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BUREAU OF INDIAN STANDARDS

AGENDA

Textile Materials made up of Polyolefin (Excluding Cordage) Sectional Committee TXD 23

36th Meeting

Date/Day	Time	Venue
30 September 2024 (Monday)	**03 : 00 P.M.**	Through Video Conferencing

CHAIRPERSON
Dr Tanweer Alam
Additional Director, IIP, Delhi

MEMBER SECRETARY
Shri Amit Kumar Pandey
Scientist-B/Asst. Director
BIS, New Delhi

Item 0 WELCOME AND OPENING REMARKS

Item 1 CONFIRMATION OF MINUTES OF THE PREVIOUS MEETING

1.1 The minutes of the 35th meeting of the Committee held on 27 June 2024 through VC were circulated to the members vide BIS DG letter No. TXD 23/A2.35 dated 24 July 2024.

The comment received on the minutes from Ms. Aparna Dutt Sharma representing Cement Manufacturers' Association, New Delhi and from Ms. Padmaja Reddy and Shri Prakash Khemani representing from IFTEX (Formerly AIFTMA), New Delhi are given in **Annex 1 (Pages 5 - 9).**

1.1.1 The Committee may **DECIDE**.

Item 2 SCOPE AND COMPOSITION OF COMMITTEE

2.1 The present composition and scope of TXD 23 is given in **Annex 2 (Pages 10 - 12).**

2.1.1 The committee may **REVIEW.**

Item 3 ISSUES ARISING OUT OF PREVIOUS MEETINGS

3.1 The committee noted the summary of actions taken on the decisions of the previous meetings of TXD 23 as given in **Annex 3 (Pages 13 - 14)**.

3.1.1 The Committee may **NOTE**.

Item 4 DRAFT STANDARD/AMENDMENT FOR WIDE CIRCULATION

4.1 In the 33rd meeting of TXD 23 held on dated 10 Aug 2023, the committee decided that BIS will prepare a draft amendment for incorporating the requirements of Type III sacks for 40 kg NPK grade fertilizers that shall be same as Type I and Type II except width of sack. Accordingly, the draft amendment prepared by BIS, in consultation with the relevant stakeholders, on the above matter is given in **Annex 4 (Pages 15 – 17)**.

4.1.1 The Committee may **DELIBERATE** and **DECIDE**.

Item 5 COMMENTS ON PUBLISHED STANDARDS

5.1 Comments received from Mr. Sachchidanand Tiwari representing V K Pack Well Pvt. Ltd., Kanpur and from Shri K.C. Patel representing M/s Texel Industries Ltd., Gujarat, on IS 7903 : 2017 Textiles - Tarpaulins made from high density polyethylene (HDPE) woven fabrics - Specification (*fifth revision*) are given in **Annex 5 (Pages 18 - 29).**

5.1.1 The Committee may **DECIDE**.

5.2 Comments received from Dr. Sandesh Kumar Jain representing CIPET, Bhopal on IS 18482 : 2023 Textiles - Sandwich extrusion laminated polypropylene PP woven sacks for packaging bulk commodities – Specification is given in **Annex 6 (Page 30)**.

5.2.1 The Committee may **DECIDE.**

5.3 Comments received from Shri Tariq Sajjad, OIC Mechanical, representing from Eastern Regional Laboratory, BIS; Shri K.C. Patel representing M/s Texel Industries Ltd., Gujarat; Idma Laboratories Ltd., Panchkula; Smt. Padmaja Reddy, IFTEX (Formerly AIFTMA), New Delhi and Shri K. C. Patel, Texel Industries Ltd, Gujarat on IS 11652 : 2017 Textiles – HDPE/PP woven sacks for packaging of 50 kg cement are given in **Annex 7 (Pages 31 - 33)**.

5.3.1 The Committee may **DECIDE**.

5.4 Comments received from Shri A.K. Basu representing Inspection Syndicate Pvt. Ltd., Kolkata on IS 9755 : 2021 Textiles – High Density Polyethylene/Polypropylene woven sacks for packaging fertilizers – Specification (*sixth revision*) is given in **Annex 8 (Pages 34)**.

5.4.1 The Committee may **DECIDE**.

5.5 Comments received from Surat Branch Office, BIS; Shri Manoj Kumar Singh representing M/s Jai Corp. Ltd., Silvassa; Shri N. Krishnamoorthy representing Chemplast Cuddalore Chemicals Ltd., Chennai and Shri K. Srinivasan representing Alkali Manufacturers Association

of India, New Delhi on IS 16703 : 2017 Textiles – High Density Polyethylene/Polypropylene woven sacks for packaging of 25 kg polymeric materials are given in **Annex 9 (Pages 35 - 42)**.

5.5.1 The test reports received Surat Branch Office, BIS and from Shri Manoj Kumar Singh representing M/s Jai Corp. Ltd., Silvassa on IS 16703 : 2017 are given in **Annex 10 (attached separately).**

5.5.2 The Committee may **DECIDE**.

5.6 Comments received from Shri Awadhesh Kumar Singh representing M/s Ultra Tech Cement Ltd., Mumbai, Smt. Padmaja Reddy representing IFTEX (Formerly known as AIFTMA), and Shri A. K. Basu representing Inspection Syndicate Pvt. Ltd., Kolkata on IS 16709 : 2017 Textiles - Polypropylene (PP) woven, laminated, block bottom valve sacks for packaging of 50 kg cement – Specification are given in **Annex 11 (Pages 43 - 46)**.

5.6.1 The test reports/data received from Shri Awadhesh Kumar Singh representing M/s Ultra Tech Cement Ltd., Mumbai and Shri A. K. Basu representing Inspection Syndicate Pvt. Ltd., Kolkata on IS 16709 : 2017 are given in **Annex 12 (attached separately)**.

5.6.2 The Committee may **DECIDE**.

Item 6 TECHNICAL ISSUES

6.1 Study of Ash content in HDPE/PP cement sacks as per IS 11652 : 2017

6.1.1 In the 35th meeting of TXD 23 held on dated 27 June 2024, the committee had decided to convene the panel (TXD 23/P1) meeting for reconsidering the ToRs for rationalizing the study for its completion in a time bound manner along with finalization of cost sharing of the study.

6.1.2 Accordingly, Panel meetings for the same had been convened on dated 08 July 2024 and 22 August 2024. The Minutes of the above said panel meetings are given in **Annex 13a (Pages 47 - 52) and 13b (Pages 53 - 63)** respectively. A confirmation was sought from CMA, New Delhi for bearing the testing charges for conducting the study at IIP and CIPET. The confirmation mail received from CMA, New Delhi is given in **Annex 14 (Page 64).**

6.1.3 The Committee may **NOTE.**

6.2 Study of Ash content in HDPE/PP sugar sacks as per IS 14968 : 2015

6.2.1 In the 33rd meeting of TXD 23 held on 10 August 2023, the committee had decided to reconsider the ToRs for reconsidering the ToRs for rationalizing the study for its completion in a time bound manner along with finalization of cost sharing of the study.

6.2.2 Accordingly, a panel (TXD 23/P2) meeting for the same had been convened on 20 August 2024. The Minutes of the above said panel meeting is given in **Annex 15 (Pages 65 - 72)**. Due to absence of ISMA representatives in the meeting, a reconfirmation for bearing the testing charges for conducting the study at IIP was sought from ISMA, New Delhi. The response received from ISMA on the same is given in **Annex 16 (attached separately**).

6.2.3 The Committee may **DECIDE**.

Item 7 REVIEW OF PROGRESS OF R&D PROJECT ALLOCATED UNDER TXD 23

7.1 In the 34th meeting of TXD 23 held on dated 30 November 2023, the committee prepared the Terms of Reference (ToR) for the R&D project on "Study of construction and performance requirements of 1 kg, 2 kg and 5 kg leno woven sacks". The above-mentioned R&D project was then approved by the review committee after Head (TXD) and Member Secretary (TXD 23) apprised the review committee about the project and explained the rationale behind the proposed R&D project. The approved ToR was then made available for public bidding. After receiving bids, the research evaluation committee decided to allocate the project to NIT, Jalandhar under the leadership of Mr. Anil Lal Yadav.

7.1.1 The mid-term progress report along with the Statement of Expenditure as submitted by Mr. Anil Lal Yadav, NIT, Jalandhar are given in **Annex 17 (attached separately)**. The ToR as approved by the review committee is given in **Annex 18 (Pages 73 - 76)**.

7.1.2 The committee may **REVIEW**.

Item 8 REVIEW OF PUBLISHED STANDARDS

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

8.1.1 Accordingly, the following Indian Standard is due for review whose proforma is given in **Annex 19 (Pages 77 - 81):**

i) **IS 17399 : 2020** Textiles - Polypropylene (PP)/high density polyethylene (HDPE) laminated woven sacks for mail sorting, storage, transport and distribution – Specification

8.1.2 The Committee may DECIDE.

Item 9 ANY OTHER BUSINESS
Item 10 DATE AND PLACE OF NEXT MEETING

ANNEX 1
(*Item* 1.1)

Comments received on the minutes of 35th meeting of TXD 23 held on 27 June 2024

I. Comments received from Ms. Aparna Dutt Sharma representing CMA, New Delhi

The following are the key observations on the TXD 23 minutes.

Item/Clause	CMA Observations/Recommendations on the minutes
Item 0 Line 5 *He further stated that as always CMA and cement sector members will be provided full opportunity to present their views preferably anything new since the last meeting as all earlier views have been taken into consideration by TXD 23 and on record in minutes.*	– CMA and its Member Companies have made a number of representations starting 2016 on the draft standard IS 11652:2017. – The views of CMA and Cement Industry were not given due consideration while formulating or publishing the standard.] – Stating, therefore, that *as all earlier views have been taken into consideration by TXD 23* was incorrect.
Item 5.1.4	– In addition to what has been captured in the minutes, it was also stated by a BIS Official that *ISO 23560: 2015 Woven polypropylene sacks for bulk packaging of foodstuffs* deals with foodstuffs and it would not be right to compare IS 11652:2017 with this standard. – This has not been captured in the minutes and needs to be included.
Item 5.1.5	– The contents of the paragraph are completely misleading. CMA and its Members had made a number of written representations since 2016 and had constantly stated their inputs verbally during the TXD23 meetings as well. – These inputs had, however, not been given any weightage during formulation and implementation of IS 11652:2017.
Item 5.1.6 *The committee also*	

informed CMA and other cement sector members that there is no question of side stepping the technical study which has never been submitted by CMA to the committee.	– The statement is highly misleading. Please note that the study was to be conducted by the Panel TXD 23/P1, which had been constituted under TXD 23 Sectional Committee and had Members from a number of Associations including Indian Federation of Woven Technical Textiles (IFTEX), Chemicals & Petrochemicals Manufacturers' Association (CPMA) and CMA. Moreover, the convenor for the TXD 23/P1 panel was from the Indian Institute of Packaging (IIP). Stating, therefore, that the study was to be conducted by CMA was not correct and the study has to be conducted under the TXD 23/P1 panel. – This had been promptly stated by Dr A K Singh, Head – Product Assurance & Services, UltraTech Cement Limited during the meeting and has not been recorded as a part of the minutes. – Reference may also be drawn to the minutes of the 27th meeting of BIS TXD 23 held on September 10, 2020, where under **Item 7 Point m**, it has been clearly stated that "*After detailed deliberations, the committee also decided to reaffirm its decision as taken in the last meeting that the study be undertaken for generating actual test data of ash content and other parameters of IS 11652:2017 under the supervision of TXD 23. It was also decided that CPMA and AIFTMA will also be associated with CMA for undertaking this study. The committee also decided that due to concerns raised by the members regarding the reports provided by IIP, Mumbai, the complete study shall be undertaken a fresh*" . – Also, under **Item 7 Point n** it has been stated that "*To facilitate the study, the committee reconstituted a panel as under to decide the detailed terms of reference and SOP of the study including all decisions till date of the committee and published standards*" . – These two points clearly state that the study was to be conducted under the supervision of TXD23 and the reconstituted panel was to decide the detailed terms of reference. – Stating, therefore, that the study was to be submitted by CMA to the committee\

Item 5.1.5	– CMA and its Members had made representations in October 2016, August 2017 and October 2017 highlighting the environmental impact of limiting ash content to 6% and stating that the cement bags were achieving high performance even with 15% ash content. – These were not given any consideration by BIS and the standard was published in November 2017 without even considering the inputs from CMA and its Member Companies.
Item 5.1.20 point a Para- 13 and 13.1 of the Order	– As mentioned above, stating that the study was to be submitted by CMA to the committee was wrong and needs to be promptly edited in the minutes. – This has been clearly stated by drawing reference to the minutes of the 27th meeting of TXD 23 held on September 10, 2020. This was also emphasised by CMA Members during the TXD 23 meeting on June 27, 2024
Other items	– The point highlighted by Dr S K Saxena, Chairman, CMA BIS Committee & Senior Vice President, Works, JK Lakshmi Cement, that the standards should be performance based and not prescription based has not been included. – Dr Saxena also stated that if the bags are performing well and no issues are being reported, then adequate freedom should be given on the usage of input materials and fillers in the cement bags should not be questioned. – This point has not been captured in the minutes and should be included.

II. <u>Comments received from Smt. Padmaja Reddy representing IFTEX, New Delhi</u>

Our Observations for Incorporation in the MOM dated 27th June 2024:

- Representatives from IFTEX (formerly AIFTMA) New Delhi informed the committee of the importance of considering the inputs and views of HDPE/PP woven sack manufacturers before making any changes to the applicable National standards as manufacturers are responsible for maintaining the quality of the bags and adhering to BIS standards.

- Furthermore, they stated that bag manufacturers are Recipe Neutral and Revenue Neutral, with no commercial gains from the increase or decrease in ash content percentage. They reaffirmed that they can manufacture bags with zero fillers or according to the recipe specified in the purchase order from the buyer.

- They also cited that an increase in filler content would necessitate an increase in the GSM of the fabric to achieve the desired strength specified by BIS Standard 11652-2017.

- Samples for the proposed study should be collected only at the manufacturers' facilities manufactured under normal operating conditions.

- The drop test of the bags should be conducted at the cement plant, not at the PP bag manufacturers' end, as cement is filled at a 3.2 bar pressure in the cement packing plants. Only after this, the bags must be tested for the drop test as per BIS standards.

- IFTEX also suggested that the study should be conducted again when the EPR rules for mandatory use of reprocessed material become applicable.

III. **Comments received from Shri Prakash Khemani representing IFTEX, New Delhi**

I would like to commend BIS for their tremendous efforts in standardizing various products in India, including PP bags. Your commitment to giving all stakeholders a patient hearing is also highly appreciated.

Regarding the Minutes of the 35th meeting held on 27 June 2024, I kindly request you to include my following comments as part of the minutes:

1. Mr. Prakash Kumar Khemani from Suraj Logistix Pvt Ltd. emphasized the importance of conducting the entire manufacturing process for sampling bags in the presence of Panel members at one manufacturing facility in each of the four regions, under normal working conditions. This approach will account for the varying atmospheric conditions across different regions.

2. Mr. Khemani also proposed that the behavior of the bags when filled with high temperate at cement plants using automated Roto Packers would differ from those filled

manually at the bag manufacturing facility. Therefore, he suggested that the drop test should be conducted at the cement plants to reflect actual conditions.

Thank you for considering my comments.

ANNEX 2
(*Item* 2.1)

TEXTILE MATERIALS MADE FROM POLYOLEFINS (EXCLUDING CORDAGE) SECTIONAL COMMITTEE, TXD 23

SCOPE: To Formulate Indian Standard Specifications and Method of Tests for Textile Materials Made from Polyolefins (Excluding Cordage).

Meeting(s) held	**Date & Place**
33rd meeting	10 Aug 2023 (Video Conferencing)
34th meeting	30 Nov 2023 (Video Conferencing)
35th meeting	27 June 2024 (Video Conferencing)

Sl No.	***Organization***	***Representative(s)***	**Attendance**
1.	Indian Institute of Packaging (IIP), New Delhi	DR TANWEER ALAM (***Chairperson***)	3/3
2.	ACC Limited, Mumbai	DR SANJAY GUPTA DR MANISH KARANDIKAR (*Alternate*)	3/3
3.	All India HDPE/PP Woven Fabric Manufacturing Association, Bengaluru	SHRI NARESH BHANDIA	3/3
4.	Cement Manufacturers Association (CMA), New Delhi	DR S. K. SAXENA SHRI VISHAL MOHITE (*Alternate)*	3/3
5.	Central Institute of Petrochemicals Engineering & Technology (CIPET), Bhopal	DR SANDESH KUMAR JAIN SHRI VIVEK KUMAR (*Alternate*)	3/3
6.	Central Pollution Control Board (CPCB), New Delhi	SHRI KAMLESH SINGH SHRI RISHABH SRIVASTAV (*Alternate*)	1/2
7.	Chemicals and Petrochemicals Manufacturers Association (CPMA), New Delhi	SHRI AJAY SARDANA SHRI UDAY CHAND (*Alternate*)	3/3
8.	Consumer Guidance Society of India, Mumbai	DR SITARAM DIXIT DR M.S. KAMATH (*Alternate*)	3/3
9.	Dept. of Chemical & Petrochemical, Ministry of Chemical & Fertilizers, New Delhi	SHRI O. P. SHARMA SHRI VARUN POONIA (*Alternate*)	3/3
10.	Directorate of Sugar, New Delhi Ministry of Consumer Affairs, Food & Public Distribution, New Delhi	SHRI SANGEET SINGLA SHRI D. K. JHA (*Alternate*)	1/3
11.	Food Corporation of India (FCI), New Delhi	SHRI KAUSHIK DAS SHRI S VIJAY KUMAR (*Alternate*)	3/3
12.	Gas Authority of India Limited (GAIL), New Delhi	SHRI KULDEEP NEGI SHRI NITIN GUPTA	3/3
13.	Government e Marketplace (GeM), New Delhi	SHRI ABHISEK KAKKAR	2/3
14.	Gujarat Narmada Valley Fertilizers Co. Ltd., Narmadanagar	SHRI YOGESH N. PATEL SHRI RAKESH S. AGRAWAL (*Alternate*)	3/3

15.	Haldia Petrochemical Ltd., Kolkata	SHRI AMARTYA MAITY SHRI T. R. SRIKANTH (*Alternate*)	3/3
16.	HPCL-Mittal Energy Limited, Noida	SHRI VINEET KUMAR GUPTA SHRI ALAKESH GHOSH (*Alternate*)	3/3
17.	Indian Farmers Fertiliser Cooperative (IFFCO) Ltd., New Delhi	SHRI HARISH KUMAR SHRI OM PRAKASH KUMAR (*Alternate*)	1/3
18.	Indian Federation of Woven Technical Textiles, New Delhi	SMT PADMAJA REDDY SHRI PRAKASH KHEMANI (*Alternate*)	3/3
19.	Indian Flexible Intermediate Bulk Container Association (IFIBCA), New Delhi	SHRI RAVISH KAMATH SHRI SHASHANK AGARWAL (*Alternate*)	2/3
20.	Indian Institute of Packaging (IIP), Mumbai	DR AMIT SINGLA SHRI HARISH KUMAR R. K. (*Alternate*)	3/3
21.	Indian Oil Corporation Limited (IOCL), New Delhi	SHRI SUMIT BASU SHRI RAJA PODDAR (*Alternate*)	3/3
22.	Indian Sugar Mills Association (ISMA), New Delhi	SMT BHARATI BALAJI SHRI DEEP MALIK (*Alternate)*	3/3
23.	Inspection Syndicate of India Pvt. Ltd., Kolkata	SHRI A. K. BASU SHRI ARNAB BASU (*Alternate*)	3/3
24.	Lamifabs & Papers (P) Ltd., Aurangabad	SHRI KAMLESH DHOOT SHRI PUSHKAR KAMLESH DHOOT (*Alternate*)	2/3
25.	Lohia Corp Ltd, Kanpur	DR UPENDER KRISHEN SAROOP SHRI RAJEEV KUMAR DWIVEDI (*Alternate*)	3/3
26.	Mangalore Refinery and Petrochemicals Limited, Mangaluru	SHRI NILANJAN GUHA SHRI NARATTAM CHAKRABORTY (*Alternate*)	3/3
27.	Ministry of Consumer Affairs, Food & Public Distribution, New Delhi	SHRI ASHOK KUMAR DR SUBHASH GUPTA (*Alternate*)	0/3
28.	Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi	DR SATYENDRA KUMAR DR BHAWNA SINGH (*Alternate*)	2/3
29.	Nayara Energy Limited, Mumbai	SHRI TUSHAR DONGRE SHRI SIDDHANT CHAURASIA (*Alternate*)	3/3
30.	Office of the Textile Commissioner, Mumbai	SHRI N. K. GUPTA SHRI C. R. KALESAN (*Alternate*)	3/3
31.	PlastIndia Foundation, Mumbai	SHRI SURENDER CHOUDHARY SHRI MAKRAND APPALWAR (*Alternate*)	3/3
32.	Rashtriya Chemical and Fertilizers Limited, Mumbai	SHRI KAUSTUBH KOKANE MRS. DIPALI TAMMEWAR (*Alternate*)	3/3
33.	Reliance Industries Limited (RIL), Mumbai	SHRI S. V. RAJU SHRI VINOD K. R. (*Alternate)*	3/3
34.	Texel Industries Ltd., Kalol	SHRI SHAILESH R. MEHTA SHRI KANAYALAL C. PATEL (*Alternate*)	2/3
35.	The Fertilizer Association of India (FAI), New Delhi	DR D S YADAV DR NARESH PRASAD (*Alternate*)	2/3

36.	Ultratech Cement Limited, Mumbai	DR AMIT SHAH SHRI SANDEEP KADAM (*Alternate*)	3/3
37.	VCPL, Vadodara	SHRI V. SREENIVASAN SHRI G M PATEL (*Alternate*)	3/3

Annex 3
(*Item* 3.1)

SUMMARY OF ACTIONS TAKEN ON THE MINUTES OF THE 34rd MEETING

Item No.	Decisions	Action Taken
2.1	Composition and Scope of TXD 23	Updated composition of TXD 23 is given in Annex 1.
5	**DRAFTS UNDER PREPARATION** **Merging of Standards** a) IS 14887:2014, Textiles - High density polyethylene (HDPE)/polypropylene (PP) woven sacks for packaging of 50 kg food grains - Specification (first revision) b) IS 16208:2015, Textiles - High density polyethylene (HDPE)/polypropylene (PP) woven sacks for packaging of 10 kg, 15 kg, 20 kg, 25 kg and 30 kg foodgrains – Specification	The committee decided that Standardization cell in AIFTMA will provide the merged draft including the enhanced requirements for packing of foodgrains like Wheat, Rice, Paddy, Pulses etc. from 10 kg to 50 kg which shall be placed in the next committee meetings. The merged draft standard is still **AWAITED** from the standardization cell IFTEX (Formerly known as AIFTMA), New Delhi.
7	**TECHNICAL ISSUES** **7.1 Study of ash content requirement in HDPE/PP sugar sacks (IS 14968:2015)** The committee decided to conduct a panel meeting to decide the ToR and funding decisions. **7.2 Study of ash content requirement in HDPE/PP cement sacks (IS 11652:2017)** The committee decided to conduct a panel meeting to decide the ToR and funding decisions.	The panel meeting for the same has been conducted on 20th August 2024 where the revised ToR has been finalized. Coming under agenda item 6.2. The panel meeting for the same has been conducted on 22nd August 2024 where the revised ToR has been finalized. Coming under agenda item 6.1.

9	**REVIEW OF PUBLISHED STANDARDS** The committee noted that only one Pre 2000 standard '**IS 12100:1987** Specification for high density polyethylene (HDPE) woven sacks for packing flour' is due for revision under the domain of TXD 23.	The draft is under preparation and the same shall be allocated to the newly formed standardization cell in AIFTMA. Coming under Agenda Item 4.1 for discussion.
12	**ANY OTHER BUSINESS** **12.1 IS 14738:2017 Flexible intermediate bulk containers (FIBCs) – Specification (*First Revision*)** The committee decided to convene a panel meeting for the preparation of draft revision of IS 14738:2017.	A panel meeting for the same shall be conducted shortly.

Annex 4
(*Item* 4.3)

Doc: TXD 23 (xxxxx)

AMENDMENT NO. 2 OCTOBER 2023

TO

IS 9755 : 2021 TEXTILES — HIGH DENSITY POLYETHYLENE (HDPE)/POLYPROPYLENE (PP) WOVEN SACKS FOR PACKAGING FERTILIZERS — SPECIFICATION

(Sixth Revision)

(*Page* 1*, Clause* **3**) — Substitute the following for the existing:

'3 TYPES

Based on packaging capacity, the HDPE/PP woven sacks shall be classified as under:

a) Type I — Sacks having nominal capacity of 45 kg for packaging of neem coated urea fertilizers;

b) Type II — Sacks having nominal capacity of 50 kg for packaging of other than neem coated urea fertilizers; and

c) *Type III* — Sacks having nominal capacity of 40 kg for packaging of NPK (Nitrogen, Phosphorous and Potassium) fortified grade fertilizers.'

(*Page* 1*, Clause* **4.2***, third sentence of the first para*) — Substitute the following for the existing:

'For sacks of Type I, Type II and Type III, the linear density of tapes shall be 1000 denier and, fabric shall be of 10 × 10 mesh.'

(*Page* 3*, Table* 1*, see also amendment no.* 1) — Substitute the table for the existing:

Table 1 Requirements of HDPE/PP Woven Sacks for Packaging Fertilizers
(*Clauses* 5.1, 5.3, 5.5 *and* 5.6)

Sl No.	Characteristic	Requirement			Tolerance	Method of Test, Ref to
		Type I	Type II	Type III		
		Neem Coated Urea Fertilizers	Other than Neem Coated Urea Fertilizers	NPK fortified grade fertilizers		

(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Dimensions (*see* Note 1)					
	a) Inside length, mm	As agreed to between the buyer and the seller	As agreed to between the buyer and the seller	As agreed, to between the buyer and the seller	$^{+20}_{-10}$ mm	Annex B
	b) Inside width, mm	600	i) 600 for non-phosphatic/ other low-density fertilizers	i) 580 for non-phosphatic/ other low-density fertilizers	$^{+20}_{-10}$ mm	Annex B
			ii) 560 for high density phosphatic fertilizers	ii) 560 for high density phosphatic fertilizers	$^{+20}_{-10}$ mm	
ii)	Ends per dm	40	40	40	± 2	Annex B
iii)	Picks per dm	40	40	40	± 2	Annex B
iv)	Mass of fabric, g/m^2 (*see* Note 2)					Annex B
	a) Unlaminated sacks	88	88	88	± 3	
	b) Laminated sacks	111	111	111	± 3	
v)	Mass of sack, g, *Min* (*see* Note 3)	As agreed to between the buyer and the seller	As agreed to between the buyer and the seller	As agreed to between the buyer and the seller	± 6 Percent	IS 1964
vi)	Average breaking strength of fabric (ravelled strip method, 325 mm × 70 mm)[1)], *Min*, N[2)] (kgf)					IS 1969 (Part 1)
	a) Lengthwise	900 (91.8)	900 (91.8)	900 (91.8)	—	
	b) Widthwise	900 (91.8)	900 (91.8)	900 (91.8)	—	
	c) Widthwise (Lamination joint) (for laminated sacks)	900 (91.8)	900 (91.8)	900 (91.8)	—	
vii)	Breaking strength of bottom seam (ravelled strip method), Min, N[2)] (kgf)	400 (40.8)	400 (40.8)	400 (40.8)	—	IS 9030
viii)	Elongation at break of fabric, percent					IS 1969 (Part 1)
	a) Lengthwise	15 to 25	15 to 25	15 to 25	—	
	b) Widthwise	15 to 25	15 to 25	15 to 25	—	
ix)	Ash content, Max, percent					Annex C
	a) For UV stabilized sacks	2.2	2.2	2.2	—	
	b) For non- UV stabilized sacks	6	6	6	—	
x)	Drop impact strength (*see* Note 4)	No failure	No failure	No failure	—	Annex D

[1] Width after ravelling = 50 mm; Gauge length = 200 mm.

[2] 1 N = 0.102 kgf (approximately).

NOTES

1 The suggested sack width for Type I sacks is 600 mm for packaging of Urea fertilizers; for Type II sacks is 600 mm for packaging of low-density non-phosphatic fertilizers and 560 mm for packaging of high-density phosphatic fertilizers; and for Type III sacks is 580 mm for packaging of low-density NPK fertilizers and 540 mm for packaging of high-density NPK fertilizers. The sack length may vary with material bulk density. These sack dimensions provide for optimum free space of minimum of 20 percent of length when measured along the surface of the fabric from mouth stitch line of the sack, up to the surface level of the contents.

2 Buyer and the seller may agree to the mass of fabric other than that specified in Table 1. However, the agreed mass per square meter of unlaminated fabric and laminated fabric shall comply with a tolerance of ± 3 percent as stated in **4.2** and **4.5**.

3 The method of calculating the mass of the sacks is given in Annex E for guidance.

4 Drop impact strength performance of filled sack depend on many factors including top stitch quality. Various factors, such as, top stitching needle size, needle quality, number of stitches per inch, stitching thread quality and free volume available in the filled sack after top stitching, decide the drop impact performance of sack, specifically, if the sack failure is observed at or near the top stitch. Bagging machine operators are recommended to use 12 stitches per dm for top stitch and maintain free volume approximately 20 percent of total filling volume. Necessary care shall be taken by the bagging machine operators to optimize top stitching parameters to avoid unwarranted drop impact failure of filled sack.

(TXD 23)

Annex 5
(*Item* 5.1)

Comments received on IS 7903 : 2017 Textiles - Tarpaulins made from high density polyethylene (HDPE) woven fabrics - Specification (fifth revision)

I. Comments received from Mr. Sachchidanand Tiwari representing V K Pack Well Pvt. Ltd., Kanpur

This is in regards to the amendments in IS 7903:2017 for the welfare of the farmers. We would like to bring into you notice regarding the current scenario and market of Tarpaulins.-In today's market, only 1-2% of tarpaulins are sold with ISI marks, while 98-99% of tarpaulins are either without ISI marks or do not adhere to quality standards. Users buy these tarpaulins for immediate use, but they deteriorate within a few days. This is because ISI-marked tarpaulins, which are heavier and more expensive, are less accessible to users/farmers. Considering the needs and time constraints, it is our responsibility to provide users/farmers with lightweight, easy-to-use, and cost-effective tarpaulins that meet ISI standards. This will ensure that more users/farmers can benefit from them.

Understanding the users' needs, we have been successfully producing GSM tarpaulins for the past 10 years. These tarpaulins are lightweight, easy to use, and cost-effective, addressing the requirements of the users.

Please find the attached Internal Test reports for Tarpaulins with 3 different GSM for kind perusal.

1. 80GSM
2. 120GSM
3. 160GSM

We look forward to your positive response and amendments as requested.

V. K. PACK WELL PVT. LTD

INTERNAL TEST REPORT 80 GSM Tarpauline

Lot No - 01 **DATE – 25/11/2023**

TARPAULIN MADE FROM HIGH DENSITY POLYETHYLENE WOVEN FABRIC

Sr. No.	Clause No.	Name of the test	Test method	Unit	Test value obtained	Specified Requirement
1	3.1	HDPE Tapes	IS 6192		Conform	Tape shall be manufactured from HDPE granules
		i) Width of Tape		mm	2.75	2.50 (Min.)
		ii) Linear Density		Denier	535	530 (Min.)
2	3.2	HDPE Fabric Tapes	IS 6899			
		i)Warp Direction		Nos.	36	35 Min.
		ii)Weft Direction		Nos.	36	35 Min.
3	3.3	Eyelets	IS 4084	size	Conform	Size 28 or 30 or agreed between the buyer & the seller
4	3.4	Line / Cord Beading			Conform	Min. 2.5 mm diameter shall be provided along the length & width of the tarpaulin.
5	5.1	Lamination			Conform	Fabric shall be laminated with the LDPE or suitable combination of LDPE & LLDPE melt of coating grade on each side and the coating shall be UV stabillized by incorporating UV stabilizer or carbon black.
		Coating Thickness	IS 13162 Part 3	Micron	21	20.0 (Min.)
	5.1.2	Sandwich lamination	IS 13162 Part 3	Micron	Three layer	Shall be 30 Micron (Min.)
						The Tarpaulin shall be

6	5.2	Construction		mm	Conform	constructed by heat sealing laminated pieces of woven fabric obtaining the desired dimension the ends & sides of the tarpaulins are hemmed by heat sealing. Combination of panel width not less than 1800 mm.
		Width of hem		mm	41	The width of the hem shall be min. 40.
7	5.3	Joints / seams (overlap)cm.		cm.	4	3.5 (min.)
8	5.4	Fixing of Eyelets			Conform	Shall be agreed between the buyer & the seller.
9	3.2	i) No. of HDPE fabric layers			Conform	1 Layer of HDPE fabric
		ii) No. of lamination layers			Conform	2 Layer of LLDPE & LDPE
		iii) Total No. of layers in the finished tarpaulin			Conform	3 Layers
	5.1.1	iv) Mass of finished tarpaulin	Annex B	g/m^2	81.5	Min. 80
		v) Mass of laminated fabric	Annex C		80.5	Min. 80
10	5.1.1 & 6.1	vi) Breaking strength Before U.V Exposure	IS 1969 (I)			
		a) Warp		N	550	500 (Min.)
		b) Weft			500	400 (Min.)
		vii) Elongation at break		%		15 to 25
		a) Warp			23.0	
		b) Weft			22.5	
		viii) Retention of Breaking strength after U.V exposure of 144 hrs.	IS13162(II) & IS 1969 (I)	%		85 % of original value

		a) Warp			515	
		b) Weft			470	
11	5.1.1 & 6.1	ix) Welded Seam strength before U. V exposure (Weft)	IS 1969 (I)	N	450	Min.65 % of original value of fabric
		x) Retention of welded Seam strength after U. V exposure 144 Hrs. (Weft)	IS13162(II) & IS 1969 (I)	%	420	Min. 85% of original value
		xi) Trapozoid tear strength	IS 14293	N	125	100 (min.)
		xii) Puncture Resistance	Annex D	N	175	150 (min.)
		xiii) Impact failure load at 1524 mm drop, Min, gram force at 50% failure	Annex E		Conform	Shall be no sign of failure at 1524mm height and 300 g load
		xiv) Colour fastness to light (for coloured tarpaulines)	IS 2454		>4	4 or better
		xv) Ash content,	Annex F	%	1.3	Max. 3 %
12	6.2	Dimension		mm	Conform As per requirement	
		Length				+3/-1%
		Width				+3/-1%
		Height				+3/-1%
13	6.3.1	Water Proofness (Before ageing)				
		Water repellency by cone test	IS 7941		No leakage observed	There shall be no leakage
		Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7940		No leakage observed	Does not leak through the tarpaulin
	6.3.2	After ageing (ageing at 70o C for 168hrs.)				
		Water repellency by cone test			No leakage observed	There shall be no leakage
		Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7016 (8)		No leakage observed through tarpaulin	Does not leak through the tarpaulin

V. K. PACK WELL PVT. LTD

INTERNAL TEST REPORT

Lot No - 01 **DATE – 02/21/2023**

TARPAULIN MADE FROM HIGH DENSITY POLYETHYLENE WOVEN FABRIC

Sr. No.	Clause No.	Name of the test	Test method	Unit	Test value obtained	Specified Requirement
1	3.1	HDPE Tapes	IS 6192		Conform	Tape shall be manufactured from HDPE granules
		i) Width of Tape		mm	2.52	2.50 (Min.)
		ii) Linear Density		Denier	950	1050 (Min.)
2	3.2	HDPE Fabric Tapes	IS 6899			
		i)Warp Direction		Nos.	41	39 Min.
		ii)Weft Direction		Nos.	40	39 Min.
3	3.3	Eyelets	IS 4084	size	Conform	Size 28 or 30 or agreed between the buyer & the seller
4	3.4	Line / Cord Beading			Conform	Min. 2.5 mm diameter shall be provided along the length & width of the tarpaulin.
5	5.1	Lamination			Conform	Fabric shall be laminated with the LDPE or suitable combination of LDPE & LLDPE melt of coating grade on each side and the coating shall be UV stabilized by incorporating UV stabilizer or carbon black.
		Coating Thickness	IS 13162 Part 3	Micron	35	20.0 (Min.)
	5.1.2	Sandwich lamination	IS 13162 Part 3	Micron	Three layer	Shall be 30 Micron (Min.)

6	5.2	Construction		mm	Conform	The Tarpaulin shall be constructed by heat sealing laminated pieces of woven fabric obtaining the desired dimension the ends & sides of the tarpaulins are hemmed by heat sealing. Combination of panel width not less than 1800 mm.
		Width of hem		mm	43	The width of the hem shall be min. 40.
7	5.3	Joints / seams (overlap)cm.		cm.	4.0	3.5 (min.)
8	5.4	Fixing of Eyelets			Conform	Shall be agreed between the buyer & the seller.
9	3.2	i) No. of HDPE fabric layers			Conform	1 Layer of HDPE fabric
		ii) No. of lamination layers			Conform	2 Layer of LLDPE & LDPE
		iii) Total No. of layers in the finished tarpaulin			Conform	3 Layers
	5.1.1	iv) Mass of finished tarpaulin	Annex B	g/m^2	163	Min. 160
		v) Mass of laminated fabric	Annex C		152	Min. 150
10	5.1.1 & 6.1	vi) Breaking strength Before U.V Exposure	IS 1969 (I)			
		a) Warp		N	940	900 (Min.)
		b) Weft			805	675 (Min.)
		vii) Elongation at break		%		15 to 25
		a) Warp			22.0	
		b) Weft			23.0	

		viii) Retention of Breaking strength after U.V exposure of 144 hrs.	IS13162(II) & IS 1969 (I)	N		85 % of original value
		a) Warp			880	
		b) Weft			750	
11	5.1.1 & 6.1	ix) Welded Seam strength before U. V exposure (Weft)	IS 1969 (I)	N	740	Min.65 % of original value of fabric
		x) Retention of welded Seam strength after U. V exposure 144 Hrs. (Weft)	IS13162(II) & IS 1969 (I)	N	710	Min. 85% of original value
		xi) Trapozoid tear strength	IS 14293	N	125	100 (min.)
		xii) Puncture Resistance	Annex D	N	285	250 (min.)
		xiii) Impact failure load at 1524 mm drop, Min, gram force at 50% failure	Annex E		Conform	Shall be no sign of failure at 1524mm height and 300 g load
		xiv) Colour fastness to light (for coloured tarpaulines)	IS 2454		>4	4 or better
		xv) Ash content,	Annex F	%	1.37	Max. 3 %
12	6.2	Dimension		mm	Conform As per requirement	
		Length				+3/-1%
		Width				+3/-1%
		Height				+3/-1%
13	6.3.1	Water Proofness (Before ageing)				
		Water repellency by cone test	IS 7941		No leakage observed	There shall be no leakage
		Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7940		No leakage observed	Does not leak through the tarpaulin
		After ageing (ageing at 70o C for 168hrs.)				
		Water repellency by cone test			No leakage observed	There shall be no leakage

	6.3.2	Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7016 (8)		No leakage observed through tarpaulin	Does not leak through the tarpaulin

V. K. PACK WELL PVT. LTD

44-B, & 46/6-B, CO-OPERATIVE ESTATE, DADA NAGAR KANPUR, 208022

INTERNAL TEST REPORT

Lot No- 01 **DATE- 28/11/2023**

TARPAULIN MADE FROM HIGH DENSITY POLYETHYLENE WOVEN FABRIC

Sr. No.	Clause No.	Name of the test	Test method	Unit	Test value obtained	Specified Requirement
1	3.1	HDPE Tapes	IS 6192		Conform	Tape shall be manufactured from HDPE granules
		i) Width of Tape		mm	2.51	2.50 (Min.)
		ii) Linear Density		Denier	611	600 (Min.)
2	3.2	HDPE Fabric Tapes				
		i)Warp Direction	IS 6899	Nos.	40	39 Min.
		ii)Weft Direction		Nos.	41	39 Min.
3	3.3	Eyelets	IS 4084	size	Conform	Size 28 or 30 or agreed between the buyer & the seller
4	3.4	Line / Cord Beading			Conform	Min. 2.5 mm diameter shall be provided along the length & width of the tarpaulin.
5	5.1	Lamination			Conform	Fabric shall be laminated with the LDPE or suitable combination of LDPE & LLDPE melt of coating grade on each side and the

						coating shall be UV stabillized by incorporating UV stabilizer or carbon black.
		Coating Thickness	IS 13162 Part 3	Micron	34	25.0 (Min.)
	5.1.2	Sandwich lamination	IS 13162 Part 3	Micron	Three layer	Shall be 30 Micron (Min.)
6	5.2	Construction		mm	Conform	The Tarpaulin shall be constructed by heat sealing laminated pieces of woven fabric obtaining the desired dimension the ends & sides of the tarpaulins are hemmed by heat sealing. Combination of panel width not less than 1800 mm.
		Width of hem		mm	42	The width of the hem shall be min. 40.
7	5.3	Joints / seams (overlap)		cm.	4.1	3.5 (min.)
8	5.4	Fixing of Eyelets			Conform	Shall be agreed between the buyer & the seller.
9	3.2	i)No. of HDPE fabric layers			Conform	1 Layer of HDPE fabric
		ii)No. of lamination layers			Conform	2 Layer of LLDPE & LDPE
		iii)Total No. of layers in the finished tarpaulin			Conform	3 Layers
	5.1.1	iv)Mass of finished tarpaulin	Annex B	g/m^2	125	Min. 120
		v)Mass of laminated fabric	Annex C		115	Min. 110

10	5.1.1 & 6.1	vi) Breaking strength Before U.V Exposure	IS 1969 (I)			
		a) Warp		N	650	600 (Min.)
		B) Weft			595	450 (Min.)
		vii)Elongation at break a) Warp b) Weft		%	22.0 22.5	15 to 25
		viii) Retention of Breaking strength after U.V exposure of 144 hrs.	IS13162(II) & IS 1969 (I)	N		85 % of original value
		a) Warp			611	
		B) Weft			548	
11	5.1.1 & 6.1	ix) Welded Seam strength before U. V exposure (Weft)	IS 1969 (I)	N	530	Min.65 % of origional value of fabric
		x) Retention of welded Seam strength after U. V exposure 144 Hrs. (Weft)	IS13162(II) & IS 1969 (I)	N	520	Min. 85% of original value
		xi) Trapozoid tear strength	IS 14293	N	125	100 (Min.)
		xii) Puncture Resistance	Annex D	N	165	150 (min.)
		xiii)Impact failure load at 1524 mm drop, Min, gram force at 50% failure	Annex E		Conform	Shall be no sign of failure at 1524mm height and 400 g load
		xiv)Colour fastness to light (for coloured tarpaulines)	IS 2454		>4	4 or better
		xv) Ash content,	Annex F	%	1.3	Max. 3 %
12	6.2	Dimension Length Width Height		mm	Conform As per requirment	 +3/-1 % +3/-1 % +3/-1 %
13	6.3.1	Water Proofness (Before ageing)				

		Water repellency by cone test	IS 7941		No leakage observed	There shall be no leakage
		Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7940		No leakage observed	Does not leak through the tarpaulin
	6.3.2	After ageing (ageing at 70° C for 168 hrs.)				
		Water repellency by cone test			No leakage observed	There shall be no leakage
		Resistance to water penetration by the pressure head test (Water column height 900mm time of exposure 1 hrs.)	IS 7016 (8)		No leakage observed through tarpaulin	Does not leak through the tarpaulin

II. Comments received from Shri K.C. Patel representing M/s Texel Industries Ltd., Gujarat

Item, Clause Sub Clause No.	Comments	Specific Proposal
(1)	(2)	(3)
Sl No. V in Table- 1 (Mass of Laminated Fabric, g/m^2, Min.)	Tarpaulins are made in various sizes. The gsm of finished Tarpaulin gets 7 to 8% more in small sizes and 3 to 5 % more in medium sizes while in large size gets as required according to the mass of Laminated fabric which is given in IS 7903. So mass of Laminated fabric has to be reduced for small sizes orders as customers are not willing to pay more weight price as the price of product is determined according to the SQM. Given Mass of Laminated Fabric as per below in IS. a) *Type I* — 185 g/m^2,Min. b) *Type II* — 230 g/m^2,Min. c) *Type III* — 280 g/m^2,Min. d) *Type IV* — 315 g/m^2,Min. e) *Type V* — 370 g/m^2,Min. f) *Type VI* — 420 g/m^2,Min. g) *Type VII* – 465 g/m^2,Min.	The mass of Laminated fabric should be min. as per below. a) *Type I* — 180 g/m^2,Min. b) *Type II* — 225 g/m^2,Min. c) *Type III* — 275 g/m^2,Min. d) *Type IV* — 310 g/m^2,Min. e) *Type V* — 365 g/m^2,Min. f) *Type VI* — 415 g/m^2,Min. g) *Type VII* – 460 g/m^2,Min According to the sizes the manufacturer can determine the gsm of the coated fabric Reducing the gsm by 2 to 3% will not change the properties of the Laminated fabric.
Table-1, Sl. No-viii & x.	Retention strength after UV exposure of 144 h, percent, N, Min as per IS :13162 (Part-2)	In which Xenon arc test method is used. In our experience the UVB fluorescent condensation test is more effective than Xenon arc and most international products also determine product retention by this method as per ASTM D 7238 which covers all polyolefin products.

Annex 6

(*Item* 5.2)

Comments received from Dr. Sandesh Kumar Jain representing CIPET, Bhopal on IS 18482 : 2023 Textiles - Sandwich extrusion laminated polypropylene PP woven sacks for packaging bulk commodities – Specification

With reference to the above cited subject, this is to inform you that Recently Food Corporation of India has floated 1st time the Tender for the supply of 10Kg Textile –Sandwich Extrusion laminated Polypropylene (PP) woven sacks for packaging of food grains to be distributed under PMGKAY scheme in huge quantity all over India. In this connection CIPET has given its consent to undertake this prestigious assignment pertaining to inspection / testing of 10 Kg Textile – Sandwich Extrusion laminated Polypropylene (PP) woven sacks for packaging of food grain as per IS 18482:2023, to be procured by FCI as per the directives of Department of Food & Public Distribution, Govt. of India.

However, as this is a new product/ standard published by BIS, some point of discussion has be raised in Lot Size- 1,00,001- 2,50,000 Bags requirement according to the sampling criteria mentioned in the Table-3 of IS 18482:2023 as follows:

a) As per column 4 for IS 18482:2023 (Table 3) required sample size for (Visual, Inspection, Warp and Weft per Decimeter, Fabric Mass, Sack Mass and Sack Dimension) all 48 samples will be destructed for performing Fabric Mass as per Annexure B. So, the sample may be insufficient for conducting other tests at column5 & 6 and other test. Hence another set of samples are required to perform other tests.

b) For conducting breaking strength on the sizes given (specially for smaller size) as per IS 1969 part 1, according to the sampling criteria as per IS 18482:2023(Table 3) min. 55 to 60 bags are required to complete the 18 nos. (before)+ 4 nos. (after UV) testing.

c) For conducting Drop impact test as per Annexure E as per the Sample Size at column 6 of Table 3 the sample shall be submitted in filled condition with suitable grains. Also looking into the sample size at column 6, additional 4 filled bags shall be submitted for conforming the lot.

Therefore, for performing the complete Testing of the above product as per IS18482:2023, Total 48 + 55 to 60 + 04 (filled Bags) are required. Accordingly the sampling criteria to be modified in the standard Table No. 3.

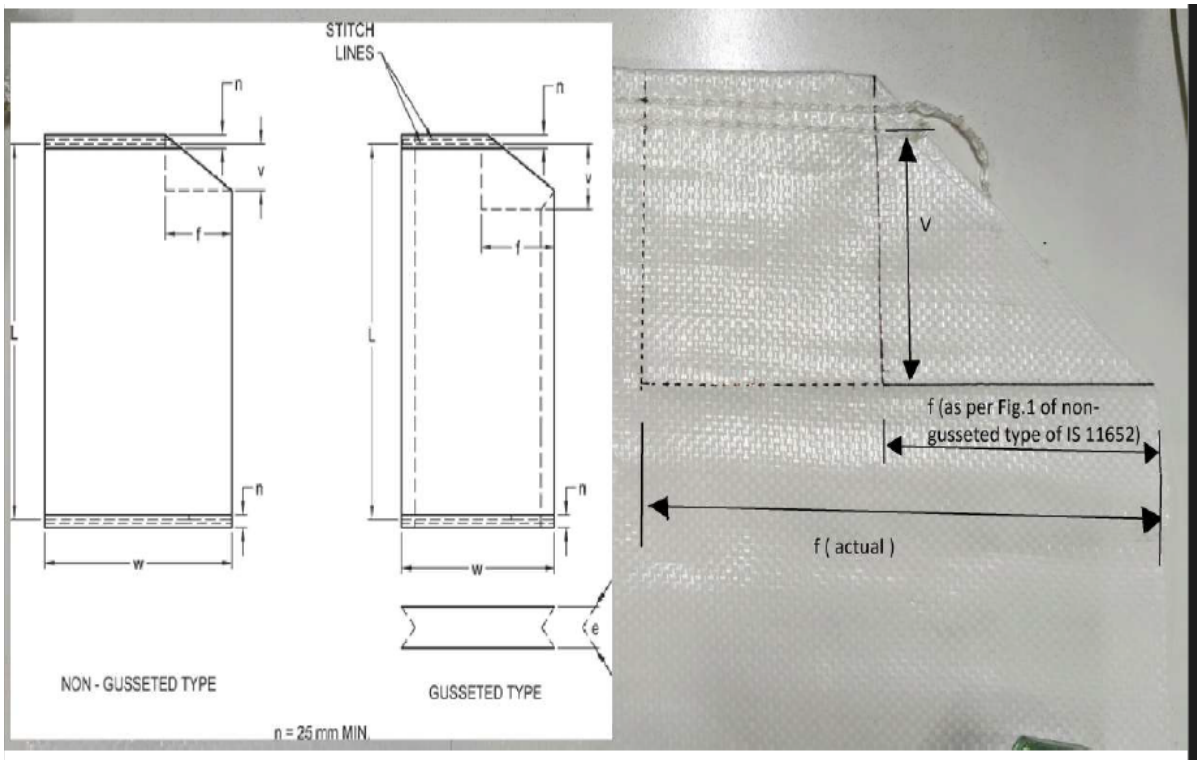
Annex 7

(*Item* 5.3)

Comments received on IS 11652 : 2017 Textiles – HDPE/PP woven sacks for packaging of 50 kg cement

I. Comments received from Shri Tariq Sajjad, OIC Mechanical, representing from Eastern Regional Laboratory, BIS

This has reference to cl 4.7 of IS 11652:2017, where the depth of the valve (f) as shown in the fig. 1 for Non-Gusseted bag is confusing. It is not clear whether we have to take measurement from the outer corner as per the figure 1 or as per the actual folded depth of the valve. Please refer to the attached photographs for further clarity.



II. Comments received from Shri Rajesh Jha representing IFTEX, New Delhi

We are writing to bring to your attention a matter regarding the specifications outlined in IS 11652:2017. As per our understanding, the weight specified for the bags refers to unprinted bags, as the calculation does not account for the weight of the **printing ink.**

This ambiguity in the specification sheet is causing confusion among our buyers, prompting us to seek your urgent clarification for IS 11652 : 2017 as well for all Other PP/HDPE Bags Standards.

For your perusal, detailed hereunder is the calculation sheet as per standards and is also attached herewith this email

ANNEX E

(*Table* 1, *Note*)

METHOD FOR CALCULATION OF MASS OF SACKS

E-1 Total mass of sacks comprises of;

a) mass of fabric, and
b) mass of stitching tape or thread.

E-2 Calculation of mass of sack with the help of the following formulae as the case may be:

a) *Mass of tubular fabric*:
   1) For plain, non-gusseted sack;
   $G = [L + (v \times 1.3) + 55\ \text{mm}] \times 2W \times M \times 10^{-6}$
   2) For gusseted sack;
   $G = [L + v + 1/2e + 55\ \text{mm}] \times 2W \times M \times 10^{-6}$

b) *Mass of stitching tape or thread*:
$G_t = L_1 \times T \times 10^{-6}$

where

G = mass of sack, in g;
L = length of sack, in mm (measured for stitch to stitch);
W = width of sack, in mm;
M = mass of fabric, in g/m^2;
v = width of valve, in mm;
e = width of gusset, in mm;
G_t = mass of stitching tape or thread, in g;
L_1 = length of stitching tape or thread, in mm; and
T = linear density of stitching tape, in tex.

Symbol	Details	As per formula	As per BIS	Bag dimensions
M	Mass of fabric in gms/m^2		79.00	
T	Linear density of stitching tape in tex		100.00	
W	Length of sack in mm			740.00
v	Width of sack in mm			500.00
L1	Width of valve in mm	17,600		100.00
	(W + 25 mm each side) × 4 rows X 8 tapes / row			
Gt	L1 x T x 10^{-6}			
Gt	Mass of stitching tape in gms	1.76		
G	[L + (v × 1.3) + 55 mm] × 2W × M × 10^{-6}			
G	Mass of tubular fabric in gms	73.08		
GS	Mass of Un - printed Sack in gms	74.84		
Gink	Printing Ink weight in gms			1.50
G Final Bag		76.34		

We earnestly request the Bureau of Indian Standards to issue a clarification stating that the specifications in IS 11652:2017 are for unprinted bags, and the weight of the ink which is on

an average 1.5 grams per bag, should be added to the bag weight according to the buyer's artwork. This applies to all PP/HDPE Bags Standards.

We believe this clarification will enhance transparency, benefiting both manufacturers and end-users.

We look forward to your positive response.

III. Comments received from Idma Laboratories Ltd.

We invite your kind attention to IS 11652:2017 Textiles- High Density Polyethylene (HDPE)/Polypropylene (PP) Woven Sacks for Packaging of 50 kg Cement - Specification (Third Revision)

Clause 4.2 Fabric- Prescribes the following:

> "The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on a circular loom from HDPE/PP tapes having width 2.5mm (with a tolerance of ±5 percent), and conforming to IS 6192 and IS 11197 respectively, and linear density of 900 denier".

As per the information available on BIS homepage, IS 11197:1985 has been superseded by IS 6192:2023. However, there is no amendment to IS 11652:2017 in this regard.

The above comments may please be considered for issuing suitable amendment in this regard.

IV. Comments received from Shri K. C. Patel representing Texel Industries Ltd, Gujarat

My Small suggestion is given below if applicable.

When handling cement bags, a significant amount of cement powder is released, which can be inhaled by individuals nearby or dispersed into the atmosphere. To prevent this, it is advisable to strengthen the bags by incorporating a suitable plastic liner either inside or outside, increasing the thickness of the coating layer to ensure the cement powder remains contained.

Additionally, the packaging should be waterproof, as exposure to water can cause the cement to harden, which is problematic, especially in rural areas where storage space is limited.

Need to think on it.

Annex 8

(*Item* 5.4)

Comments received from Shri A.K. Basu representing Inspection Syndicate Pvt. Ltd., Kolkata on IS 9755 : 2021 Textiles – High Density Polyethylene/Polypropylene woven sacks for packaging fertilizers – Specification (*sixth revision*)

A. Clause 4.6.1 suggested folding for the bottom seam has been mentioned for double fold, so that the stitching passes through a minimum of six layers of fabric. The double folding at the bottom is not needed and single folding will serve the seam stability /achieve specified seam strength of the bottom.

   The top stitching at the mouth closing has always been done on two layers of fabric and the top stitch also withstand the hazardous handling and drop of the bags at loading and unloading point. The double folding at the bottom do not practically improve the seam strength except increase the weight of bag by 1.5 gms.

B. Subclause (c) of clause D-3 under 'Annex D Drop Impact test for filled bags' suggest drop of one time at bottom edge and one time from top edge. Since, the top stitching is being done on two layer of fabric and the stitching are being done at packer conveyor, most of the time stitching passes through uneven fabric not exactly parallel to the edge of the bag. This creates uneven pressure on the top edge while drop and probability of seam breakage at the suggested test procedure is very high.

Annex 9

(*Item* 5.5)

Comments received on IS 16703 : 2017 Textiles – High Density Polyethylene or Polypropylene woven sacks for packaging of 25 kg polymeric materials

I. Comments received from Surat Branch Office, BIS

This has reference to IS 16703:2017 'Textiles — High Density Polyethylene (HDPE)/Polypropylene (PP) Woven Sacks for Packaging of 25 kg Polymer Materials — Specification'. Upon reviewing the standard, it has come to our attention that there is a discrepancy related to the width specifications of the sack. As outlined in Figure 1 of the standard, the width 'W' is clearly indicated as excluding the gusset opening. However, Table 1 specifies the sack width requirement as 560 mm after the gusset opening.

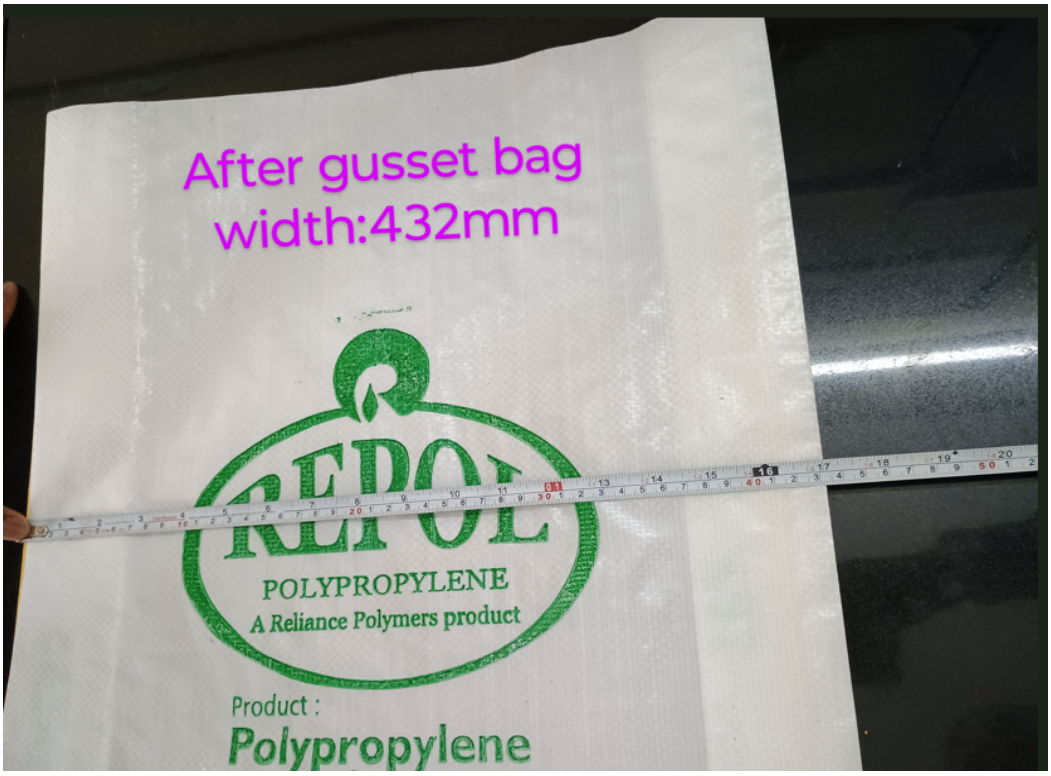
This inconsistency poses a significant challenge, as it leads to discrepancies in the width measurements of the sacks. Consequently, several reports have failed to meet the required standards due to this issue.

To provide clarity and ensure conformity with the standard, we kindly request your assistance in resolving this contradiction. Two reports have been attached for your kind reference.

II. Comments received from Shri Manoj Kumar Singh representing Jai Corp Ltd., Silvassa

A. As per clause 4.3.1 of IS 16703:2017, Bottom fold should be minimum 25mm for single fold single row stitch. Bottom fold test results are within tolerance in Sahibabad lab test report. But they have written in test report non -conform based on specs, declared in Table - 1for bottom fold length. Declared specs. of bottom fold length (50mm to 65mm) is incorrect. It is not possible in single fold bag. As per my opinion, there is a need for correction in Table - 1 for bottom fold length. It should be 25 mm (+10, - 5).

B. As per Sl.no. (i)(b) of Table 1 of IS 16703 : 2017, the flat width (including gusset) is specified as 560 ($\pm$10) mm. But the lab has not included the gusset width in the width of the sacks. So, they are getting non conform results of sacks. It should be represented as 566 (= 434.4 + 131.6). It is also within tolerance. I have eclosed herewith photos of measuring bottom fold, sack width after gusset, Sack width after flattening gusset & Test report of CL lab for your ready references.



Bag Width After Gusset

Bag Width After Flattening Gusset

Bottom Fold Measurement

III. Comments received from Shri N. Krishnamoorthy representing Chemplast Cuddalore Vinyls Ltd., Chennai

Sub - Proposal for amendments to IS 16703:2017 Textiles - High Density Polyethylene (HDPE) and Polypropylene (PP) woven sacks for packaging of 25kg Polymer material - Specification" (read with Amendments 1 and 2)

We refer to BIS 16703: 2017 (reaffirmed in 2020) and its subsequent amendments relating to "Textiles - High Density Polyethylene (HDPE) and Polypropylene (PP) woven sacks for packaging of 25kg Polymer material - Specification".

We introduce ourselves as the second largest manufacturer of PVC resin in the country, with a capacity of over 400ktpa.

As you will appreciate, PVC is a very fine powder, and sacks used for packing need to ensure the following:

a) Material does not ooze out through the body or stitching holes, and

b) Bags are capable of being safely stacked on a pallet for ease of storage, transport & handling.

We have been in production of PVC resin for over 50 years now, and, ever since the above standard got published and moves started for making the same mandatory, we have been trying to experiment with sacks that fully comply. with the prescribed specification. We give below some of the specifications where we are facing issues with usage of the sacks and the amendments required by us so that sacks serve their intended purpose:

Clause	Specification as per IS 16703	Comments	Proposed Changes
4.2 Fabric	The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on circular loom from HDPE/PP tapes having width of 2.5 mm (tolerance of ± 5 percent) conforming to IS 6192 and IS 11197 respectively.	Use of fabric with 2.5mm tape width is resulting in bags slipping off the pallet, leading to safety issues. Based on various trials & observations, it is found that use of fabric with tape width of 3mm increases the roughness of the bag surface, leading to safe stacking on pallets. IS 6192 - Clause 5.4 Width – stipulates: *"The finished width of the tape shall be as agreed to between the buyer and the seller or as declared. However, the finished width shall not exceed 5.0 mm and shall be subject to a tolerance of +5 percent on agreed/declared width".* Similarly, IS 11197 – Clause 4.5 Width — stipulates: *"The finished width of the tape shall not exceed 5 mm."* Thus, a tape width of 3mm ± 5% is fully in compliance of IS 6192 & IS 11197 referred to here.	Amend first sentence of first para of clause 4.2 as under: The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on circular loom from HDPE/PP tapes having width of 2.5 to 5.0 mm (tolerance of ± 5 percent on declared width) conforming to IS 6192 and IS 11197 respectively.
4.3.1 Bottom seam	The stitching of bottom seam shall be done with single row of chain stitch (see IS 10789) and minimum 10 mm from the bottom edge of the sack. The stitching shall be done with single fold	The construction of single fold and single row of chain stitch is unsuitable for packing of PVC resin, which is in the form a fine powder, as it oozes out from the bottom of the bags. There is no spillage however, when the bags are constructed with double fold and double chain stitch.	Amend Clause 4.3.1, first para as under: The stitching of bottom seam shall be done with one or two rows of chain stitches. When a single row of stitch is used, it shall be minimum 10 mm

	over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of four layers of the fabric. The number of stitches/dm shall be 14 ± 2. The stitching shall be uniform without any missing stitch, loose thread or knot. The material used for stitching shall be HDPE/PP tape as used in the fabric or any other multifilament twisted thread or spun yarn suitable for the purpose, having breaking load not less than 90 N. For woven sacks intended for packaging powder material, bulky filler yarn or cord may be used to avoid oozing of material from stitch holes.	As double stitching over double fold is actually superior to single stitching over single old, other options must be available for materials that are likely to ooze out due to the finer particle size and weight combination. It may also be worth noting that IS 9755:2021 allows double stitch /double fold. Further, the reference to IS 10789 should be deleted as the standard is withdrawn	from the bottom edge of the sack. The number of stitches/dm shall be 14 ± 2. When two rows of stitches are used, they shall be separated from each other by minimum 5 mm and the outer stitch shall be minimum 8 mm from the outer edge of the sack. The number of stitches/dm shall be 12 ± 2. The stitching shall be done with a single or double fold over scam. When stitching is done with a single fold, it shall be done over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of four layers of the fabric. When stitching is done with double fold, it shall be done with double fold over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of six layers of the fabric. In all cases, the stitching shall be uniform without any

			missing stitch, loose thread or knot.

IV. **Comments received from Shri K. Srinivasan representing Alkali Manufacturers Association of India, New Delhi**

Proposal for amendments to IS 16703 : 2017 Textiles – High Density Polyethylene (HDPE) and Polypropylene (PP) woven sacks for packaging of 25kg Polymer material – Specification (read with Amendments 1 and 2)
Dear Sir,

We write with reference to IS 16703: 2017 (reaffirmed in 2020) and its subsequent amendments relating to "Textiles – High Density Polyethylene (HDPE) and Polypropylene (PP) woven sacks for packaging of 25kg Polymer material – Specification". PVC Resin manufacturers in India who are among AMAI Members have represented to us regarding problems faced by them in packing PVC (a very fine powder) in HDPE/PP woven sacks. The problem is two-fold:

a) As the PVC resin is a fine powder, it oozes out of the woven sacks through the body or stitching holes;

b) The bags tend to rupture when stacked over one another.

The problems faced by PVC resin manufacturers are described in detail in the table enclosed with this letter along with amendments requested to the specifications in IS 16703.

Sir, as you may be aware, the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers have issued Quality Control Order notifying IS 16703:2017 for mandatory compliance effective 7th June 2024. As a result, PVC resin producers are required to comply which is resulting in usage of bags that are functionally unsuitable while functionally suitable bags exceed the specification laid down by BIS.

Clause	**Specification as per IS 16703**	**Comments**	**Proposed Changes**
4.2 Fabric	The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on circular loom from HDPE/PP tapes having width of 2.5 mm (tolerance of ± 5 percent) conforming to IS 6192	Use of fabric with 2.5mm tape width is resulting in bags slipping off the pallet, leading to safety issues. Based on various trials & observations, it is found that use of fabric with tape width of 3mm increases the roughness of the bag	Amend first sentence of first para of clause 4.2 as under: The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on circular loom from HDPE/PP tapes

	and IS 11197 respectively.	surface, leading to safe stacking on pallets. IS 6192 - Clause 5.4 Width –stipulates: *"The finished width of the tape shall be as agreed to between the buyer and the seller or as declared. However, the finished width shall not exceed 5.0 mm and shall be subject to a tolerance of +5 percent on agreed/declared width".* Similarly, IS 11197 – Clause 4.5 Width — stipulates: *"The finished width of the tape shall not exceed 5 mm."* Thus, a tape width of 3mm ± 5% is fully in compliance of IS 6192 & IS 11197 referred to here.	having width of 2.5 to 5.0 mm (tolerance of ± 5 percent on declared width) conforming to IS 6192 and IS 11197 respectively.
4.3.1 Bottom seam	The stitching of bottom seam shall be done with single row of chain stitch (see IS 10789) and minimum 10 mm from the bottom edge of the sack. The stitching shall be done with single fold over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of four layers of the fabric. The number of stitches/dm shall be 14 ± 2. The stitching shall be uniform without any missing stitch, loose thread or knot. The	The construction of single fold and single row of chain stitch is unsuitable for packing of PVC resin, which is in the form a fine powder, as it oozes out from the bottom of the bags. There is no spillage however, when the bags are constructed with double fold and double chain stitch. As double stitching over double fold is actually superior to single stitching over single old, other options must be available for materials that are likely to ooze out due to the finer particle size and weight combination.	Amend Clause 4.3.1, first para as under: The stitching of bottom seam shall be done with one or two rows of chain stitches. When a single row of stitch is used, it shall be minimum 10 mm from the bottom edge of the sack. The number of stitches/dm shall be 14 ± 2. When two rows of stitches are used, they shall be separated from each other by minimum 5 mm and the outer stitch shall be minimum 8 mm from the outer edge of the sack. The

	material used for stitching shall be HDPE/PP tape as used in the fabric or any other multifilament twisted thread or spun yarn suitable for the purpose, having breaking load not less than 90 N. For woven sacks intended for packaging powder material, bulky filler yarn or cord may be used to avoid oozing of material from stitch holes.	It may also be worth noting that IS 9755:2021 allows double stitch /double fold. Further, the reference to IS 10789 should be deleted as the standard is withdrawn	number of stitches/dm shall be 12 ± 2. The stitching shall be done with a single or double fold over scam. When stitching is done with a single fold, it shall be done over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of four layers of the fabric. When stitching is done with double fold, it shall be done with double fold over seam to a depth of minimum 25 mm, so that the stitches pass through a minimum of six layers of the fabric. In all cases, the stitching shall be uniform without any missing stitch, loose thread or knot.

Annex 11

(*Item* 5.6)

Comments received on IS 16709 : 2017 Textiles - Polypropylene (PP) woven, laminated, block bottom valve sacks for packaging of 50 kg cement – Specification

I. Comments received from Shri Awadhesh Kumar Singh representing M/s Ultra Tech Cement Ltd., Mumbai

We would like to submit the following observations on IS 16709 : 2017 :

- **Air Permeability –** The said IS code states air permeability values 70-100 m3/h but practically we observed ballooning of the bags at the mentioned air permeability even at maximum value of 100m3/hr which doesn't allow smooth operation of the packer for bags filling. To avoid this effect the air permeability is normally kept in the range of 110 – 140 m3/h depending upon the fineness & types of cement. Hence request to review & revise the air permeability parameters.

- **Average Breaking Strength of Fabric Length & Width wise** (Ref-IS 16709:2017, Table 1, Sl No. (V and VI), page 4) - When permeability increased to 110 – 140 m3/h it impacts fabric strength severely. The lengthwise & widthwise strength reduces from 600 N to 500 N at 120-130m3/hr. Hence proposed to revise average lengthwise breaking strength from 650 N to 600 N and width wise breaking strength from 600 N to 500N considering maximum allowable air permeability or a table may be introduced.

- **Elongation at the Break - Fabric** (Ref - IS 16709:2017, Table 1, Sl No. (VII), page 4) - Elongation parameter for Block Bottom laminated bags has been kept similar to normal HDPE/PP bags as per IS 11652: 2017 i.e. 15-25%, but elongation of Bock bottom bags reduces remarkably which further reduces on increased air permeability. We practically observed elongation in the range of 10% to 14%. Test results of third-party inspection and own lab of particulars lots of Block bottom bags are attached for reference pl. Therefore, we propose the elongation 10-14% in place of 15 to 25% for block bottom bags.

  Similarly needs to revise the elongation range for BOPP laminated block bottom bags which mentioned 15-25%. However, the values practically observed are in the range of 7% to 12% which has been found lower than block bottom LPP bags due to the additional film layer. Hence proposed to revise the elongation in the range of 7-12%.

- **Drop test of Bags -** We have also observed at shop floor during testing of packed bag well passing on flat face but failed most of the times side, top and bottom edges may be due to smaller surface area and higher weight impact.

II. Comments received from Smt. Padmaja Reddy representing IFTEX (Formerly known as AIFTMA)

The Indian PP,HDPE. Industry represented by IFTEX (Formerly AIFTMA) for over 5() Years is to committed to supply ISI Marked PP (HDPE Woven Sacks and/or as per present BIS Standards for Cement Packing as per IS 11652. 2017 as well Block Bottom Bags as per IS 16709: 2017.

we wish to bring to your attention certain critical points that merit reconsideration in the BIS norms for Laminated Block Bottom Bags (IS: 16709: 2017).

A. Request for revision in the strength parameter based on the perforation levels required by customers.

Average Breaking Strength of Fabric Length & Width wise (Ref - IS 16709:2017, Table SI No. (V and VI). page 4)

The current standard, IS 16709:2017, lacks a correlation between strength and air permeability. Recent requirements from cement companies necessitate bags with minimum perforation ranging from 105 m^3/h to as high as 130 m^3/h. However, the existing BIS standard considers air permeability as 90m^3/H while determining other parameters such as strength and elongation.

Our laboratory tests, maintaining the ash content of fabric as per BIS 16709:2017, reveal a reduction in fabric strength at different air permeability levels.

Bag fabric GSM : 86 gms/sqmtr
Ash Content : 3.85%

The reading mentioned in the below table is average of 10 bags, perforation checked before and range between ± 5 m^3/hr. of the mentioned perforation in table.

Sl No.	Perforation	Strength	Elongation
1.	70 m^3/hr	632 N	14 %
2.	90 m^3/hr	614 N	14 %
3.	100 m^3/hr	553 N	13 %
4.	110 m^3/hr	550 N	12 %
5.	120 m^3/hr	540 N	11 %
6.	130 m^3/hr	517 N	11 %

B. Request to revise the Elongation parameter to 10% to 13% for PP laminated Block Bottom Bags and 8% to 12% for BOPP laminated Block Bottom Bags to align with practical and achievable industry standards.

Elongation at the Break - Fabric (Ref - IS 16709:2017, Table 1, Si No. (VII), page 4)

IS 16709:2017 specifies an elongation range of 15% to 25% for PP laminated Block Bottom bags, which Is comparable to the elongation requirement for woven bags in other BIS standards. However, Block Bottom bags differ as they are laminated and perforated. making the specified elongation standards unachievable.

Our observations and recommendations from OF.M machine manufacturers, M/s Starlinger Ltd. Austria, and M/s Windmoller Houchllor, indicate that achievable elongation in Laminated Block Bottom Rags after perforation is approximately 11% to 13%. Additionally, for BOPP laminated Block Bottom Bags, the achievable range is 8°o to l 2"a due to the low elongation of BOPP film.

C. Request for revision in the current procedure for carrying out the Drop Impact Testing of the Sacks specifies as under for both IS 16709:2017.

C-3.1 Drop test shall be carried out using suitable sack drop mechanism. Each sack shall be dropped from a height of 1.8 m for the test requirements as specified below:

a) Height of drop 1.8 m (two times for face side and two times for hack side),
h) Height of drop – 1.8 m (one time for left edge and one time for right edge), and
c) Height of drop - 1.8 m (one time for bottom edge and one time for top edge).

While the drop impact testing is a reasonable indicator of the performance of the hags in the actual usage, the same is not sacrosanct and cannot be taken as a technical test to measure the performance of the bags. Also, the procedure laid out for testing of these bags needs to be modified. The test should be carried out on the flat face and back sides of the sack only and not the side, top and bottom edges. The reduced area of the surface in contact with the ground when the sack is dropped on the side, top and bottom edges will inevitably result in failure of the sack. Additionally, during actual handling the sacks are always slacked on the flat face and back side only and therefore need to be tested for the same.

The proposed procedure for carrying out the Drop Impact Testing of the Sacks should therefore be revised as under:

C-3.1 Drop test shall be carried out using suitable sack drop mechanism. Each sack shall be dropped from a height of 1.8 m for the test requirements as specified below:

a) Height of drop = 1.8 m (two times for face side and two times for back side).
b) Delete

c) Delete

We appreciate your attention to these concerns and kindly request a thorough review and consideration of our suggestions to enhance the effectiveness and relevance of the existing BIS norms.

III. Comments received from Shri A. K. Basu representing Inspection Syndicate Pvt. Ltd., Kolkata

We would like to point out toward Elongation at Break % of Perforated bags (Laminated Block Bottom) for packing cement as specified in IS:16709. In spite of high perforation of 110-130 m^3/hr presently in use for cement bags elongation at break has been kept 15-25% as in all other type of bags of normal fabric. It is needless to mention that after perforation fabric loses its elongation to a good percentage and our observation after inspection and testing of millions of cement bags, the Elongation at Break % should be between 11-18%.

In all standards like IS 11652:2017, IS:9755-2012, IS:14887-2014$ IS; 14968-2015 for fabric in clause no. 4.2 it is clearly mentioned that the Tape should conform the requirement given IS: 6192. In clause no. 5.1.4 of IS: 6192 it is clearly specified that average tenacity of tape for HDPE should be minimum 4g/denier and for PP 5g/denier. In that case the specified value for tensile strength for HDPE should be lower than that of specified value of PP fabric. But the same has not been considered in the standards mentioned above. This needs to be looked. A National standard should be foolproof and should not attract any controversy.

IS:16703 : 2017 (HDPE?PP Woven Sacks for Packaging of 25 kg Polymer Materials. In clause 4.2 of the standard it is defined that the (Linear density of tapes shall be 900 denier for 10 X 10 mesh /inch fabric). In the table 1, Requirement for Average Breaking strength for both lengthwise and widthwise is 834 N and for bottom seam strength is 390 N. For fabric of similar construction, BIS can adopt the same standard for PP cement bag Standard IS: 11652.

Annex 13a
(*Item* 6.1)

For BIS Use Only

BUREAU OF INDIAN STANDARDS

MINUTES

Second Meeting of Panel (TXD23/P11) for Study of Ash Content and Usability of HDPE/PP Cement Sacks (IS 11652:2017) under TXD23, Textile Materials Made from Poly olefins (Excluding Cordage) Sectional Committee

Date/Day	**Time**	**Venue**
08 July 2024 (Monday)	1430 h	Through Video Conferencing

ATTENDEES:

1.	Dr Tanweer Alam **(Chairman TXD 23)**	Indian Institute of Packaging (IIP), Mumbai
2.	Dr Amit Singla (**Convener)**	-do-
3.	Shri Shubho Chakraborty	Cement Manufacturer's Association, New Delhi
4.	Shri Awadhesh Singh	-do-
5.	Shri Pravesh Sharma	-do-
6.	Shri Vishal Mohite	-do-
7.	Shri Sandesh Kumar Jain	Central Institute of Plastics Engineering and Technology, Bhopal
8.	Shri Ajay Sardana	Chemical and Petrochemicals Manufacturers Association, New Delhi
9.	Shri Vineet Gupta	-do-
10.	Shri Kuldeep Negi	-do-
11.	Smt. Padmaja Reddy	Indian Federation of Woven Technical Textiles (Formerly AIFTMA), New Delhi
12.	Shri Surendra Chowdhury	-do-

13.	Shri A. K. Basu	Inspection Syndicate Pvt. Ltd., Kolkata
14.	Shri Upender Krishen Saroop	Lohia Corp. Ltd., Kanpur
15.	Shri S.V. Raju	Reliance Industries Ltd., Mumbai
16.	Ms. Samidha	-do-
17.	Shri Prakash Kumar Khemani	Suraj Logistics Pvt. Ltd., Kolkata
18.	Shri V. Sreenivasan	VCPL, Vadodara
19.	Shri Amit Kumar Pandey	Scientist 'B' (Textiles), BIS & Member Secretary

Item 0 WELCOME AND INTRODUCTORY REMARKS BY THE PANEL CONVENER

Dr. Amit Singla welcomed all the members present in the meeting and reaffirmed the decisions made during the 35th meeting of TXD 23 held on 27.06.2024 including that this panel meeting will be held on 08.07.2024 by VC to finalize its recommendations on the specific subject after taking into consideration the said discussions of 35th meeting and facts and figures available till date. He requested the members to present their technical views as per the agenda as circulated by BIS. He requested the member secretary to start the proceedings with remarks from Chairman TXD 23 and provide adequate time to CMA representatives to be heard respectfully by all members without any interruption which was appreciated by CMA. He further advice that the deliberations should be very precise, technical and cover the process to start the study as per TOR, rough estimate of testing charges from CIPET and IIP after allowing 25% discount, funding process by CMA along with IFTEX and CPMA.

Item 1 WELCOME AND INTRODUCTORY REMARKS BY THE CHAIRMAN TXD 23

Dr. Tanweer Alam, Chairman TXD 23, welcomed the panel members and briefed the circumstances due to which this panel meeting is being held under specific directions of the TXD 23 taken in its 35th meeting held on 27.06.2024. He appreciated the inputs from the panel members and requested to specifically deliberate on initiating the study immediately as per agenda of this panel meeting and its annexures as well agenda and minutes of the first meeting of panel held on 13.01.2022. He clarified that the technical study on ash content for which CMA proposal was accepted by TXD 23 in July 2019 should be done without any further delay. He requested to the members to hear the CMA representatives patiently and CMA representatives were requested to make their submissions comprehensively and freely. It was clarified that there is no question of side stepping the CMA technical study on the subject of ash content which has actually never been initiated as per TOR. He also expressed that members would continue their effort for good National Standards in public interest particularly

in the present context of Plastics and Environment with high focus on ecological and environmental sustainability. The Indian Polymer producers have provided adequate data on polymers chemistry as well ecological and environmental sustainability.

Item 2 COMPOSITION OF PANEL TXD23/P11

The committee examined and further **CONFIRMED** the present composition and scope of the panel TXD 23/P1 as given in **Annex 1** of the agenda**.**

Item 3 Study of Ash Content requirement in HDPE/PP Cement Sacks (IS 11652 : 2017 – Reaffirmed in 2022)

3.1 Pursuant to very comprehensive, interactive deliberations on the subject from CMA representatives and all panel members and considering the facts and figures available , National Policies applicable such as PWM and EPR Notifications and other material on record including the terms of reference of the said study which was finalized during the 26th meeting of TXD 23 held on dated 08 July 2019 as well the minutes of the first meeting of the panel held on 13.01.2022 and inputs from various panel members all given in the agenda of the panel meeting. The panel unanimously decided as under for recommendations to TXD 23 committee for further decision on this subject as per directions of the Hon'ble Delhi High Court in its order of 28.05.2024 while disposing the writ petition of CMA and Others.

a) The Terms of References (TOR) of 3 Paras as given in **Annex 1 (Page 4)** to the minutes which was finalized during the 26th meeting of TXD 23 held on 08.07.2019 continues to be the TOR for this specific Study proposed by CMA on ash content. The PWM Rules and EPR Rules including addition of reprocess material as notified by the Government of India in March 2024 amending earlier rules of 2016 and others though is applicable to HDPE/PP bags of IS 11652 : 2017 as well all other Plastic packaging is to be dealt separately or in this study to be decided by TXD 23 with consultation of experts and representatives of MOEF & CC, CPCB as this was found to be out of the purview of the panel in its present scope.

b) The committee scrutinized the proposal received from Shri Upender Krishen Saroop representative from Lohia Corp. Ltd., Kanpur for the manufacturing of bags with different levels of ash content on one machine in a controlled environment as given in **Annex 1** to the agenda. The committee unanimously not agreed with the proposal on the grounds that the manufacturing of bags shall be done in 4 different regions to consider the effect of ambient conditions in the study as this study is not for the research purpose but for resolving the practical issues. However, the committee appreciated the proposal of Lohia Corp. Ltd., Kanpur for manufacturing of bags as per the TOR of the study at free of cost.

c) The 100 samples of printed PP cement sacks as per Para- 1 of TOR will be tested as per test charges finalized by CIPET and accepted by IIP as given in **Annex 2 (attached seperately)** to the minutes. The collection of samples shall be jointly carried out by CMA , IFTEX (Formerly AIFTMA) and CPMA as per TOR. The Suppliers and Buyers details shall be provided by CMA.

d) The 1400 samples of Para – 2 (non - UV & UV stabilized) will be tested as per test charges finalized by CIPET and accepted by IIP. IFTEX will manufacture the said samples in four regions i.e. North, South, East and West from its members and provide the total numbers, as required by BIS standards to CIPET and IIP, to be provided by IFTEX free of cost. This entire process shall be jointly coordinated by CMA , IFTEX and CPMA. The details of HDPE/PP cement sacks manufacturer's shall be provided by IFTEX and to be concurred by CMA and CPMA.

e) Samples as required for Drop Test as per IS – 11652 : 2017 shall be provided extra as Drop Test has to be conducted at Cement Plants which shall be coordinated by CMA jointly with IFTEX and CPMA.

f) The panel appreciated the immediate confirmation from IFTEX during the meeting to provide the required samples free of cost for this study. They also agreed that if required they can make samples with recycled plastics subject to its availability.

g) The panel appreciated the immediate confirmation from CPMA during the meeting to provide Raw Material – PP to the manufacturers selected free of cost.

h) The CMA representatives did not confirm their fund contribution to bear the testing charges of the samples during the meeting informing that it needs consultations within CMA and sought a maximum of 1 week from the receipt of minutes to respond . It was commented by the members that the aggrieved party on IS 11652 : 2017 is CMA and proposal for study on ash content was submitted by CMA , accepted by TXD 23 in July 2019 is aware of the approximate testing charges and should have come prepared to confirm to bear the cost as initially agreed by CMA in 2019, details of which are available on record.

i) The proposal of the members to add a new category of NIL fillers in the TOR of the study was not accepted by CMA and to be decided by the TXD 23. It was clearly mentioned by the members other than CMA representatives that higher fillers would eventually lead to deterioration of strength and overall quality keeping in view PWM.

j) BIS requested to take up the study of ash content with recycled plastics as per PWM rules as a R&D project with new TOR for which TXD 23 Technical Committee to take necessary action.

Item 4 ANY OTHER BUSINESS

3.1 There being no other business the meeting ended with a hearty vote of thanks to the ***Convener***.

Item 5 DATE AND PLACE OF NEXT MEETING

It was decided that the third meeting of the panel will be called immediately on receipt of the necessary inputs as per minutes from the panel members.

Annex 1
(*Item 3.1***)**

Terms of Reference for the study of ash content in cement sacks as per IS 11652 : 2017

It was decided that 100 samples of printed bags of various suppliers and buyers as per existing IS 11652:2017 from all 4 regions i.e North, South, East, West shall be collected jointly by CMA, AIFTMA, CPMA and the representative of IIP and CIPET for testing as per requirements of IS 11652:2017 (Currently enforced) to generate actual data of the test results of bags in use.

Further, for the proposed study, CMA, AIFTMA and CPMA jointly will arrange to send the following samples to IIP and CIPET for the testing of all the requirements as per IS 11652 : 2017:

1. Non-UV - 100 samples each with Ash content with maximum percentages of 2, 4, 6, 8, 10, 12 and 14 (Total samples 700).
2. UV stabilized - 100 sampless each with Ash content with maximum percentages of 2, 4, 6, 8, 10, 12 and 14 (Total samples 700).

The committee also decided that factual test data of Indian Cement Manufacturers along with their current packing details of the quality and standards provided by them and incorporated in the agenda shall also be analyzed by the above panel for adequacy and panel may also request for additional data, if required. The committee further decided that the outcome of the above study shall be placed before the committee during its next meeting for decisions and discussions.

Annex 13b
(*Item 6.1*)

For BIS Use Only

BUREAU OF INDIAN STANDARDS

MINUTES

Combined Meeting of Panel TXD 23/P1 "Study of ash content in HDPE/PP cement sacks" and TXD 23/P7 "Review of the requirements of Fabric strength and Seam strength of Cement sacks IS 11652: 2017" under TXD 23, Textile Materials Made from Polyolefins Sectional Committee

Date/Day	**Time**	**Venue**
22 August 2024 (Thursday)	1100 hr	Through Video Conferencing (CISCO Webex)

ATTENDEES:

1.	Dr Tanweer Alam **(Chairman TXD 23)**	Indian Institute of Packaging (IIP), Delhi
2.	Dr Amit Singla (**Convener)**	Indian Institute of Packaging (IIP), Ahmedabad
3.	Shri Naresh Bhandia	All India Woven Fabric Manufacturers' Association, Bangalore
4.	Shri Shubho Chakraborty	Cement Manufacturer's Association, New Delhi
5.	Shri Awadhesh Singh	-do-
6.	Shri Pravesh Sharma	-do-
7.	Shri Vishal Mohite	-do-
8.	Shri Ravi Kumar	-do-
9.	Shri Vatsal Goel	-do-
10.	Dr. Vishal Verma	Central Institute of Petrochemical Engineering & Technology, Chennai
11.	Shri Ajay Sardana	Chemical and Petrochemicals Manufacturers Association, New Delhi

12.	Shri Vineet Gupta	-do-
13.	Shri Nitin Gupta	-do-
14.	Smt. Padmaja Reddy	Indian Federation of Woven Technical Textiles (Formerly AIFTMA), New Delhi
15.	Shri Vijay Dalmia	-do-
16.	Shri A. K. Basu	Inspection Syndicate Pvt. Ltd., Kolkata
17.	Shri Upender Krishen Saroop	Lohia Corp. Ltd., Kanpur
18.	Shri Surender Choudhary	PlastIndia Foundation, Mumbai
19.	Shri S.V. Raju	Reliance Industries Ltd., Mumbai
20.	Ms. Samidha	-do-
21.	Shri Prakash Kumar Khemani	Suraj Logistics Pvt. Ltd., Kolkata
22.	Shri V. Sreenivasan	VCPL, Vadodara
24	Shri J.K. Gupta	Scientist 'E' & Head (Textiles)
23.	Shri Amit Kumar Pandey	Scientist 'B' (Textiles), BIS & Member Secretary

Item 0 WELCOME AND INTRODUCTORY REMARKS BY SHRI J.K. GUPTA, HEAD (TEXTILES)

Shri J. K. Gupta, Head (Textiles) welcomed the convenor and all the panel members in the meeting. He informed that this is a combined meeting of the panels TXD 23/P1 and TXD 23/P7 for resolving the two major issues being faced in IS 11652 : 2017 i.e., Finalization of terms of references for performing the study of ash content in HDPE/PP Cement sacks and Reviewing of the requirement of Fabric strength and Seam strength in HDPE/PP Cement sacks. He also requested all the panel members to provide their specific input related to agenda items only so that these issues can be resolved on top priority.

Item 1 WELCOME AND INTRODUCTORY REMARKS BY THE PANEL CONVENER

Dr. Amit Singla, Convenor TXD 23/P1 and TXD 23/P7, also welcomed all the panel members in the meeting. He informed the panel members that this study shall be performed as per the research design by keeping only one variable parameter i.e. Ash content which will leads to the actual effect of ash content on the performance of HDPE/PP cement sacks as per IS 11652 : 2017. He further advice that the deliberations should be very precise, technical and cover the process to start the study as per TOR, estimation of testing charges from CIPET and IIP, funding process by CMA (proposer of the study) along with IFTEX and CPMA.

Item 2 COMPOSITION OF PANEL TXD23/P1

The panel examined and **CONFIRMED** the present composition of the panel TXD 23/P1 as given in the agenda**.**

Item 3 COMPOSITION OF PANEL TXD23/P7

The panel examined and **CONFIRMED** the present composition of the panel TXD 23/P7 as given in the agenda**.**

Item 4 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

4.1 The panel scrutinized the comments received from CMA, New Delhi, as given in **Annex 1** to the agenda, on the minutes of the 2nd panel meeting of TXD 23/P1 held on dated 08 July 2024 through video conferencing which was circulated vide BIS DG letter no. TXD 23/P1.2 dated 22 July 2024.

4.1.1 After detailed deliberations, the panel decided that the points mentioned by CMA, New Delhi are well noted and will be discussed in detail during this meeting under agenda item 5. Thereafter, with afore-said note, the panel **CONFIRMED** the minutes of the 2nd panel meeting of TXD 23/P1 held on dated 08 July 2024 through video conferencing.

4.2 In view of no comments received on the minutes of the first panel meeting of TXD 23/P7 held on dated 08 April 2024 through video conferencing which were circulated vide BIS DG letter no. TXD 23/P7.1 dated 24 April 2024, the panel **CONFIRMED** the minutes.

Item 5 STUDY OF ASH CONTENT REQUIREMENT IN HDPE/PP CEMENT SACKS AS PER IS 11652 : 2017

5.1 Shri J K Gupta, Sc-E & Head (Textiles) briefed the panel members about the actions taken related to the study of ash content in HDPE/PP cement sacks by the TXD 23 committee and the panel TXD 23/P1 in their earlier meetings. He also informed the panel members about the decision taken in the 33rd meeting of TXD 23, held on dated 10 August 2023, to reconsider the terms of references for rationalizing the said study considering the technical and financial aspects, for which this meeting is being held.

5.2 The Panel scrutinized the comments, and the response received from CMA, Delhi on the minutes and on the cost bearing of testing charges for the study as given in **Annex 1 and 2** to the agenda respectively and after a detailed discussion on the said subject among the panel members, the panel unanimously decided as under:

i) Collection of HDPE/PP cement sacks as per IS 11652 : 2017 from suppliers and buyers of each four regions and its testing for evaluating the existing conditions of cement sacks shall be excluded from the study as more than 60 licenses have already been granted to the manufacturers of cement sacks and in addition to this, this will also not contribute in analysing the effect of ash content on the performance of cement sacks as per IS 11652 : 2017. However, the panel also decided that the test data/reports from the suppliers and buyers of cement sacks as per IS 11652 : 2017 shall be collected on top priority from each of the four regions, i.e. North, South, East and West, to analyse the current scenario of cement sacks.

ii) It was informed by CMA that the shelf life of cement is only 3 months and are always kept under the roof, therefore, the packaging of cements are only done in non-UV stabilized PP cement sacks. After detailed discussions, the panel unanimously decided that the afore-said study shall be conducted only on the non-UV PP cement sacks as per IS 11652 : 2017, with seven different levels of ash content i.e., 2%, 4%, 6%, 8%, 10%, 12% and 14 %. In addition to this, the panel members also informed that the requirement of ash content of 2.2 % for UV stabilized woven sacks are well acceptable by the stakeholders for all standards and same shall continue for IS 11652 : 2017 without any changes.

iii) Manufacturing of the samples of non-UV cement sacks as per IS 11652 : 2017 shall be done at one manufacturing facility, i.e. M/s Suraj Logistics, Jamshedpur, under similar conditions, so that, all the other parameters except ash content shall remain constant to evaluate the effect of ash content on the mechanical and physical characteristics of cement sacks as per IS 11652 : 2017.

iv) Shri Ajay Sardana representing CPMA, New Delhi reconfirmed that CPMA will provide the raw material- PP along with Calcium Carbonate Fillers of similar grade to M/s Suraj Logistics, Jamshedpur at free of cost. The logistics cost for raw material-PP and Calcium carbonate fillers shall be borne by CPMA. The quality or grade of calcium carbonate filler shall be the same as what is being used by majority of the manufacturers of cement sacks. The details of the raw material to be used in this study are stated as under:
    a) Raw material (PP granules) - Prime raffia grade virgin PP.
    b) Filler – With min. 20 % Prime raffia grade virgin PP and remaining calcium carbonate filler

v) The manufacturing of samples along with the sampling shall be performed in the presence of the representatives from IFTEX, AIWFMA, CMA and CPMA which will be performed on the dates informed by M/s Suraj Logistics, Jamshedpur in advance to the mentioned organizations. The complete expenses of the representatives to witness the manufacturing and sampling of bags shall be borne by their respective organizations. Each organization (mentioned above) will nominate two representatives (principal and alternate), so that, in case of non-availability of principal member, alternate member can witness the manufacturing and sampling of sacks for timely completion of the study and inform the same to the M/s Suraj Logistics, Jamshedpur in advance along with the contact details.

vi) M/s Suraj Logistics, Jamshedpur shall produce lots of appropriate quantity of non-UV cement sacks, produced from 500 Kg raw material, for each 7 levels of ash content within 30 days from the receipt of raw materials from CPMA. The cost of manufacturing of samples shall be borne by the manufacturer (member of IFTEX).

vii) 100 non-UV sacks each with 7 different levels of ash content as mentioned above shall be drawn randomly from the respective lot of PP cement sacks of appropriate quantity. Each sample shall consist of 10 PP cement sacks as per IS 11652 : 2017. The counter samples of 100 non-UV sacks shall also be drawn, sealed and kept safely at the manufacturing facility. In addition to this, extra three non-UV PP cement sacks for each sample (total 30 sacks for each level of ash content) shall be drawn randomly from the respective lot of PP cement sacks of appropriate quantity and shall be packed separately. The logistics cost of sending the drawn samples to the testing facility shall be borne by M/s Suraj Logistics, Jamshedpur.

viii) The panel decided that the 100 non-UV PP cement sacks shall be tested only at IIP after considering the financial concerns for performing the study. However, as per the request received from CMA representative that as the sampling and cost of testing has been rationalized, so, the samples can be tested at both IIP and CIPET, therefore, the panel decided that the additional 100 non-UV PP cement sacks with 7 different levels of ash content will be tested at CIPET, only if CMA agrees to bear the testing charges for the same.

ix) The Drop testing of non-UV cement sacks shall be performed at M/s Reddipalayam Cement works, Ultra Tech Cement Ltd., Tamilnadu, as finalized by CMA, in the presence of representatives from CMA, AIWFMA, IFTEX, and CPMA on the dates informed by M/s Reddipalayam Cement works, Ultra Tech Cement Ltd., Tamilnadu in advance to the mentioned organizations. The report of the same shall be provided to IIP for performing statistical analysis within 30 days from the receipt of samples from the M/s Suraj Logistics, Jamshedpur. The complete expenses of the representatives to witness the drop testing of sacks shall be borne by their respective organizations. Each

organization (mentioned above) will nominate two representatives (principal and alternate), so that, in case of non-availability of principal member, alternate member can witness the drop testing of sacks for timely completion of the study, and inform the same to the cement industry in advance along with the contact details.

x) The testing of the samples, except drop test, will be performed at IIP in the presence of representatives from IFTEX, AIWFMA, CMA and CPMA which will be performed on the dates informed by IIP in advance to the above-mentioned organizations. IIP shall provide the test report along with the statistical analysis to the TXD 23 committee within 45 days from receipt of samples from M/s Suraj Logistics, Jamshedpur. The complete expenses of the representatives to witness the test shall be borne by their respective organizations. Each organization (mentioned above) will nominate two representatives (principal and alternate), so that in case of non-availability of principal member, alternate member shall witness the testing of sacks to prevent any delay in the study, and inform the same to the IIP in advance along with the contact details.

xi) The testing charges for performing the study as per the ToR by IIP, as given in **Annex 1** to the minutes, shall be borne by CMA. And the payment of the testing charges shall be done directly to IIP. The panel also requested IIP to provide the maximum possible discount on testing charges for the study.

xii) The CMA representative does not provide the confirmation for bearing the testing charges in the meeting on the grounds that he needed to discuss the finalized testing charges with the members of his association for final approval. He requested the panel to provide the time to discuss with in his organization and to provide the confirmation for bearing the testing charges for the said study. The panel decided that the confirmation of bearing of testing charges for the said study shall be provided by CMA within two days from receipt of minutes of this meeting.

xiii) The panel also appreciated the reconfirmation from IFTEX for his submission to provide RS. 3 lacs additional to the manufacturing cost of samples for non-UV PP cement sacks.

5.3 In addition to this, panel also reaffirmed that this study is being performed only for reconfirmation of the requirements of Ash content in cement sacks as per IS 11652 : 2017 as requested by CMA in the 26th meeting of TXD 23 held on dated 08 July 2019. It is also informed that the Indian Standards are always dynamic in nature and shall be reviewed periodically to comply with the latest technology, development and national policies notified by Government of India.

Item 6 REVIEW OF THE REQUIREMENTS OF FABRIC STRENGTH AND SEAM STRENGTH OF CEMENT SACKS IS 11652: 2017 UNDER TXD 23

6.1 Shri J. K. Gupta briefed the panel about the communication received from IFTEX for the issue being faced by the manufacturers of cement sacks due to the rejection of their lots by the user industries of cement sacks i.e. cement industry because of non-compliance with the requirement of seam strength and fabric strength as per IS 11652 : 2017. He further informed the panel that BIS has received the data from Manufacturers as well as from the users also and there is a wide difference in both the data. As per the data received from IFTEX and manufacturers of cement sacks, the requirement of fabric strength and seam strength varies from 850 to 870 and 350 to 370 respectively. However, as per the data received from the users end, majority of the lots are found to have the fabric strength and seam strength value more than 900 N and more than 400 N respectively. In this factual situation, there is a conflict between the data provided by the sellers and buyers. Therefore, comprehensive data and analysis are required to consider the IFTEX proposal.

6.2 Shri Awadhesh Kr. Singh, representative from CMA, New Delhi informed the panel that data provided by M/s Ultra Tech Ltd. comprises of data from both accepted and rejected lot, and it can be clearly seen from the rejected lot data that the fabric strength and seam strength value is lower than the specified requirement in IS 11652 : 2017. However, due to wrong interpretation by the cement industries, they may have provided the data of accepted lots which is meeting the requirements as per IS 11652 : 2017. He also requested the panel that the data of rejected lots shall also be sought from the cement industries along with the data of accepted lots and BIS may communicate with cement plants accordingly.

6.3 Smt. Padmaja Reddy, representing IFTEX, New Delhi, endorsed the inputs from Shri Awadhesh Kr. Singh. In addition to this, she also informed that it is difficult to achieve the 900 N fabric strength and 400 N seam strength consistently with 79 GSM fabric even with the maximum Ash Content of 6% in non-UV PP cement sacks. She further elaborated the calculation of GSM and corresponding strength of the fabric as given in **Annex 4** to the agenda and suggested that the fabric strength of 900 N can only be achieved with 88 GSM fabric. In addition to this, Smt. Padmaja Reddy, IFTEX, also informed the panel that in order to achieve the required strength as per IS 11652 : 2017, the manufacturers have to compromise with the production by running the machines with slower speed and at lower efficiency for acceptance of their lots by the cement industries.

6.4 Shri Vijay Dalmia, representing from IFTEX, New Delhi, also informed the committee that it is nearly impossible to achieve the strength of 900 N with 79 GSM fabric. He also suggested the panel that either fabric strength of 900 N and seam strength of 400 N shall be replaced with 850 N and 360 N respectively or GSM of the fabric shall be increased from 79 GSM to 88 GSM in order to prevent rejection of the lots by the cement industries.

6.5 Shri Prakash Khemani representing M/s Suraj Logistics, Kolkata also reinforced the above inputs provided by IFTEX and assured all technical support to the Panel which was well appreciated.

6.6 Shri J.K. Gupta, Head (Textiles), informed the panel that as per the information received from different stakeholders, the GPD of the PP tapes used for manufacturing of woven sacks is about 5.5. Considering the GPD of tapes as 5.5, the entire calculation results will be changed significantly. Therefore, he requested the panel that the data related to GPD of tape shall also be taken from the manufacturers of the cement sacks before reaching to a conclusion.

6.7 Shri Awadhesh Kr. Singh, representing from CMA, New Delhi informed the committee that the Cement sacks with 79 GSM fabrics have been used extensively by the cement industries from a very long period, so, therefore, there is no point in increasing the GSM of the fabric as it will increase the cost of the cement sacks. The achievable strength of cement sacks with 79 GSM fabric shall be determined and specified in the standard. Shri V. Sreenivasan from M/s VCPL, Vadodara and Shri A. K. Basu, representing from M/s Inspection Syndicate Pvt. Ltd., Kolkata also reinforces the above input that there is no point in increasing the GSM of fabric which has been used for a very long time. It was again reaffirmed that the panel can deal only with technical inputs and the cost calculations are outside the purview of the Panel.

6.8 After detailed deliberation, the panel decided that the fresh test data of at least two months for both accepted and rejected lots of cement sacks as per IS 11652 : 2017 shall be collected from the major players of the cement industry along with the data for number of lots accepted or rejected with in last two months at the earliest, for which CMA, IFTEX will provide support. In addition to this, the panel also requested IFTEX, New Delhi to provide the data related to the GPD of PP tapes used in the PP cement sacks to BIS.

Item 7 ANY OTHER BUSINESS

7.1 The panel also requested to BIS to formulate an Indian Standards on the "Calcium Carbonate fillers used in HDPE/PP woven sacks" which is playing a crucial role on the performance of HDPE/PP woven sacks particularly keeping in view the National Policy on PWM and Recycling.

7.1.1 Shri J.K. Gupta, Head (Textiles), informed the panel that he will recommend this subject for formulation of Indian Standards to the respective technical committees and also requested the members to take up this matter in the respective technical committee for the formulation of Indian standard on this subject on top priority.

7.2 Shri Awadhesh Kr. Singh representative from CMA, New Delhi has raised the query that why cement sacks are being fall for 8 times for drop testing of bags as cement sacks undergoes only 5-6 no's of drops during the handling and transportation from manufacturer to consumer end. Shri Prakash Khemani from M/s Suraj logistics, Kolkata and Smt. Padmaja Reddy from IFTEX also endorsed the above comment and informed the panel that dropping the cement sacks by 8 times will leads to the failure of 100 % cement sacks and therefore, the no. of drops shall be reduced. Shri Prakash Khemani also informed the panel that the sacks failed the drop test on the stitched side due to their seam strength being 400 N, which makes them incapable of bearing a 50 kg load of filled material.

7.2.1 Shri Vineet Gupta representative from CPMA, New Delhi informed the panel that the requirement of 8 drops of sacks for drop testing was added in the standard after adding the safety of margin in the total no. of drops faced by the sacks during the handling and transportation from manufacturer to consumer's end. Therefore, the no. of drops shall not be diluted. He also informed the panel that the same procedure for drop test is also carried out on Polymer packaging sacks as per IS 16703: 2017 and the sacks are successfully conforming the requirements.

7.2.2 The panel decided that the decision for making the changes in the drop testing procedure is outside the purview of this panel and therefore, this matter shall be taken in the next committee meeting for further discussion. The panel also requested Shri Prakash Khemani to submit a detailed calculation for the same to the TXD 23 committee for further discussion in the committee meetings.

7.3 Shri Vineet Gupta representative from CPMA, New Delhi strongly requested the panel and the sectional committee to implement the National Policy and vision of Hon'ble Prime Minister of India on Quality and Standards as stated on Independence Day from Red Fort, Shri Surender Choudhary from PlastIndia Foundation, Mumbai reinforced the same and provided a brief historical prospective on Quality, Standards and Circular Economy as per National Policies. The panel appreciated the efforts of BIS and Stakeholders.

7.4 There being no other business the meeting ended with a hearty vote of thanks to the ***Convener***.

Item 7 DATE AND PLACE OF NEXT MEETING

It was decided that the third meeting of the panel TXD 23/P7 will be called immediately on receipt of the necessary test reports/data as per the minutes from the major players of the cement industry.

Annex 1

(*Item 5.2***)**

Total testing charges for the proposed study on non-UV sacks								
Manufacturer	**No. of Sacks**							**Total no. of sacks**
	2%	**4%**	**6%**	**8%**	**10%**	**12%**	**14%**	
A	100	100	100	100	100	100	100	700
Testing Charges by IIP (Rs.13,500/- for each sample)								**70*Rs. 13,500/-= Rs. 9,45,000/-**
NOTE - Each sample consist of 10 sacks								

Total Testing Charges for the study		
Study of ash content		**For IIP**
Study	Non-UV cement sacks	Rs. 9,45,000/-
Total testing charges (excluding GST)		Rs. 9,45,000/-
Total testing charges (including 18% GST)		Rs. 9,45,000* 1.18 = Rs. 11,16,000/- (approx.)
Overall, Total Testing Charges		**Rs. 11,16,000/-**

Sl. No.	**Test parameters**	**Testing Charges by IIP**
1.	Tape – Linear Density	Rs. 700/-
2.	Bottom Seam	Rs. 500/-
3.	Dimension (length of sack)	Rs. 550/-
4.	Dimension (width of sack)	Rs. 550/-
5.	Dimension (width of gusset)	Rs. 550/-
6.	Dimension (width and depth of valve)	Rs. 550/-
7.	Ends per dm	Rs. 700/-
8.	Picks per dm	Rs. 700/-
9.	Fabric GSM	Rs. 550/-
10.	Mass of sack	Rs. 550/-

11.	Breaking Strength (Lengthwise)	Rs. 1,200/-
12.	Breaking Strength (Widthwise)	Rs. 1,200/-
13.	Breaking strength (Top seam)	Rs. 1,200/-
14.	Breaking Strength (Bottom Seam)	Rs. 1,200/-
15.	Elongation (Lengthwise)	Rs. 800/-
16.	Elongation (Widthwise)	Rs. 800/-
17.	Ash Content	Rs. 1,200/-
Total testing charges for non-UV sacks		**Rs. 13,500/-**
Drop test charges		**Rs. 2,200/-**

Annex 14

(*Item* 6.1)

Confirmation mail received from CMA, New Delhi for bearing the testing charges of the study to be conducted at IIP and CIPET

I am writing to you in response to your email below in the matter of study on ash content in Cement HDPE/PP bags discussed during the combined meeting of the panels TXD 23/P1 and TXD 23/P7 held on August 22, 2024. You are now seeking a confirmation from CMA for bearing the balance testing charges of the said study to be done at IIP only or at both IIP and CIPET.

In this context, I am writing to confirm that CMA would like the study and the testing to be done both at IIP and CIPET. CMA confirms its contribution for the study at both IIP (INR 11,16,000.00 - INR 3,00,000.00 = INR 8,16,000.00/-, including GST) and CIPET (INR 8,92,080.00/-, including GST) as decided in consultation with CMA Members. This is subject to certain basic and essential prerequisites, which were unanimously agreed upon by all stakeholders at the Meeting of Panel TXD 23/P1 held on August 22, 2024 [refer paragraph 5.2 of the minutes], and are being listed below, for clarity:

i. The test data/reports from the suppliers and buyers of Cement sacks as per IS 11652: 2017 collected on top priority by BIS from each of the four regions, i.e. North, South, East and West to analyse the current scenario of Cement sacks, would be used to generate data and as a comparative reference to the study conducted at IIP and CIPET.
ii. CPMA will provide the raw material PP along with calcium carbonate fillers of similar grade as being used by the majority of the manufacturers of Cement sacks to M/s Suraj Logistics, Jamshedpur, at free of cost and logistics cost for raw material and calcium carbonate fillers shall be borne by CPMA,
iii. IFTEX will provide INR 3.00 lakhs in addition to the manufacturing cost of samples for non-UV Cement sacks effectively reducing CMA's contribution to the testing charges of the study by INR 3.00 lakhs.
iv. The manufacturing of samples along with the sampling and testing of samples (including drop test) shall be performed in the presence of the representatives from IFTEX, AIWFMA, CMA and CPMA.

CMA is willing to extend all necessary support for the successful completion of the study in a time-bound manner. The present representation is addressed without prejudice to the rights and contentions of CMA.

This is for relevant consideration.

Annex 15
(*Item* 6.2)

For BIS Use Only

BUREAU OF INDIAN STANDARDS

MINUTES

Second Meeting of Panel (TXD23/P2) for Study of Ash Content requirement in HDPE/PP Sugar Sacks (IS 14968:2015) under TXD23, Textile Materials Made from Polyolefins (Excluding Cordage) Sectional Committee

Date/Day	Time	Venue
20 August 2022 (Tuesday)	1100 h	Through Video Conferencing

ATTENDEES:

1. **Dr. Tanweer Alam (Chairperson)**	**Indian Institute of Packaging, Delhi**
2. **Dr. Amit Singla (Convener)**	**Indian Institute of Packaging, Ahmedabad**
3. Shri Naresh Bhandia	All India HDPE/PP Woven Fabric Manufacturing Association, Bangalore
4. Shri Ajay Sardana	Chemicals and Petrochemicals Manufacturers' Association, New Delhi
5. Smt. Padmaja Reddy	Indian Federation of Woven Technical Textiles (Formerly AIFTMA), New Delhi
6. Shri Surender Choudhary	-do-
7. Shri A K Basu	Inspection Syndicate of India Pvt. Ltd., Kolkata
8. Representative	National Federations of Cooperative Sugar Factories Ltd.
9. Dr. Upender K Saroop	Lohia Corp Ltd., Kanpur

10. Shri Vishwanath Sreenivansan	VCPL, Vadodara

BIS DIRECTORATE GENERAL:

1. Shri J K Gupta, Sc-E & Head (Textiles)	Bureau of Indian Standards, New Delhi
2. Shri Amit Kumar Pandey, Member Secretary (Textiles)	Bureau of Indian Standards, New Delhi

Item 0 WELCOME AND INTRODUCTORY REMARKS BY SHRI J.K. GUPTA, HEAD (TEXTILES)

Shri J. K. Gupta, Head (Textiles) welcomed the Chairperson TXD 23, Convener TXD 23/P2, and all the panel members in the meeting. He informed the panel that this meeting is being held for concluding the terms of references for the afore-said study to complete it in the time bound manner. He also requested the panel members to provide their precise inputs on the agenda items for arising on the conclusions.

Item 1 WELCOME AND INTRODUCTORY REMARKS BY THE CHAIRPERSON

Dr. Tanweer Alam, Chairperson TXD 23, also welcomed all the panel members along with Head (Textiles) and Convener TXD 23/P2 in the meeting. He requested all the panel members to provide their precise inputs for finalization of ToR for performing the study in a time-bound manner. He regretted the absence of ISMA representatives (the proposer of the Study) for this very important Meeting. He requested BIS to convey the same to ISMA.

Item 2 WELCOME AND INTRODUCTORY REMARKS BY THE CONVENER

Dr. Amit Singla, Convener, also welcomed all the members present in the meeting and requested them for providing their technical inputs on the agenda items only to finalize the terms of references of the said study so that the study can be performed at the earliest for analyzing the effect of ash content on the performance of sugar sacks as per IS 14968 : 2015. He also emphasized that in order to analyze the effect of ash content on the quality of HDPE/PP

woven sacks, it is imperative that all the other parameters except ash content shall remain same as per the standard.

ITEM 1 COMPOSITION OF PANEL TXD23/P 2.1

The panel examined the composition of the panel as given in the Agenda and **CONFIRMED** the same.

ITEM 2 Study of Ash Content and Usability of HDPE/PP Sugar Sacks (IS 14968:2015)

2.1 Shri J K Gupta, Sc-E & Head (Textiles) briefed the panel members about the actions taken by the TXD 23 committee and the panel TXD 23/P2 in their earlier meetings as given in the agenda. He also informed the panel members about the decision taken in the 33rd meeting of TXD 23, held on dated 10 August 2023, to reconsider the terms of references for rationalizing the said study considering the technical and financial aspects, for which this meeting is being held.

2.2 The Panel scrutinized the inputs received from Inspection Syndicate Pvt. Ltd., Kolkata, CPMA, New Delhi, IFTEX (Formerly AIFTMA), New Delhi and AIWFMA, Bangalore for reconsidering the terms of references for rationalizing the above study and after a detailed discussion among the panel members, the panel unanimously decided as under:

xiv) Collection of HDPE/PP sugar sacks as per IS 14968 : 2015 from suppliers of each four regions and its testing for evaluating the existing conditions of sugar sacks shall be excluded from the study as the QCO has already been implemented on the HDPE/PP sugar sacks as per IS 14968 : 2015 and more than 150 licenses have already been granted to the manufacturers of sugar sacks. However, the panel also decided that the test data/reports from the suppliers and buyers of sugar sacks as per IS 14968 : 2015 shall be collected on top priority from each of the four regions, i.e. North, South, East and West, to analyse the current scenario of sugar sack for which ISMA, NFCSFL and others would provide necessary support.

xv) The afore-said study shall be conducted only on the Type – 1 variety (50 Kg Capacity) of PP Sugar sacks as per IS 14968 : 2015, for both UV and non-UV sacks with seven different levels of ash content i.e., 2%, 4%, 6%, 8%, 10%, 12% and 14 %.

xvi) Manufacturing of the samples of UV and non-UV sugar sacks as per IS 14968 : 2015 shall be done at only one manufacturing facility i.e. M/s Ranasaria Poly Pack Pvt. Ltd.,

Ahmedabad under similar conditions, so that, all the other parameters except ash content shall remain same to evaluate the effect of ash content on the mechanical and physical characteristics of sugar sacks as per IS 14968 : 2015. The committee also appreciated the proposal from M/s Lohia Corp. Ltd., Kanpur for manufacturing of samples, however, the committee disagrees unanimously stating that the manufacturing of samples shall be done at one of manufacturer of Sugar sacks.

xvii) Shri Ajay Sardana representative from CPMA, New Delhi reconfirmed that CPMA will provide the raw material- PP along with Calcium Carbonate Fillers and UV-stabilizers (For UV-sacks) of similar grade to M/s Ranasaria Poly Pack Pvt. Ltd., Ahmedabad at free of cost. The logistics cost for raw material-PP, Calcium carbonate fillers and UV stabilizers shall be borne by CPMA. The quality or grade of calcium carbonate filler and UV-stabilizers shall be the same as what is being used by majority of the manufacturers of Sugar sacks. The details of the raw material to be used in this study are stated as under:

c) Raw material (PP granules) - Prime raffia grade virgin PP.

d) Filler – With min. 20 % Prime raffia grade virgin PP and remaining calcium carbonate filler

e) UV stabilizers – with min. 20 % UV and remaining Prime raffia grade virgin PP, no fillers shall be added.

xviii) The manufacturing of samples along with the sampling shall be performed in the presence of the representatives from IFTEX, AIWFMA, ISMA and CPMA which will be performed on the dates informed by M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad in advance to the mentioned organizations. The complete expenses of the representatives to witness the manufacturing and sampling of bags shall be borne by their respective organizations. Each organization (mentioned above) shall nominate two representatives (principal and alternate), so that, in case of non-availability of principal member, alternate member can witness the manufacturing and sampling of sacks for timely completion of the study, and inform the same to the M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad in advance along with the contact details.

xix) M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad shall produce lots of appropriate quantity of sacks, produced from 500 Kg raw material, for each 7 levels of ash content and for both UV and non-UV within 30 days from the receipt of raw materials from CPMA. The cost of manufacturing of samples shall be borne by the manufacturer (member of IFTEX).

xx) 100 UV and 100 non-UV sacks each with 7 different levels of ash content as mentioned above shall be drawn randomly from the respective lot of PP sugar sacks of appropriate quantity. Each sample shall consist of 10 PP sugar sacks as per IS 14968 : 2015. The counter samples of 100 UV and 100 non-UV sacks shall also be drawn, sealed and kept safely at M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad. The logistics cost of sending

the drawn samples to IIP shall be borne by the M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad.

xxi) The testing of the samples will be performed at IIP only in the presence of representatives from IFTEX, AIWFMA, ISMA and CPMA which will be performed on the dates informed by IIP in advance to the above-mentioned organizations. IIP shall provide the test report along with the statistical analysis to the TXD 23 committee within 45 days from receipt of samples from M/s Ranasaria Poly Packs pvt. Ltd., Ahmedabad. The complete expenses of the representatives to witness the test shall be borne by their respective organizations. Each organization (mentioned above) shall nominate two representatives (principal and alternate), so that in case of non-availability of principal member, alternate member can witness the testing of sacks for timely completion of the study, and inform the same to the IIP in advance along with the contact details.

xxii) The testing charges for performing the test, as per the study, by IIP shall be borne by AIWFMA, AIFTMA, IFIBCA, M/s Lohia Corp. Ltd., Kanpur and ISMA. And the payment of the testing charges shall be made directly to IIP. The panel requested IIP to provide maximum possible discount on the testing charges for the study and to provide the confirmation of the same to BIS at the earliest which shall be recorded in the minutes. The testing charges for performing the study, as received from IIP, is given in **Annex 1** to the minutes.

xxiii) The panel decided that the member secretary shall consult with the representatives of AIWFMA, AIFTMA, IFIBCA and M/s Lohia Corp. Ltd, Kanpur for confirmation of their contribution in the testing charges for the study which shall be recorded in the minutes. The balance testing charges, after the contribution of above-mentioned organization, shall be borne by ISMA as being the proposer of this study and also one of the major beneficiaries of this study.

xxiv) As per the confirmation received from above-mentioned organizations, the cost sharing of the testing charges is stated as under:

a) IFTEX (Formerly AIFTMA), New Delhi has reconfirmed his submission of Rs. 3 Lacs contribution additional to the manufacturing cost of samples for both UV and non-UV sugar sacks.
b) AIWFMA has confirmed its contribution of Rs. 1 Lacs in the testing charges for the study.
c) M/s Lohia Corp. Ltd, Kanpur has confirmed its contribution of Rs. 5 Lacs in the testing charges for the study.
d) IFIBCA, New Delhi, has confirmed its contribution of Rs. 2 Lacs in the testing charges for the study.
e) The balance testing charges i.e., Rs. 14,01,128/- for the study shall be borne by ISMA.

The following table is given for a proper understanding of cost sharing of the testing charges for the study:

Total testing charges, as received from IIP, for the study (including GST) = Rs. 25,01,128/-		
Cost sharing of the testing charges		
Contributors	**Amount**	**Remark**
1. IFTEX, New Delhi	Rs. 3 Lacs	Confirmed
2. AIWFMA, Bangalore	Rs. 1 Lacs	Confirmed
3. M/s Lohia Corp. Ltd., Kanpur	Rs. 5 Lacs	Confirmed
4. IFIBCA, New Delhi	Rs. 2 Lacs	Confirmed
5. ISMA, New Delhi	Balance amount of the testing charges (i.e., Rs. 14,01,128/-)	To be confirmed

xxv) The panel also decided that, due to absence of the representatives from ISMA in the meeting, a reconfirmation shall be submitted by ISMA for bearing the balance amount of the testing charges for the afore-said study. In addition to this, panel also requested ISMA to provide the technical difficulties into IS 14968 : 2015 and its amendments issued till date.

2.3 In addition to this, panel also reaffirmed that this study is being performed only for reconfirmation of the requirements of Ash content in Sugar sacks as per IS 14968 : 2015 as requested by ISMA in the 30th meeting of TXD 23 held on dated 04 March 2022. It is also informed that the Indian Standards are always dynamic in nature and shall be reviewed periodically to comply with the latest technology, development and national policies notified by Government of India.

Item 3 ANY OTHER BUSINESS

3.1 There is no other business the meeting ended with a hearty vote of thanks to the ***Convener***.

Annex 1

(*Item 2.2***)**

Sl. No.	Test parameters	Testing Charges	Specimen Charges
1.	Tape – Linear Density	700.00	
2.	Bottom Seam	500.00	
3.	Dimension (Inside length)	500.00	
4.	Dimension (Inside width)		
5.	Ends per dm	500.00	
6.	Picks per dm		
7.	Fabric GSM	500.00	
8.	Mass of Sack	500.00	
9.	Breaking Strength and elongation (Lengthwise)	1100.00	500.00
10.	Breaking Strength and elongation (Widthwise)	1100.00	
11.	Breaking Strength (Bottom Seam)	1100.00	500.00
14.	Ash Content	1200.00	
Total testing charges for non-UV sacks		**7700.00**	**1000.00**
G. Total for non-UV		**8700.00**	
15.	UV exposure	0	10180.00
16.	Breaking strength & Elongation after UV exposure (Length Wise)	1100.00	500.00
17.	Breaking strength & Elongation after UV exposure (Width Wise)	1100.00	
Total testing charges for UV sacks		**10,900.00**	**11,680.00**
G. Total for UV Sack Testing		**21,580.00**	

Total testing charges for the proposed study on non-UV sacks								
Manufacturer	**No. of Sacks**							**Total no. of sacks**
	2%	**4%**	**6%**	**8%**	**10%**	**12%**	**14%**	
A	100	100	100	100	100	100	100	700
Testing Charges (Rs. 8,700 for each sample)								**70*8,700 = Rs. 6,09,000/-**
NOTE - Each sample consist of 10 sacks;								

Total testing charges for the proposed study on UV sacks								
Manufacturers	**No. of Sacks**							**Total no. of samples**
	2%	**4%**	**6%**	**8%**	**10%**	**12%**	**14%**	
A	100	100	100	100	100	100	100	700
Testing Charges (Rs. 21,580 for each sample)								**70*21,580 = Rs. 15,10,600/-**
NOTE - Each sample consist of 10 sacks;								

Total Testing Charges for the study		
Study of ash content		**For IIP**
Study	Non-UV sugar sacks	Rs. 06,09,000/-
	UV sugar sacks	Rs. 15,10,600/-
Total testing charges (excluding GST)		**Rs. 21,19,600/-**
GST @18%		Rs. 3,81,528/-
Overall, Total Testing Charges		**Rs. 25,01,128/-**

Annex 18
(*Item* 7.1**)**

TERMS OF REFERENCE FOR THE R&D PROJECT
(*Refer to the Guidelines on R&D Projects issued vide note SCMD/R&D dated 09-09-23*)

[Textile materials made from polyolefins sectional committee TXD 23 under Textile Department of BIS]

1 Title of the Project

Study of construction and performance requirements of 1 kg, 2 kg and 5 kg leno woven sacks.

2 Background

2.1 The leno woven sacks are widely used for packaging fruits and vegetables due to their open mesh weave with high tensile, tear, and impact burst strength. The sacks also provide excellent ventilation, preventing rotting, sweating, and fungal growth, resulting in an increase in the shelf life of fruits and vegetables by approximately 50 %. The sacks are lightweight and cost-effective, with a lower cost compared to other packaging materials of similar capacity.

2.2 IS 16187:2014 'High-density polyethylene (HDPE)/polypropylene (PP) leno woven sacks for packaging and storage of fruits and vegetables' is formulated by BIS. It specifies the constructional and performance requirements of leno woven sacks for packaging of 25 kg and 50 kg.

2.3 The Leno bag manufacturing machinery and technology have improved recently resulting in higher strength tapes and fabric, even at lower fabric weight. Moreover, the fruit and vegetable packaging trends have also undergone significant change in the last 5 to 8 years with wider acceptance of organized retailing and smaller size packs along with regular size packaging. The bag labelling has also been modified. All these changes call for the revision of the existing standard, to make it more adaptable and acceptable to all concerned, including bag manufacturers, farmers, cold storage, wholesalers, retailers, and end-users. Additional thoughts also need to be included for sustainable packaging of leno bags, its reuse, and recycling in line with EPR.

2.3.1 The existing IS covers the requirements of woven leno sacks for packaging of only 25 kg and 50 kg. The outcome of this R&D will form the foundation for establishing the constructional and performance specifications of 1 kg, 2 kg, and 5 kg leno woven sacks, to be incorporated into the existing IS 16187:2014.

3 Objective

Collect and analyse the relevant technical data and scientific evidence for constructional and performance specifications of 1 kg, 2 kg, and 5 kg leno woven sacks from both primary and secondary sources.

4 Scope

4.1 Extensive study and analysis of the available literature on leno woven sacks, including but not restricted to the following:

a) International standards;
b) Research papers;
c) Guidelines by ministry/regulatory bodies;
d) Any studies conducted by any industry and their association, Institutes and NGOs; and
e) Any other relevant sources.

4.2 Collection of the manufacturing database (small, medium and large-scale), testing infrastructure and users in the country.

4.3 Collection of import and export data, identifying the standards and regulations adhered to by domestic and foreign manufacturers, and conducting a comparative analysis of these standards and regulations.

4.4 Collection of the testing data, types of equipment and methods related to leno woven sacks from 2 NABL Labs (at least 1 Government) by circulating suitable questionnaires through email or any other digital means.

4.5 Undertake visits to collect user feedback from 5 organized malls such as Reliance Store, Smart Bazaar, D-Mart, and similar establishments, along with 5 local stores, 5 markets (mandis), and 5 small-sized local shops that deal with leno woven sacks. The focus will be on the aspects including but not limited to the following:

a) Focused discussion on quality issues, challenges being faced and suggestions if any.
b) The brand owners whether they have EPR registration or not (except brand owners falling under the micro and small category of MSME).

4.6 Undertake visits to 2 industries of each small, medium and large scale (total **6**) and collect data including but not restricted to the following:

a) Types of raw materials used for manufacturing the sacks;
b) Manufacturing processes;
c) In-process quality checks being followed by the manufacturing unit;
d) Witness the testing of the product;
e) Testing instruments for testing woven leno sacks in the plant;
f) Testing methods being followed;
g) In-house testing data of 3 months;
h) Marking and labelling of the products;

i) Post-manufacturing quality checks;
j) Packaging requirements;
k) Sustainability aspects are being followed by units regarding the energy-saving, and waste disposal in terms of 3R (Reduce, Reuse and Recycle);
l) The producer of the product whether they have EPR registration or not; and
m) Focused group discussions with teams involved in production, testing, and R&D to address quality issues, discuss challenges faced and gather suggestions for improvement.

4.7 Collection of eight samples of each type of leno woven sacks (1 kg, 2 kg, and 5 kg) from both small and medium-scale industries, making a total of **48** samples. Perform testing on these samples according to the specifications outlined in IS 16187:2014. Utilize two labs accredited by NABL, testing **24** samples from each lab for each variety collected from industries (*Refer to the table below for a clearer understanding*):

Sample collected from Industry type	Variety	No. of Samples	Lab
Small scale Industry	1 kg	4	Lab 1
	1 kg	4	Lab 2
	2 kg	4	Lab 1
	2 kg	4	Lab 2
	5 kg	4	Lab 1
	5 kg	4	Lab 2
Medium scale Industry	1 kg	4	Lab 1
	1 kg	4	Lab 2
	2 kg	4	Lab 1
	2 kg	4	Lab 2
	5 kg	4	Lab 1
	5 kg	4	Lab 2

NOTE — Typically, small and medium-scale industries are the primary producers of leno woven sacks.

4.8 Preparation of a comprehensive project report covering all the above information.

5 Research Methodology

a) Collect and analyse the data/information as specified in **4.1**, **4.2, 4.3** and **4.4**;
b) Visit manufacturers and users and collect data/information as specified in **4.5** and **4.6**;
c) Collect and test the samples as specified in **4.7**; and
d) Analyse the data/information and prepare a comprehensive project report.

6 Deliverables

Comprehensive report (both soft and hard copy) consisting of outcomes of the study covering all the aspects of the scope appending the survey formats and responses, questionnaires, results of testing, report of visits, and other relevant documents/ information.

7 Requirements for the CVs

B.Tech in Textile Technology/Textile Engineering/Textile Chemistry/Fibre Science & Technology/Plastic Engineering.

8 Timeline and Method of Progress Review

The timeline for the project shall be 120 days from the date of award of the project. The stage-wise indicative timelines for the execution of the project shall be as follows:

Timeline	Method of progress
0 to 20 days	Literature review, desktop study, collection of relevant data and information. After conducting a literature survey and desktop research, the R&D strategy will be reviewed through a meeting with the nodal officer before any site visits.
21 to 60 days	Visit users and Industries. Collect the samples.
61 to 104 days	Testing of samples. Submit a draft report to BIS.
105 to 120 days	Submission of the final project report.

9 Support BIS will Provide

a) All the relevant Indian Standards/ISO Standards or any other standards required during the project will be provided by BIS.
b) Facilitate/introduce the awardee of the project to relevant Industry and industry associations, testing labs, institutes, academia, users, regulators/ministries.
c) Facilitate testing of samples in BIS/BIS Recognized Lab.

10 Nodal Point

In case of queries/clarification, Shri Amit Kumar Pandey, Scientist B and Member Secretary, TXD 23 may be contacted on txd@bis.gov.in.

Annex 19

(*Item* 8.2)

REVIEW ANALYSIS OF INDIAN STANDARD

(To be submitted to the Sectional Committee)

1. **Sectional Committee No. & Title:** TXD 23, Textile Materials Made from Polyolefins Sectional Committee

2. **IS No:** IS 17399 : 2020

3. **Title:** Textiles – Polypropylene (PP)/high density polyethylene (HDPE) laminated woven sacks for mail sorting, storage, transport and distribution – Specification

4. **Date of review:** 22 September 2024

5. **Review Analysis**

i) Status of standard(s), if any from which assistance had been drawn in the formulation of this IS.

Standard (No. & Title)	Whether the standard has since been revised	Major changes	Action proposed
NA	NA	NA	NA

ii) Status of standards referred in the IS

Referred standards (No. & Title)	IS No. of these standards since revised	Changes that are of affecting the standard under review	Action proposed
IS 1964:2001 Textiles — Methods for determination of mass per unit length and mass per area of fabrics (Second Revision)	Same version	NA	NA
IS 1969 (Part 1):2018	Same version	NA	NA

Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip Method (Fourth Revision)			
IS 6192:1994 Textiles —Monoaxially oriented high density polyethylene tapes — Specification (Second Revision**)**	**IS 6192 : 2023,** Textiles Monoaxially oriented high density polyethylene HDPE and polypropylene PP tapes Specification (Third Revision**)**	The present revision has been made in the light of experience gained since its publication and to incorporate the following major changes: a) The requirement for ash content and its test method has been specified. b) All amendments have been incorporated. c) Marking requirements have been modified to include the environment friendly recycling logo on the tape package. d) Sampling and criteria for conformity have been modified.	Latest version of the standard i.e. **6192** shall be referred in the revision and accordingly other changes will be made wherever required.
IS 6359:1971 Method for conditioning of textiles	**IS 6359 : 2023,** Method for conditioning of Textiles (First Revision)	The present revision has been made in the light of experience gained since its publication and to incorporate the following major changes:	Latest version of the standard i.e. **6359** shall be referred in the revision and accordingly other changes will be made

		a) The time interval for moisture equilibrium for testing in an accelerated conditioning system has been specified. b) Principle for the rapid/accelerated conditioning has been specified. c) The requirements for the standard alternative atmosphere have been specified. d) References to Indian standards have been updated.	wherever required.
IS 9030:1979 Method for determination of seam strength of jute fabrics including their laminates	Same version	NA	NA
IS 10146:1982 Specification of polyethylene for its safe use in contact to foodstuffs,pharmaceuticals and drinking water	Same version	NA	NA
IS 10789:2000 Textiles — Stitch types — Classification and terminology (First Revision)	Same version	NA	NA
IS 10910:1984 Polypropylene and its copolymer for its safe use in contact with foodstuffs, pharmaceuticals and drinking water	Same version	NA	NA

IS 11197:1985 Specification for monoaxially oriented polypropylene tapes	Superseded by IS 6192 : 2023	NA	NA
IS 14534:2016 Plastics — Guidelines for the recovery and recycling of plastics waste (First Revision)	**IS 14534,** Plastics guidelines for the recovery and recycling of plastics waste (Second Revision**)**		Latest version of the standard i.e. **14534** shall be referred in the revision and accordingly other changes will be made wherever required.

iii) Any other standards available related to the subject& scope of the standard being reviewed (International/regional/other national/association/consortia, etc or of new or revision of existing Indian Standard)

Standard (No. & Title)	**Provisions that could be relevant while reviewing the IS**	**Action proposed**
NA	NA	NA

iv) Technical comments on the standard received, if any

Source	**Clause of IS**	**Comment**	**Action proposed**
NA	NA	NA	NA

v) Information available on technical developments that have taken place (on product/processes/practices/use or application/testing/input materials, etc)

Source	Development	Relevant clause of the IS under review that is likely to be impacted (Clause & IS No.)	Action proposed
NA	NA	NA	NA

vi) Issues arising out of changes in any related IS or due to formulation of new Indian Standard

Related IS and its Title (revised or new)	Provision in the IS under review that would be impacted & the clause no. or addition of new clause/provision	Changes that may be necessary in the Standards under review	Action proposed
NA	NA	NA	NA

vii) Any consequential changes to be considered in other IS

Related IS to get impacted	Requirements to be impacted
NA	NA

1. Any other observation:

2. Recommendations:

Based on the above observations, the committee may decide to reaffirm this standard for further five years.