



**PRODUCT MANUAL FOR
AGRO TEXTILE -- HIGH DENSITY POLYETHYLENE (HDPE) WOVEN BEDS FOR VERMICULTURE
ACCORDING TO IS 15907:2010**

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.	Product	:	IS 15907:2010
	Title	:	Agro Textile - HDPE Woven Beds For Vermiculture - Specification
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl 4 of IS 15907:2010
b)	Grouping guidelines	:	NA (No varieties are defined)
c)	Sample Size	:	01 Vermibed 02 Unlaminated HDPE fabric 1.5 m x 1.5 m, 03 HDPE Tape 20 meter
3.	List of Test Equipment	:	Please refer ANNEX –A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in aday	:	Dimensions, Mass of fabric, Breaking strength and elongation (before UV exposure), Puncture strength , Tear Strength.
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 15907:2010 with the following scope:		
	Name of the product	:	Agro Textile - HDPE Woven Beds For Vermiculture

ANNEXURE - A

List Of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Test Equipment	Tests used in with Clause Reference	
		Cl. Ref.	Tests
1	Thickness tester with interchangeable presser foot, reference plate and gauge as per IS 13062 (Part 3)	5.2.1 & 5.2.2	Coating Thickness
2	Vernier Caliper	4.3	Cord Beading
3	Measuring Scale/tape	5.3.1, 5.3.2, 5.4 & 6.1	Measurement of Net windows and vermiwash outlet, Width of pockets, Overlap Sealing Joints, Height of vermibed
4	Measuring Tape	6.1	Fabric Width & Dimension of vermibed
5	Electronic Balance (L.C.0.1 mg)	4.1	Linear Density
6	Electronic Balance (L.C. 10 mg)	6.1	Mass of Fabric
7	Tensile Tester	4.1	HDPE Tape Tensile & Elongation Breaking Strength of unlaminated fabric
8	Universal Testing Machine	Table 1 Sr. No. 2, 3	Breaking Strength of laminated Fabric & elongation before UV exposure
		Table 1 Sr. No 4	Retention of Breaking Strength after UV exposure
		Table 1Sr. No. 5	Welded Seam Strength before UV exposure
		Table1 Sr. No. 6	Welded Seam Strength after UV exposure
9	Tear Strength Machine	Table No. 1 Sr. No. 7	Tear strength
10	Puncture Test Machine	Table No. 1 Sr. No. 8	Puncture Strength

11	Air oven for Environmental stress Cracking test	Table 1 Sr. No. 9	Environmental Stress Cracking
12	Chemical PolyoxyethylatedNonylPh enol and Beaker	Table 1 Sr No. 9	Environmental Stress Cracking (Chemical used for test)
13	Sulphuric Acid, Sodium Hydroxide, Sodium Chloride, Amonium Hydroxide	Table 1 Sr. No. 10	Resistance to chemicals
14	Accelerated Weathering &light fastness tester	Table 1 Sr. No. 11	Colour fastness to artificial light
15	Bursting Tester	Table 1 Sr. No. 12	Bursting Pressure Test
16	UV exposure Chamber with condensation	Table 1Sr. No. 4 & 6	Retention of Breaking Strength after UV exposure
17	Humidity & Conditioning Chamber		For Conditioning of sample
18	Hot Air Circulating Oven Test Machine	6.2.2	Ageing test
19	Pressure Head Tester	6.2.1	Waterproofness Test (Resistance to Water Penetration)
20	Cone Tester	6.2.1	Waterproofness Test (Water repellency)

The above lists are indicative only and may not be treated as exhaustive.

ANNEX B

SCHEME OF INSPECTION AND TESTING FOR AGRO TEXTILE -- HIGH DENSITY POLYETHYLENE (HDPE) WOVEN BEDS FOR VERMICULTURE ACCORDING TO IS 15907:2010

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 equipment.

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

3. PACKING AND MARKING – The Standard Mark as given in the Schedule of the license shall be printed on each vermibed provided always that the vermibed to which mark is thus applied conforms to every requirement of the specification.

3.1 Marking and packing shall be done as per the provisions of the Indian Standard. In addition, the following details shall be mentioned on each vermibed or on a label affixed to it:

a) BIS Licence No. CM/L _____.

b) BIS website details i.e.–“For details of BIS certification please visit www.bis.gov.in”

4. CONTROL UNIT –For the purpose of this scheme, all the HDPE woven beds for vermi culture made from same batch of HDPE fabric (having the same mass/unit area) having the same manufacturing parameters and manufactured 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 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.

**Table 1 LEVELS OF CONTROL
(Scheme of Inspection and Testing)**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1	HDPE Tape	4.1	IS 15907 & IS 6192	S	Three	One day/Each control unit	Pl see Note 3
4.2	HDPE Fabric	4.2	IS 15907 & IS 6899	S	Three	do	Pl see Note 3
4.3	Cord Beading	4.3	IS 15907	S	Three	do	Pl see Note 3
5.1	General Design	5.1	do	R	All	do	
5.2	Lamination and						
5.2.1	Coating thickness	Method A	IS 13162 (Pt 3)	R	Two	Each control unit	
5.2.2	coating thickness of sandwich lamination	-do-	-do-	R	-do-	-do-	
5.3,5.3.1,5.3.2	Construction	5.3,5.3.1,5.3.2	IS 15907	R	One	do	
5.4	Bonding.		do	R	Three	do	
Table 1	Requirements						
i)	Mass		IS 1964	R	Two	Each control unit	
ii)	Breaking Strength before UV exposure		IS 1969	R	Two	do	
iii)	Elongation at break		do	R	Two	do	
iv)	Welded Seam strength before UV exposure		IS 1969	R	Two	do	
v)	Retention of breaking strength after UV exposure	Annex B	IS 1969	R	Two	Once in week	
vi)	Welded Seam strength after	Annex B	IS 1969	R	Two	Once in week	5

	UV exposure						
vii)	Tear Strength	Method A2	IS 7016(part 3)	R	Two	Each control unit	
viii)	Puncture Strength	Annex C	IS 15907	R	Two	do	
ix)	Environmental Stress cracking	Annex D	IS 15907	R	Two	Every 3 rd control unit	
x)	Resistance to chemicals (change in mass)	Annex E	IS15907	R	Two	Once in week	
xi)	Colour Fastness to artificial light	--	IS 2454(xenon lamp method)	R	Two	do	For coloured Beds only
xii)	Bursting pressure		IS 1966	R	Two	Each control unit	
6.1	Dimension	6.1	IS 15907	R	ALL	do	
6.2	Water proofness	6.2	IS 15907	R	Two	Once in a week	

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 empaneled 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 to BO head.

Note –3: If material/component is purchased, conformity of purchased lot (consignment) to IS 15907 shall be established either by supplier test certificate/ in-house testing of each lot. Record(s) of such certificate(s)/test shall be maintained.