (Chairman)**	2/2
2.	Caledonian Jute and Industries Ltd, Kolkata	Shri Pankaj Kumar Chatterjee	1/2
3.	Cheviot Company Limited, Kolkata	Ms. Satarupa Banerjee (Ms. Pratima Chowdhury)	0/2
4.	CSIR- Indian Institute of Toxicology Research, Lucknow	Dr V P Sharma	1/2
5.	Department of Jute & Fibre Technology, Institute of Jute Technology, University of Kolkata	Prof A Choudhury (Prof. S. K. Ghosh)	1/2
6.	E.I.D. Parry (India) Ltd, Chennai	Shri T. Kannan	1/1
7.	Eskaps (India) Pvt. Ltd., Kolkata	Shri Satyajit Chakraborty (Shir Laba Kumar Das)	2/2
8.	Food, Civil Supplies & Consumer Protection Department, Govt of Chhattisgarh	Shri Santosh Kumar Pathak	1/2
9.	Food Corporation of India, New Delhi	Shri Kaushik Das (Shri S. Vijay Kumar)	2/2
10.	Food Supplies and Consumer	Shri Somen Nayak	0/2

	Welfare, Govt of Odisha		
11.	Food, Civil Supplies and Consumer Affairs Department, Govt of Haryana	Nomination Awaited	1/2
12.	Food, Civil Supplies & Consumer Protection Department, Govt of Madhya Pradesh	Nomination awaited	1/2
13.	Food, Civil Supplies & Consumer Protection Department, Govt. of Punjab	Shri Anand Sagar Sharma (Smt. Renu Bala)	2/2
14.	Gloster Limited, Kolkata	Shri Tanmoy Singha	2/2
15.	Hukumchand Jute Mills, Kolkata	Shri R K Srivastav (Shri Bijan Sarkar)	1/2
16.	ICAR-Central Research Institute for Jute and Allied Fibers (CRIJAF), Kolkata	Dr. Gouranga Kar	1/2
17.	ICAR-National Institute of Natural Fibre Engineering and Technology (NINFET), Kolkata	Dr Surajit Sengupta (Shri Manik Bhowmick)	2/2
18.	Indian Jute Industries Research Assn., Kolkata	Shri Partha Sanyal (Smt. Soumita Chowdhury)	2/2
19.	Indian Jute Mills Association, Kolkata	Shri Samir Kr Chandra (Shri Bhudipta Saha)	2/2
20.	Indian Sugar Mills Association, New Delhi	Ms. Bharati Balaji (Ms. Priya Chakraborthy)	2/2
21.	Ministry of Consumer Affairs, Food and Public Distribution, Govt of India	Shri Vishwajeet Halder (Shri Rakesh Kumar Meena)	0/2
22.	Murlidhar Ratanlal Exports, Kolkata	Shri Avijit Das	0/2
23.	Ministry of Textiles, New Delhi	Director (Jute)	1/2
24.	National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), Kolkata	Smt. Anindita Guha	2/2
25.	National Jute Board, Kolkata	Shri Mahadeb Dutta	1/2
26.	National Jute Manufacturers Corporation Ltd, Kolkata	Shri I. A. Mondal	1/2
27.	Office of the Jute Commissioner,	Shri Soumyadipta Datta	2/2

	Kolkata		
28.	SGS India, Gurgaon	Shri Shailesh Sharma (Shri Bhasker Sen)	2/2
29.	The Jute Corporation of India Ltd, Kolkatta	Shri Kalyan Majumdar (Shri A Majumdar)	1/2
30.	West Bengal Pollution Control Board, Kolkatta	Shri Subrata Ghosh (Shri Qazi Hasan)	1/2

ANNEX 3
(Item 3.1)

SUMMARY OF ACTIONS TAKEN ON THE MINUTES OF THE LAST MEETING

Item No.	Decision	Action taken
2.1	Certain modifications were suggested in the composition of the committee.	Updated composition is given in **Annex 2**
	DRAFTS STANDARDS FOR FINALISATION	
4.1	**TXD 03 (21242), Textiles — Jute and polypropylene union bags for packing 50 kg food grains — Specification** The committee decided to take legal opinion on the jurisdiction of the Jute & Jute Products Sectional Committee (TXD 03). If the legal advice is positive i.e. the subject of specification of jute/pp union bag as categorised as above fall under scope/domain of TXD 03; the draft standard as given in the agenda shall be finalized for publication. The minutes of the 39th meeting of TXD 03 was reviewed by Competent Authority. The decision of the Competent Authority for item no. 4.1, TXD 03 (21242), Textiles — Jute and polypropylene union bags for packing 50 kg food grains — Specification is as follows:- 'The TC in this case exceeded its mandate by making a recommendation for seeking legal opinion. Decision of the Divisional council regarding the scope of a TC is final.' Accordingly, the decision of the Textiles Division Council that the subject of 'Jute and polypropylene union bags for packing 50 kg food grains' fall within the domain of TXD 03 is final. So, no further legal opinion is required in this matter. The extract of agenda and minutes of 25th meeting of Textiles Division Council held on 19 May 2023 are enclosed. In view of above, the draft Indian standard TXD 03 (21242), Textiles — Jute and polypropylene union bags for packing 50 kg food grains — Specification finalized by TXD 03 during 39th meeting has been sent for publication.	Published as IS 18531: 2023. Subsequently the order issued by Hon'ble Justice of Hon'ble High Court of Calcutta to set aside the standard. The matter is being taken up for further action.

5.1	**NEW SUBJECTS FOR FORMULATION OF INDIAN STANDARDS** **JUTE SHOPPING BAGS** The committee decided that based on the recommendation of panel, preliminary draft standard of Jute Shopping Bag shall be prepared by BIS and the same shall be issued in wide circulation for 2 months for eliciting technical comments from stakeholders.	Coming up for discussion under agenda item **4.1**
6.1	**REVIEW OF PUBLISHED STANDARDS** i) IS 18161 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 50 kg Mustard Seed, Niger Seed and Ragi — Specification ii) IS 18162 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 50 kg Pulses and Soyabean — Specification iii) IS 18163 : 2023, Textiles — Light Weight Jute Sacking Bags for Packing 35 kg Groundnut with Shell — Specification The committee decided to constitute a panel to deliberate the comments received during manak manthan and safety stitch for necessary changes required in the above standards.	Coming up for discussion under agenda item **5.1**
7.1	**REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS** The committee decided that all the stakeholders shall send their suggestion/comments on the standard of their domain areas.	Coming up for discussion under agenda item **6.1.**

ANNEX 4
(Item 4.1)

PRELIMINARY DRAFT FOR APPROVAL FOR WIDE CIRCULATION

Draft Standards on
TEXTILES- JUTE SHOPPING BAG- SPECIFICATION

1. SCOPE

This protocol specifies terminology, general specification, general requirements, packing, marking, sampling, inspection, and criteria for conformity of 15 kg capacity jute shopping bags.

2. REFERENCES

The standards listed in **Annex A** contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid of the referred standards. 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.

3. TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall be apply, related to jute, IS 12111 for cotton tape, IS 3871 for rope and IS 9543 for polyester sewing thread.

4. MANUFACTURE

4.1. Hessian Cloth

4.1.1. The bags shall be made from single piece of plain weave jute hessian of uniform construction as given below:

Fabric Type- Single warp, single weft woven on modern shuttleless loom.

The hessian cloth shall conform to the requirements laid down in Table 1.

4.1.2. The base fabric and gussets shall be made from jute yarn with linear density of 7-8 lbs/spy with an areal density of 270 g/m^2. The constituent jute yarn of the base fabric and gusset shall be smooth and uniform.

4.1.3. Two hessian base fabric of bags are sewn by two side gussets and one bottom gusset. Handles are made of cotton tape enveloping a cotton rope. Each handle is attached to each base fabric (hessian) of bag.

4.2. Cotton tape for handle

4.2.1. The tape shall be woven uniformly with regular and firm edge free from starch. Double warp and double weft pattern tapes are used with plain weave design, manufactured in the narrow loom.

4.2.2. The yarn used in the manufacture of tape shall be cotton yarn and shall be satisfactory in evenness of thread, and reasonably free from defects such as neps, slubs, knots, kinks, etc. The yarn shall be free from size or filling materials. The approximate count of the warp and weft yarn is given in Table 3.

4.2.3. The tape shall comply with the requirements of Table 3. Permissible tolerances and the methods of test for the various requirements have also been prescribed in the table.

4.2.4. *p*H Value- The *p*H value of the aqueous extract of tape shall be not less than 6.0 nor more than 8.0. The *p*H value of the aqueous extract of tape shall be determined by the hot method prescribed in IS: 6117-2021.

4.2.5. The tapes shall be scoured, bleached or dyed as per the requirement of the buyer.

4.3. Rope / filler for handle

The rope/filler of handle is assembled by number of untwisted, coarser yarns bounded by few finer yarns. The coarser yarn strands should be well formed, metal free, continuous and shall be free from snarls, loops or other defects and free from foreign matters. The physical requirement is given in Table 4.

4.4. Seam

The two sides and the bottom gussets of the bags shall be sewn with lock stitches with the base fabric. The base fabric is made sure to be lined up with the gusset. The gusset is folded laterally with a hemming width of 1.5 ± 0.2 cm and lock stitched with the base fabric of the bag with a seam allowance of 1 cm minimum as shown in figure 1. The number of stitches per inch shall be 8 ± 1. The material used for the stitching should be polyester sewing thread of adequate strength (or cotton sewing thread having same strength specified according to IS: 1720-1978). The stitching shall be uniform without any loose thread or knot.

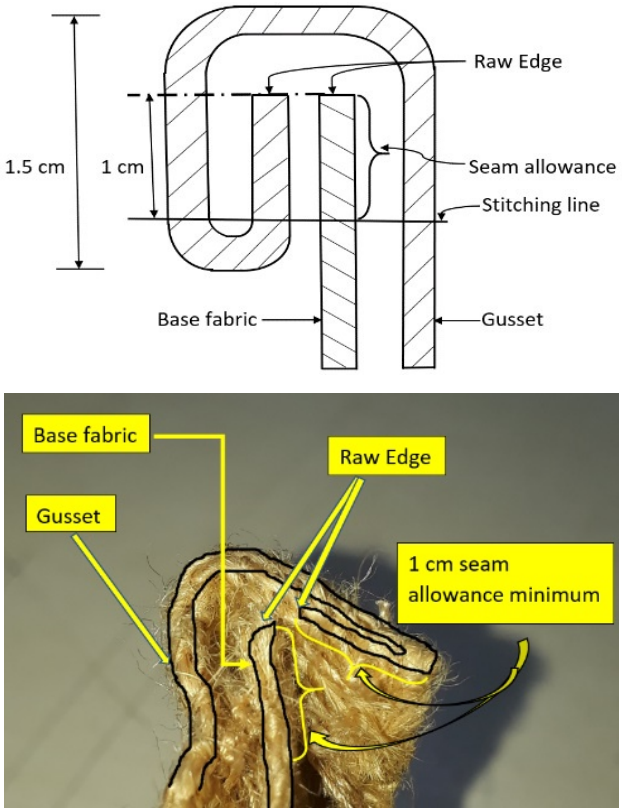


Figure 1: a) Schematic diagram of bag seam sewn with four thickness of cloth
b) Real picture of bag at seam portion

NOTE from SGS: As raw edge of base fabric is kept open so it would be better if the base fabric to be folded by 1cm getting locked with gusset and then stitched.

4.5. Capacity

The bag shall have a nominal capacity of 15 kg.

5. SPECIFIC REQUIREMENTS

5.1. Length and Width

Lay each bag flat on a table, remove all the creases and wrinkles and measure the outside length and outside width at the centre of the bag to the nearest 0.5 cm. However, tolerance is given in Table 2. The bags shall conform to the requirements specified in Table 2.

5.2. Mass in Grams Per Square Meter

Cut portion from bags of 100 mm square after measurement of moisture regain (*see* IS 9113) and determine the mass in grams per square metre of fabric in accordance with IS 2387.

5.3. Ends and Picks

Count the ends and picks from each portion of the bags in one and two places respectively in accordance with IS 1963. In case of narrow fabric having width of 10 cm or less, all warp threads including selvedge ends shall be counted and expressed as threads per full width.

5.4. Bag Handle Length

"Bag handle length" is defined as the requisite portion of the handle that is stitched with the two surface points on the base fabric of the bag.

Figure 2: a) Schematic diagram of Bag handle length
b) Real picture of bag handle length

5.5. Fabric Breaking Strength

From each portion from bags prepare 2 test specimens, 1 in the warp and 1 in weft direction and determine the breaking strength by ravelled strip method as under:

a) *Ravelled strip method* — Carry out tests on 100 mm wide ravelled strip and 200 mm between grips [*see* IS 1969 (Part 1)] in a fabric strength tester with a rate of traverse 460 mm per min. Other test procedure should be in accordance given in **Annex I**.

5.6. Seam Strength

From each portion from bags prepare 1 test specimen and determine the seam strength by the method as under:

Carry out test by taking the specimen of 350 mm overall length (*Min*), 100 mm width at the seam portion and 50 mm effective width excluding portion for ravelling [*see* IS: 9030-1979]. Other test procedure should be in accordance given in **Annex J**.

5.7. Handle Attachment Strength

From each portion from bags prepare 1 test specimen and determine the handle attachment strength by the procedure elaborated in **Annex E**.

NOTE- The load range of the machine shall be such that all the observed values would lie between 10 and 90 percent of the full-scale load. The permissible error in the machine at any point in this range shall not exceed ± l percent.

5.8. Static Load Test

From each lot size select sample bags randomly as per table 9 and conduct the static load test by the procedure elaborated in **Annex C**.

5.9. Dynamic Load Test

From each lot size select sample bags randomly as per table 9 and conduct the dynamic load test by the procedure elaborated in **Annex D.**

5.10. Moisture Regain

Determine the moisture regain in each bag as per sampling plan on opening the cartons by the use of a suitable moisture meter. After opening the cartons, sufficient time (not less than 10 min) shall be allowed to lapse before measuring moisture regain to enable the fabric to attain conditions for the normal use of the moisture meter. Take reading at different portion for each bag. The contract moisture regain of the bag shall be maximum 16 percent as per IS: 9113-2012.

NOTE

1. IJIRA (Indian Jute Industries Research Association) Moisture Meter may be used for the purpose. This meter works on the principle of measuring the electrical resistance which changes with moisture content in the material. The specimen (jute product) is placed under the electrode gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through the electrodes is amplified and recorded on the meter calibrated against the actual moisture regain, based on oven-dry method of the material. A separate chart, calibrating the readings of the actual moisture regain based on oven-dry method of the material may also be used. The instrument shall be operated according to the manufacturer's instructions. Mention of the name of the specific instrument is not intended to promote or give preference to the use of that instrument over others not mentioned.

5.11. Oil Content

5.11.1. From each portion as per sampling plan take one representative strip, together weighing approximately 20 g and determine the oil content on dry de-oiled material basis as per the procedure given at **5.11.2.** Minimum two tests shall be carried out as per IS: 2969-1974.

5.11.2. **Procedure**

a) Take a test specimen, weigh it to the nearest milligram and place it in the thimble of the Soxhlet apparatus. Take about 100 ml of trichloroethylene or light petroleum in the extraction flask previously cleaned, dried and

weighed correct to 1mg. Extract the test specimen for 1.5 to 2 hours with a minimum of 6 siphoning per hour. After completion disconnect the apparatus.

b) Withdraw the specimen from the apparatus, open it out and allow the excess solvent to evaporate. Dry the specimen for 4 hours at 105 ± 3ºC in the drying oven. Transfer the dried specimen to a tared airtight container, cool and weigh. Determine the oven-dry mass of the specimen (M_d) correct to 1 mg.

c) Recover the excess of the solvent by heating the flask in a water-bath, maintained at 95ºC, if the solvent is trichloroethylene and 60 to 65ºC if the solvent is light petroleum, and simultaneously allowing a stream of air to pass through the flask by means of a tube terminating just below its neck. Remove all traces of moisture by heating the flask at 105 ± 3ºC for 0.5 hours. Weigh the flask and determine the mass of the extract (M_c) correct to 1 mg.

$$\text{Oil content percent} = \frac{M_c}{M_d} \times 100$$

Table 1. Requirements of Hessian fabric

Sl. No. (1)	Quality parameters (2)	Requirement (3)	Tolerance (4)	Hukumchand (5)	Gloster (6)	Birla (7)	Methods of Test (*Clause*)
1	Average Weight per square metre, g (Corrected)	270 g	+8 percent or (+21.6) -2 percent or (-5.4)	286.2	271.7	256.6	IS: 2387-1969 **5.2**
2	Ends per dm	51	±2	53	51	49	IS: 1963-1981 **5.3**
3	Picks per dm	51	±2	52	52	49	
4	Average breaking strength: a) Ravelled-strip method, (10cm×20cm), *Min*, N(kgf): 1. Warpway 2. Weftway Individual breaking strength, *Min*, N (kgf) 1. Warpway 2. Weftway	833 (85) 833 (85) 735 (75) 735 (75)	85 *Min*	1015 (103.6) 1182 (120.6)	921 (94) 1046 (106.8)	894 (91.3) 802 (81.8)	IS 1969-2009 **5.5**

Table 2 Requirement of Shopping Bags

Sl. No. (1)	Quality Parameters (2)	Requirement (3)	Tolerance (4)	Gloster (5)	Birla (6)	Method of Test (*Clause*) (7)
1	Dimension (cm)	45×35×20	+2 -0	45.5×36×20.2	46×36×19.6	**5.1**
2	Average and Individual Moisture regain, percent, *Max*	17	17 *Max*	12.3	10.3	**5.10**
3	Contract regain, percent	16	NA			**5.10**
4	Oil content, percent on dry de-oiled material basis, *Max*	3 %	3 % *Max*	2.3	0.9	IS 2969- 1974 **5.11**
5	Bag handle length, cm	60	± 2	60	58.2	**5.4**
6	Average Seam strength, N (kgf)	117 (12)	12 *Min*	120.5 (12.3)	99.2 (10.12)	IS 9030- 1979 **5.6**
7	Average Handle attachment strength, N (kgf)	294 (30)	28 *Min*	314.3 (32.07)	263.1 (26.84)	**5.7**
8	Static load test at 24 hrs	No visual damage	No visual damage	No visual Damage observed	No visual Damage observed	**5.8**
9	Dynamic load test at 2000 cycles	No visual damage	No visual damage	No visual Damage observed	No visual Damage observed	**5.9**

Table 3 Physical Requirements of Tapes, Cotton

Sl. No. (1)	**Characteristics (2)**	**Requirement (3)**	**Tolerance (4)**	**Gloster (5)**	**Birla (6)**	**Method of Test** (*Clause*) **(4)**
1	Width, mm	40	±2	40	Couldn't be tested due to no sample provided by M/S Birla	IS: 1954
2	Mass, g/100m *Min*	1900	±5 %	2014		IS: 1964
3	Ends in Full Width *Min*	70	±5 %	70		IS:1963
4	Picks/cm *Min*	7	±5 %	7		

5	Approximate Count of yarn	Warp	98 tex × 2 (6s/2)	±5 %	92.2 tex × 2 (6.4s/2)		IS:3442
		Weft	98 tex × 2 (6s/2)	±5 %	103.6 tex ×2 (5.7s/2)		
6	Average Breaking Strength on Full Width, N(kgf), ***Min***		75	75 *Min*	760 (77.6)		IS:1969 (Part 1)

Parameters	**Requirement**	**Tolerance**	**Gloster**	**Birla**	**Method of test**
Diameter (mm)	90	+1 –0	90	Couldn't be tested due to no sample provided by M/S Birla	IS: 7071 (Part 3)-1974
GLM (g/m)	25	±5 %	25.5		

Table 4 Requirements of Cotton Rope

5.12. Bag Handle

The handle of the bag made of 100% cotton tape enveloping a cotton rope as shown in figure 2. The rope is provided for easy gripping by the user. The tape is lock stitched with the bag to withstand 15 kg load. The base fabric and tape cloth rolled up to hemming width of 2 ± 0.2 cm together and lock stitched (stitch density 8 ± 1 stitches/inch) parallelly along the length of bag.

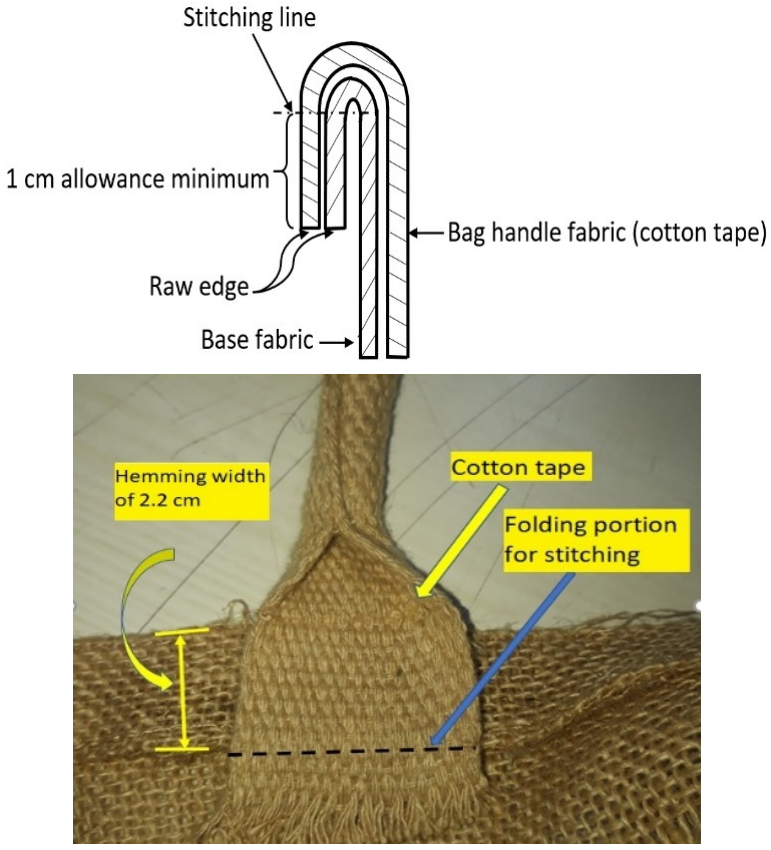


Figure 2: a) Schematic diagram of stitching at handle attachment portion
b) Real picture of bag handle attachment portion

Figure 3: Schematic diagram of Lock stitch

5.13. Sewing Thread

The sewing thread should be of polyester thread, unbleached, bleached, dyed, unsized or as settled between buyer & supplier. This does not specify the type of finish and feel of the sewing thread, nor does it specify the degree of whiteness of the bleached thread or the colour of the dyed threads (as per IS: 9543- 1980). The sewing threads shall comply with the requirements given in Table 5.

5.13.1. Polyester yarn used in the manufacture of the sewing thread shall be evenly spun with suitable number of turns per metre so that a balanced thread is produced. It shall be reasonably free from spinning defects.

5.13.2. The 3-ply polyester sewing thread shall be reasonably free from knots, snarls and doubling defects.

5.13.3. Unless agreed otherwise, the direction of twist in the singles and the finished sewing thread shall be at the discretion of the manufacture.

5.13.4. White sewing thread shall have a uniform bleached finish. The dyed sewing threads shall have the required shade and free from all dyeing defects and should be azo free.

Table 5 Requirements of Polyester Sewing Thread

Parameters	Requirement	Tolerance	Gloster	Birla	Method of test
Nominal Count English Cotton Count (Ne)	30/3 Ne	±1 Ne	29.4/3	29.1/3	IS: 1315-1977
Number of ply	3 ply (3 strands, each single)	3- ply *Min*	3 ply	3 ply	
Single Thread Breaking Load, *Min* Newtons (kgf)	19.6 (2)	± 0.2 kgf	20.6 (2.1) 20.6 (2.1)	19.6 (2) 19.6 (2)	IS: 1670-1991

5.14. Additional Requirements for Labelling as Environment Friendly Products (Optional)

5.14.1. The manufacturers shall produce to BIS, environmental consent clearance from the concerned State Pollution Control Board as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Preventions and Control of Pollution) Act, 1981 along with the authorization, if required under the Environment (Products) Act, 1986 and the Rules made thereunder, while applying for ECO-Mark. Additionally, the manufacturer shall produce documentary evidence on compliance of the provisions related to noise level and occupational health under the provisions of Factory Act, 1948 and Rules made thereunder.

5.14.2. The product packaging may display in brief the criteria based on which the product has been labelled environment friendly.

5.14.3. The material used for product packaging shall be reusable and biodegradable materials.

5.14.4. Polyhalogenated based phenolic fire retardants shall not be used.

5.14.5. The bags shall confirm to the requirement given in Table 6.

Table 6 Specific Requirement for ECO-Mark

Sl. No.	Parameter	Maximum Limit, Hessian and Sacking mg/kg (ppm)
(1)	(2)	(3)
i)	Non-halogenated hydrocarbons	3 percent
ii)	Pesticides (Sum Parameter) Banned Pesticides	1.0 Nil (Below detectable limit)
iii)	pH of aqueous extract	6.0-8.0
iv)	Coupled amines from azo-dyes (Sum parameters)	ND (Detectable limit using GC-MS)

6. PACKING & MARKING

6.1. Packing

The shopping bags shall be packed in 5-ply corrugated cardboard cartons of quality as per IS: 13228- 2006. The bag pieces are either packed in polythene bags and placed inside the carton, or the bags enveloped by polythene sheets are placed directly inside carton for final packaging. The dimension of the cartons shall be as agreed to between the purchaser and the supplier. Equal number of bags should be packed in all cartons (50 pieces wrapping with polythene sheet may be packed in one carton).

6.2. Marking

Unless otherwise agreed to between the buyer and the seller, the following information shall be marked on the as follows as per IS: 2873:

i. Identification of source of manufacturer
ii. Description of goods, such as bag type, bag dimension or GSM;
iii. Number of bags;
iv. Contract weight in kilograms;
v. Carton number;

vi. Any other particulars required by the buyer or by the regulations or law in force

6.3. BIS Certification Marking

The cartons may also be marked with ECO-Mark in addition to Standard Mark, if the requirements specified in **5.14** are also satisfied.

7. SAMPLING AND CRITERIA FOR CONFORMITY

7.1. Lot

All carton of jute shopping bags of same size produced under similar conditions of production and delivered to a buyer against one dispatch note shall constitute a lot.

7.2. Sample Size and Criteria for Conformity

For assessing the conformity of lot to the requirements of this standard, cartons shall be first selected from each lot at random in accordance with the column 3 of Table 7.

7.3. Sample Size for bags

For freedom from defects, length, width, ends/dm, picks/dm, number of stitches/inch and moisture regain, equal number of bag pieces to be collected from each and every selected carton as per **7.2**. The total number of cartons to be selected from each lot for these requirements is given in column 3 of Table 7. The total number of bags to be checked from each lot for this requirement is given in column 3 of Table 8.

7.4. Criteria for Conformity

7.4.1. *Criteria for Conformity for Length and Width*

The dimension of at least 80 percent of the bags under test shall be in accordance with the requirement specified i.e. (+2, -0). Out of the remaining bags (20 percent, *max*) all bags may have dimension above the specified limit, but dimension of not more than 10 percent *max* of sampled bag under test may be below the specified limit upto 1 cm. Thereafter, dimension of not a single bag below the specified value of more than 1 cm is to be allowed.

7.4.2. *Criteria for Conformity for Ends/dm, Picks/dm, Number of Stitches/inch and Moisture Regain*

The lot which meets the requirements of **7.4.1** shall be tested for ends/dm, picks/dm, number of stitches/inch and moisture regain as per the plan. A bag shall be termed as defective, if it

fails to meet any one or more of these requirements and tolerance. The lot shall be considered as conforming to the requirements of ends/dm, picks/dm, number of stitches/inch and moisture regain, if the total number of defective bags found in the sample is less than or equal to the corresponding acceptance number given in column 4 of Table 8.

7.4.3. *Criteria for Conformity for Freedom from Defects*

The lot which meets the requirements of **7.4.1** and **7.4.2** shall be tested for freedom from defect. Each bag selected in the sample shall be checked for freedom from defects. A bag shall be termed as defective if it contains one major defects (see Annex B). Here two minor defects will be considered as one major defects. A lot shall be considered conforming to this requirement, if the number of defective bags is less than or equal to the acceptance number given in column 4 of Table 8. All the sampling plan are as per ISO 2859-1: 1999 and acceptance numbers given in Table 8 are on the basis of an AQL of 4.0 percent.

7.4.4. *Criteria for Conformity for Metal detection*

Each bag selected in the sample shall be checked for metal detection test. For this purpose, total number of bags to be selected at random should be as per column 4 of Table 9 from the cartons selected from the lot. No remnants of the metal should remain in the bag and no bag should be failed in metal detection test. If any single bag fails in the metal detection system, then the entire lot should be considered as rejected.

Table 7 Sample size for cartons

Sl. No	**Total no. of carton in the lot**	**Total no. of carton in sample**
(1)	(2)	(3)
1	Upto 15	2
2	16 to 25	3
3	26 to 90	5
4	91 to 150	8
5	151 to 280	13
6	281 to 500	20
7	501 to 1200	32

Table 8 Sample Size and Acceptance Number

Sl. No.	Total no. of pieces in the lot	For length, width, number of stitches/inch, ends/dm, picks/dm, moisture regain and visual defects	
		Total no. of bags in sample	Acceptance Number
(1)	(2)	(3)	(4)
i)	Upto 500	50	5
ii)	501 to 1200	80	7
iii)	1201 to 3200	125	10
iv)	3201 to 10000	200	14
v)	10001 to 35000	315	21

NOTE- If the number of pieces in a consignment exceeds 35000 pieces, the same shall be split into number of lots each comprising maximum of 35000 pieces.

Table 9 Sample size for functional test

Sl. No.	Total no. of pieces in the lot	For warpway & weftway tensile strength, seam strength, handle attachment strength, and constituent yarn count measurement	For static load test and dynamic load test	Acceptance Number
		Total no. of bags in sample	Total no. of bags in sample	
(1)	(2)	(3)	(4)	(5)

i)	Upto 1200	5	5	0
ii)	1201 to 35000	8	8	1

7.5. Sample Size and Criteria for Conformity for Breaking Strength Requirement

The lot, which meets the above requirement shall then be tested for breaking strength requirement. For this purpose, select the number of bags at random as per column 3 of Table 9 collected equally from the carton selected in the sample and if the number of sample bags exceeds the number of selected cartons, then the rest of the bags to be selected again from the cartons starting serially from the first sample number. Suitable test specimen shall be taken from these bags and tested for warp way, weft way seam strength and handle attachment strength. The lot shall be declared as conforming to these requirements if:

a) Average value of warp way, weft way, seam breaking strengths and handle attachment strength respectively, as obtained for all test specimens are not less than the corresponding values specified, and

b) None of the individual value is less than 12 % below the specified value.

7.6. Sample Size and Criteria for Conformity for Static and Dynamic Load Strength Requirement

The lot, which meets the above requirement shall then be tested for static load and dynamic load strength requirement. For this purpose, to select the total number of bags at random as per column 4 of Table 9 from the cartons selected from the lot. Bags failing the requirement shall be termed as defective. The lot shall be considered as conforming if the total number of defective bags found in the sample is less than or equal to the corresponding acceptance number given in column 5 of Table 9.

7.7. Sample Size and Criteria for Conformity for Oil Content

The lot, which meets the above requirements, shall then be tested for oil content. For this purpose, two bags shall be selected out of two different cartons selected as per **7.2**. The lot shall

be declared as conforming to this requirement, if both the bags meet the requirement of oil content.

The lot shall be considered as conforming to the requirements of this standard, if **7.2** and **7.4** to **7.6** are satisfied.

ANNEX A

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
3442: 1980	Textiles- Method for determination of crimp and count of yarn removed from fabric
7071: 1989	Ropes and Cordages- Methods of physical test
1964: 2001	Textiles- Methods for determination of mass per unit length and mass per area of fabric
1670: 1991	Textiles- Yarn- Determination of breaking load and elongation at break of single strand
1315: 1977	Textiles- Yarn- Method for determination of linear density of yarns spun on cotton system
1963: 1981	Textiles- Methods for determination of threads per unit length in woven fabrics
5476: 1986	Glossary of terms relating to jute
12111: 1987	Glossary of terms relating to narrow fabrics
3871: 1996	Textiles- Fibre ropes and cordage- Glossary of terms
1720: 1978	Specification for cotton sewing threads
9113: 2012	Textiles- Jute sacking- General requirements
6117: 1977	Specification for tapes, cotton
1969 (Part 1): 2009	Textiles- Tensile properties of fabrics- Determination of maximum force and elongation at maximum force
2969: 1974	Method for determination of oil content of jute yarn and fabrics
1954: 1990	Determination of length and width of woven fabrics- Method
3442: 1980	Method for determination of crimp and count of yarn removed from fabrics
2387: 1969	Methods for determination of weight of jute fabrics
9543: 1980	Specification for spun polyester sewing threads
6359: 1971	Method for conditioning of textiles
9030: 1979	Method for determination of seam strength of jute fabrics including their laminates
2873: 1991	Textiles- Packaging of jute products in bales- specification
13228: 2006	Corrugated fibreboard boxes for packing and transportation- Specification

ANNEX B

CLASSIFICATION FOR DEFECTS

Sl. No.	Type of Defect	Major	Minor
1.	Broken Yarn	**X**	
2.	Missed Yarn	**X**	
3.	Knot in Weave Surface		X
4.	Dirt		X
5.	Stain	**X**	X
6.	Broken Stitches	**X**	X
7.	Skipped Stitches	**X**	X
8.	Mildew	**X**	
9.	Gaw	**X**	
10.	Multiple Broken/Missing End	**X**	
11.	Multiple Broken Weft	**X**	
12.	Cut, Hole, Tear or Patch	**X**	
13.	Float	**X**	
14.	Handle Defects	**X**	X
15.	Printing Defects	**X**	X
16.	Stitching Defects	**X**	
17	Slub yarn		X
18	Loose untrimmed yarn		X
19	Defective bag shape	**X**	

Defects of both major and minor type

Type of defect	Minor	Major
Stain	Area of stain below 0.04cm^2 or dimension of stain below 0.2 cm	Area of stain above 0.04cm^2 or dimension of stain above 0.2 cm

Broken stitch	Length below 0.3cm	Length above 0.3cm
Skipped stitches	Length below 0.3cm	Length below 0.3cm
Printing defects	Area of defect below 0.04cm^2 or dimension of defect below 0.2 cm	Area of defect above 0.04cm^2 or dimension of defect above 0.2 cm

ANNEX C

STATIC LOAD TEST FOR 15 KG CAPACITY

C-1 To determine the effect of static loading of 15 kg mass on the strength of the bag

C-2 TEST PROCEDURE

C-2.1 Place defined weight of 15 kg that distributed as evenly as possible in the bag.

C-2.2 Put the loaded bag on the holder of the luggage impact tester, ensuring the bag to be suspended properly by its handle.

C-2.3 Hang the bag in the tester for 24 hrs.

C-2.4 Assess visually and examine if any damage has occurred.

ANNEX D

DYNAMIC LOAD TEST FOR 15 KG CAPACITY

D-1 To determine the effect of dynamic loading of 15 kg mass on the strength of the bag.

D-2 TEST PROCEDURE

D-2.1 Place defined weight of 15 kg that to be distributed as evenly as possible in the bag.

D-2.2 Put the loaded bag on the holder of the luggage impact tester, ensuring the bag to be suspended properly by its handle.

D-2.3 Set the machine parameter to 500, 1000, 1500 & 2000 number of cycles.

D-2.4 Set the stroke length at 6 inch and keep a cyclic rate of motion at 30 cycles/min.

D-2.5 Assess visually and examine if any damage has occurred.

ANNEX E

HANDLE ATTACHMENT STRENGTH TEST

E-1 To determine the handle attachment strength of the bag.

E-2 TEST PROCEDURE

E-2.1 Place the handle of the test piece centrally in one jaw of the constant rate of extension (CRE) type tensile testing machine.

E-2.2 Place the base fabric of the same test piece in the other jaw keeping the handle attachment part at central position between the two jaws.

E-2.3 Set the machine parameter at 100 mm/min and gauge length at 75 mm

ANNEX F

FABRIC AREAL DENSITY (GSM) TEST

F-1 To determine of areal density (GSM) of the fabric for manufacturing shopping bag. (Ref. Standard)

F-2 TEST PROCEDURE

F-2.1 Lay the bag sample, smoothly on the flat table.

F-2.2 Mark at least one 100 ± 2 mm square specimen from the bag with the help of a template.

F-2.3 Take different sets of warp and weft threads as far as possible and cut out the specimens marked.

F-2.4 Specimens should not be taken within 50 mm from a seam of a bag.

ANNEX G

FABRIC CONSTRUCTION MEASUREMENT

G-1 To determine the construction of the fabric for manufacturing shopping bag. ((Ref. Standard)

G-2 TEST PROCEDURE

G-2.1 Lay on a flat table a portion of one of the pieces constituting the test sample and smoothen it out.

G-2.2 Place the counting glass with the pointer at zero on the piece in such a way that

a) On turning the screw, the pointer moves in a direction parallel or perpendicular to warp threads, depending upon which set of threads (warp or weft) is being counted, and

b) The pointer shall coincide either with the right hand or the left-hand edge of a thread, depending on whether the counting is started from right to left or from left to right direction.

G-2.3 Find the number of warp or weft threads by counting the number of units (normally comprising one thread and one space).

ANNEX H

CONSTITUENT YARN COUNT MEASUREMENT

H-1 To determine the count of constituent warp yarn and weft yarn of the fabric for manufacturing shopping bag. (Ref. Standard)

H-2 TEST CONDITION

Prior to evaluation, the test sample shall be conditioned to moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature for 24 hours (as per IS 6359; 1971).

H-3 TEST PROCEDURE

H-3.1 From the various portions of the fabric comprising the test sample, cut out 5 warp way test specimens and 5 weft way test specimens taking care that the same group of warp and weft yarn is not repeated.

H-3.2 For determining the approximately universal count of the warp yarn in tex, which is necessary for calculating the tension to be applied during the test.

H-3.3 Draw two parallel marks 200 mm apart at right angles to the direction of warp.

H-3.4 Remove 10 warp yarn and cut them along the marks with a sharp razor blade end template.

H-3.5 Determine the mass of all the yarn in milligrams and calculate the approximately universal count of the yarn in tex by the following formula:

Calculate its universal count as follows:

$$\text{Universal count, in tex} = \frac{W}{L} \times 1000$$

w= weight, in g, of the test specimen
l=length in m of the test specimen

ANNEX I
FABRIC TENSILE STRENGTH TEST

I-1 To determine the tensile strength in warp and weft way of the jute shopping bag. (Ref. Standard)

I-2 TEST CONDITION

Prior to evaluation, the test sample shall be conditioned to moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature for 24 hours (as per IS 6359; 1971).

I-3 TEST PROCEDURE

I-3.1 From each bag prepare 2 test specimens, 1 in the warp and 1 in weft directions.

I-3.2 For woven fabrics, each test specimen shall be cut with its length parallel to the warp or the weft of the fabric and shall be sufficiently wide to allow the necessary fringes.

I-3.3 Threads shall be removed in approximately equal numbers from each of the long edges of the cut strip until the width of the test specimen is achieved.

I-3.4 The width of the fringes shall be such that during testing no longitudinal threads escape from the fringes.

I-3.5 Clamp a test specimen centrally so that its longitudinal centre line passes through the centre point of the front edges of the jaws.

I-3.3 Determine strength testing at 200 mm between grips in a constant rate of extension (CRE) type tensile testing machine with a test speed of 460 mm per min.

ANNEX J
FABRIC SEAM STRENGTH TEST

J-1 To determine the seam strength of the jute shopping bag. (Ref. Standard)

J-2 TEST CONDITION

Prior to evaluation, the test sample shall be conditioned to moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature for 24 hours (as per IS 6359; 1971).

J-3 TEST PROCEDURE

J-3.1 From each sample cut test specimens with the length across the seam and the width parallel to the seam.

J-3.2 The size of the specimen shall be 350 mm length (*Min*) and 100 mm width and 50 mm effective with after ravelling.

J-3.3 The seam shall be at the middle of the specimen.

J-3.4 In case of ravelled strip, care shall be taken that wherever possible no thread perpendicular to the seam is cut in the final width of the specimen.

J-3.5 Set the clamps of the testing machine so that the distance between them is 200 mm for strip method and the test shall be carried out at the rate of 460 ± 15 mm/min.

J-3.6 Take a test specimen and insert it in the clamps of the testing machine so that its longer side is parallel to the direction of application of load with approximately the same length of the fabric extending beyond the jaws of at each end and the seam in the middle of the two clamps.

J-3.7 Secure the test specimen between the jaws of one of the clamps. Through the free end of the specimen, apply a tension of about one percent of the expected breaking load, and secure it between the jaws of the other clamp.

ANNEX K

DETERMINATION OF ROPE DIAMETER

K-1 To determine the rope diameter used in the handle of the jute shopping bag. (Ref. Standard)

K-2 TEST PROCEDURE

K-2.1 From one bag in the test sample pull out the rope which is wrapped by cotton tape/webbing.

K-2.2 Take one piece of rope and apply a tension to it.

K-2.3 The pre-tension applied should be equal to $D^2/8$, where D is the nominal diameter of the rope in mm.

K-2.4 While the piece is under tension, measure its diameter to the nearest mm by means of a rope gauge or a pair of callipers of suitable size (or other suitable means) taking care to ensure that the jaws rest on the outside of the strands.

ANNEX L

BREAKING LOAD TEST OF SEWING THREAD

L-1 To determine the breaking load of sewing thread used for stitching of the jute shopping bag. (Ref. Standard)

L-2 TEST CONDITION

Prior to evaluation, the test sample shall be conditioned to moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature for 24 hours (as per IS 6359; 1971).

L-3 TEST PROCEDURE

L-3.1 Set the clamps of the testing machine so that the distance between the nips of the clamps along the specimen axis (including any portion in contact with snubbing surfaces) is 500 ± 2 mm.

L-3.2 Set the machine test speed at 300 ± 15 mm/min.

L-3.3 Mount the specimen using a pre-tension of 0.50 ± 0.05 cN/tex.

L-3.4 Operate the machine, carry the test to rupture and record the breaking load.

ANNEX M

YARN COUNT MEASUREMENT ON COTTON SYSTEM

M-1 To determine the yarn linear density on cotton system. (Ref. Standard)

M-2 TEST CONDITION

Prior to evaluation, the test sample shall be conditioned to moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature for 24 hours (as per IS 6359; 1971).

M-3 TEST PROCEDURE

Reel out skein of 109.73 m (120 yd) on the wrap reel and then determine their mass in grams individually on the balance correct to 1 mg. Calculate the linear density of yarn as per cotton count system.

Cotton Count System- Calculate linear density of polyester yarn in the cotton count system up to one decimal place by the following formula:

$$N_e = \frac{64.8}{m}$$

where, N_e = cotton yarn count; and

m = mass of skein of 109.73 m (or 120 yd), in grams

ANNEX N

LIST OF PESTICIDES USED ON JUTE - BANNED, RESTRICTED OR WITHDRAWN

M-1 PESTICIDES REGISTERED FOR USE ON JUTE IN INDIA

HERBICIDES : Dalapon

FUNGICIDES : Carbendazim

INSECTICIDES : Carbaryl, Carbofuran, Endosulfan, Lindane, Phosalone, Quinalphos

M-2 EXTRACT FROM LIST OF PESTICIDES NOT APPROVED, RESTRICTED USE, WITHDRAWN OR BANNED IN THE COUNTRY AS ON 10.04.1992

M-2.1 Pesticides not Approved for Use

2,4, 5-T

M-2.2 Pesticides Restricted for Use

Use of DDT in agriculture is banned. In very special circumstances warranting the use of DDT for plant protection, the State or Central Government may purchase it directly from M/s Hindustan Insecticides Ltd, to be used under expert Government supervision. Use of DDT for public health programme up to 10 000 MT per annum, except in case of any major outbreak, is restricted.

Use of Diedrin shall be restricted for Locust Control in desert areas by Plant Protection Advisor to the Government of India.

M-2.3 Pesticides Banned/Withdrawn

Pentachlorophenol, Toxaphene and Aldrin.

ANNEX O

LIST OF COUPLED AMINES RELEASED FROM AZO – DYES

i) 4-Aminodiphenyl
ii) 2-Amino-4 -nitrotouene
iii) 1,3 Benzidine
iv) 4-Chloro-o-toluidine
v) 2-Naphylamine
vi) o-Alminoazotolune
vii) p-Chloraniline
viii) 2,4-Diaminoanisole
ix) 4,4’ – Diamino diphenylmethane
x) 3,3’ – Dimethoxybenzidine
xi) 4-Chloroaniline
xii) 3,3’ – Dimethylbenzidine
xiii) 3,3’ – Dimethyl-4,4’ diaminodiphenylmethane
xiv) p-Cresidin (2-Methoxy 5-methylaniline)
xv) 4,4’ Methylene-bis-(2 -chloraniline)
xvi) 4,4’ Oxydianiline
xvii) 4,4’ Thiodianiline
xviii) o-Toluidine
xix) 2,4, – Toluylenediamine
xx) 2,4,5 – Trimethylaniline
xxi) p-Amino-azobezene
xxii) 2-Methoxyaniline
xxiii) 3,3-Dichlorobenzidine
xxiv) o-Anisidine

ANNEX 5
(Item 5.1)

COMMENTS ON PUBLISHED STANDARDS

Minutes of the Meeting of the Panel constituted by the Jute & Jute Products Sectional Committee of BIS (TXD O3) during its 39th meeting (01.09.2023) to deliberate the comments on the published BIS Standards which have been received during *manak manthan.*

Date: 16.10.2023, Time: 03:00 PM
Venue: Hybrid Mode: Conference Room at Office of the Jute Commissioner, Kolkata

1. The 1st meeting of the panel, which has been constituted by Jute & Jute Products Sectional Committee of BIS (TXD O3) during its 39th meeting dated 01.09.2023 (Agenda Item No. 6.1), to deliberate the comments which have been received during the recent *manak manthan,* on the following published BIS Standards *viz.* -

(a) IS -18163:2023 Textiles Light weight jute sacking bags for packing 35 kg Groundnut with Shell Specification,

(b) IS-18161:2023, Textiles Light weight jute sacking bags for packing 50 kg Mustard seed, Niger seed and Ragi Specification

(c) IS-18162:2023, Textiles Light weight jute sacking bags for packing 50 kg Pulses, and Soybean Specification

The meeting of the panel was held on 16.10.2023 from 03:00 PM onwards through *hybrid* mode. The meeting was attended by the representatives from BIS (HQ, New Delhi), NAFED, IJMA, IJIRA, SGS and JCO. The List of attendee is enclosed at Annexure-A.

2. Sh. S. Datta, the convenor of the panel welcomed all the participants and briefed them about the background of holding this meeting. It was informed that a request has been received from IJMA to co-opt Sh. B. Saha, Technical Head, IJMA as a member of this panel; and accordingly the same was unanimously concurred by the other members.

4. Thereafter, all the panel members were requested to offer their views/opinion on the comments received from KKBO-1 & KKBO-2 on the above mentioned standards. The detailed discussion of the panel is tabulated below in *seriatim* –

1. IS 18163 : 2023, Textiles Light weight jute sacking bags for packing 35 kggroundnut with shell Specification

(a) Comments received from KKBO-2 during *Manak Manthan*

Sl. No.	Clause	Type of Comment	Comment received form KKBO-2 during Manak Manthan	Comments of the panel members
1	Title of the standard	Editorial	With the given dimensions of the bags in the standard it won't be possible to pack 35 kg of groundnuts in one bag. The maximum weight of groundnuts that may be packed is 32 kg.	1. Sh. Chandra representing IJMA informed that presently, bags of size 112 cm x 67.5 cm are being procured by the user agency for the purpose of packing 35 Kg groundnuts; which is same as the size currently specified in this standard. Accordingly, any changes in the standard may not be required at this stage. Also, it was noted that the bulk density of commodities like ground nut as well as filling capacity of the jute bags for the same, depends upon various extraneous factors like moisture content, geographical origin and quality of ground nut etc. Accordingly, it was opined by the members that as NAFED is in the process of procurement of such bags as per the notified specification; at this stage the panel may wait for the first-hand results on the end use performance of these bags, especially in respect of their packing capacity, and further action may be taken, if necessary, depending upon the end use performance of these bags. **Decision of Panel:** As the comments of the proposer are not backed up by technical data, accordingly, no change was recommended by the panel members at this stage.
2	4.4	Editorial	The jute industry appreciates	1. IJMA mentioned that the matter pertains to revision of

			narrower hemming at mouthsince it reduces wastage and cost of the material used. Alsothe sole purpose of hemming at mouth is to control the frayed ends and has nothing to do with the capacity or quality of the bags.	IS-9113:2012 and is not specifically related to IS-18163:2023. 2. Also, IJMA added that the bags with modified length of fold for hemming have already been sent to FCI, Odisha long back for trials and the result are still awaited. Unless the end use performance of such bags with modified fold length for hemming are assessed, further changes may not be recommended. **Decision of Panel:** No change was recommended by the panel members.
	Table 4	Editorial	Jute mills receive orders for bales in multiples of 54 i.e. for bales of 54,108,162,216etc. Order document is attached for proof. Hence the number of bales in the lot against which sample size and acceptance numbers are fixed may be rearranged to suit the purpose of sampling.	NAFED being the procurement agency for such bags; submitted that the jute mills generally receive orders for such bags mostly in the multiple of 75 bales. Accordingly, the contention of this comment perhaps does not reflect the actual ground conditions and accordingly the contention is unfounded. **Decision of Panel:** No change was recommended by the panel members.
4	Table 1	Editorial	The standard does not mention requirements of Type B bags.	1. Representatives from IJMA mentioned that the jute industry is gradually phasing out the conventional sacking looms and replacing them by the modern S4 looms. Accordingly, IJMA is of the view that any new standard/ specification should encourage modern machineries rather than promoting old low productive conventional machineries. 2. The representatives from IJMA further stated that if any manufacturer proposes for a standard for such bags made out of conventional looms; the proposal should be supplemented by a draft technical

				specification, which the panel can take up for discussion in the subsequent meeting. 3. Sh. Sen from SGS stated that a standard may be developed for bags manufactured in the conventional looms as well; which may as well protect the interest of the jute mills with additional weaving capacity with conventional sacking looms. IJIRA also agreed with the same views. 4. BIS was requested to ask the proposer to come up with a suitable draft specification for these bags which can be taken up by the panel for deliberation in the next meeting. **Decision of Panel:** No change in the specification was recommended by the panel members at this stage.

b) Comments received from KKBO-1 during Manak Manthan

Sl. No.	Clause	Type of Comment	Comment received form KKBO-1 during Manak Manthan	Comments of the panel members
1	-	Editorial	Provision of grams per square metre (GSM) of fabric may be included in the standard	1. The panel members unanimously agreed that the GSM of fabric should be included in the standard. **Decision of Panel:** The proposal was accepted by the panel members. The panel decided that IJMA in association with IJIRA shall derive the GSM of the fabric and shall present the same to the panel members by circulation & concurrence.
2	4.1.1 and 5.1	Editorial	In Table 1-Requirements of jute bags; ends/dm is mentioned as 46 with a tolerance of +4 and -3, and picks/dm is mentioned as 50 with a tolerance of ± 2 in line with IS	1. The panel examined the comments of the proposer and felt that the comment is in the line with IS-16186:2014. **Decision of Panel: Proposed change is accepted** by the panel members and the members opined that the

			16186 could be modified to a lower tolerance at ± 2 for both the cases	requirement of tolerance for ends/dm should be ± 2 in place of +4 and – 3.
3	4.1.1 and 5.1	Editorial	In Table 1-Requirements of jute bags; average breaking strength of sacking (warp way & weft way) is mentioned as 1225 minimum which could be modified to a highervalue.	Sh. Saha from IJMA stated that in case of IS-16186:2014 for packing 50 kg foodgrain, the requirements for average breaking strength of sacking (warp way & weft way) is mentioned as 1225 N minimum and accordingly, for 30 kg capacity bags, the reasons necessitating a higher breaking strength value seams unreasonable. **Decision of Panel:** Proposed change was not agreed by the panel members as per the reasons stated above.
4	-	Editorial	Majority of jute bag manufacturers use traditional loomsfor manufacturing of jute bags. However, the standard does not mention requirements of Type B bags.	Already discussed and resolved above at Table No.1 (a). Sl. No. (4)

2. 18161 : 2023, Textiles Light weight jute sacking bags for packing 50 kg mustard seed, Niger seed and Ragi Specification

(a) Comments received from KKBO-1 during *Manak Manthan*

Sl	**Clause**	**Type of**	**Comment**	

No.		Comment		
1	-	Editorial	Provision of grams per square metre (GSM) of fabric maybe included in the standard	Already discussed and resolved above at Table No.1 (b) -Sl. No. (1)
2	4.1.1 and 5.1	Editorial	In Table 1-Requirements of jute bags; ends/dm is mentioned as 56 with a tolerance of +4 and -3, and picks/dm is mentioned as 56 with a tolerance of +-2 in line with IS 16186. The tolerance could be modified to +-2 for both the cases.	Already discussed and resolved above at Table No. 1 (b) -Sl. No. (2)
3	-	Editorial	In Table 1-Requirements of jute bags; average breaking strength of sacking (warp way & weft way) is mentioned as 1225 minimum which could be modified to a higher value	Already discussed and resolved above at Table No. 1 (b) -Sl. No. (3)
4	-	Editorial	Majority of jute bag manufacturers use traditional loomsfor manufacturing of jute bags. However, the standard encourages the use of S4 Jute machine or looms for better quality jute bags which become costly for the manufacturers. Hence, an alternative option may beincorporated in the standard	Already discussed and resolved above at Table No. 1 (b) -Sl. No. (4)

3. IS 18162 : 2023, Textiles Light weight jute sacking bags for packing 50 kg pulsesand soyabean Specification

(a) Comments received from KKBO-1 during *Manak Manthan*

Sl No.	Clause	Type of Comment	Comment	
1	-	Editorial	Provision of grams per square metre (GSM) of fabric maybe included in the standard	Already discussed and resolved above at Table No. 1 (b) – Sl. No. (1)

2	4.1.1 and 5.1	Editorial	In Table 1-Requirements of jute bags; ends/dm is mentioned as 46 with a tolerance of +4 and -3, and picks/dm is mentioned as 50 with a tolerance of +-2 inline with IS 16186 could be modified to a lower toleranceat +-2 for both the cases.	Already discussed and resolved above at Table No. 1 (b), Sl. No. (2)
3	4.1.1 and 5.1	Editorial	In Table 1-Requirements of jute bags; average breaking strength of sacking (warp way & weft way) is mentioned as 1225 minimum which could be modified to a higher value.	Already discussed and resolved above at Table No. 1 (b) - Sl. No. (3)
4	-	Editorial	Majority of jute bag manufacturers use traditional loomsfor manufacturing of jute bags. However, the standard encourages the use of S4 Jute machine or looms for better quality jute bags which become costly for the manufacturers. Hence, an alternative option may beincorporated in the standard.	Already discussed and resolved above at Table No. 1 (b) - Sl. No. (4)

5. Sh. Datta and other panel members requested BIS to forward the name of the proposer(s) of these comments as deliberated as above, so that they may also be invited in the next meeting of the panel; to have a better view of their proposals, following which a detailed technical discussion can be held.

6.

(a) Ms. S. Chowdhury, Scientist, IJIRA proposed an amendment in IS 18161:2023 and also IS 18163:2023 at **Table 2 - Requirements of packed bales (Clause 5.2) - Sl. No.1 (i) Total no of bags per bale shall be '500'** instead of 400; which shall be applicable for both the standards as stated above.

(b) Sh. Dharmbeer, representing BIS informed that BIS has received comments for clarification in **Table 2 - Requirements of packed bales (Clause 5.2) - Sl. No.1 (v) "*Number of joined bags per bundle of 25 bags*".** The members of the panel confirmed that the same shall be ***'maxmimum 1'*** instead of **'1'**. It was opined that BIS would seek confirmation on this aspect from the members through circulation.

Decision of the Panel: The panel agreed to the above proposals and proposed that the necessary amended is required in the relevant standards.

7. With no other matter(s) to discuss, the convener thanked all the participants for attending the meeting and offering their valuable inputs.

==========

Annexure-A

List of Participant(s):

(a) Attended physically:

1. Sh. S. K. Chandra, TDD-IJMA, Kolkata
2. Sh. Bhudipta Saha, Technical Head, IJMA, Kolkata
3. Ms. Soumita Chowdhury, Scientist, IJIRA, Kolkata
4. Sh. Bhaskar Sen, SGS India Pvt. Ltd., Kolkata
5. Sh. S. Datta, Assistant Director (JM), O/o the Jute Commissioner & Convenor of the Panel, Kolkata
6. Ms. A. Mukherjee, Tech. Officer, O/o the Jute Commissioner, Kolkata
7. Sh. C. Dey, Tech. Associate, O/o the Jute Commissioner, Kolkata

(b) Attended through video conference:

1. Sh. Dharmbeer, Scientist-D and Member Secretary-TXD-03 of BIS
2. Smt. Anindita Guha, NAFED, Kolkata

ANNEX 6

(Item 5.2)

COMMENTS ON PUBLISHED STANDARDS

KKBO-1, Manak Manthan Comments – IS 3344 : 2023, Textiles — D.W. Tarpaulin Jute Bags for Packing (Mint) Coins — Specification (First Revision)

Sl No.	Clause No.	Type of Comments	Comments
IS 3344 :2023			
1	5.1	Technical	Weftway, Breaking load is higher w.r.t picks/dm For 550 gsm with average ends/dm 86 and picks/dm 48, tentative warp and weft count will be 8-9 lbs and 13-14 lbs respectively. Considering the same breaking load weft way might be less than warp way.
2	1	Technical	The weight carrying capacity of the bag should be included . By including the weight carrying capacity, it will be better to correlate with the durability of the bag.
3	4.1	Technical	Weight per square metre of the tarpaulin used in the fabrication of the bags is 550 g Jute being a natural fibre and by virtue of the manufacturing process absolute weight per square metre is difficult to achieve
4	-	Technical	Weaving defects not included.

ANNEX 7
(Item 5.3)

COMMENTS ON PUBLISHED STANDARDS

TEST REPORTS RECEIVED FROM IJMA ON IS 15138 : 2010

INDIAN INDUSTRIES' RESEARCH ASSOCIATION

TEST REPORT

To
Mr. Bhudipta Saha,
Technical Head
Indian Jute Mills Association,
Royal Exchange,
6, Netaji Subhas Road,
Kolkata - 700 001

Date: 09.09.2023

Reference: Letter dated 21.08.2023 of Hooghly Infrastructure Pvt. Ltd. Unit - Hukumchand Jute Mills
Report No.:- TT / 060 / 23 - 24
Type of Sample - Jute Bags
Sample received from - M/s Hooghly Infrastructure Pvt. Ltd. Unit - Hukumchand Jute Mills

Test Results

Sl No.	Test Parameters	Values	Standard Followed
1	Types of Bag	90 cm × 59 cm (52×52)/dm warp & weft – 10 lbs, Natural jute bag.	
2	No. of bags tested	14	--
3	Avg. Outside length(cm.) Range	90.5 (90.0 – 91.0)	
4	Avg. Outside width(cm.) Range	59.1 (59.0 – 59.5)	
5	Avg. Ends/dm Range	52 (52 – 53)	ASTM: D 3775-17
6	Avg. Picks/dm Range	52 (-)	
7	Stiches/dm(Herakle)	10.0 (-)	IS: 9113-2012
8	Avg. Weight/Bag (g) (Converted at 20% MR) Range	499.37 (484.25-529.07)	
9	Avg. Tensile strength(Kg.) (10×20)Cm. A) Warp Way(Avg.) Range B) Weft Way (Avg.) Range	 148 (135-170) 146 (112-174)	--

10	Seam Tensile strength (Kg) (5×20) Cm Average Range Types of Break (C, T, E)	 52 (38-64) 1,1,8	 IS 9030-1979 (RA-2014)

Note: C— Cloth, T- Twine, E- Edge

INDIAN INDUSTRIES' RESEARCH ASSOCIATION

TEST REPORT

Report No.:- TT/060/23-24 Dated – 09.09.2023

Drop Test

1) Drop Test Procedure: 5 Drops from 183 cm (6ft.) followed by single drop from 366 cm (12ft)
2) No. Bags Tested: 5 bags for each quality

Sl No.	Test Parameters	Value	Standard Followed
1	Types of Bag	90 cm × 59 cm (52×52)/dm warp & weft – 10 lbs, Natural jute bag.	--
2	Unfilled length & width (cm.)	91.1 × 59.0	
3	Filled length & width (cm.)	81.2 × 54.4	
4	Filled Height (cm.)	19.8	
5	Empty space Height (cm.)	11.7	
6	**No. of drops**	**No. of bags damaged/Type of Damage**	IS 13035-1991
a	1st (183 cm)	No damage	
b	2nd (183 cm)	No damage	
c	3rd (183 cm)	No damage	
d	4th (183 cm)	No damage	
e	5th (183 cm)	No damage	
f	6th (366 cm)	No damage	
7	**Seepage**	No Seepage	
8	**Hook Hole Recovery**		--
a	Initial Diameter(mm)	12.5	
b	Final Diameter (mm)	3.2	
c	Recovery (%)	74.4	
9	**Bag Performance as per IJIRA grading**		
a	Poor	0	I.J.I.R.A. Grading
b	Fair	0	
c	Good	0	
d	Excellent	6	

I.J.I.R.A. performance grading-1) Damage after 1st /2nd drop (6ft.) – Poor, 2) Damage after 3rd/4th/5th drop (6ft.) – Fair, 3) Damage after 6th drop (12ft.) – Good, 4) Survived after 6th drop(12ft.) – Excellent

Notes:
1. This report is for your private use only and should not be used for publicity or litigation.
2. Authenticity of this report could be validated with the office copy at IJIRA, Kolkata.
3. Photocopies of this report should not be taken and circulated for commercial purpose.
4. Above test results have been obtained from sample supplied by M/s Hooghly Infrastructure Pvt. Ltd Unit - Hukumchand Jute Mills
5. Test report shall not be reproduced in full without written approval of the institute.

6. All tensile tests are carried out at 65 ± 2% RH and 27 ± 2 °C temperature.

INDIAN INDUSTRIES' RESEARCH ASSOCIATION

TEST REPORT

To
Mr. Bhudipta Saha,
Technical Head
Indian Jute Mills Association,
Royal Exchange,
6, Netaji Subhas Road,
Kolkata - 700 001

Date: 21.11.2023

Reference: Letter dated 21.08.2023 of Gloster Limited
Report No.:- TT / 095 / 23 - 24
Type of Sample – 50kg Sugar bag manufactured in S4A loom for packaging of sugar
Sample received from – Gloster Limited

Test Results

Sl No.	Test Parameters	Values	Standard Followed
1	Types of Bag	32525 sugar bag Natural with Polyliner (Type-2), (90 cm × 59) cm (50×50)/dm Hd & Herakle stitch 50kg bag in S4A loom	
2	No. of bags tested	15	--
3	Avg. Outside length(cm.) Range	90.8 (90.0 – 92.0)	
4	Avg. Outside width(cm.) Range	60.0 (59.5 – 60.5)	
5	Avg. Ends/dm Range	50 (–)	ASTM: D 3775-17
6	Avg. Picks/dm Range	51 (50-52)	
7	Stiches/dm(Herakle)	10.0 (10-11)	IS: 9113-2012
8	Avg. Weight/Bag (g) (Converted at 20% MR) Range	513.24 (497.45-524.03)	
9	Avg. Tensile strength(Kg.) (10×20)Cm. A) Warp Way(Avg.) Range B) Weft Way (Avg.) Range	 167.0 (157-182) 179.4 (170-192)	--
10	Seam strength (Kg) (5×20) Cm Average Range Types of Break (C, T, E)	 54.5 (31-64) 0,3,8	IS 9030-1979 (RA-2014)

Note: C— Cloth, T- Twine, E- Edge

INDIAN INDUSTRIES' RESEARCH ASSOCIATION

TEST REPORT

Report No.:- TT/095/23-24 Dated – 21.11.2023

Drop Test

1) Drop Test Procedure: 5 Drops from 183 cm (6ft.) followed by single drop from 366 cm (12ft)
2) No. Bags Tested: 5 bags for each quality
3) Material - Sugar

Sl No.	Test Parameters	Value	Standard Followed
1	Types of Bag	90 cm × 59 cm (52×52)/dm warp & weft – 10 lbs, Natural jute bag.	--
2	Unfilled length & width (cm.)	91.0 × 60.0	
3	Filled length & width (cm.)	83.0 × 58.5	
4	Filled Height (cm.)	19.1	
5	Empty space Height (cm.)	12.9	
6	**No. of drops**	**No. of bags damaged/Type of Damage**	IS 13035-1991
a	1st (183 cm)	No damage	
b	2nd (183 cm)	No damage	
c	3rd (183 cm)	No damage	
d	4th (183 cm)	No damage	
e	5th (183 cm)	No damage	
f	6th (366 cm)	No damage	
7	**Seepage**	No Seepage	
8	**Hook Hole Recovery**		--
a	Initial Diameter(mm)	12.6	
b	Final Diameter (mm)	3.6	
c	Recovery (%)	71.4	
9	**Bag Performance as per IJIRA grading**		
a	Poor	0	I.J.I.R.A. Grading
b	Fair	0	
c	Good	0	
d	Excellent	5	

I.J.I.R.A. performance grading-1) Damage after 1st /2nd drop (6ft.) – Poor, 2) Damage after 3rd/4th/5th drop (6ft.) – Fair, 3) Damage after 6th drop (12ft.) – Good, 4) Survived after 6th drop(12ft.) – Excellent

Notes:
1. This report is for your private use only and should not be used for publicity or litigation.
2. Authenticity of this report could be validated with the office copy at IJIRA, Kolkata.
3. Photocopies of this report should not be taken and circulated for commercial purpose.
4. Above test results have been obtained from sample supplied by M/s Gloster Limited
5. Test report shall not be reproduced in full without written approval of the institute.
6. All tensile tests are carried out at 65 ± 2% RH and 27 ± 2 °C temperature.

ANNEX 8
(Item 5.3)

COMMENTS ON PUBLISHED STANDARDS

DRFAT STANDARD FOR REVISION OF IS 15138

TEXTILES — JUTE BAGS FOR PACKING 50 kg SUGAR — SPECIFICATION

FOREWORD

This Indian Standard (First 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 2002. This revision has taken place to incorporate the following major changes:

a) Tolerances on length, width and mass of bag have been reduced for improved structure and serviceability;
b) Sampling and criteria for conformity have been modified; and
c) Classified major and minor defects have been incorporated to minimize failures during storage and end use.

The types of bags specified in this standard have been developed after extensive trials keeping in view the guidelines provided by the International Labour Organization (ILO) for not permitting manual carriage of weight exceeding 50 kg by the workers and consumers for their safety. In addition, care has been taken to restrict the use of batching oil in the manufacture of bags to safer limit so as to minimize its adverse impact on the contents. One of the varieties also specifies a food grade loose liner to be used in order to protect the contents from adverse impact of oil and moisture.

The composition of the Committee responsible for formulation of this standard is given is 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 or analysis, shall be rounded off in accordance with IS 2 ‘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 — JUTE BAGS FOR PACKING 50 kg SUGAR — SPECIFICATION

(*First Revision*)

1 SCOPE

This standard prescribes constructional details and other requirements of three types of jute bags for packing 50 kg sugar.

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 at Annex A.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 MANUFACTURE

4.1 Fabric

Type A bags shall be made from single piece of 568 g/m^2 double warp, plain weave jute fabric of uniform construction with warp running along the length of the bag. Type B and Type C bags shall be made from hessian having mass of 417 g/m^2 and 354 g/m^2 respectively. Type D and Type E shall be made from Shuttle-less Rapier loom with Single warp and double weft of single piece of 441 g/m^2 and 408 g/m^2 respectively. The cloth shall be without stripes or shall have stripes as agreed to between the buyer and the seller, woven along the length of the bag.

NOTE — Mass of fabric is for guidance only.

4.1.1 The jute bags used for packing food items, such as sugar shall be manufactured from raw jute.

4.2 Seam

The sides of Type A bag shall be herakle stitched with safety stitch as specified in **5.1.4** of IS 9113. The side of Type B, Type C bags shall be sewn with herakle stitches on selvedge through two layers and the bottom raw edge shall be folded inside to a depth of at least 3.8 cm and then stitched at the mouth as specified in **5.1.3** of IS 9113. Type D & Type E are hemmed and both sides herakle stitched. The number of stitches per 10 cm shall be between 9 and 11.

4.3 Hemming at the Mouth

Provisions of **5.1.3** of IS 9113 shall apply.

4.4 Freedom from Defects

The bags shall meet the requirement of freedom from defects as given in Annex B.

4.5 Liner

Type C & Type E bags shall be provided with minimum 25µm thick loose liner made of food grade virgin HMHDPE conforming to IS 10146.

5 SPECIFIC REQUIREMENTS

5.1 The bags shall conform to the requirements specified in Table 1.

5.2 Tolerance

The following tolerance shall be permitted on outside length, outside width, ends/dm, picks/dm and corrected mass per bag as given in Table 1.

Sl No.	*Characteristic(s)*	*Tolerance*				
		Type A Bag	Type B Bag	Type C Bag	Type D Bag	Type E Bag
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Outside length and outside width, cm	← +3 →			+4 -0	+4 -0
ii)	Ends/dm	+4 -2	±2	±2	±2	±2
iii)	Picks/dm	+2 -1	+2 -1	+2 -1	±2	±2
iv)	Corrected mass per bag, percent, *Max*	+7.5 -6.0	+7.5 -2.0	+7.5 -2.0	+8 -6	+8 -6

5.3 The bales containing the bags shall conform to the requirements specified in Table 2.

6 PACKING

The bags shall be packed in bales as prescribed in IS 2873 or as specified in the agreement between the buyer and the seller.

7 MARKING

The bales shall be marked as prescribed in IS 2873.

Table 1 Requirements of Bags

(*Clause* 5.1)

Sl No.	**Characteristic**	**Requirement**					**Method of Test (Ref to Cl of IS 9113)**
		Type A Bag	Type B Bag	Type C Bag	Type D Bag	Type E Bag	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(6)

i)	Dimensions, cm (*see* Note 1) a) Outside length b) Outside width	 87.5 58.5	 91.5 56.0	 91.5 56.0	 90 59	 90 59	 8.3.2 8.3.2
ii)	Ends/dm	68	47	47	52	50	8.4.2
iii)	Picks/dm	31	55	47	52	50	8.4.2
iv)	Corrected mass per bag, g	630	475	405 +32 linear	506	470 +33 Liner	8.5.2
v)	Average breaking load of sacking (ravelled strip method, 10 cm × 20 cm), *Min*, N (kgf) : a) Warpway b) Weftway	 1570 (160) 1420 (145)	 1470 (150) 1765 (180)	 1470 (150) 1420 (145)	 1225 (125) 1225 (125)	 1225 (125) 1225 (125)	 8.6.2
vi)	Average breaking load of seam (ravelled strip method, 5.0 cm × 20.0 cm), *Min*, N (kgf) : a) Warpway b) Weftway	 - 440 (45)	 490 (50) 685 (70)	 490 (50) 490 (50)	 - 440 (45)	 - 440 (45)	 8.7
vii)	Moisture regain: a) Moisture regain, percent, *Max* (*see* Note 2) b) Contract moisture regain, percent	 22 20	 17 16	 17 16	 22 20	 22 20	 8.2 -

NOTES

1 The bags of specified dimensions are suitable for packing of sugar. However, other dimensions as per agreement between the buyer and the seller may also be used provided the tolerance on dimensions and bag mass as given in **5.2** is complied with. The mass of such bags shall be calculated by the method given in **5.3** of IS 9113.

2 Average moisture regain shall be maximum 22 percent. However, 10 percent of the individual value of moisture regain percent may be above 22 percent with an upper limit of 26 percent

Table 2 Requirements of Packed Bales

(*Clause* 5.3)

Sl No.	**Characteristic**	**Requirement**	**Method of Test (Ref to Cl of IS 9113)**
(1)	(2)	(3)	(4)
i)	Total number of bags per bale (*see* Note)	500	8.9
ii)	Number of bags per bundle	25	-
iii)	Number of joined bags per bundle of 25 bags, *Max*	1	-
iv)	Contract mass of a bale, kg	315.0 (Type A) 237.5 (Type B) 218.5 (Type C) 253.0 (Type D)	-

		251.5 (Type E)	
v)	Corrected net mass of a bale	Not less than the contract mass	8.1
vi)	Oil content on dry de-oiled material basis, percent, *Max*	3	8.8
NOTE — The number of bags per bale shall be 500 or as specified in an agreement between the buyer and the seller			

Additional markings including the country of origin shall be made as stipulated by the buyer or required by the regulation or law in force.

7.1 BIS Certification Marking

7.1.1 The bales and the jute bag may also be marked with the Standard Mark.

7.1.2 The jute bags 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 jute bags may be marked with the Standard Mark.

8 SAMPLING AND CRITERIA FORCONFORMITY

8.1 Lot

All bales of jute bags of same size produced under similar conditions of production and delivered to a buyer against one dispatch note shall constitute a lot.

8.2 Sample Size and Criteria for Conformity

For assessing the conformity of lot to the requirements of this standard, bales shall be first selected from each lot at random in accordance with the col 2 and col 3 of Table 3. All the bales so selected in the sample shall be tested for 'Gross mass of bales', 'Tare mass of bailing hoops and other packing materials' and 'Number of bundles per bale'. Two bundles of bags selected at random from each bale selected in the sample shall be tested for total number of bags per bundle.

The lot shall be considered as conforming to the requirements of this standard, if all the following conditions are satisfied:

a) The total corrected net mass of all the bales in the sample is not less than the total contract mass of all the bales.

b) The total number of bags in each bale selected as per **8.2** under test meets the relevant requirement.

8.3 Sample Size for Bags

For freedom from defects, length, width, ends/dm, picks/dm, number of stitch/dm, mass per bag and moisture regain, 07 bags shall be selected at random from each of the bales selected as per **8.2**. The total number of bags to be tested from each lot for these requirements is given in col 5 of Table 3

8.4 Criteria for Conformity

8.4.1 *Criteria for Conformity for Freedom from Defects*

Each bag selected in the sample shall be tested for freedom from defects. A bag shall be termed as defective, if it contains two or more major defects (*see* Annex B). A lot shall be considered conforming to this requirement, if the number of defectives is less than or equal to the acceptance number given in col 6 of Table 3. Acceptance numbers given in Table 3 are on the basis of an AQL of 4.0 percent.

8.4.2 *Criteria for Conformity for Length, Width, Ends/dm, Picks/dm, Number of Stitches/dm and Moisture Regain*

The lot, which meets requirements of **8.4.1**, shall be tested for length, width, ends/dm, picks/dm, number of stitches/dm and moisture regain as per the plan. A bag shall be termed as defective, if it fails to meet any one or more of these requirements. The lot shall he considered as conforming to the requirements of length, width, ends/dm, picks/dm, stitches/dm and moisture regain, if the total number of defectives found in the sample is less than or equal to the corresponding acceptance number given in col 6 of Table 3.

8.4.3 *Criteria for Conformity for Mass of Fabric*

The lot, which meets the above requirement, shall then be tested for mass of fabric. The lot shall be declared as conforming to this requirement, if

a) the average value of mass per bag, as obtained for sampled bags is not less than the nominal value specified; and

b) not more than 10 percent of the individual values of mass of bags is below the lower specified value.

8.5 Sample Size and Criteria for Conformity for Breaking Strength Requirement

The lot, which meets the above requirements, shall then be tested for breaking strength requirements. For this purpose, one bag shall be selected at random from each bale selected in the sample. Suitable test specimens shall be taken from these bags and tested for warpway, weftway and seam strength. The lot shall be declared as confirming to these requirements, if

a) the average values of warpway, weftway and seam breaking strengths respectively, as obtained for all test specimens are not less than the corresponding values specified; and

b) none of the individual value is less than 20 percent below the specified value.

8.6 Sample Size and Criteria for Conformity for Oil Content

The lot, which meets the above requirements, shall then be tested for oil content. For this purpose two bags shall be selected out of two different bales selected as per **8.2**. The lot shall be declared as conforming to this requirement, if both the bags meet the requirement of oil content.

8.7 The lot shall be considered as conforming to the requirements of this standard, if **8.2** and **8.4** to **8.6** are satisfied.

Table 3 Sample Size and Acceptance Numbers

(*Clauses* 8.2, 8.3, 8.4.1 *and* 8.4.2)

Sl No.	**No. of Bales in the Lot**	**No. of Bales in the Sample**	**For Length, Width, Number of Stitches/dm, Ends/dm, Picks/dm, Moisture Regain**		
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 25	5	7	35	5
ii)	26 to 90	8	7	56	6
iii)	91 to 300	12	7	84	8
iv)	301 to 500	18	7	126	10
NOTES **1** If the number of bales in a consignment exceeds 500, the same shall be split into number of lots each comprising maximum of 500 bales. **2** Joined bags shall also be drawn for visual inspection and breaking strength.					

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*second revision*)
5476 : 1986	Glossary of terms relating to jute (*first revision*)
9113 : 2012	Textiles – Jute sacking – General requirements (*second revision*)
10146 : 1982	Specification for polyethylene for its safe use in contact with foodstuffs, Pharmaceuticals and drinking water

ANNEX B

(*Clauses* 4.4 *and* 8.4.1, *and Table* 4)

CLASSIFICATION OF DEFECTS

B-1 The detailed classification of defects is given in Table 4.

Table 4 Classification of Defects

Sl No.	Type of Defect	Description		Major	Miner
(1)	(2)	(3)		(4)	(5)
i)	GAW	Portion over the whole width of the fabric completely unwoven with weft	>1.5 cm	x	-
			0.5-1.5 cm	-	X
ii)	Multiple broken/missing warp (End)	Two or more contiguous, regardless of length		x	-
iii)	Multiple broken weft (Pick)	Two or more contiguous, regardless of length		x	-
		One pick, full width		-	X
iv)	Cut, hole, tear or patch	Two or more warp or filling threads ruptured at adjoining points		x	-
v)	Float	A place in the fabric where warp and weft yarns escape the required interlacement	>2 cm^2	x	-
			0.5 cm^2 to cm^2	-	X
vi)	Gap stitching	Stitches missing	> 1.5 cm	x	-
			0.5-1.5 cm	-	X
vii)	Corner gap	Corner of the bag not properly stitched resulting in formation of hole	> 1.5 cm	x	-
			0.5-1.5 cm	-	X
viii)	Mildew	Staining of fabric due to fungal or bacterial growth visible to naked eye		x	-
NOTE — Two minor defects shall be counted as one major defect.					

ANNEX 9

(Item 5.3)

COMMENTS ON PUBLISHED STANDARDS

IS 15138 : 2010, Textiles – Jute bags for packing 50 kg sugar – Specification (first revision)

Sl No.	Clause / Subclause No.	Paragraph No./Figure No./Table No.	Type of Comment	Attachment
1	4.5	1	Editorial	N/A
	Comments/Suggestions along with Justification for the Proposed Change		The dimensions (length* width) of the loose liner may also be included in the clause as once the loose liner is used the capacity of the bag will be indirectly related to the dimenstion of the liner. Tolerance on dimensions of loose liner vis a vis dimension of jute bag might be referred to as in IS 14968:2015.	
2	4.5	1	Editorial	N/A
			Minimum thickness mentioned as 25 microns, considering the hydrophilic property of jute fibre and sugar, thickness of liner might be increased to have better moisture barrier. Moreover, at lower thickness of liner, the abrasive nature of jute fiber may also result in puncture the liner during its prolonged usage.	
3	4.5	1	Editorial	N/A
			Only HMHDPE is allowed as polymeric material, other materials like LDPE, LLDPE might also be considered for inclusion subjected to fulfilling the food grade conformity requirements. As in the standard no specific tensile , tear or any mechanical property is mentioned for liner , so scope might not be restricted to only one polymeric material.	
4	5.1 table 1	1	Editorial	N/A
			As per Table 1 clause 5.1, weight of liner is 32 g, if thickness of liner is considered for increase or change in dimenstions of liner, then the weight of liner may also be consequently be increased.	
5	5.3 table 2	1	Editorial	N/A
			As per clause 5.3 and Table 2, number of bags per bundle is not mentioned, which might be included as 25 in line with other jute standards 18161, 18162.	

ANNEX 10
(Item 6.1)

REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS

SHRI RAGHVENDRA GUPTA, IJMA, KOLKATA

Sub: Request for splitting existing TD 4 grade as per IS 271:2020 to form two separate grades.

Sir,

The present grading of raw jute into 5 categories as specified by IS 271:2020 has replaced the earlier 8 categories as specified by IS 271:2003. The earlier grading system of categorizing raw jute into 8 grades came into practice in the year 1969 and remained in practice for over half a century before being replaced. Even though IJMA had raised legitimate concerns on compressing of the grades from 8 to 5, BIS proceeded with haste in publication of revised Indian standards for the grading of raw jute.

The revised Indian standard for raw jute grading has created an anomalous situation by merging the erstwhile distinctive and unique TD 6 and TD 7 grades into a single TD 4 grade. We request your consideration of the following for splitting the existing TD 4 grade to form two separate grades:

1. The use of the 2 grades are entirely different. While TD 6 is required for manufacturing of sacking weft component in Type B B.Twill jute bags, TD 7 is used for manufacturing coarse yarn.

2. The price of TD 6 is higher than TD 7. Since commercial values of both the grades are considerably different, the two grades cannot be compressed into a unified grade.

3. Jute mills are also witnessing decline in productivity as substantial man hours are devoted for manual segregation of the two grades.

4. Most importantly, the revised grading standard is not in consonance with the trade practice adopted and prevalent at the markets since decades.

In view of the aforesaid, we request your consideration of our proposal to amend IS 271:2020 by splitting existing TD 4 into two grades i.e. TD 4 for erstwhile TD 6 and TD 5 for erstwhile TD 7.

SHRI BHUDIPTA SAHA, IJMA, KOLKATA

NAME OF THE COMMENTATOR/ORGANIZATION: INDIAN JUTE MILLS ASSOCIATION

DOCUMENT NO: IS 271 : 2020

Item, Clause Sub-Clause No. Commented upon (Use Separate Box afresh)	Comments	Specific Proposal (Draft clause to be add/amended)	Remarks	Technical References and justification on which (2), (3), (4) are based
(1)	(2)	(3)	(4)	(5)
Gradation, Clause 4.1 All TOSSA and DAISEE raw jute (from which the roots have not been cut) shall be classified into the following 5 grades: TD1, TD2, TD3, TD4 and TD5 Clause 4.2 All WHITE raw jute (from which the roots have not been cut) shall be classified into the following 5 grades: W-1, W-2, W-3, W-4 and W-5	While making this standard, it was mentioned that TD4 grade has been made by merged erstwhile TD6 TD7 and W6 & W7. Now, in practice we fine TD6 & TD7 are entirely different in usages, TD6 is used for making weft for B type B Twill while TD7 is used for manufacturing coarser yarns. Then the commercial value of TD6 and TD7 are different This grading is not in consonance with the present trade practice.	Instead of 5 grading system for both TOSSA, DAISEE and WHITE jute, 6 grading system should be adopted. A draft IS 271 based on 6 grading system is attached herewith.		Refer the revised IS 271 which is enclosed

ANNEX 11
(Item 6.1)

REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS

Draft Standards for Revision of IS 271 : 2020, Textiles - Grading of White, Tossa and Daisee Uncut Indian Jute (Fifth Revision)

Jute and Jute Products Sectional Committee, TXD 03

FOREWORD

This Indian Standard (Fifth 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 Textiles Division Council.

This standard was first published in 1950 and subsequently revised in 1969, 1975, 1987, 2003 & 2020. 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, TDl, 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 fourth revision of this standard was taken up to incorporate the modified scores for different characteristics and maximum root content for better implementation by the jute growers and traders.

This standard has been taken up for revision again to include the following major changes:

a) Instrumental methods for assessment of different quality characteristics/parameters for determination of jute grading has been included;
b) Classification of Jute grading has been reduced from 8 to 6 grades. The WHITE jute is classified into 6 grades, namely, WN-1, WN-2, WN-3, WN-4, WN-5 and WN-6; TOSSA and DAISEE jute are classified into 6 grades, namely, TDN-l, TDN-2, TDN-3, TDN-4, TDN-5 and TDN-6;
c) Based on relative importance of different quality characteristics/parameters for determination of jute grading, score weightage for the same has been reassigned;
d) Bulk density parameter for determination of jute grading has been excluded and merged with fineness; and
e) The colour description of WHITE, TOSSA, and DAISEE jute has been changed to 3 (Good, Average, No bar) term from the existing 5 terms.

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

(Sixth 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

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 bundle (of specified weight for instrumental method) 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.

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

3.7 Reed/Fibre streak — The fibre system from one individual jute plant.

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

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

3.10 Root — The hard barky region at the lower end of the reed normally called root or cuttings.

3.11 *Defects*

3.11.1 *Major Defects* — Centre root, dazed and over-retted fibre, runners, knots, mossy fibres and entangled sticks.

3.11.2 *Minor Defects* — Weak croppy end, gummy fibre, loose leaf, loose sticks, and specks.

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

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

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

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

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

3.17 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.

3.18 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.

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

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

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

3.22 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.

3.23 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.

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

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

4 GRADING

4.1 All TOSSA and DAISEE raw jute (from which the roots have not been cut) shall be classified into the following 6 grades: TDN1, TDN2, TDN3, TDN4, TDN5 and TDN6.

4.2 White raw jute (from which the roots have not been cut) shall be classified into the following 6 grades: WN-1, WN-2, WN-3, WN-4, WN-5 and WN6.

4.3 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) Root content;
c) Defects;
d) Fineness; and
e) Colour.

4.3.1 *Strength: 30 marks*

Sub-group with Score for Strength Parameter					
Quality (Hand and Eye)	*Excellent*	*Good*	*Fair Average*	*Average*	*Poor*
Value, g/tex (Instrumental)	≥ 25	< 25 – 23	< 23 – 21	< 21 - 18	<18 -15
Score	30	26	16	13	07

4.3.2 Colour: 10 marks

Sub-group with Score for Colour			
Quality (hand and eye)	*Good*	*Average*	*No bar*
Value, whiteness index (Instrumental)	≥ 65	≥ 45 – < 65	<45
Score	10	05	0

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

Class	Colour Description		
	WHITE	**TOSSA**	**DAISEE**
Good (≥ 65)	Light creamy to white	Light creamy to reddish white	Reddish to brownish with some light grey
Average (< 65 to ≥ 45)	Brownish to reddish white with some light grey	Light grey to copper colour	Light grey
No bar (< 45)	Grey to dark grey	Grey to dark grey	Grey to dark grey

4.3.3 Fineness: 15 marks

Sub-group with Score for Fineness Parameter					
Quality (hand and eye)	*Very Fine*	*Fine*	*Fair Average*	*Average*	*Coarse*
Value , tex (Instrumental)	≤ 1.8 for White jute and ≤ 2.0 for Tossa jute	≤1.8 for White jute and ≤ 2.0 for Tossa jute	>1.8 – 3.0 For White and >2.0 – 3.0 for Tossa Jute	>3.0 for White and >3.0 for Tossa jute	>3.0 for White and >3.0 for Tossa jute
Score	15	12	10	05	02

4.3.4 Root content: 20 marks

Sub-group with Score for Root Content Parameter					
Quality (hand and eye)	*Excellent*	*Good*	*Fair Average*	*Average*	*Poor*
Value, length percent (Instrumental)	< 5	> 5 ≤ 7	> 7 ≤ 9	> 9 ≤ 11	>11
Score	20	15	12	08	05

4.3.5 *Defects: 25 marks*

4.4 The hand and eye method may be used for assessing these qualities for commercial purposes and in the same time instrumental methods are also available for scientific assessment of certain important characteristics.

Sub-group with Score for Defect Parameters					
Quality (hand and eye)	*Excellent*	*Good*	*Fair Average*	*Average*	*Poor*
Value, weight percent (Instrumental)	≤ 0.5	>0.5 - 1.0	>1.0 - 1.5	>1.5 – 2.0	>2.0
Score	25	17	12	09	06

NOTE — For comparing strength by hand, 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.

4.5 The requirement of each individual quality characteristic in case of each of the 6 grades for WHITE, TOSSA and DAISEE jute in Table 1 for hand and eye method and Table 2 for instrumental method.

4.6 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 TOSSA and DAISEE and WHITE jute shall be done on the basis of Table 1 or Table 2.

Table 1 Score for "Hand and Eye" Method Grading

(*Clauses* 4.5 *and* 4.6)

Grade	Strength	Defects	Root Content	Fineness	Colour	Total Score
TDN1 / WN1	Need Strength to break the fibre and sharp audible sound at the time of breakage **(Excellent 30)**	Free from major defects but 10% minor defects may be allowed **(25)**	< 5% lengthwise **(20)**	Very Fine **(15)**	Light creamy to reddish yellow with lustre **(10)**	**100**
TDN2 / WN2	Need *moderate* Strength to break the fibre and sound will be available at the time of breakage **(Good 26)**	90% free from major defects but 20% minor defects may be allowed **(17)**	> 5% - 7% lengthwise **(15)**	Fine **(12)**	Light creamy to reddish yellow with lustre **(10)**	**80**
TND3 / WN3	Need *less* Strength to break the fibre and sound will be available at the time of breakage **(Fair Average 16)**	80% free from major defects but 30% minor defects may be allowed **(12)**	> 7% - 9% lengthwise **(12)**	Fair average **(10)**	Light creamy to reddish yellow with lustre **(10)**	**60**
TDN4 / WN4	Need *less* Strength to break the fibre and a *feeble* sound at the time of breakage **(Average 13)**	80% free from major defects but 40% minor defects may be allowed **(09)**	> 9% - 11% lengthwise **(08)**	Average **(05)**	Reddish / Brownish with some light grey **(05)**	**40**
TDN5 / WN5	Need *lesser* Strength to break the fibre and *no* sound will be available at the time of breakage **(Poor 07)**	70% free from major defects but 20% minor defects may be allowed **(06)**	> 11% lengthwise **(05)**	Coarse **(02)**	No bar **(0)**	**20**
TDN6 / WN6	Any other jute (not in entangled condition) not suitable for any of the above grades but has commercial value					

NOTES

1 The minimum reed length should be 150 cm, or the effective reed length should not be less than 100 cm except for TDN6.

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 TDN3/WN3 to TDN6/WN6 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 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, etc, reference to the relevant part of IS 7032.

Table 2 Score and Value for Instrumental Grading

(*Clauses* 4.5 *and* 4.6)

Grade	Strength Gm/tex	Defects Wt.%	Root Content (L%)	Fineness (tex)	Colour (w.r.t. white %)	**Total Score**
TDN1/WN 1	**30** Excellent (≥ 25)	**25** (≤ 0.5)	**20** (<05)	**15** Very Fine (≤ 2)	**10** Good (≥ 65)	**100**
TDN2/WN 2	**26** Good (<25 - 23)	**17** (>0.5 - 1.0)	**15** (05 - <07)	**12** Fine (≤ 2)	**10** Good (≥ 65)	**80**
TDN3/WN 3	**16** Fair Average (<23 - 21)	**12** (>1.0 - 1.5)	**12** (07 - <09)	**10** Fair Average (>2 - 3)	**10** Good (≥ 65)	**60**
TDN4/WN 4	**13** Average (<21 - 18)	**09** (>1.5 - 2.0)	**08** (09 - <11)	**05** Average (>3)	**05** Average (64 - 45)	**40**
TDN5/WN 5	**07** Poor (<18 - 15)	**06** (>2.0)	**05** (>11)	**02** Coarse (>3)	**0** No bar (< 45)	**20**
TDN6/WN 6	**Any other jute (not in entangled condition) not suitable for any of the above grades but of commercial value**					
For WHITE jute, Fineness value range: Very Fine (≤ 1.8) tex, Fine ((≤ 1.8) tex, Fair Average (>1.8 – 3.0) tex, Average (>3.0) tex & Coarse (>3.0) tex **Bulk Density** parameter has been omitted & merged with Fineness						

NOTES

1 The minimum reed length should be 150 cm, or the effective reed length should not be less than 100 cm except for TDN6.

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 TDN3/WN3 to TDN6/WN6 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 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, etc, reference to the relevant part of IS 7032.

8 The value of the corresponding parameters mentioned in the Instrumental method, was optimized using the standard instruments developed by ICAR-NINFET (erstwhile NIRJAFT)

5 PACKING

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

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

ANNEX 12
(Item 6.2)

REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDRADS

Draft for comments only Doc No.: TXD 03 (XXXXX)
XXXX
2023

(*Not to be reproduced without permission of BIS or used as Standard*)

भारतीय मानक **मसौदा**

वस्त्रादि — पटसन धागे/ सुतली की पैकेजबंदी संहिता

(आई एस 14342 का *पहला पुनरीक्षण*)

Draft *Indian Standard*

Textiles — Jute Yarn—Packaging Code

(First Revision of IS 14342*)*

ICS: 59.080.20

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)
This standard was first published in 1996. This first revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

i) The Title of the standard has been updated.
ii) BIS certification clause is incorporated in this draft standard.
iii) Packing and marking clause is incorporated in this draft standard.
iv) Latest sampling clause is in corporate in the latest version of the standard.
v) References to Indian standards is updated.

This standard is mainly based on the information provided by the Indian Jute Industries' Research Association, Calcutta.
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

This standard prescribes procedure for packaging of jute yarn/twine in the form of truss or bale.

2 REFERENCES

The following Indian standards are necessary adjuncts to this standard:

IS NO.	*Title*
1029 : 1970	Specification for hot rolled steel strips (baling) first revision)
1670 : 1991	Textiles -Yarn - Determination of breaking load and elongation at break of shingle strand (second revision)
2818 (Part 2) : 1971	Specification for Indian hessian: Part 2 305 and 229 g/m^2 at 16 percent regain (First revision)

3 TERMINOLOGY

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

3.1 Yarn

A continuous strand made from jute fibres twisted together.

3.2 Twine

A plied yarn made by twisting together two or more strands of yarn.

3.3 Hank

Jute yarn reeled as skein having circumference of 229 cm and length of 274 metres (300 yards).

3.4 Spool

A package of yarn with a core as specified by the buyer.

3.5 Bundle

A package without covering or wrapping consisting of a number of hanks or spools suitably tied as specified.

3.6 Truss

A bundle of hanks or spools suitably covered or wrapped but neither hooped nor machine pressed

3.7 Bale

A rectangular or square shaped compressed rigid package containing jute yarn/twine in hanks suitably wrapped with bale covering with outer layer stitched and bound by metal hoops.

4 PACKING MATERIALS

4.1 Bale/Truss Covering

The jute fabric used for covering bale/truss shall be new, double warp sacking or hessian fabric having mass and breaking strength as under:

Sacking		
Average mass, g/m^2, Min		523
Average breaking load	Warp	1120(114)
(on 10 cm x 20 cm revelled strip), N (kgf), Min	Weft	1325 (1325)
Hessian		
Average mass, g/m^2, Min		229
Average breaking load	Warp	1020 (104)
(on 10 cm x 20 cm revelled strip), N (kgf), Min	Weft	1100 (112)

However jute fabric of other construction conforming to the relevant Indian Standard may be used if agreed to between the buyer and the seller.

4.2 Polyethylene Film

The minimum thickness of the polyethylene film used for covering the bundles of yarn/twine shall be 40 micron (23 g/m^2).

4.3 Sewing Twine

The twine used for stitching the bale/truss covering shall have a minimum breaking strength of 176 N irrespective of the number of plies (see also IS 1670).

4.4 Baling Strips (or Hoops)

The baling strips used for outside bounding of bales shall be new and of soft grade. The thickness and width of strips painted black shall be 1.63 mm and 25 mm respectively (see also IS 1029).

5 MAKE UP OF PACKAGES

5.1 Yarn

Two or specified number of yarn spools shall be packed in a polyethylene bag and eight such bags shall be put together to form one truss. In case-of jumbo spool, one spool shall be packed in a polyethylene bag instead of two.

5.2 Twine

5.2.1 Jute twine shall be made into a hank of a specified circumference of mass as specified by the buyer.

5.2.2 A number of such hanks shall be tied together with twine to make a bundle of mass as agreed to between the buyer and the seller.

5.2.3 Each bundle of twine shall be wrapped with polyethylene film.

5.2.4 The bundles of twine shall then be made into truss or bale as agreed to between the buyer and the seller.

5.3 All trusses or bales of one lot purporting to be of one specified type and quality shall contain the mass of yarn or twine as agreed to between the buyer and the seller.

6 REQUIREMENTS OF PACKAGES

6.1 The average moisture regain percent in a packed bale or truss shall not exceed 16 percent.

6.2 The bale or truss shall be completely covered on all sides with at least one layer of bale covering.

6.3 The loose ends of the bale covering shall be sewn with jute twine as prescribed in 4.3 in such a way that distance between stitches is about 8 cm on the sides and about 12 cm at the top and bottom of the bale.

6.4 The truss shall contain spools as specified by the buyer and shall not include any damaged or defective spool. Each truss shall be provided with loops or dog-ears for handling purpose.

6.5 The bale shall be securely bound with steel strips (hoops) (see 4.4) running at right angles to the length of the bale. The number of strips for each bale shall not be less than 3.

6.6 The bales shall be compressed suitably avoiding excessive pressure which may cause damage to twine.

7 MARKING

7.1 Unless otherwise agreed to between the buyer and the seller, the following information shall be stencilled on the truss or bale with an indelible ink of any suitable colour:

a) Description of material,

b) Net and gross mass of the yarn or twine in the truss or bale,

c) Bale or truss number,

d) Identification of source of manufacturer, and

e) Any other information required by the buyer or by the law or regulations in force.

7.2 The trusses or bales shall be marked on two sides unless otherwise agreed to between the buyer and the seller.

7.2.2 *BIS Certification Marking*

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

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDRADS

Draft for comments only Doc No.: TXD 03 (XXXXX)
XXXX
2023

(*Not to be reproduced without permission of BIS or used as Standard*)

भारतीय मानक मसौदा
वस्त्रादि — ए- ट्विल पटसन के बोरे — विशिष्टि

(आई एस 1943 का *तीसरा पुनरीक्षण*)

Draft *Indian Standard*
Textiles — A-Twill Jute Bags — Specification
(Third Revision of IS 1943*)*

ICS: 59.060.10

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)
This standard was first published in 1961 and it was subsequently revised in 1964 and 1995. This standard has been revised again so as to ensure compatibility regarding general requirements of A-twill jute bags with those specified in IS 9113 Textiles – Jute sacking – General requirements (*Second Revision*)

This third revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

i) The Title of the standard has been updated.
ii) BIS certification clause is incorporated in this draft standard.
iii) Packing and marking clause is incorporated in this draft standard.
iv) Latest sampling clause is in corporate in the latest version of the standard.
v) ICS number is incorporated in place of udc number in this draft standard.
vi) References to Indian standards is updated.
vii) Amendments has been incorporated in this draft standard.

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 requirements of A—Twill Jute bags.

1.2 The bags specified in the standard shall not be manually handled after packing material.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
1963 : 1981	Method for determination of threads per unit length in woven fabrics (*Second Revision*) (Reaffirmed April 1993)
IS 1969 (Part 1) : 2018 ISO 13934-1:2013	Textiles — Tensile Properties of Fabrics Part 1 Determination of Maximum force and Elongation at Maximum Force Using the Strip Method (*Fourth Revision*)
2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*Second Revision*)
2969:1974	Method for determination of oil content of jute yarn and fabrics (*First Revision*) (Reaffirmed March 1993)
5476:1986	Glossary of terms relating to jute (*First Revision*)
9030:1993	Method for determination of seam strength of jute fabrics including their laminates (Reaffirmed March 1992)
9113 : 2012	Textiles – Jute sacking – General requirements (*Second Revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 MANUFACTURE

4.1 Sacking

The bags shall be made from single piece of double warp, 2/1 twill weave jute sacking of uniform construction having nominal mass of 750 g/m^2 with warp running along the length of the bag. There shall be three blue stripes, or stripes as agreed to between the buyer and the seller, woven along the length of the bag. The constructional particulars of sacking used in the fabrication of the bags shall be such that the bag meets the requirement specified in Table 1.

NOTE— Mass of fabric in g/m2 is given for guidance only.

4.2 Seam

The sides of the bags shall be sewn with overhead or herakle stitches on selvedge through two layers of sacking as specified in IS 9113. The number of stitches per 10 cm shall be between 9 and 11.

4.3 Safety Stitch

A line of safety union stitch shall be provided at the inner edges of the overhead or herakle Stitches (see IS 9113). The number of safety union stitches per 10 cm shall be between 9 and 11.

4.4 Hemming at the Mouth

Provisions of IS 9113 shall apply.

4.5 Joined Bag

Provisions of IS 9113 shall apply.

4.6 Freedom from Defects

The bags shall be generally free from weaving and sewing defects such as missing picks, holes, cuts, tears, floats, crushed selvedge's, spots, stains, gap stitches, loose ends and frayed ends which effect the performance of the bag.

5 SPECIFIC REQUIREMENTS

5.1 The bags shall conform to the requirements specified in Table 1.

5.2 The bales containing the bags shall conform to the requirements specified in Table 2.

5.3 The contract moisture regain shall be 20 percent.

6 PACKING

The bags shall be packed in bales as prescribed in IS 2873 or as specified in the agreement between the buyer and the seller.

7 MARKING

7.1 The bales shall be marked as prescribed in IS 2873. Additional marking shall be made as stipulated by the buyer or required by the regulation or law in force.

Table 1 Particulars of Bags
(Clauses **4.1** and **5.1**)

SI No.	Characteristic	Requirement	Tolerance	Method of Test
(1)	(2)	(3)	(4)	(5)
i)	Dimensions, cm (see Note):			Clause 8.3.2 of IS 9113
	a) Outside length	112	+4	
	b) Outside width	67.5	-0	
ii)	Corrected mass per bag, g	1190	+120 -90	Clause 8.5.2 of IS 9113
iii)	Ends per dm	102	± 6	IS 1963
iv)	Picks per dm	5	± 2	IS 1963
v)	Average breaking load of sacking [revelled strip method. 10 cm × 20 cm] Min, N (kgf):			IS 1969

	Warp way	2000 (204)		
	Weft way	1765 (180)		
vi)	Average breaking load of seam [revelled strip method, 10 cm × 20 cm] Min, N (kgf)	657 (67)		IS 9030

NOTES
1 The buyer and the seller may agree to the dimensions other than those specified above. The tolerance of $\frac{+4}{-0}$ cm shall apply on the dimensions.
2 In case of bags having herakle stitching with safety stitch, the corrected mass per bag shall be 1 200 g instead of 1 190 g.

The mass of such bag may be calculated by the method given in **5.3** of IS 9113. However, a tolerance of $\frac{+10}{-7.5}$ percent on the bag mass shall be permissible**.**

Table 2 Requirements of Packed Bales
(*Clause* **5.2**)

SI No.	Characteristic	Requirement	Methods of Test
(1)	(2)	(3)	(4)
i)	Total number of bags per bale (see Note)	400	Clause 8.9 of IS 9113
ii)	Number of joined bags per bundle of 25 bags	1	do
iii)	Contract mass of a bale Kg	480	-
iv)	Corrected net mass of a bale	Not less than contract mass	Clause 8.1 of IS 9113
v)	Moisture regain, percent, Max	22	Clause 8.2 of IS 9113
vi)	Oil content on dry deoiled material basis, percent, Max	3	IS 2969

NOTE — The number of bags per bale shall be 400 or as specified in an agreement between the buyer and the seller**.**

7.2 BIS Certification Marking

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

8 SAMPLING AND CRITERIA FOR CONFORMITY

The sampling procedure and criteria for conformity as specified in IS 9113 shall be followed.

BUREAU OF INDIAN STANDRADS

Draft for comments only Doc No.: TXD 03 (XXXXX)
XXXX 2023

भारतीय मानक मसौदा
वस्त्रादि — खाद्यान्नों की पैकिंग के लिए बी—द्विल पटसन के बोरे — विशिष्टि

(आई एस 2566 का *चौथा पुनरीक्षण*)

Draft *Indian Standard*

Textiles — B—Twill Jute Bags for Packing Food grains — Specification

(*Fourth Revision* of IS 2566)

ICS: 59.060.10

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)

This standard was first published in 1963 and revised in 1965, 1984 and 1993. The last revision has been prepared to upgrade the performance of jute bags, at the request of Food Corporation of India to minimize wastage of food grains. The following are the major changes incorporated in this revision:

a) Tolerances presently specified for ends and picks per dm will have been tightened.
b) General requirements and criteria for conformity have been laid down in IS 9113.

The mass of bags of different sizes at various moisture regains are given in Annex B for information.

This fourth revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

vi) The Title of the standard has been updated.
vii) BIS certification clause is incorporated in this draft standard.
viii) Packing and marking clause is incorporated in this draft standard.
ix) Latest sampling clause is in corporate in the latest version of the standard.
x) ICS number is incorporated in place of udc number in this draft standard.
xi) References to Indian standards is updated.
xii) Amendments has been incorporated in this draft standard.

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 requirements of jute bags for packing 100, 93 and 75 kg food grains.

1.2 The bags specified in the standard shall not be manually handled after packing food grains.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 MANUFACTURE

4.1 The bags shall be made from cloth conforming to IS 3667. It shall be made from a single piece of cloth preferably the warp running along the length of the bag. There shall be a single blue stripe (or stripes) of single or double warp as agreed to between the buyer and the seller, woven along the length of the bag. Additional woven identification mark may be provided if required by the buyer.

4.2 Hemming at the Month

Provisions of IS 9113 shall apply.

4.3 Seam

4.3.1 For bags with hemming at the mouth, the sides of the bags shall be sewn with overhead or herakles stitches on selvedge through two layers of fabric (see Fig. 1). The stitching shall be of even tension throughout with all the loose ends securely fastened. The number of stitches per 10 cm at the sides shall be between 9 and 11 (see *also* IS 9113).

4.3.1 For bags with selvedge at the mouth, the stitching of the raw edges of the bag shall be done after turning to a depth of 38 mm, with overhead or herakle stitches through four layers of the fabric (see Fig. 2). The bottom of the bag shall be stiched at selvedge through two layers of the fabric with overhead or herakle stitch as the case may be (see *also* IS 9113).

4.4 Joined Bag

Provisions of IS 9113 shall apply.

4.5 Freedom from Defects

The bags should be generally free from weaving and sewing defects which effect the performance of the bag, such as holes, cuts, tears, floats, crushed selvedges, soots, stains, gap stitches, loose ends and frayed ends.

5 SPECIFIC REQUIREMENTS

5.1 The bag shall conform to the requirements specified in Table 1.

5.2 The bales containing the bags shall conform to the requirements as laid down in Table 2.

5.3 The contract moisture regain shall be 20 percent.

6 PACKING AND MARKING

6.1 Packing

The bags shall be packed in bales as laid down in IS 2873 or as specified in an agreement between the buyer and the seller.

6.2 Marking

The bales shall be marked as laid down in IS 2873. Additional marking shall be made as stipulated by the buyer or required by the regulation or law in force.

6.2.1 The bales may also be marked with the Standard Mark.

6.2.2 *BIS Certification Marking*

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

7 SAMPLING

7.1 The sampling shall be as laid down in IS 9113.

7.2 A lot shall be considered as conforming to the requirements of the standard if the conditions as laid down in IS 9113 are satisfied.

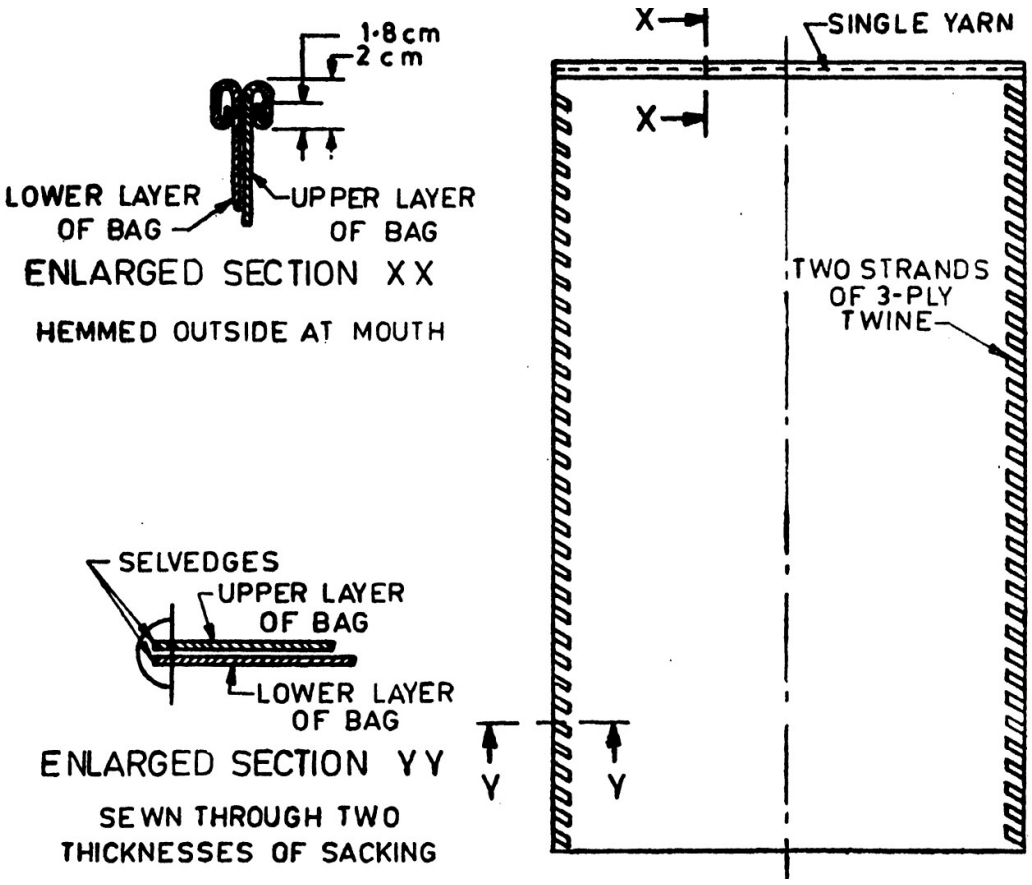
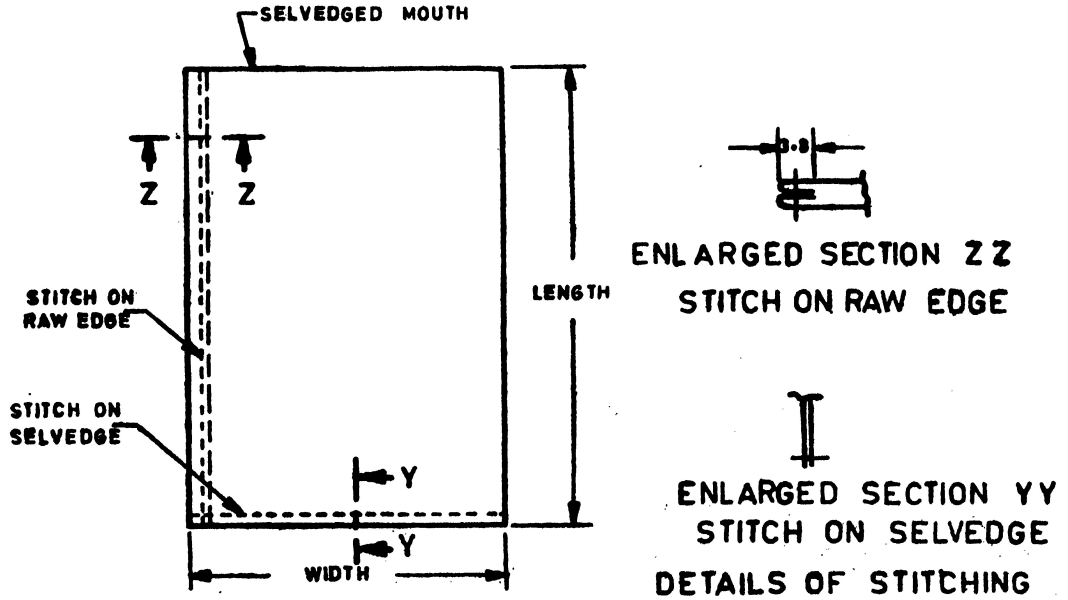


FIG. 1 B-TWILL JUTE BAG



All dimensions in centimetres.

Fig. 2 Construction of A Typical Selvedged Bag (Bag Length = Cloth Width)

Table 1 Requirements of B-Twill Jute Bags for Foodgrains

(*Clause* **5.1**)

SL NO.	Characteristic	Size			Method of Test
(1)	(2)	100 kg (3)	93 kg (4)	75kg (5)	(6)
i)	Dimensions (see Note):				IS 1954
	a) Outside length, cm	122	112	106.5	
	b) Outside width, cm	67.5	67.5	61	
	Tolerance, cm		+4 -0		
ii)	Corrected mass per bag, g:				8.5.2 of IS 9113
	a) Overhead stitch	1110	1020	880	
	b) Herakle stitch	1115	1025	885	
	Tolerance, percent		+10 -7.5		
iii)	Ends per dm		76		IS 1963
	Tolerance		+4 -3		
iv)	Picks per dm		31		IS 1963
	Tolerance		+2 -1		
v)	Breaking load of cloth (Min) (revelled strip method. 10 × 20 cm)				IS 1969
	a) Warpway : Average		1570 (160)		
	b) Weftway : Average		1620 (165)		
vi)	Scam breaking load (Min) (revelled strip method, 5 × 20 cm) N (kgf) Average		608 (62)		IS 9030

Table 2 Requirements of Packed Bales of B-Twill Jute Bags

(*Clause* **5.2**)

SI No.	Characteristic	Sizes	Method of

					Test
(1)	(2)	100 Kg (3)	93 Kg (4)	75 Kg (5)	(6)
i)	Total number of bags per bale	300	300	300	8.9 of IS 9113
ii)	Number of joined bags per bundle of 25 bags	1	1	1	-do-
iii)	Contract mass of a bale, kg				
	a) Overhead stitch	333	306	264	
	b) Herakle stitch	334.5	307.5	265.5	
iv)	Correct net mass of a bale	Not less than the contract mass			8.1 of IS 9113
v)	Moisture regain percent, Max	22			8.2 of IS 9113
vi)	Oil content on dry deoiled material basis, percent, Max	3			IS 2969

ANNEX A
(*Clause* **2**)

LIST OF REFERRED STANDARDS

IS No.	*Title*
1954 : 1990	Methods for determination of length and width of fabric (*Second Revision*)
1963 : 1981	Methods for determination of threads per unit length in woven fabrics (*Second Revision*)
IS 1969 (Part 1) : 2018 ISO 13934-1:2013	Textiles — Tensile Properties of Fabrics Part 1 Determination of Maximum force and Elongation at Maximum Force Using the Strip Method (*Fourth Revision*)
2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*Second Revision*)
2969 : 1974	Method for determination of oil content of jute yarn and fabrics (*First Revision*) (Reaffirmed March 1993)
3667 : 1993	Textiles — B-twill jute cloth — Specification (*Second Revision*)
5476 : 1986	Glossary of terms pertaining to jute (*First Revision*)
9030 : 1979	Method for determination of seam strength of jute fabrics including their laminates
9113 : 2012	Textiles – Jute sacking – General requirements (*Second Revision*)

ANNEX B

(Foreword*)*

MASS OF B-TWILL JUTE BAGS AT DIFFERENT MOISTURE REGAIN VALUES

Moisture Regain Percent	Mass in g for Size of Bag					
	100 Kg		93 Kg		75 Kg	
	Over head	Herakle	Over head	Herakle	Over head	Herakle
22	1130	1135	1037	1042	894	900
20	1110	1115	1020	1025	880	885
18	1092	1097	1003	1008	865	870
16	1074	1079	986	991	851	856
14	1055	1060	969	974	836	841
12	1037	1042	952	957	821	826
10	1018	1023	935	940	807	811
8	1000	1004	918	922	792	796
7	991	995	910	914	785	789
6	981	986	901	905	777	782

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDRADS

Draft for comments only Doc No.: TXD 03 (XXXXX)
XXXX
2023

(*Not to be reproduced without permission of BIS or used as Standard*)

भारतीय मानक मसौदा
वस्त्रादि — हैसियन के कट्टे — विशिष्टि

(आईएस 3790 का *तीसरा पुनरीक्षण*)

Draft *Indian Standard*

Textiles — Hessian Bags — Specification

(*Third Revision* of IS 3790)

ICS:

Jute and Jute Products Sectional Committee, TXD 03

last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)

This standard was first published in 1966 and subsequently revised in 1971 and 1991. In the last revision the standard has been revised in order to harmonize it with the specification issued by the Export Inspection Council and the norms formulated by Indian Jute Mills Association. In the present revision, changes have been made in the sampling, inspection and criteria for conformity.

This third revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

i) The Title of the standard has been updated.

ii) BIS certification clause is incorporated in this draft standard.
iii) Packing and marking clause is incorporated in this draft standard.
iv) Latest sampling clause is incorporated in the latest version of the standard.
v) ICS number is incorporated in place of udc number in this draft standard.
vi) References to Indian standards is updated.
vii) Amendments has been incorporated in this draft standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values (*second revision*).' The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

1.1 This standard specifies requirements for two types of hessian bags fabricated from Type 1 and Type 2 hessian cloths conforming to IS 2818 (Part 2): 1971 withdrawn.

1.2 The bags specified in the standard shall not be manually handled after packing material more than 50 kg.'

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

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

3.1 Hemmed Bag

A bag with raw edges hemmed forming the mouth of the bag.

3.2 Selvedged Bag

A bag with selvedge forming the mouth of the bag.

3.3 Joined Bag

A bag made from not more than two pieces of hessian cloth. The joining shall be done in such a manner so that warp and weft shall run in the same direction.

4 GENERAL REQUIREMENTS

4.1 Hessian Cloth

The bags of Type 1 and Type 2 shall be made from single pieces of plain weave hessian cloth conforming to the requirements of Type 1 and Type 2 as prescribed in IS 2818 (Part 2) withdrawn .

4.2 Hessian Bags

4.2.1 The bags shall be either hemmed or selvedged as agreed to between the buyer and the seller.

4.2.2 The outside dimensions of the bag shall be as agreed to between the buyer and the seller. However, tolerances given in Table 1 shall be applicable.

Table 1 Requirements of Hessian Bags

(Clauses **4.2.2, 5.1** and **8.1**)

SI No.	Characteristic	Requirement		Method of Test
(1)	(2)	Bags from Type 1 Hessian (3)	Bags from Type 2 Hessian (4)	(5)
i)	Corrected net mass of a bale	Not less than contract mass	Not less than contract mass	C-1
ii)	Tolerance on nominal outside dimensions of a bag:			C-5
	a) For dimensions, up to 137 cm, in cm	+4 -0	+4 -0	
	b) For dimensions above 137 cm. in cm	+4 -0	+4 -0	
iii)	Tolerance on nominal mass of a bag (specified or calculated), percent:			C-3
	a) Average	+8 -2	+8 -2	
	b) Individual	± 10	± 10	
iv)	Ends per dm	47 ± 2	38^{+2}_{-1}	C-7
v)	Picks per dm	47 ± 2	35^{+2}_{-1}	C-2
vi)	Moisture regain, percent, Max	17	17	
vii)	Contract regain, percent	16	16	
viii)	Oil content, percent on dry de-oiled material basis, Max	3	3	C-8

4.3 Seam

The bag shall be sewn with overhead or herakle stitches. The sewing shall be done through two thicknesses of the cloth if both the edges to be sewn are selvedges. In case of raw edge(s), turning shall be done to a depth of at least 4.0 cm before sewing. The stitching shall be of even tension throughout with all the loose ends secured so that the stitch does not open up. The number of stitches per decimetre shall be from 9 to 11. For overhead or herakle stitches, two strands or jute twine of count 310 tex × 3 (9 grist × 3) shall be used.

NOTE — The count of twine is given for guidance only.

4.3.1 *Safety Stitch*

A line of safety union stitch may be provided at the inner edges of the overhead and herakle (9 grist × 2) if agreed to between the buyer and the seller. The number of safety union stitches per decimetre shall be from 9 to 11.

NOTE — The count of twine is given for guidance only.

4.4 Hemming at the Mouth

In the case of hemmed bags the raw edges at the mouth of the bags shall be turned over first to a depth of about 1.5 cm and then to a depth of about 2.5 cm. The three thicknesses of hessian thus formed shall be hemmed. The number of stitches per decimetre in the hem shall be from 9 to 11. The count of the hemming twine shall be 310 tex (9 grist).

NOTE — The count of hemming twine is given for guidance only.

4.5 Joined Bag

The seam used to join the two pieces of hessian in a joined bag shall have strength not less than the breaking strength of the seam as specified in Table 2 and shall be sufficiently tight to prevent shifting or leakage of the content of the bag.

5 SPECIFIC REQUIREMENTS

5.1 The hessian bags shall conform to the requirements specified in Table 1 and Table 2 unless specifically agreed to between the buyer and the seller.

5.2 Bag Mass

When the contract is on the basis of cloth construction, the mass of the bag shall include the mass of the constituent cloth the total area including the area required for folding and hemming (see **4.3** and **4.4)** plus mass of the twine from its grist and length calculated on the following basis:

Sl No. (1)	Type of Stitch (2)	Length of Twine as Multiple of Sewn Length (3)
i)	Hemming	4
ii)	Overhead	5
iii)	Herakle	8
iv)	Union	4

5.3 Breaking Strength

5.3.1 When the contract is on the basis of cloth construction, the breaking strength values of the cloth and seam shall be as given in Table 2.

5.3.2 When the contract is on the basis of bag mass and if the nominal mass of cloth derived from such 'mass of bag' is less than 305 g/m^2 in case of Type 1 and less than 229 g/m^2 in case

of Type 2, but without considering the mass of twine, the mass of cloth satisfies the requirements of each type, the breaking strength values of the cloth and seam shall be as given in Table 2.

5.3.3 Breaking strength shall be calculated on the basis of five specimens in each warp way and weft way directions taken from each bag selected.

5.4 Number of Bags and Joined Bags per Bale

The number of bags in a bale shall be 500 for bags made from Type 1 hessian and 1 000 for bags made from Type 2 hessian or as agreed to between the buyer and the seller.

5.4.1 Joined bags shall not be more than one per bundle of 25 bags. In case the bundle contains more than 25 bags as agreed to between the buyer and the seller, the number of joined bags in a bale shall not exceed 4 percent of the total bags in a bale.

5.4.2 The number of bags and joined bags per bale shall be determined by the method prescribed in Annex B.

6 PACKING AND MARKING

6.1 Packing

The hessian bags shall be packed in bales as per the procedure specified in IS 2873 or as agreed to between the buyer and the seller.

6.2 Marking

The bales shall be marked as specified in IS 2873. Additional markings shall be made if required by the buyer or by the regulations or law in force.

6.2.1 Bales may also be marked with the Standard Mark.

6.2.2 *BIS Certification Marking*

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

7 SAMPLING AND INSPECTION

7.1 Unless otherwise agreed to between the buyer and the seller, the sampling shall be done as given in Annex B and the procedure for testing and inspection as given in Annex C.

8 CRITERIA FOR CONFORMITY

8.1 The lot shall be considered as conforming to the requirements of this standard if the following conditions are satisfied:

a) The total of the corrected net mass of the bales under test is not less than the contract mass of the bales.

b) The dimensions of at least 80 percent of the bags under test are in accordance with the requirements specified in Table 1. Out of the remaining bags (20 percent maximum) the dimensions of not more than 10 percent of the bags under test is below the specified value, and no bag has dimensions less than 1.5 cm below the specified values.

c) The corrected mass of at least 80 percent of the bags under test are in accordance with the requirements specified in Table 1. Out of the remaining bags (20 percent maximum) the corrected mass of not more than 10 percent of the bags under test is below the lower specified limit. The average corrected mass of the bags under test conforms to the requirement specified in Table 1.

d) The total number of bags in each bale under test and the number of joined bags in each bundle of bags under test meet the relevant requirement.

e) The average moisture regain percent for the bags under test is not more than the requirement specified in Table 1.

f) The average values of ends and picks per decimetre of the bags under test are in accordance with the requirements specified in Table 1.

g) The average values of (a) warp way and weft way breaking strength of the cloth and (b) warp way and weft way breaking strength of the seam of the bags under test conform to the requirements specified in Table 2.

h) The average oil content percent of the bags under test not more than the specified requirement (see Table 1).

Table 2 Requirements for Breaking Strength and Seam Strength of Bags

(*Clauses* **4.5, 5.1, 5.3.1** and **5.3.2**)

SI No.	**Characteristic**	**When the contract is on the basis of Cloth Construction**				**When the contract is on the basis of Bag Mass**				**Method Of Tests**
		Strip Method		Grab Method		Strip Method		Grab Method		
(1)	(2)	Type I bags (3)	Type 2 bags (4)	Type I bags (5)	Type 2 bags (6)	Type I bags (7)	Type 2 bags (8)	Type I bags (9)	Type 2 bags (10)	(11)
	Cloth breaking strength on 10 cm × 20 cm strip, N (kgf)									C-6 of IS 2818 (Part 1)
	a) Warpway	1098 (112)	902 (92)	353(36)	284 (29)	1078 (110)	882 (90)	343 (35)	284 (29)	
	b) Weftway	1176 (120)	764 (78)	382 (39)	245 (25)	1127 (115)	735 (75)	363 (37)	235 (24)	

	Seam strength on 5 cm × 20 cm strip									C-8 of IS 2818 (Part 1)
	a) Warp way	333 (34)	245 (25)	—	—	333 (34)	176 (18)	—	—	
	b) Weft way	353 (36)	206 (21)	—	—	333 (34)	176 (18)	—	—	

ANNEX A
(*Clause* **2**)

LIST OF REFERRED STANDARDS

IS NO.	*Title*
1963 : 1981	Methods For Determination Of Threads Per Unit Length In Woven Fabrics (*Second Revision*)
2818 (part 1) : 1990	Indian Hessian : Part 1 General (Second Revision)
2818 (part 2) : 1990	Indian Hessian: Part 2 305 And 229 G/M^2 At 16 Percent Contract Regain (First Revision)
2873 : 1991	Textiles — Packaging Of Jute Products In Bales — Specification (*Second Revision*)
2969 : 1974	Method For Determination Of Oil Content Of Jute Yarn And Fabrics (*First Revision*)
5476 : 1986	Glossary Of Terms Relating To Jute (*First Revision*)
9030 : 1979	Method For Determination Of Seam Strength Of Jute Fabrics Including Their Laminates

ANNEX B
(*Clauses* **5.4.2** *and* **7.1**)

SAMPLING

B-1 SAMPLING PROCEDURE

B-1.1 Lot

All the bales of hessian bags of same type and quality delivered to a buyer against one despatch note.

B-1.2 For assessing the conformity of the bales to the requirements of this specification, the test sample of bales shall be selected from the lot at random as follows:

No. of Bales in the Lot	No. of Bales to be Drawn and Opened for Inspection
up to 15	2
16 to 50	3
51 to 150	5

NOTE — If the number of bales in a lot exceeds 150, the same shall be taken as a separate lot comprising of bales a maximum of 150

B-1.3 From the bales selected as above, the test sample shall be drawn as follows:

Sl No.	Test	Test sample
i)	Gross mass of bales	The bales selected as in B-1.2
ii)	Tare mass (of baling hoops and all other packing materials)	
iii)	Total number of bags per bale	Two bundles of bags from each bale selected as in **B-1.2**
iv)	Number of joined bags per bale	
v)	Moisture regain, percent	30 bags (selecting equal number of bags from each bale selected in **B-1.2**
vi)	Length and width	
vii)	Ends and picks per dm	
viii)	Mass per bag	
ix)	Breaking strength of cloth and seam	Five bags selected out of the bales selected in **B-1.2** subject to a minimum of one bag from each bale

x)	Oil content, percent	Two bags selected out of two different bales as selected in **B-1.2**

NOTES

1 Joined bags shall not be selected for the purpose of tests at (v) to (ix) above.

2 In case the bundle contains less than 25 bags, five bundles shall be selected for determining the number of joined bags per bale

ANNEX C
(Table 1, *Clauses* **5.1, 5.3.1** *and* **5 3.2**)

TESTING AND INSPECTION

C-1 TESTING AND INSPECTION PROCEDURE

C-1.1 Testing and inspection of the lot as laid down below shall be carried out as given below.

C-2 MASS OF BALES

C-2.1 Determine the average gross mass (Wg) of the bales in the test sample from the gross mass of each bale to nearest kilogram.

C-2.2 Remove the baling hoops and all other packing materials of the bales selected as in **B-1.2** and weigh them together to the nearest kilogram. Calculate the average tare mass of bale by dividing the number of bales weighed (Wt).

C-2.3 The average net mass of bale under test,

$Wn = W\text{q} - W\text{t}$

C-2.4 Determine the average corrected net mass W of bales under test by the following formula:

$$\text{W} = \frac{W_N X\,(100+\text{Contract Regain Percent})}{100+\text{Average moisture regain percent of sales (see C-2)}}$$

C-3 MOISTURE REGAIN

C-3.1 Determine the moisture regain in each bag after opening the bales by the use of a suitable moisture meter. After opening the bales, sufficient time (not less than 10 minutes) shall be allowed to lapse before measuring the moisture regain to enable the cloth to attain conditions for the normal use of moisture meter. Take at least one reading for each sample bag.

NOTES

1 The mathematical average of all the readings is the average moisture regain percent of the fabric.

2 IJIRA (Indian Jute Industries Research Association) Moisture Meter* may be used for the purpose. The meter works on the principle of measuring the electrical resistance which changes with moisture content in the material. The specimen (jute product) is placed under the electrode gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through

the gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through the electrodes is amplified and recorded on the meter calibrated

*Mention of the name of the specific instrument is not intended to promote or give preference to the use of that instrument over others not mentioned against the actual moisture regain, based on ovendry method of the material. A separate chart,calibrating the readings of the actual moisture regain based on oven-dry method of the material may also be used. The instrument shall be operated according to the manufacturer's instruction.

C-4 MASS PER BAG

C-4.1 Weigh each bag to the nearest 5 g after tests for **C-2** and **C-3**. Weighing may be carried out in prevailing atmospheric condition. Correct the observed mass of each bag for the observed moisture regain (see **C-3.1)** as follows:

$$\text{Corrected mass} = \frac{\text{Observed mass moisture } x\ (100+\text{Contract moisture regain percent})}{100+\text{Observed moisture regain.percent}}$$

C-5 NUMBER OF BAGS AND JOINED BAGS PER BALE

C-5.1 Count the number of bundles of bags in each bale and number of bags and joined bags in each bundle. From the above, determine the total number of bags in each bale under test.

C-6 LENGTH AND WIDTH

C-6.1 Lay each bag flat on a table free from creases and wrinkles and measure the outside length and outside width about the centre to the nearest 0.5 cm.

C-7 BREAKING STRENGTH OF SEAM

C-7.1 Take two test specimens for breaking strength of seam, one from each side, or one from the side and the other from the bottom of the bags as the case may be. Test the breaking strength of each specimen taking 200 mm between grips of a strength tester having a constant rate of traverse of 460 mm (or 18 cm) per minute in accordance with IS 9030.

C-8 ENDS AND PICKS

C-8.1 Count the ends and picks from each bag in one and two places respectively with a suitable gauge. Determine the average ends and picks per decimetre of the bags under test in accordance with 7 of IS 1963.

C-9 OIL CONTENT

C-9.1 From each bag, take one representative strip and determine oil content on dry deoiled material basis as per method given in IS 2969.

(आई एस 4744 का *दूसरा पुनरीक्षण*)
Draft *Indian Standard*
Textiles — Packaging of jute products in rolls—Specification
(Second Revision of IS 4744*)*

ICS: 59.060.10

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)
In order to ensure that the jute products reach the destination in sound condition, proper packaging with suitable packing materials is essential.in IS 2873: 1991 'Textiles Packaging of jute products in bales, is covered- Packaging of jute products in bales - specification (second revision) '.This standard gives details for the packaging of jute products in rolls to ensure adequate protection to the contents of the rolls against possible damage due to normal handling during transit.

This standard was first published in 1968 and revised in 1991. In last revision, besides other modifications, use of jute cloth as agreed between the buyer and the seller has also been permitted for the outer layer of packing.

This standard contains clauses which call for agreement between the buyer and the seller or which permit the buyer to use his option to suit his requirements. The relevant clauses are **3.3** to **3.5**, **5.1.3**, **5.1.5**, **5.1.6**, **5.1.7**, **6.1.1**, **6.1.2**, **6.1.3**, **6.1.5**, **7.1**, **7.1.1** and Table **1**.
This standard has been revised on the basis of proposal received from Export Inspection Agency, Calcutta.

This second revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

i) The Title of the standard has been updated.
ii) BIS certification clause is incorporated in this draft standard.
iii) Packing and marking clause is incorporated in this draft standard.
iv) Latest sampling clause is in corporate in the latest version of the standard.
v) ICS number is incorporated in place of udc number in this draft standard.
vi) References to Indian standards is updated.

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

This standard prescribes the requirements of packaging for different types of jute cloth in the form of rolls.

2 REFERENCE

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
IS 2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*Second Revision*)
IS 1670 : 1991	Textiles-Yarn-Determination Of Breaking load and elongation At Break of single strand (*Second Revision*)

3 TERMINOLOGY

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

3.1 Roll — A cylindrical rigid package containing one type of jute products wrapped on a suitable core, covered with roll covering with outer layer fastened in conformity with this standard.

3.2 Crisped — A term used in describing an aspect of the make-up of jute fabric; it describes a jute fabric folded lengthwise at the middle from selvedge to selvedge.

3.3 Joined Roll — A full length roll made up of two pieces joined together in a manner as agreed to between the buyer and the seller.

3.4 Full Length Roll — Jute fabric rolled into one continuous length within tolerance limits as agreed to between the buyer and the seller

NOTE — A roll containing less than full length as agreed to between the buyer and the seller is known as 'short roll' and that containing more than full length is called a 'long roll'.

3.5 Core — A cylindrical inner support made of paper, steel or wood or any other suitable material, around which the cloth is wound, the inside and outside diameter of which has been as agreed to between the buyer and the seller. It shall have sufficient strength to prevent its bending or collapsing during use.

4 PACKING MATERIALS

The packing materials for making up the roll shall satisfy the requirements specified in Table 1.

5 MAKE-UP OF PACKAGE

5.1 The cloth shall be wound into a roll form in the manner described in **5.1.1** to **5.1.7.**

5.1.1 The inner end of cloth shall be laid flat and trimmed square across the full width of the core and pasted on the core with gummed tape so that the cut edge of the cloth along one weft thread is generally parallel to the long axis of the core so as to avoid any distortion.

5.1.2 The cloth shall be generally free from caddis, threads, foreign matters. protruding yarn and other

5.1.3 Unless otherwise agreed, the tail end (visible outside end) of the cloth shall be tied, stitched or gummed to the body to prevent it from unwinding.

5.1.4 Winding of cloth on the core shall be done under suitable tension so as to produce a rigid package without damaging the texture of the fabric or the core.

5.1.5 The cloth shall be crisped and rolled only when agreed to between the buyer and the seller.

5.1.6 A marker shall protrude from one end of the roll where cloth is joined, if so required by the buyer.

Table 1 Requirements of Packing Materials

(Clauses **4** *and* **6.1.4***)*

SI No. (1)	Function (2)	Material (3)	Requirement (4)
i)	Inside Covering (See Note)	Single layer of polyethylene sheet of thickness 40 μm (23 g/m^2), Min or Mutually acceptable waterproof material	—
ii)	Roll covering	Jute cloth	Hessian fabric not less than 229 g/m^2, 38 ends/dm x 35 picks/dm
iii)	Sewing	Jute twine	Breaking load of all strands 18 kg Min (For method of test, see IS 1670 : 1970)

NOTE — In case of packaging of carpet backing fabric rolls, the inside covering of polyethylene sheet shall be invariably used, and it will be adequate to use only one layer of jute cloth.

5.1.7 The length of the cloth in rolls shall be as agreed to between the buyer and the seller and shall not be less than the length marked on the roll. The Length of cloth in metres in each roll may be stencilled as desired by the buyer at the tail end perpendicular to the selvedges, or on a separate flap or label, or in any other manner as agreed to between the buyer and the seller.

6 REQUIREMENT OF PACKAGES

6.1 The roll shall satisfy the requirements specified in **6.1.1** to **6.1.6**.

6.1.1 In the case of carpet backing fabric rolls, discs of cord board or any suitable materials as agreed to between the buyer and the seller shall be used at both ends of the roll.

6.1.2 The rolls shall be completely covered on all sides excepting the core protrusions which may also be covered, if required by the buyer.

6.1.3 A roll may be covered with a polyethylene sheet inside the roll covering if agreed to between the buyer and the seller but in the case of roll of carpet backing cloth, it shall be covered with polyethylene sheet inside the roll covering.

6.1.4 The loose ends of the roll covering shall be sewn with jute twine [see Table 1, item (iii)] about 8 cm between stitches on all sides.

6.1.5 At either end, the core shall protrude but not more than 3.5 cm or as agreed to between the buyer and the seller.

6.1.6 The rolls shall be compressed suitably avoiding excessive pressure which may cause damage to the contents.

7 MARKING

7.1 Unless otherwise agreed to between the buyer and the seller, the roll shall be stencilled with an indelible ink, of suitable colour, with the following information:

a) Indication of the source of manufacture;
b) Month and year of packing;
c) Length of the cloth rolled in metres;
d) Contract mass, in kg;
e) Roll number;
f) Specification including quality and construction; and
g) Other declarations required as per law in force.

7.1.1 Roll shall be marked on both the end-on side and the round side (see Fig. 1) unless Otherwise agreed to between the buyer and the seller.

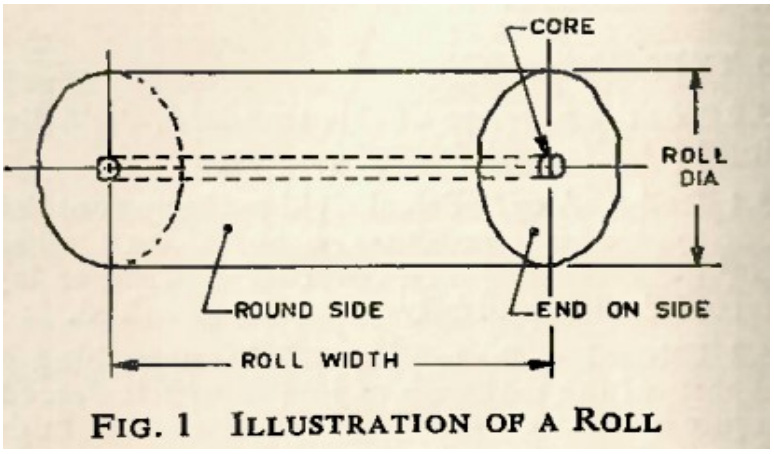


FIG. 1 ILLUSTRATION OF A ROLL

7.1.2 Each roll may also be marked with the Standard Mark**.**

7.2 BIS Certification Marking

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

2023

भारतीय मानक मसौदा
वस्त्रादि — कालीन बैकिंग फैब्रिक के लिए विशिष्टता

(आई एस 4900 भाग 1—3 का *दूसरा पुनरीक्षण)*

Draft *Indian Standard*

Textiles — Specification for Jute Carpet Backing Fabric

(*Second Revision* of IS 4900 part 1—3)

ICS: 59.060.10

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)

This standard, first published in 1969, has been revised in 1984 to take cognizance of the experience gained and the developments that have taken place in the use of jute carpet backing fabrics. In this revision one variety of primary backing fabrics and two varieties of secondary backing fabrics have been incorporated. The breaking load values of warp and weft of primary backing fabrics have also been modified.

The revised standard is published in three parts as under:
Part 1 — gives general information and general requirements of jute carpet backing fabric;

Part 2 — covers the specific requirements of 5 varieties of primary backing fabrics of 237,271, 305, 339 and 407 g/m^2; and

Part 3 — covers specific requirements of two varieties of secondary backing fabric of 186 and 203 g/m^2. Jute carpet backing fabric of 237 g/m^2 is also sometimes used as secondary backing.

This second revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

xiii) The Title of the standard has been updated.
xiv) BIS certification clause is incorporated in this draft standard.
xv) Packing and marking clause is incorporated in this draft standard.
xvi) Latest sampling clause is in corporate in the latest version of the standard.
xvii) ICS number is incorporated in place of udc number in this draft standard.
xviii) References to Indian standards is updated.

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.

PART 1 GENERAL

1 SCOPE

1.1 This standard (Part 1) covers general requirements and information regarding terminology, packing and marking, sampling and inspection and criteria for conformity of the jute carpet backing fabric woven in both plain and sateen weaves.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
IS 7075:1983	Specification for cardboard tubes used as cores for jute fabric rolls (*First revision*)
IS 4744:1991	Textiles –Packaging of jute products In rolls-Specification (*First Revision*)
IS 14466 : 1997 ISO 8498	Fabrics — Description Of Defects —Vocabulary
IS 1963 : 1981	Method for determination of threads per unit length in woven fabrics (*Second Revision*) (Reaffirmed April 1993)
IS 2387:1969	Methods for determination of weight of jute fabrics (*First Revision*).
IS 1969 (Part 1) : 2018 ISO 13934-1:2013	Textiles — Tensile Properties of Fabrics Part 1 Determination of Maximum force and Elongation at Maximum Force Using the Strip Method (*Fourth Revision*)
IS 2969:1974	Method for determination of oil content of jute yarn and fabrics (*First Revision*) (Reaffirmed March 1993)
IS 4900 (Part 1) – 1984	Specification For Jute Carpet Backing Fabric Part 1 General (*First Revision*)

3 TERMINOLOGY

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

3.1 Lot — The quality of carpet backing fabric purporting to be of one definite type, width and quality, and packed in rolls of specified lengths delivered to one buyer against one despatch note.

3.2 Roil — A The cylindrical rigid package containing one type of jute carpet backing fabric wrapped on suitable core (see IS: 7075) and covered with roll covering with outer layer stitched properly, in conformity with IS: 4744

3.2.1 *Joint-Roll —* A full length roI1 made up of two pieces of carpet backing fabric joined together in such a way to enable smooth passage through the processing machinery.

NOTE — The joints should be indicated by flag at the side of the roll.

3.3 Contract Mass (Roll) — The mass as obtained from the specified length per roll, nominal width and mass per square metre of fabric.

3.4 Fabric Woven — A structure produced by interlacing two or more sets of yarns where the yarns pass each other essentially at right angles and one set of yarns is parallel to the fabric axis.

3.4.1 *Woven-Plain*— The type of weave in a cloth in which each warp thread passes alternately over and under each weft thread.

3.4.2 *Woven-Sateen* —A fabric with a lustrous surface obtained by a sateen weave with lower warp sett and higher weft sett.

3.5 Fabric Backing

3.5.1 *Primary Backing* — The base fabric on which carpet face pile yarns are inserted, stitched or anchored to make a carpet.

3.5.2 *Secondary Backing* — The fabric laminated/bonded to the back side of a woven or tufted carpet pile floor covering forming an underlay.

3.6 Length of Roll — The distance from one end of a fabric to the other, measured parallel to the selvedge while the fabric is free from folds or wrinkles.

3.7 Width, Fabric — The distance from one selvedge to another measured perpendicular to the selvedges while the fabric is free from folds or wrinkles.

3.8 Mass Fabric — Mass per unit area expressed in grams per square metre (ounces per square yard).

3.9 Breaking Load — The maximum load applied to a specimen in a tensile test carried to rupture.

3.10 Oil Content (Extractable Matter) — Ken-fibrous oily or waxy material in or on the yarn, that can be removed by specific organic solvents. The matter extracted from jute backing includes added processing oils and natural fats and waxes.

3.11 Standard Atmosphere for Testing

3.11.1 *Standard Temperature Atmosphere* —Air having a relative humidity of 65 ± 2 percent and a temperature of 20 ± 2°C.

3.11.2 *Standard Tropical Atmosphere* — Air having a relative humidity of 65 ± 2 percent and a temperature of 27 ± 2°C.

NOTE — When testing at international level is involved, a standard temperature of 20 ± 2ºC, or by agreement 27 ± 2°C may be used.

3.12 Bow — The greatest distance parallel to the selvedges, between a weft yarn and a straight line drawn between the points at which this yarn meets the selvedges. The straight line connecting the selvedges is perpendicular to both. If the line is not perpendicular to both selvedges, the fabric contains bow and bias.

3.13 Bias (Skewness) — The distance parallel to and along the selvedge between the point at which a weft yarn meets one selvedge and a perpendicular from the point at which the same yarn meets the other selvedge.

3.14 Combined Bow and Bias — The greatest distance parallel to the selvedges between a weft yarn and a straight line drawn perpendicular from the point at which the same yarn meets the selvedge. The selvedge side from which the perpendicular is drawn is that which results in no intersection with the weft being measured.

3.15 Weft (Filing) Fall-Off — The difference between the perpendicular distance from any point on a weft yarn to a line perpendicular to the selvedges and the same measurement made 300 mm (12 in) further along the width.

4 GENERAL REQUIREMENTS

4.1 Jute carpet backing fabric shall be woven with jute yarn in plain or sateen weave. The fabric shall be of generally uniform construction. Its selvedge shall be firm, straight and may contain cotton threads.

4.2 Fabric Defects — The fabric shall be:

a) free from mildew and oil stains; and

b) reasonably free from weft bars, multiple broken threads, holes, smash, and floats.

4.2.1 A reference may be made to IS: 4125 for details of these flaws.

5 PACKING AND MARKING

5.1 The jute carpet backing fabric shall be packed in rolls and rolls marked as laid down in IS: 4744 or as specified in an agreement between the buyer and the seller. The length of roll shall be 'specified length ± 5 percent' for 90 percent of the rolls in a lot (or contract). In the remaining 10 percent of the rolls in a lot (or contract) the length shall be specified length ±10 percent'.

5.1.1 The roll may also be marked with the IS1 Certification Mark.

NOTE — The use of the IS1 Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The IS1 Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by IS1 and operated by the producer. ISI marked products are also continuously checked by IS1 for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the IS1 Certification Mark may be granted to manufacturers or processors.

5.2 BIS Certification Marking

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

6 SAMPLING AND INSPECTION

6.1 Unless otherwise agreed to between the buyer and the seller, the procedure for sampling shall be as given in Annex A and the procedure for testing and inspection as given in Annex E.

7 CRITERIA FOR CONFORMITY

7.1 The lot shall be considered as conforming to the requirements of the standard, if the following conditions are satisfied on following ANNEX A and B:

a) The measured length of each roll under test is within specified (marked) length ±5 percent;

b) The average oil content (extractable matter) percent of the sample under test does not exceed the specified percentage;

c) The average warp way and weft way breaking load values are not less than the corresponding breaking load values specified;

d) The average mass* per square metre and ends and picks per decimetre of the rolls under test are in accordance with the requirements specified;

e) The average bow, bias, combined bow and bias and weft fall-off of the rolls under test are in accordance with the requirements specified; and

f) The average width of each of the rolls under test is in accordance with the requirement specified.

ANNEX A

(Clauses **5.1** *and* **6.1***)*

SAMPLING

A-1 SAMPLING PROCEDURE

A-1.1 The following minimum number of rolls and samples shall be taken at random from the lot and subjected to corresponding tests (see Annex B).

A-2 TEST SAMPLE

A-2.1 For assessing the conformity of the rolls to the requirements of this standard, the number of rolls to be selected from the lot shall be in accordance with the following table:

No. of Rolls in the Lot	No. of Rolls to be Drawn and Opened for inspection
1 to 20	1
21 to 50	2
51 to 100	3
100 to 200	4
201 and above	4 + 1 for every 100 rolls or part thereof above 200 rolls

A-2.2 From the rolls selected as above, the test sample shall be drawn as follows:

Test	Test Sample
Ends and picks	All the rolls selected as in **A-2.1**
Width	
Bow, bias, combined	
bow and bias	
Mass per square metre	
Breaking load	
Length per roll	
Tare mass (Packing materials and core)	
Oil content	One roll

ANNEX B

(Clauses **5.1, 6.1** *and* **A-1.1***)*

METHODS OF TEST AND INPECTION

B-l Tests may be carried out in prevailing atmospheric conditions with relative humidity varying from 40 to 90 percent.

B-l.1 Tests by buyers may be carried out in standard tropical atmosphere (see **2.11.2**) or standard temperate atmosphere (see **2.11.1**) as agreed to between the buyer and the seller. Prior to tests for the determination of ends and picks, breaking load and oil content, the test specimens shall be conditioned to moisture equilibrium in the standard atmosphere. It may be assumed that moisture equilibrium has been reached, when, after free exposure of the specimen to air in motion the change in mass of the specimen at successive intervals of not less than 4 hours does not exceed 0.1 percent of the specimen mass.

B-2 LENGTH

B-2.1 Scope — This method for the measurement of fabric length is applicable to rolls of jute backing. The following three approved methods of measuring length are:

a) Hand method,
b) Drum method, and
c) Clock method.

B-2.2 The choice of the method of measurement in determining the length of roll of fabric shall be agreed upon by the parties concerned.

B-2.3 Summary of Methods — The length of a roll of jute backing fabric is measured from one end of the roll to the other, using a graduated measuring device.

B-2.4 Uses and Significance

B-2.4.1 Jute backing fabric is furnished in rolls of length as agreed upon by the manufacturer and consumer. The length of roll should be a multiple of the length of rolls of carpet made from the roll of jute backing. Deviation from the stipulated length creates economic losses for the carpet manufacturer.

B-2.4.2 The hand method is the only method by which the length of the roll of jute backing fabric may be measured free from tension. This method is the reference method to which all other methods shall be compared for the establishment of their accuracy.

B-2.4.3 The drum and the clock methods may be used for measuring the length of jute backing fabric, provided the accuracy of each method is such that, no discrepancy greater than 0.5 percent exists between the results of these methods and length as measured by the hand method.

B-2.5 Apparatus

B-2.5.1 *Racks and Mandrels* — For unwinding the roll of fabric.

B-2.5.2 *Flat Surface* — At least 3 m (3 yd) long, and at least 150 mm (6 in) wider than the width of fabric to be measured.

B-2.5.3 Steel *Measuring Tape* — Accurate within 0.1 percent at length over 1 m (36 in).

B-2.5.4 *Measuring Drum with Tensioning* Devices **—** Length and drum shall be at least 150 mm (6 in) more than the width of the cloth to be measured. The periphery shall be accurately known within 0.1 percent. The drum shall be covered with fabric or cork, and the area of contact sufficient to prevent slippage. It shall be motor driven and the contact controlled by one or more free-running jockey rolls set close to but not touching the drum.

B-2.5.5 *Measuring Clock* **—** Which can be attached to operating machinery. A device consisting of a pair of wheels mounted 75 to 100 mm (3 to 4 in) apart on a free-running common axle which is connected to a counting mechanism graduated to read in metres and decimetres (yards and declyards). The surfaces of the wheels are about 12 mm (0.5 in) wide and covered with cork, or other friction materials, ground to a circumference known accurately within 0.1 percent. The length of fabric in a roll is read directly on the counter.

B-2.6 Calibration of Apparatus

B-2.6.1 *Measuring Tape*

B-2.6.2 *Measurement of Measuring Drum Periphery* **—** Pass a ribbon of light weight paper, about 12 mm (0.5 in) wide, or a flexible fine wire around the drum so that the paper or wire contacts the drum at all points of periphery. Cut the wire or paper at the overlap. Measure the paper ribbon or ***wire*** whilst free from tension *on the* flat surface (see **B-2.5.2)** with the help of tape (see **B-2.5.3**) and record the length. Make three measurements of the periphery, one at a point approximately equidistant from the ends of the drum and one 300 mm (12 in) from each edge. Average the three measurements and use this value as the drum periphery.

B-2.6.3 *Calibration of Measuring Clock* — Run the clock on the surface of a drum of known circumference (see **B-2.5.4**) for a convenient number of revolutions. Compare the length read from the clock with the length computed from the drum circumference and number of revolutions. The difference between the two values is the calibration error.

B-2.7 Procedure

B-2.7.1 *Hand Method* — Lay out the fabric flat, without tension, on a horizontal surface at least 3 m (3 yd) long. Measure the length parallel to the selvedge's using measuring tape (see B-**2.5.3**) using pins as marks. Lay out successive lengths at least 3 m (3 yd) long and insert pins. Total the lengths to get total fabric length to the nearest decimetre (deciyard).

B-2.7.2 *Drum Method* — Run the roll of fabric over a measuring drum with sufficient tension to keep the fabric running true and flat without slippage. Read the length to the nearest decimetre (deciyard) from the dial or counter geared to the drum. Adjust the observed length for any calibration error (see **B-2.6.3**).

B-2.7.3 *Clock Method*— Mount the device (see **B-2.5.5**) on any machine designed to handle continuous lengths of cloth in such a way that the moving fabric will turn the measuring wheels. Read the length to the nearest decimetre (deciyard) directly from the counter. Adjust the observed length for any calibration errors (see **B-2.6.3**). This length represents the length under whatever tension prevailed while the fabric was running.

B-2.8 Report — Report the following information:

a) The method used to measure length,

b) The fabric length in metres (yards) to the nearest decimetre (deciyard), and

c) The atmospheric conditions during testing if the conditions were different from the standard atmosphere for testing.

B-3. WIDTH

B-3.1 Scope

B-3.1.1 This method for the measurement of fabric width is applicable to rolls of fabric or to a sample removed from roll.

B-3.1.2 The choice of the method of measurement in determining the width of jute backing fabric shall be as agreed to between the buyer and the seller.

B-3.2 Summary, of Methods — The width of fabric is measured directly using a steel tape (see **B-2.5.3**) graduated in millimetres (and also in l/32 inch divisions). Width measurements include the selvedge's.

B-3.3 Uses and Significance

B-3.3.1 Jute backing fabric is sold in widths agreed upon by the manufacturer and consumer. Significant departure from specified widths creates economic losses for the carpet manufacturer.

B-3.3.2 Following three procedures are provided for measuring the width of jute backing fabric:

a) Measurement on a roll free from tension,

b) Measurement on a roll at running tension, and
c) Measurement of a full width sample cut from a roll.

NOTE—Measurements made on a roll free from tension may not be identical with measurements made on a roll under tension.

B-3.4 Apparatus — Racks, mandrels, flat surface and measuring tape (see **B-2.5.1, B-2.5.2** and **B-2.5.3**).

B-3.5 Procedure

B-3.5.1 ***For Roll Free from Tension*—** Measure the width on a smooth flat surface with the fabric laid out flat without tension in any direction. Use a tape as described in **B-2.5.3** Measure distances perpendicular to the selvedges to the nearest 3 mm (one-eight inch). Repeat the measurements in at least 5 places along the roll from 24 to 50 m (25 to 50 yd) apart. Make no measurement within 10 m (10 yd) from the end of a roll.

NOTE — Perpendicularity of tape to selvedge is important. In a fabric with a width of 152 cm (60 in), a deviation of 4" will produce an error of 3 mm (one eighth inch).

B-3.5.2 *For Roll Running Under Tension* — When agreed upon by the parties concerned, determine the width at the upwind of the tufting machine or at a rolling up machine. Make measurements of width from 25 to 50 m (25 to 50 yd) apart as described in **B-3.5.1** Make no measurement within 1 m (1 yd) from the end of a roll.

B-3.5.3 *For Sample Removed from a Roll*

B-3.5.3.1 *Cut* the sample to be measured from a roll, full width and at least 1.5 m (1.5 yd) in length. Take the sample not less than 1 m (1 yd) from the end of the roll.

B-3.5.3.2 Make 5 or more measurements on the sample following the procedure described in B-3.5.1. Do not make measurements closer than 150 mm (6 in) from the cut ends.

B-3.6 Calculation — Calculate the average of the width measurements made on the roll or the sample cut from a roll to the nearest 3 mm (one eighth inch,).

B-3.7 Report — Report the following information:

a) The method used to measure width, if rolls were used;

b) The average of the measurements made on the roll or the sample to the nearest 3 mm (one-eighth inch); and

c) The number of measurements used in calculating the average.

B-4 ENDS AND PICKS

B-4.1 Count the number of warp threads (warp) and weft threads (weft) per 250 mm (10 in) in accordance with IS : 1963.

B-4.2 Uses and Significance — The number of ends and picks in a jute backing fabric affects the surface appearance of a carpet. Therefore, knowledge of the ends and picks per unit length is important to the carpet manufacturer.

B-5 MASS

B-5.1 Carry out the test as detailed in IS: 2387.

B-5.2 Uses and Significance

B-5.2.1 Mass of fabric in relation to specified mass is a measure of value received for the cost and is indicative of satisfactory construction. Hence, fabric mass is of importance to both buyers and sellers of jute backing.

B-5.2.2 The mass determined from a roll is the mass of the unconditioned fabric. If there is a dispute on the mass of fabric between the manufacturer and the purchaser, the roll shall then be conditioned in the standard atmosphere prior to weighing. Mass determined from a roll includes selvedges.

B-6 BREAKING LOAD

B-6.1 Carry out the test as detailed in IS: 1969.

B-6.2 Uses and Significance

B-6.2.1 The breaking load of the jute backing fabric is measure of its ability to withstand the forces imparted to the pile floor covering during wall-to-wall installation and to withstand the loads imposed by heavy traffic in public installation of carpets.

B-6.2.2 Pendulum—type constant—rate—of—traverse testers operated at 300 mm/min (12 in/min) are specified because of their common use in the industry, but the use of constant—rate—of—elongation type instruments or other instruments with lower inertia errors may be used by mutual agreement between the buyer and the seller.

B-7 OIL CONTENT

B-7.1 Carry out the test as detailed in IS: 2969.

B-7.2 Uses and Significance—Oil is added to jute fibre to facilitate spinning of yarn used in backing fabric. The added oil may migrate into the pile of a floor covering depending on the nature of the finish on the jute yarn, pile fibre content of the floor covering, surface configuration of the pile yarns, conditions of use of the floor covering, and other factors. It has been found that if extractable matter in conventional jute yarn exceeds 2 percent, the migration of oil into the pile yarn will result in a visible increase in rate of soiling of the floor covering if the pile fibre is cotton or rayon. Consequently, a knowledge of the amount of extractable matter in jute backing fabric is important to both manufacturer and purchaser.

B-8 WEFT DISTORTION (BOW, BIAS, COMBINED BOW AND BIAS, AND WEFT FALL-OFF)

B-8.1 Scope — This method covers the measurement of weft distortion in jute backing fabric. It is applicable to all woven jute backing fabrics.

B-8.2 Summary of Method

B-8.2.1 Weft distortion is classified into four types: bow, bias, combined bow and skewness, and weft fall-off. There are two conditions of measurement (a) unrolling a portion of the roll, laying it flat without tension on a horizontal surface and making measurements, or (b) by measurement

on the roll at the back of the rolling machine. This method is most suitable for the backing manufacturer.

B-8.2.2 A reference line perpendicular to the selvedges is drawn on the fabric. The distortion of a weft yarn is measured in relation to the reference line.

B-8.3 Significance — Weft distortion in jute backing may result in distortion of the pattern of the pile surface tufted into it.

B-8.4 Conditioning — The roll need not be conditioned or preconditioned for measurement of filling distortion.

B-8.5 Apparatus

B-8.5.1 Racks and mandrels for unwinding the roll of fabric.

B-8.5.2 Flat surface at least 3 m (3 yd) long, and at least 150 mm (6 in) wider than the fabric to be measured.

B-8.5.3 *Measuring Tape or Line —* Long enough so that a perpendicular can be dropped from a point from a point on one selvedge to the opposite point (plumb lines).

B-8.6 Procedure.

B-8.6.1 *Measurement on a Flat Surface*

B-8.6.1.1 Mount the roll to be measured on a mandrel and racks. Rotate the roll without pulling on the fabric. Gently lay out 3 m, (3 yd) of cloth on a smooth horizontal surface without tension in any direction.

B-8.6.1.2 Trace one weft thread across the full width using a soft pencil or other suitable marker.

B-8.6.1.3 Measure bow by drawing a line AC (see Fig. 1A) between the points of intersection of the marked filling thread and the selvedges. This line must be perpendicular to each selvedge. Assume bow of a pick corresponds to the curved line ABC of Fig. 1A. Point *B* is the greatest distance of filling pick *ABC* from the line *AC.* Draw a perpendicular from point B to the line *AC* intersecting it at *D.* Measure the distance *BD* to the nearest 2.5 mm (0.1 in).

B-8.6.1.4 Measure bias by tracing the position of one pick as directed in B-**8.6.1.2**. Assume that this position corresponds to the line *AC* in Fig. 1B. Draw a line perpendicular to the selvedge across the fabric from the point C, where the marked pick meets one selvedge, meeting the other shown in Fig. 1B, to the nearest 2.5 mm (0.1 in).

B-8.6.1.5 Measure combined bow and bias by tracing the position of one pick, as directed in B-8.6.1.2. Assume that this position corresponds to the line *ABC* in Fig. 1C. At C, where the pick meets the selvedge, draw a perpendicular across the fabric meeting the opposite selvedge at point *D.* Point *B* is the greatest distance of the pick *ABC* from the line *DC.* Draw a perpendicular from point *B* to the line *DC.* Measure the distance *BE* between point *B* and the intersection *E,* of the perpendicular and line *DC* to the nearest 2.5 mm (0.1 in).

B-8.6.1.6 Measure weft fall-off on a selected filling yarn *AC (see* Fig. 1D). Draw a reference line (the reference line may be drawn using a chalked string) perpendicular to the selvedges. At a point *B* on the selected weft yarn, draw a perpendicular to the reference line. Measure the distance along the perpendicular from the point to the reference line to the nearest 2.5 mm (0.1

in). From the point of intersection *E* measure 300 mm (12 in) along the reference line. At the point *E* erect a perpendicular to the reference line such that it intersects the selected weft yarn. Measure the distance along the perpendicular between the reference line and the selected weft. The difference between the two measurements is the weft fall-off.

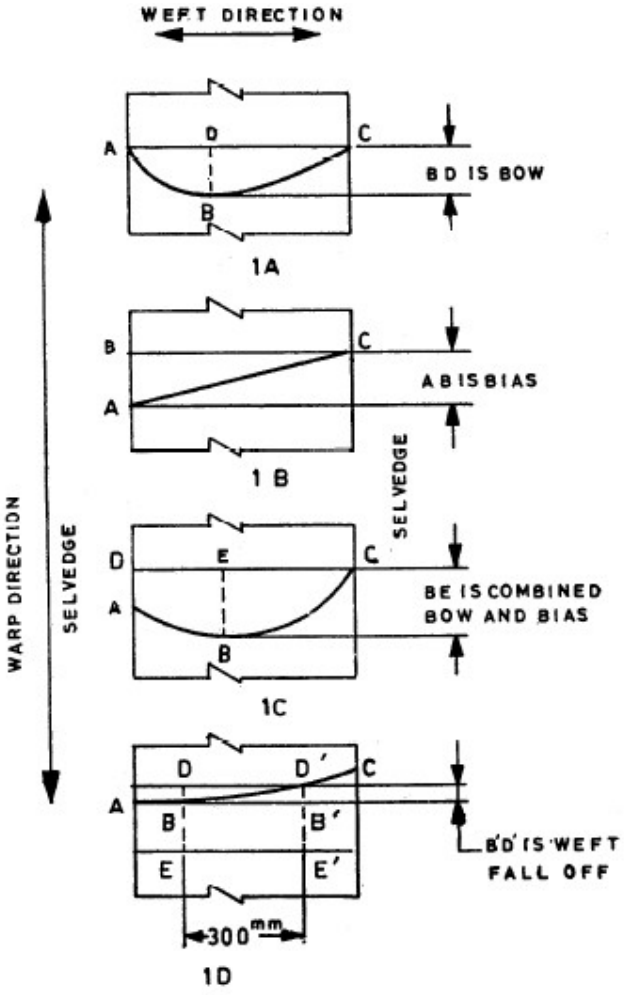


FIG. 1 DETERMINATION OF BOW AND BIAS

B-8.6.2 Measurement on a Roll

B-8.6.2.1 Mount the roll to be measured at the back of the rolling machine and measure bow, bias, combined bow and bias and falling fall—off on the roll.

B-8.6.2.2 To determine the reference line from which distortions of the weft are measured, drop plumb lines at both ends of the roll to the axis of the roll. Using a soft pencil, trace a line across the roll between the two plumb lines.

B-8.6.2.3 Make determinations of bow, bias, combined bow and bias and weft fall-off described in **B-8.6.1.3, B-8.6.1.4, B-8.6.1.5** and **B-8.6.1.6**. In doing so, the weft yarn selected for measurement shall for bow (**B-8.6.1.3**), intersect the reference line at both selvedges; for bias and combined bow and bias intersect the reference line at one selvedge only.

B-8.6.3 Measurement should be made at five different places with a minimum distance of 27 m (30 yd) between ***two*** adjacent readings along the length of the fabric.

B-8.7 Calculation of Results

B-8.7.1 If the weft distortion at any point of measurement is not on the same side of reference line, measure weft distortion at both the sides of reference line separately and add them to have the average value.

B-8.7.2 Compute the average of the five measurements of weft distortion to the nearest 2.5 mm (0.1 in).

B-8.8 Report - Report the following information:

a) The method of measurement that is, on a flat surface or on a roll;

b) The pattern of weft distortion observed at each measurement;

c) The average value as obtained in **B-8.7.2.**

PART 2 237, 271, 305, 339 AND 407 g/m^2

1 SCOPE

1.1 This standard (Part 2) prescribes constructional details and other requirements of the following varieties of plain or sateen woven jute carpet backing fabric of such widths as agreed to between the buyer and the seller:

237 g/m^2 (7 oz/yd^2),
271 g/m^2 (8 oz/yd^2),
305 g/m^2 (9 oz/yd^2),
339 g/m^2 (10 oz/yd^2), and
407 g/m^2 (12 oz/yd^2).

2 SPECIFIC REQUIREMENTS

2.1 The jute carpet backing fabric shall conform to the requirements laid down in Table 1.

3 OTHER REQUIREMENTS

3.1 In respect of the requirements not specified here, requirements given in Part 1 of this standard shall apply

TABLE 1 REQUIREMENTS OF PRIMARY JUTE CARPET BACKING FABRIC

(Clause **2.1***)*

SI No.	Characteristic	Requirement					Method of Test (see IS : 4900 (part 1)
		237	271	305	339	407	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	Mass, g/m^2 (oz/yd^2) based on roll mass	237(7)	271(8)	305(9)	339(10)	407(12)	B-5
	Tolerance (± 5 percent)						
	g	± 12	± 14	± 15	± 17	± 20	
	(oz)	(± 0.5)	(±0.4)	(±0.45)	(±0.5)	(±0.6)	
ii)	Ends/dm (warp yarns/in) Tolerance	51(13)	55(14)	59(15)	59(15)	71(18)	B-4
iii)	Picks/dm (filling yarns/in)	39(10)	47(12)	51(13)	51(13)	59(15)	B-4
	Tolerance	± 3 percent for all varieties					
iv)	Width (average)	As Agreed					B-3
	Tolerance	$^{+1.5}_{-0.0}$ percent (Within and between rolls for all varieties					
v)	Breaking load [grab method 2.5 x 7.5 cm (1 x 3 in)] kgf (lb) : Min, Average						
	Warp way	35(78)	39(85)	45(100)	46(102)	61(135)	
	Weft way	22(48)	32(70)	34(75)	41(90)	50(110)	
vi)	Length	Marked length ± 1 percent					B-2
vii)	Oil content (extract table matter)	2.0 percent, *Max*					B-7
viii)	Weft distortion bow, bias, combined bow and bias, average, *Max*						
	a) up to and including 4 m backing width	75 mm (3 in)					See note
	b) Above 4 m backing width	100 mm (4 in)					
	Tolerance (weft fall off) [see Fig. 1 D in B-8]	40 mm (1.5 in)					See note

PART 3 186 AND 203 g/m^2

1 SCOPE

1.1 This standard (Part 3) prescribes constructional details and other requirements of the following varieties of plain or sateen woven jute carpet backing fabrics of such widths as agreed to between the buyer and the seller: 186 g/m^2 (5.5 oz/yd^2), and 203 g/m^2 (6 oz/yd^2).

2 SPECIFIC REQUIREMENTS

2.1 The jute carpet backing fabrics shall conform to the requirements. laid down in Table 1.

3 OTHER REQUIREMENTS

3.1 In respect of the requirements not specified here, requirements given in Part 1 of this standard shall apply.

TABLE 1 REQUIREMENTS OF SECONDARY JUTE CARPET BACKING FABRIC

(Clause **2.1***)*

SI No.	**Characteristic**	**Requirements**		**Method of Test (see IS : 4900 (part 1)**
		Variety 186	Variety 203	
(1)	(2)	(3)	(4)	(5)
i)	Mass, g/m^2 (oz/yd^2) based on roll mass	186 (5.5)	203(6)	B-5
	Tolerance (± 5 percent)			
	g	± 9 (0.28)	± 10 (0.33)	
	(oz)			
ii)	Ends/dm (warp yarns/in)	35 (9)	39 (10)	B-4
	Tolerance	$^{+3}_{-2}$ percent		
iii)	Picks/dm (filling yarns/in)	35 (9) or 31 (8)	39 (10)	B-4
	Tolerance	± 3 percent		
iv)	Width (average)	As Agreed		B-3
	Tolerance	$^{+1.5}_{-0.5}$ percent (within and between rolls for all verities)		
v)	Length	Marked length		B-2
	Tolerance	± 1 percent		
vi)	Oil content	2.0 percent, *Max*		B-7

vii)	Weft distortion bow, bias, combined bow and bias, average, *Max*			
	a) up to and including 4 m backing width	100 mm (4 In)		(see note)
	b) Above 4 m backing width	125 mm (5 in)		

NOTE — No individual reading shall exceed 190 mm (7.5 in).

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDRADS

Draft for comments only Doc No.: TXD 03 (XXXXX)
XXXX

2023

(*Not to be reproduced without permission of BIS or used as Standard*)

भारतीय मानक **मसौदा**

वस्त्रादि — रेत भरने के लिए बोरे — विशिष्टि

(आई एस 9685 का *दूसरा पुनरीक्षण*)

Draft *Indian Standard*

Textiles — Sand Bags — Specification

(*Second Revision* of IS 9685)

ICS:

Jute and Jute Products Sectional Committee, TXD 03	last date for receipt of comments is XXXX 2023

FOREWORD

(Formal clauses will be added later)

This standard first published in 1981 has been revised in 2002 to align with the latest specifications IND/TC/2060(e) 'Specification for sand bags, unproofed' and IND/TC/2059(h) 'Specification for sand bags, cuprammonium – Proofed', issued by the Ministry of Defence, Government of India. However, instead of cuprammonium proofing as given in Defence specification, rot proofing has been specified by copper naphthenate process which is normally followed in the industry.

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

This second revision has been made in the light of experience gained since its last revision and to incorporate the following changes:

i) The Title of the standard has been updated.
ii) BIS certification clause is incorporated in this draft standard.
iii) Packing and marking clause is incorporated in this draft standard.
iv) Latest sampling clause is in corporate in the latest version of the standard.
v) ICS number is incorporated in place of udc number in this draft standard.

vi) References to Indian standards is updated.

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

This standard prescribes constructional details and other requirements of sand bags used as temporary barricades after filling with sand.

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

For the purpose of this standard, the definitions given in IS 5476 shall apply.

4 MANUFACTURE

4.1 Sacking

The bags shall be made from one continuous piece of 229 g/m^2 hessian conforming to IS 2818 (Part 2) withdrawn. Each piece may be folded width wise or lengthwise, but the bag length shall be in the direction of warp.

4.2 The bag shall have a vent of 8 ± 1 cm at the mouth along the side seam. The ends of the machine sewing shall be cross-stitched by hand to prevent any extension of vent. A tying cord, 60 ± 1 cm long, preferably conforming to variety No. 2 of IS 9112 shall be secured from its middle to the bag immediately below the vent and a knot applied over the point of attachment to prevent detachment. The knot applied over the point of attachment to prevent detachment. The two free ends of the tying cord shall be knotted to prevent unravelling.

4.3 Seam

The sides of the bags shall be sewn with overhead or herakles stitches on selvedge through two layers of sacking as specified in **5.1.4** of IS 9113. The number of stitches per 10 cm shall be 12 ± 1.

4.4 The finished bag shall have either a hem or selvedge at the mouth. For hemming the provisions of **5.1.3** of IS 9113 shall apply.

4.5 Joined Bag
Provisions of IS 9113 shall apply.

4.6 Freedom from Defects

The bags shall be generally free from weaving and sewing defects such as missing picks, holes, cuts, tears, floats, crushed selvedges, spots, stains, gap stitches, loose ends and frayed ends which affect the performance of the bag.

5 SPECIFIC REQUIREMENTS

5.1 The bags shall conform to the requirements specified in Table 1.

5.2 Rot—Proofing

If required by the buyer, the sand bags shall be rot-proofed by copper naphthenate process as per **4.2** of IS 11662.

5.3 The bales containing the bags shall conform to the requirements specified in Table 2.

5.4 The contract moisture regain shall be 16 percent.

6 PACKING

The bags shall be packed in bales as prescribed in IS 2873 or as specified in the agreement between the buyer and seller.

7 MARKING

7.1 The bales shall be marked as prescribed in IS 2873.

Additional markings shall be made as stipulated by the buyer or required by the regulation or law in force.

7.2 BIS Certification Marking

The bales may also be marked with the Standard Mark.

7.2.1 *BIS Certification Marking*

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

8 SAMPLING AND CRITERIA FORCONFORMITY

The sampling procedure and criteria for conformity as specified in IS 9113 shall be followed.

Table 1 Particulars of Bags

(*Clause* **5.1**)

Sl No. (1)	**Characteristic** (2)	**Requirement** (3)	**Tolerance** (4)	**Method of Test, Ref to Cl No. of IS 9113** (5)
i)	Dimensions, cm (*see* Note): a) Outside length b) Outside width	 84 36	 +3 -0	8.3.2
ii)	Corrected mass per bag, g: a) Unroofed b) Proofed	 160 180	 +10 percent -5	8.5.2
iii)	Average breaking load of seam [ravened strip method, [5 cm × 20 cm] *Min*, N (kgf): Warp way Weft way	 215(22) 215(22)		8.7
NOTE—The buyer and the seller may agree to the dimensions other than those specified above. The tolerance of +3 cm shall apply on the dimensions, The mass of such bag maybe calculated of ± 10 percent on the bag mass shall be permissible. -0				

Table 2 Requirements of Packed Bales

(*Clause* **5.3**)

Sl No. (1)	**Characteristic** (2)	**Requirement** (3)	**Method of Test, Ref to Cl No. of IS 9113** (4)
i)	Total number of bags per bale (*see* Note)	250	8.9
ii)	Number of joined bags per bundle of 25 bags	1	do
iii)	Corrected net mass of a bale	Not less than the contract mas	8.1
iv)	Moisture regain, percent, *Max*	17	8.2
v)	Oil content on dry deoiled material basis, percent, *Max*	3.0	8.8
NOTE – The number of bags per bale shall be 250 or as specified in an agreement between the buyer and the seller.			

ANNEX A

(*Clause* **2**)

LIST OF REFERRED STANDARDS

IS No.	*Title*
2818 (Part 2): 1971	Indian Hessian : Part 2305 And 229 G/M^2 At 16 Percent Contract Regain (*First Revision*)
2873:1991	Textiles — Packaging Of Jute Products In Bales — Specification (*Second Revision*)
5476:1986	Glossary Of Terms Relating To Jute (*First Revision*)
IS 1912 : 2023	Textiles — Country Jute Twine — Specification (*Third Revision*)
IS 9113 : 2012	Textiles — Jute Sacking — General Requirements (*Second Revision*)
11662:1986	Specification For Preservative Treatments Of Textiles

ANNEX 13

(Item 6.2)

REVIEW OF PUBLISHED STANDARDS/PRE-2000 STANDARDS

a) Comments from Jute Commissioner Office/IJMA, Kolkata

THE PROPOSALS FOR REVISION OF PRE-2000 STANDARDS

Sl. No.	IS No.	Title	Decision of the panel constituted under TXD 03 Sectional Committee its 39th meeting dated 01.09.2023 (Agenda Item No. 6.1)	Proposal for revision received from IJMA (in consultation with Stakeholders)
1	IS 14342 : 1996	Textiles - Jute yarn/twine - Packaging code.	IJMA and the other stakeholders proposed that the standard may be reaffirmed, as the product is still in use. ***Decision of panel*:** The panel decided that **IJMA may review** the standard in consultation with various user agencies of the standard i.e. Inspection Agencies, industry representative, etc. and furnish a report to the panel regarding necessary amendments/ modifications required for the standard, based on present needs and expectations.	**Clause 3.3 Hank** Jute yarn reeled as skein having circumference of 229 cm and weight 1000g or as agreed between Buyer & Seller.
2	IS 1943 : 1995	Textiles – A-twill jute bags (second revision).	1) The representative from the inspection agency SGS informed that the standard is now being used by them for pre-dispatch inspection of the A-Twill bags meant for export; and also opined that standard may be reviewed and revised with respect to bag dimension and other parameters. 2) The representative from IJMA stated that the bag is meant to be used by the sugar industry to fulfil the requirements of JPM Act, 1987 and accordingly the standard may be retained after due review. 1) Representative from ISMA requested for some time for furnishing necessary comments from their end on the scope and functional requirements of this standard. ***Decision of panel*:** The panel agreed to the request of ISMA and requested them to furnish their comments preferably within 15 days; and also decided to keep the decision on review and revision of the said standard as may be necessary, till the comments from ISMA are obtained.	**IJMA** is pursuing the matter with ISMA and inputs from ISMA are awaited.

Sl. No.	IS No.	Title	Decision of the panel	Proposal for revision received from IJMA (in consultation with Stakeholders)
3	IS 2566 : 1993	Textiles – B-twill jute bags for packing food-grains – Specification (third revision)	***Decision of panel*:** The panel decided that the **standard may be reviewed by IJMA** in consultation with other stakeholders for necessary amendments / revisions as may be required, based on present needs and expectations.	**Table 1 –** Requirements of B-Twill Jute Bags for Foodgrains – Point(ii) - Tolerance for Corrected mass, percentage +8/-6
4	IS 3667 : 1993	Textiles – B-twill jute cloth – Specification (second revision)	1) Representative from IJMA pointed out that as per the existing statute, commercial (open-market) transaction of B-Twill sacking cloth may not be permitted, and as such this standard may not be relevant and may be withdrawn. 2) Representative from JCO however pointed out that apart from 580 gm B-Twill bags meant for supply to government agencies; there are other varieties of twill sacking jute bags of different constructions, which are being produced in the decentralised sector and for maintaining the quality of such bags in the market, a standard is maybe required. ***Decision of panel*:** Based on the inputs received from the other members, the panel decided that the **standard may be reviewed by IJMA** in consultation with other stakeholders and revisions / amendments may be suggested as may be necessary based on present needs and expectations.	**Table 1 –** Specific Requirements of B-Twill cloth - Point (ii) - Tolerance for Corrected mass, percentage +8/-6 Point (iii) - Tolerance for Picks/dm +/-2
5	IS 9685:2002	Textiles – Sand bags – Specification (first revision)	1) The representative from SGS informed that the standard is now being used by them for pre-dispatch inspection for the products covered under this standard. 2) The representative from BIS stated that DGQA may be asked for their feedback on the relevance of this standard. ***Decision of panel*:** The panel decided that the standard may be continued and inputs from DGQA may be obtained by BIS. **IJMA in consultation** with related stakeholders may propose necessary amendments/ revisions required for the standard based on present needs and expectations.	**IJMA** is pursuing the matter with the potential users of jute Sand bags, viz. DGQA and Dept. of Disaster Management, Govt. of WB. Necessary inputs on the same are still awaited.

b) Comments from SGS, Kolkata

Review on IS Specifications

I. IS 3790:1991, Textiles- Hessian Bags"

Technical Revisions

1. Definition of Hessian may be included (Ref: IS 5476 – 1986)

2. In point no. **4.1**, the type of bags is mentioned as Type 1 and Type 2 of only two different GSM cloth which must be reviewed as there might be cloth of other GSM.
3. Last line of point no. **4.1**, mentioned as "prescribed in IS : 2818", but this Indian Standard is already archaic, therefore it may be specified.
4. Table 1 point no. **viii** Oil content % is 8, which may be reviewed.
5. Line no. 9 and 10 of point no. **4.3**, the stitches per dm may be specified with tolerance.
6. Line no. 6 and 7 of point no. **4.4**, the stitches per dm may be specified with tolerance.
7. Table 2 (Requirements for Breaking strength and Seam strength) may be reviewed based on cloth construction and based on bag mass.
8. Method of test mentioned in Table 2 (i.e., IS 2818) may be reviewed).
9. Defects Classification mentioning four points may be included which is not available in the present standard:
    i. Type of defect
    ii. Description of the defect
    iii. Whether the defect is minor of major
10. Sampling plan may be present in the Annexure based on AQL with 4.0 percent for all testing criteria with acceptance number (Ref: IS 2500.1.2000).

General Revision

11. Table 2 **"Grap Method"** may be replaced by **"Grab Method".**

II. IS 4900 (Part 1 to 3): 1984, Jute Carpet Backing Fabric

Technical Revisions

1. Defects Classification may be included which is not specifically available in the present standard. The reference IS specification of defects (IS: 4125- 1967) is given in point no. **3.2.1** which is already archaic. Defect classification should be comprised of 4 points:
    i. Type of defect
    ii. Description of the defect
    iii. Whether the defect is minor of major
2. Sample Plan may be present as per AQL for all testing criteria with acceptance number.
3. Part 3, Table 1, Requirements of secondary jute carpet backing fabric, review may be executed on the strength criteria.
4. Point no. B-5, Mass of the roll calculation may be done with specified contract moisture regain %.

General Revision

5. Point no. **B-6.2.2**, it was specified to use CRT because of their common use in the industry, but now CRE may also be used as now it is also commonly used by the industry.

III. IS 4744: 1991, Packaging of Jute products on rolls

1. Table 1, for jute twine, the number of ply and count may be specified.
2. The core should have tolerance limit for inside and outside diameter of which has been as agreed to between the buyer and the seller.
3. The thickness of the core based on different material should have tolerance limit which has been as agreed to between the buyer and the seller.
4. Tolerance limit should be present for number of damaged core while makeup of the package.