

**PRODUCT MANUAL FOR  
Textiles - HDPE / PP Woven Sacks for Packaging of Fertilizers  
According to IS 9755:2016**

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>	:	IS 9755:2016
	<b>Title</b>	:	Textiles — High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for Packaging Fertilizers. — Specification
	<b>No. of amendments</b>	:	1
2.	<b>Sampling Guidelines</b>		
a)	<b>Raw material</b>	:	HDPE/ PP used for manufacture of tape shall conform to IS 10146 / IS 10910 respectively. The liner if used shall be LDPE/LLDPE/HMHDPE/HDPE. Test certificate from raw material manufacturer shall be obtained for each lot of HDPE/PP/Liner received indicating conformity to relevant requirements of the IS.  If the firm is directly purchasing HDPE/PP Fabric Tapes, they shall confirm to Clause 3.2 of IS 9755, and IS 6192 / IS 11197 respectively.
b)	<b>Grouping Guidelines</b>	:	Pl See Annex A
c)	<b>Sample Size</b>	:	1kg HDPE/ PP Granules, 1metre X 1metre Unlaminated & Laminated Fabric, Stitching thread for UV stabilized sacks, 10 to 12 woven sacks. Equal number of liners may be drawn if the sack is provided with liner.
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>	:	Please refer Annex - D
6.	<b>Scope of the Licence :</b>		
	-Licence is granted to use Standard Mark as per IS 9755:2016 with the following scope:		
	<b>Name of the product</b>	High Density Polyethylene (HDPE) Polypropylene (PP)WOVEN SACKS FOR PACKING FERTILIZERS.	
	<b>Material</b>	High Density Polyethylene (HD PE) / Polypropylene (PP)	
	<b>Type</b>	With / without Lamination, with / without Liner, with / without UV Stabilization, Pigmented/Non Pigmented sacks or sacks manufactured with Pigmented /Non Pigmented Tapes.	

**Annex A**  
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**Grouping Guidelines**

Separate sample shall be tested for HDPE sacks and PP sacks. If raw material i.e, coloured tapes are tested along with the white/natural coloured tapes, pigmented/coloured sacks may also be covered in the scope. If sacks with lamination / Liner / UV Stabilization are tested, sacks without lamination / Liner / UV Stabilization respectively may also be covered in the scope.

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

**Annex – B**  
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**List of Test Equipment**

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

Sr. No.	Tests used in with Clause Reference	Test Equipment
Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Width & Thickness of Tape(3.2 and 5.3 of IS 6193)	Steel Rule / Vernier 0.1mm LC, Spring Loaded dial micrometer of 0.001mm LC & 140kN/m <sup>2</sup> pressure
2	Linear Density(3.2 and 5.1 of IS 6193)	Wrap reel, Weighing Balance with least count 0.1mg, Drying Woven.
3	Tenacity(3.2 and 5.4 of IS 6193)	Tensile testing machine with constant rate of extension, suitable clamps and facility to measure elongation.
4	Tapes – Elongation at point of rupture (Cl. 4.2 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. 4.2 and IS 6192)	Heat shrinkage test apparatus with water bath, specimen holder and lead in wire 6 T
6	Tapes – Colour Fastness for pigmented tapes (Cl. 4.2 and IS 6192/IS 11197)	Xenon Arc lamp test apparatus, Geometric grey scale.
7	Tapes – Dimensional stability (PP) (Cl. 4.2 and IS 11197)	Air circulating Oven
8	Liner Thickness Clause (3.4)	Dead weight dial micrometer with flat anvil 6mm and spindle head flat surface dia 4.8mm & load 10g / Spring dial micrometer
9	Length & Width of Liner(Cl.3.4)	Steel scale, Tape
10	Bottom seal of loose liner(Cl. 3.4)	Steel scale, Tape
11	Lamination coating mass, Lamination overhang(	Weighing Balance, Steel scale, Flat smooth table
12	Bottom seam stitches(Cl 3.6)	Steel Scale
13	U.V Resistance(Cl 4.2)	Test Chamber with Fluorescent UV lamps Type B

		with irradiance level 0.63W/m <sup>2</sup> with facility for heating and condensation, Tensile testing machine CRE type
14	Mass( Cl 4.3)	Weighing scale
15	Dimensions Length & Width Cl. 3.3.1 & 4.1 Sl.No i of Table 1	Steel scale, Flat smooth table
16	Ends & Picks Cl. 3.3.1 & 4.1 Sl.No ii & iii of Table 1	Pick Glass
17	Mass of Fabric Cl. 3.3.1 & 4.1 Sl.No iv of Table 1	Weighing Balance, Steel scale
18	Average Breaking Strength of Fabric(Ravelle Method) a.Length wise b.Width Wise, c.Width wise lamination joint	Tensile testing machine CRE with facility to record/indicate force and separation
19	Breaking trength of bottom seam Cl. 3.3.1 & 4.1 Sl.No vi of Table 1	Tensile testing machine with suitable clamps, stop watch, scale
20	Elongation at break of fabric Cl. 3.3.1 & 4.1 Sl.No vii of Table 1	Tensile testing machine CRE with facility to record/indicate force and separation
21	Ash Content Cl. 3.3.1 & 4.1 Sl.No viii of Table 1	Weighing Balance,Bunsen burner,Silica triangle & Tripod,Muffle furnace,Dessicator,Gloves, Crucible holder,Ventilated hood.
22	Conditioning of sample (Cl. 7)	Conditioning Chamber to maintain 27±2°C, 65±2% humidity

*The above list is indicative only and may not be treated as exhaustive.*

**Annex – C**  
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**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. PACKAGING AND MARKING** – The Standard Mark as given in Schedule of the license and Licence Number (i.e. CM/L.....) shall be printed with suitable ink by flexography on each sack for Packing Fertilizers and Printing, packaging and marking on sacks and bales shall be done as per requirements of Cl. 5.1, 5.2, 5.3 of IS 9755:2016, provided always that sacks thus marked conforms to all the requirement of the specification. In addition, BIS Licence Number CM/L- ..., and details of BIS website shall be marked on sacks and bales as follows: —For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)

**3.1 -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 produced under similar conditions in a day shall constitute a control unit.

**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 license 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 resalable shall be deformed in such a manner that it cannot be used for any other purpose. A separate record shall be maintained giving information relating to all such rejections/defective/substandard 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.

**TABLE 1**  
**LEVELS OF CONTROL**  
**(Clause 5 of SCHEME OF INSPECTION AND TESTING)**

(1)				(2)	(3)		
Test Details				Test equipment requirement <b>R: required</b> <b>(or) S: Sub-contracting permitted</b>	Levels of Control		
Clause	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3.1	Raw Material (HDPE/PP granules)		IS 10146 / IS 10910	S	01	Each consignment (See note 3)	No testing is required if material is accompanied by supplier's test certificate indicating conformity or is ISI marked
3.2	Fabric (HDPE/PP tapes)	3.2	IS 9755:2016	S	05	Each control unit (if manufactured in house) Each consignment (if procured from outside) (See note 3)	-do-
3.4	Liner	3.4	IS 9755	S	01	Each consignment (See note 3)	-do-
3.5	Lamination	3.5	IS 9755	R	05	Each control unit	To be done if required by buyer
3.6	Bottom seam stitching	3.6	IS 9755	R	30	Each control unit	
3.7	Mouth of Sack	3.7	IS 9755	R	30	Each control unit	
3.8	Capacity	3.8	IS 9755	R	30	Each control unit	

4.2	U.V Resistance	4.2	Annex- D	S	01	Once in 03 months	
4.3	Mass	Annex E	IS 9755	R	30	Each control unit	
3.3	<b>Constructional particulars of Sacks</b>						
4.1 and Table 1 i)	Dimensions	Annex B	IS9755	R	30	Each control unit	
4.1 and Table 1 ii)	Ends per dm	Annex B	IS9755	R	30	Each control unit	
4.1 and Table 1 iii)	Picks per dm	Annex B	IS9755	R	30	Each control unit	
4.1 and Table 1 iv)	Mass of fabric		IS 1964	R	30	Each control unit	
4.1 and Table 1 v)	Average breaking strength of fabric		IS 1969 (Part 1)	R	05	Each control unit	
4.1 and Table 1 vi)	Breaking strength of bottom seam		IS 9030	R	05	Each control unit	
4.1 and Table 1 vii)	Elongation at break of fabric		IS 1969 (Part 1)	R	05	Each control unit	
4.1 and Table 1 viii)	Ash content	Annex C	IS 9755	R	01	Each control unit	

Note-1: 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 for approval by BO Head.

Note 3: One consignment of material is defined as all material of one defined type and quality, delivered to the manufacturer by one supplier according to one dispatch note

## **Annex D**

### **Possible tests in a day**

When appropriately conditioned samples are available, the following tests can be carried out in a day:

- (i) Linear density of tape (Cl. 4.2 and IS 6192/IS 11197)
- (ii) Tenacity of tape (Cl. 4.2 and IS 6192/IS 11197)
- (iii) Elongation of tape (Cl. 4.2 and IS 6192/IS 11197)
- (iv) Thickness of tape (Cl. 4.2 and IS 6192/IS 11197)
- (v) Width of tape (Cl. 4.2 and IS 6192/IS 11197)
- (vi) Tests for Bottom Seam (Cl.3.6)
- (vii) Lamination Mass (Cl. 3.5)
- (viii) Lamination Overhang (Cl. 3.5)
- (ix) Liner Thickness (Cl. 3.4)
- (x) Dimensions [Cl. 4.1 and Table 1 (i)]
- (xi) Ends per dm [Cl. 4.1 and Table 1 (ii)]
- (xii) Picks per dm [Cl. 4.1 and Table 1 (iii)]
- (xiii) Mass of Fabric [Cl. 4.1 and Table 1 (iv)]
- (xiv) Breaking strength of bottom seam [Cl. 4.1 and Table 1 (vi)]