भारतीय मानक

वस्त्रादि — सीमेन्ट भरने के उच्च घनत्व पोलीइथलीन (एच डी पी ई) / पोली प्रोपलीन (पी पी) के कागज़ की परत चढ़े कट्टों की विशिष्टि

Indian Standard

TEXTILES — PAPER LAMINATED HIGH DENSITY POLYETHYLENE (HDPE)/POLYPROPYLENE (PP) BAGS FOR PACKING CEMENT — SPECIFICATION

ICS 55.080 ; 91.100.10

BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

September 1996

Price Group 2

Textile Materials Made from Polyolefins (Excluding Cordage) Sectional Committee, TX 23

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Materials Made from Polyolefins (Excluding Cordage) Sectional Committee had been approved by the Textile Division Council.

This standard is based on the current manufacturing practices.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — PAPER LAMINATED HIGH DENSITY POLYETHYLENE (HDPE)/POLYPROPYLENE (PP) BAGS FOR PACKING CEMENT — SPECIFICATION

1 SCOPE

This standard prescribes the requirements for paper laminated HDPE/PP woven sacks suitable for packing 50 kg cement.

2 REFERENCES

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

3 TERMINOLOGY

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

3.1 Flat Sack

A sack manufactured from a flat paper laminated HDPE/PP fabric or paper/HDPE or PP fabric laminated with LDPE, LLDPE or PP film.

3.2 Gusset

A fold inserted in the longitudinal edge of a tube or sack.

3.3 Gusseted Sack

A sack manufactured from a gusseted tube.

3.4 Heat Sealing (Welding)

Joining together by application of heat.

3.5 Valve

Self closer opening provided for filling cement by nozzle.

3.6 Sewn Sack

A sack closed at both ends by means of continuous traverse line of stitches.

4 MATERIAL

4.1 Kraft Paper

The kraft paper having minimum substance of 70 g/m^2 and conforming to IS 1397 : 1990 for other requirements shall be used for lamination.

4.2 HDPE/PP Woven Fabric

The HDPE/PP woven fabric shall be made from monoaxially oriented HDPE/PP tapes of minimum 750 denier (conforming to IS 6192 : 1994/ IS 11197 : 1985).

4.3 LDPE/PP Film

LDPE/PP film of minimum coating mass of 25 g/m^2 and conforming to IS 2508 : 1984 shall be used for bonding HDPE/PP woven fabrics with kraft paper or for laminating HDPE/PP fabric in case of glued bags.

5 MANUFACTURE

5.1 The kraft paper and HDPE/PP woven fabric as details given in **4.1** and **4.2** shall be joined together by using LDPE/PP film as bonding medium. Alternativelty, HDPE/PP fabric shall be laminated with LDPE/PP film and track glued to kraft paper. The LDPE/PP lamination film shall be as prescribed in **4.3**. The bonding/coating may be done by extrusion coating process. The fabric thus produced shall be converted into tube by joining two fabric edges by melt extrusion/heat sealing process using LDPE/PP of suitable grade.

5.2 Style

The sack shall be valve type, gusseted, sewn on top and bottom (*see* Fig.1).

5.3 Stitching

5.3.1 HDPE/PP or any other suitable thread having a minimum breaking load of 50 N when tested according to IS 1670 : 1991 shall be used for stitching the sacks. The top and bottom of the sacks shall be stitched through folded over crepe kraft paper ribbon with one row of chain stitch. The stitching shall be at a minimum distance of 15 mm from the edge of the sack. The number of stitches per decimetre shall be between 10 and 12.

6 REQUIREMENTS

6.1 Dimensions

The dimensions of the sacks shall be as agreed to between the buyer and the seller subject to the following

tolerances:

a) Outside length of sack (*l*)	+ 2.0 cm – 1.0 cm
b) Outside width of sack (*w*)	+ 1.0 cm – 0.5 cm
c) Width of gusset (*e*)	
d) Size of valve	+ 1.0 cm
i) Opening of the valve (*v*)	– 0.5 cm
ii) Depth of the valve, *Min* (*f*)	

6.2 Mass

The mass of sack shall be calculated for the dimensions agreed to between the buyer and the seller. However tolerance of ±6 percent on the mass of an individual sack and ±3 percent on mass of a bale of 250 sacks shall be applicable.

6.2.1 The mass of sack shall be calculated as per **A-2** of IS 11651 : 1986.

6.3 The sacks shall conform to other requirements given in Table 1.

7 PACKING

Two hundred and fifty sacks or multiples thereof shall be packed to form the bale. The bale shall be formed using a layer of HDPE or PP woven fabric and suitably secured.

8 MARKING

8.1 The sacks shall be marked with the information required by the buyer using suitable ink.

8.2 BIS Certification Marking

The bales containing HDPE/PP sacks may also be marked with the Standard Mark.

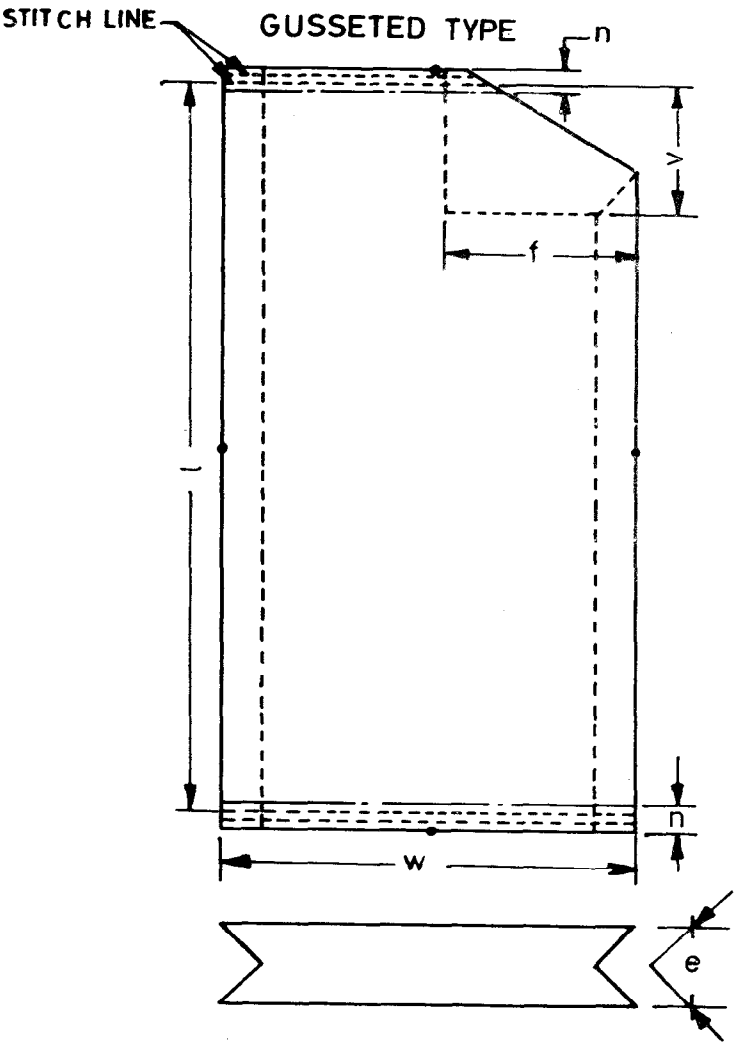

FIG. 1 VALVE TYPE GUSSETED SACK

Table 1 Other Requirements for Paper Laminated Sacks

(*Clause* 6.3)

Sl No.	Characteristics	Requirement	Tolerance	Method of Test
(1)	(2)	(3)	(4)	(5)
i)	Ends per dm, *Min*	39.0	–	IS 1963 : 1981
ii)	Picks per dm, *Min*	39.0	–	
iii)	Breaking load of fabric taken from bag N, *Min* on 5.0 cm × 20.0 cm cut strip			
a)	Widthwise	750	–	IS 1969 : 1985 (Modified grab test only)
b)	Lengthwise	700	–	
iv)	Breaking load of top or bottom seam, N, *Min*	330		IS 9030 : 1979
v)	Breaking load of longitudinal welded seam, N, *Min*	500		IS 1969 : 1985 (Modified grab test only)

8.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 SAMPLING

9.1 The sacks of the same size and construction delivered to a buyer against one despatch note shall constitute a lot.

9.2 The conformity of the lot to the requirements of the standard shall be determined on the basis of the tests carried out on the samples selected from it.

9.3 Unless otherwise agreed to between the buyer and the seller, the number of bales to be selected at random from a lot shall be according to col 1 and 2 of Table 2.

9.4 Number of Tests

The number of sacks to be selected for testing dimensions and mass of sacks shall be according to col 3 of Table 2. Equal number of sacks be selected from each bale.

9.4.1 The number of sacks to be selected for testing breaking load and seam breaking load shall be two per bale selected according to col 2 of Table 2.

9.5 Criteria for Conformity

9.5.1 The lot shall be considered as conforming to the requirements if the following conditions are satisfied:

a) The number of sacks not meeting one or more requirements in respect of dimensions, mass, ends and picks is less than or equal to the corresponding acceptance number given in col 4 of Table 2.

Table 2 Sample Size

(*Clauses* 9.3, 9.4 *and* 9.5.1)

No. of Bales in the Lot	No. of Bales to be Selected	No. of Sacks to be Selected	Permissible No. of Defective Sacks
(1)	(2)	(3)	(4)
1	1	5	0
2	2	8	0
3 to 6	3	12	0
7 to 20	5	20	1
21 to 70	8	32	2
71 and above	13	52	3

b) The average breaking load values for all the sacks under test for both widthwise and lengthwise are not less than the specified requirements.

c) The average breaking load values for all the sacks under test for top seam, bottom seam and longitudinal welded seam are not less than the specified requiremens.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*	*IS No.*	*Title*
1397 : 1990	Specification for kraft paper (*second revision*)	2508 : 1984	Specification for low-density polyethylene films (*second revision*)
1670 : 1991	Textiles — Yarn — Determination of breaking load and elongation at break of single strand (*second revision*)	6192 : 1994	Textiles — Monoaxially oriented high density polyethylene tapes — Specification (*second revision*)
1954 : 1990	Methods for determination of length and width of fabrics (*second revision*)	9030:1979	Method for determination of seam strength of jute fabrics including their laminates.
1963 : 1981	Methods for determination of threads per unit length in woven fabrics (*second revision*)	11197:1985	Specification for monoaxially oriented polypropylene tapes
1969 : 1985	Methods for determination of breaking load and elongation of woven textile fabrics (*second revision*)	11651:1986	Specification for high density polyethylene (HDPE)/ polypropylene (PP) woven sacks coated with paper

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards : Monthly Additions'.

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