



उत्पाद मैनुअल
बहुस्तरीय क्रॉस लेमिनेटेड चद्वर/तिरपाल/कवर /कृषि फिल्मस
IS 14611: 2024 के अनुसार

**PRODUCT MANUAL FOR
MULTILAYERED CROSS LAMINATED
SHEETS/TARPAULINS/COVERS/AGRICULTURAL FILMS ACCORDING TO IS
14611: 2024**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.

1.	मानक संख्या IS No.	:	IS 14611: 2024
	शीर्षक Title	:	Multilayered Cross Laminated Sheets/Tarpaulins/Covers/Agricultural Films
	संशोधनों की संख्या No. of amendments	:	Nil
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Primary raw material used for manufacturing multi-layered cross laminated sheets/tarpaulins/covers/agricultural films shall consist of Low density polyethylene (LDPE) and linear low density polyethylene (LLDPE) conforming to IS 7328.
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX –A
c)	नमूने का परिमाण Sample Quantity	:	1 piece (full length x full width).
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer ANNEX -B

4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		Workmanship, tensile strength and elongation.
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 14611: 2024 with the following scope:		
	Name of the product	Multilayered Cross Laminated Sheets/Tarpaulins/Covers/Agricultural Films	
	Type	XLN and/or LN and/or MN and/or HN and/or XHN	

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

ANNEX-A

GROUPING GUIDELINES

1. Each type intended to be covered in the scope of the licence is to be tested.
2. Scope of licence shall be restricted based on the manufacturing and testing facilities available.
3. During operation of licence, samples of each type covered in the scope of licence, shall be tested in rotation, to the extent possible

ANNEX B

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
1.	5.1 to 5.4	Construction	Vernier calipers, measuring scale or tape, CBC tester
2.	6.2 and Table 1	Substance	i. Sample cutter/sizer. ii. Steel scale. iii. Humidity chamber. iv. Weighing Balance
3.	6.3 and Table 1	Tensile Strength, Elongation	i. Tensile testing machine ii. Sample cutter/die
		Tear Strength	i. Pendulum type tear testing machine
		Dart impact strength	i. Dart impact tester as per Fig. 1 of IS 13360 (Part 5/Sec 6) with micrometer and incremental weights and dart. ii. Humidity chamber.
		Accelerated Ageing Test	i. Air Oven of such size that volume of test pieces do not exceed 10 percent of free air space in oven.
		UV exposure	i. UV exposure apparatus as per Annex H of IS 14611
4.	6.4	Water Proofness test	i. Appropriate apparatus as per Cl. 4 of IS 7016 (Part 7) ii. Manometer or pressure gauge.
5.	6.5	Strength of joints/seam	i. Apparatus for Seam strength test as per Fig. 5 of Annex C of IS 14611. ii. Cutter. iii. Laboratory Screw clips.
6.	6.6	Flex test (before and after ageing)	i. Apparatus for Flex testing as per IS 7016 (Part 4) ii. Air Oven of such size that volume of test pieces do not exceed 10 percent of free air space in oven.
7.	6.7	Ease of in-situ repair	i. Sample cutter/sizer ii. Tissue paper, cotton wool or cloth iii. Adhesive tape iv. Tensile Testing Machine

Sl. No.	Tests used in with Clause Reference		Test Equipment
	Cl. No.	Test	
8.	7.3	Measurement of tarpaulin/cover	<u>Length</u> i. Flat table, not less than 5 m long and at least as wide as specimen to be tested, with both longitudinal edges to be marked off in 1 m lengths and at least one of these length subdivided into 10 mm divisions. ii. Trimmer/Cutter OR Measuring Drum <u>Width</u> i. Flat table, not less than 2 m long at least 50 mm wider than the specimen to be tested. ii. Steel scale, length greater than the width to be measured, graduated in cm and mm.

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : For the purpose of this Scheme, Multilayered Cross Laminated Sheets/Tarpaulins/Covers/Agricultural Films of the same type manufactured from same type of raw material under the similar conditions and from the same machine, in a day shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing commoncluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the license shall be stenciled or printed on each Sheets/ Tarpaulins/Covers/Agricultural Films and printed on the label applied to the Sheets/ Tarpaulins/Covers/Agricultural Films, as the case may be, provided always that each Sheets/ Tarpaulins/Covers/Agricultural Films to which this mark is thus applied conforms to every requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each packaging:

a) “For BIS certification details please visit www.bis.gov.in”

4. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Construction	5.1 to 5.4	IS 14611	R	Firm to have adequate in-process controls to check compliance of this parameter as given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
6.1	Workmanship	6.1	-do-	R	Firm to have adequate in-process controls to check compliance of this parameter as given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
6.2 and Table 1	Substance		IS 7016 (Part 1)	R	---One--	Each control unit	
6.3 and Table 1	Accelerated Ageing Test	-	IS 7016 (Part 8)	R	-do-	Once in month	
	Tensile strength before ageing a) Longitudinal direction. b) Transverse direction. After ageing at 70 ± °C for 168 h a) Longitudinal direction. b) Transverse direction.	Table 1	IS 14611 and IS 13360 (Part 5/Sec 1) and IS 13360 (Part 5/Sec 3)	R	-do-	-do-	
	Elongation at break a) Longitudinal direction. b) Transverse direction.	-do-	-do-	R	-do-	-do-	

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
	Tear strength before ageing a) Longitudinal direction. b) Transverse direction. After ageing at 70 ± °C for 168 h a) Longitudinal direction. b) Transverse direction	-do-	IS 14611 (Annex E)	R	-do-	-do-	
	Dart impact strength	-do-	Method B of IS 13360 (Part 5/Sec 6)	R	-do-	-do-	
	Average tensile strength and elongation at break after exposing to UV radiation and weathering	-do-	IS 14611 (Annex G)	S	-do-	Every three months	
6.4	Water proofness test	-	IS 7016 (Part 7)	R	-do-	Each control unit	
6.5	Strength of joints/seam	6.5	IS 14611 (Annex C)	R	-do-	-do-	

6.6	Flex test (before and after ageing)	6.6	IS 14611, IS 7016 (Part 4) and IS 7016 (Part 8)	R	-do-	Each third control unit	
6.7	Ease of <i>in-situ</i> repair	6.7	IS 14611 (Annex D)	R	-do-	Each control unit	
7.2	Fixing of Eyelets	7.2	IS 7016 (Part 1)	R	-do-	Each tarpaulins/cover	
7.3	Measurement of tarpaulin/cover	7.3	IS 7016 (Part 1)	R	-do-	Each tarpaulins/cover	