

**PRODUCT MANUAL FOR  
Textiles — High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for  
Packaging of 50 kg Food Grains  
According to IS 14887:2014**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	<b>Product</b>	:	<b>IS 14887:2014</b>
	<b>Title</b>	:	<b>Textiles — High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for Packaging of 50 kg Food Grains</b>
	<b>No. of amendments</b>	:	1
2.	<b>Sampling Guidelines</b>		
a)	<b>Raw material</b>	:	The high density polyethylene (HDPE) or polypropylene (PP) used for manufacture of tape shall conform to the requirements specified in IS 10146 or IS 10910 respectively. The fabric used in the manufacture of HDPE/PP woven sacks shall be woven as a tube on circular looms from HDPE/PP tapes having width of 2.5 mm (tolerance of $\pm 10$ percent) conforming to IS 6192 and IS 11197 respectively, and linear density of 111 tex (1000 denier).
b)	<b>Grouping Guidelines</b>	:	Please refer Annex - A
c)	<b>Sample Size</b>	:	5 bags
3.	<b>List of Test Equipment</b>	:	Please refer Annex - B
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer Annex - C
5.	<b>Possible tests in a day</b>	:	Dimensions, Ends and Picks, Mass, average breaking strength of fabric, breaking strength of bottom seam, elongation at break, ash content
6.	<b>Scope of the Licence :</b>		
	Licence is granted to use Standard Mark as per IS 14887:2014 with the following scope:		
	<b>Name of the product</b>	High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for packaging of 50 kg Food Grains	
	<b>Material</b>	High Density Polyethylene (HDPE) or Polypropylene (PP)	

## ANNEXURE A

### PRODUCT MANUAL FOR Textiles — High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for Packaging of 50 kg Food Grains According to IS 14887:2014

#### GROUPING GUIDELINES

There shall be two group for woven sacks based on material requirements of HDPE or PP as under:

Group 1: HDPE woven sacks

Group 2: PP woven sacks

For considering GOL one sample from each group may be drawn for independent testing.

However, it shall be ensured that the manufacturer has got complete manufacturing as well as testing facilities for the sizes required to be covered in the scope of the licence.

During the operation of licences, samples of all varieties covered in the licence shall be drawn for testing in rotation.

## ANNEXURE B

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#### TEST EQUIPMENT

Major test equipment required to test as per requirements of Indian Standard.

Sr. No.	Tests used in with Clause Reference	Test Equipment
1.	Tapes – Width and Thickness (Cl. 3.2 and IS 6192/IS 11197)	Steel Rule / Vernier 0.1mm LC, Spring Loaded dial micrometer of 0.001mm LC & 140kN/m <sup>2</sup> pressure
2.	Tapes – Linear Density (Cl. 3.2 and IS 6192/IS 11197)	Weighing Balance 0.1mg accuracy, Drying Oven, Wrap Reel
3.	Tapes – Tenacity (Cl. 3.2 and IS 6192/IS 11197)	Tensile testing machine with constant rate of extension, suitable clamps and facility to measure elongation
4.	Tapes – Elongation at point of rupture (Cl. 3.2 and IS 6192/IS 11197)	Tensile testing machine with constant rate of extension, suitable clamps and facility to measure elongation
5.	Tapes – Heat Shrinkage (HDPE) (Cl. 3.2 and IS 6192)	Heat shrinkage test apparatus with water bath, specimen holder and lead in wire
6.	Tapes – Colour Fastness for pigmented tapes (Cl. 3.2 and IS 6192/IS 11197)	Xenon Arc lamp test apparatus, Geometric grey scale
7.	Tapes – Dimensional stability (PP) (Cl. 3.2 and IS 11197)	Air circulating Oven
8.	Unlaminated Fabric Mass (Cl. 3.2)	Weighing Balance 5mg accuracy, Steel Scale, Flat smooth table
9.	Bottom seam (Cl. 3.3.1)	Steel Scale
10.	Mass of bale (Cl. 4.1), Capacity (Cl. 3.4)	Weighing Scale
11.	Dimensions [Cl. 4.2 and Table 1 ii)]	Scale, Flat table
12.	Ends per dm [Cl. 5.2 and Table 1 iii)]	Pick glass
13.	Picks per dm [Cl. 5.2 and Table 1 iv)]	Pick glass
14.	Mass of sack [Cl. 4.2 and Table 1 v)]	Weighing Balance, Steel scale, Flat smooth table
15.	Average breaking strength of fabric [Cl. 4.2 and Table 1 vi)]	Tensile testing machine CRE with facility to record/indicate force and separation

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16.	Breaking strength of bottom seam [Cl. 4.2 and Table 1 vi)]	Tensile testing machine with suitable clamps, stop watch, scale
17.	Elongation at break of fabric [Cl. 4.2 and Table 1 viii)]	Tensile testing machine CRE with facility to record/indicate force and separation
18.	Average breaking strength and elongation at break of UV stabilized HDPE/PP fabric after been exposed to UV radiation and weathering [Cl. 4.2 and Table 1 ix)]	Tensile testing machine CRE with facility to record/indicate force and separation  Test Chamber with Fluorescent UV- lamps Type B (313 nm or equivalent) with irradiance level 0.63W/m <sup>2</sup> with facility for heating and condensation
19.	Ash content [Cl. 4.2 and Table 1 x)]	Weighing Balance 1mg accuracy, Silica crucible, Bunsen Burner, Silica Triangle and Tripod, Muffle furnace, Desicator, Gloves, Crucible holder
20.	Conditioning of sample	Conditioning Chamber to maintain 27±2°C, 65±2% humidity

This is an indicative list for the purpose of guidance only and may not be taken as exhaustive

## ANNEXURE C

### PRODUCT MANUAL FOR Textiles — High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for Packaging of 50 kg Food Grains According to IS 14887:2014

#### SCHEME OF INSPECTION AND TESTING

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** –The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. PRINTING, PACKAGING AND MARKING**– The standard mark(s) as given in the schedule of the licence shall be stenciled on each sack and each bale of HDPE/PP Woven Sacks, provided always that the sacks and the bales to which this mark is thus applied conforms to every requirement of the specification.

**3.1** Printing, Packaging and Marking on the sacks and bales shall be done as per the provisions of the Indian Standard. In addition, BIS Licence Number CM/L- ..., and details of BIS website shall be marked on each sack and bale as follows: “For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)”

**3.2 “FOR SACK ONLY”** shall be marked on top of the standard mark printed on each sack.

**4. CONTROL UNIT** – All the HDPE/PP woven sacks of the same construction and the same material produced under similar conditions in a day shall constitute a control unit.

**4.1 SAMPLING FOR FLOOR INSPECTION**:-Five sample bundles shall be selected every four hours of production, one bag shall be taken from each selected sample bundle, subject to 30 bags in a control unit and shall be tested as under

S.No.	Characteristics	Sample Size	Frequency	Total No. of Samples
1	Dimensions	5 bags	Every 4 hours	30 bags
2	Ends & Picks per dm	-do-	-do-	-do-
3	Breaking strength of Fabric, Bottom seam strength, and elongation	1 bag	One sample when control unit starts and then at equal intervals of 2 hours	
4	Sack	5 bags	Every 4 hours	30 bags
5	Mass of the sack	-do-	-do-	-do-

**Note-** Each bundle, which is an intermediate packaging, normally contains 50 sacks. However, the number of sacks in each bundle may vary as per the customer’s requirement

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

**6. REJECTIONS**—Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016. Any rejected material which is potentially re-salable be sheared or cut re-melting. A separate record shall be maintained giving information on quantity and control unit number, as applicable, relating to all such rejections/defective/sub-standard material of the production not conforming to the requirements of the Specification and the method of its disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material should be defaced.

**ANNEXURE C**

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**SCHEME OF INSPECTION AND TESTING**

**TABLE 1  
LEVELS OF CONTROL (Clause 5 of SIT)**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Recommended Levels of Control		
Cl.	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
3.1	Raw Material	3.1	IS 14887:2014	S	01	Each consignment	See Note 3
3.2	Fabric	3.2	-do-	R	05	Every 5 hours production	
3.3, 3.3.1 & 3.3.2	Sack	3.3.1, 3.3.2	-do-	R	30 bags	Each control unit	See Cl 4.1 of SIT
4.1	Mass of Bale	4.1	-do-	R	Each Bale		
4.2 & Table 1	i) Dimension	Annex B	-do-	R	30 bags	Each Control Unit	See Cl 4.1 of SIT
	a) Inside length	Annex B	-do-	R	-do-	-do-	-do-
	b) Inside width	Annex B	-do-	R	-do-	-do-	-do-
	ii) Ends per dm	Annex B	-do-	R	-do-	-do-	-do-
	iii) Picks per dm	Annex B	-do-	R	-do-	-do-	-do-
	iv) Mass of Sack		IS 1964	R	-do-	-do-	-do-
	v) Average Breaking strength of fabric (Lengthwise and Widthwise)		IS 1969 (Part 1)	R	5 bags	-do-	-do-
	vi) Minimum Breaking		IS 9030	R	-do-	-do-	-do-

	strength of bottom seam						
	vii) Elongation at break of fabric (Lengthwise and Widthwise)		IS 1969 (Part 1)	R	-do-	-do-	-do-
	viii) Breaking Strength of fabric after exposure to UV radiation and weathering	Annex C	IS14887:2014	S	2 bags	Once in three months	
	ix) Ash Content	Annex D	IS 14887:2014	R	2 bags	Each Control Unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification.

Note 3: One sample from each consignment shall be tested for ascertaining conformity to IS 10146 or IS 10910, unless the same is accompanied by test certificate from supplier

Note 4: Samples to be drawn and tested at regular intervals