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उत्पाद मैनुअल

कृषि वस्त्रादि — बागवानी में प्रयोग हेतु बने हुए ग्राउंड कवर — विशिष्टि
IS 16202: 2014 के अनुसार

**PRODUCT MANUAL
FOR AGRO TEXTILES — WOVEN GROUND COVERS FOR HORTICULTURE APPLICATION
ACCORDING TO IS 16202: 2014**

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 16202:2014
	शीर्षक Title	:	Agro Textiles-Woven Ground Covers for Horticulture applications बागवानी अनुप्रयोगों के लिए एग्रो टेक्सटाइल्स-बुना ग्राउंड कवर
	संशोधनों की संख्या No. of amendments	:	01
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Raw material shall be conforming to clause 4 of IS 16202: 2014. Conformity of materials to the requirement of the specification may be established through either of the following or a combination of the same: Test report from a laboratory recognized by the Bureau/Government laboratories empanelled by the Bureau/NABL accredited laboratories; Material supplier's test certificate; In- house factory test report. Note: This section indicates the requirements for raw material(if specified in the IS)for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.

b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA
c)	नमूने का परिमाण Sample Quantity	:	10m length Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	Length & Width Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	कृपया Annex- A देखें Please refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	कृपया Annex- B देखें Please refer to Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	a) Mass b) Tensile strength, Warp way & Weft way c) Tear strength, Warp way & Weft way d) Air permeability e) Index puncture resistance Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies(OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा/Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 16202: 2014 with the following scope:		
	उत्पाद का नाम Name of the product	Agro Textiles-Woven Ground Covers for Horticulture applications	

ANNEX A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

S. No.	Test used in with Clause Reference	Test Equipment/Chemicals
1.	Linear Density, Clause 4.1	Digital Balance with Pan (capable of weighing test specimens to an accuracy of 0.001 g), Length Measuring Scale (graduated in millimeters, and capable of measuring dimensions up to 10 m with an accuracy of 1 mm),
2.	Shrinkage, Clause 4.1	air circulating oven, hot water bath
3.	Dimensions, Clause 5.2	Calibrated rule, Measuring table
4.	Mass, Cl. 5.1 & Table1	Horizontal, smooth and flat table, Graduated Steel Scale, Balance capable of weighing to an accuracy of 0.005 g, Conditioning chamber suitable for maintaining 65±2% Humidity and 27±2°C Temperature
5.	Tensile strength, (a) Warp way (b) Weft way Cl. 5.1 & Table1	Tensile testing machine, Equipment for cutting specimens
6.	Trapezoid tear strength (a) Warp way (b) Weft way Cl. 5.1 & Table1	Constant Rate of Extension Tensile Testing Machine or CRT Type with Autographic Recorder, Clamps, Trapezoidal Template, Water Bath maintained at 27±2 °C, Non-Ionic Wetting Agent, Sample Preparation/Cutting Equipment, Conditioning Chamber, Vernier Caliper, Steel Scale
7.	Air Permeability, Cl. 5.1 & Table1	Circular specimen holder, Clamping device, Guard ring device, Pressure gauge or manometer, Means for drawing a steady flow of air, Flow meter, Volumetric counter or Measuring aperture
8.	Index Puncture resistance, Cl. 5.1 & Table1	Tensile/Compression testing machine, Ring clamp attachment, solid steel rod with diameter 8mm±0.01mm, Provision for maintaining 65±5% Relative humidity and 25±2°C
9.	UV accelerated exposure testing (c) Warp way (d) Weft way Cl. 5.1 & Table1	Fluorescent UV-B lamp (313 nm or its equivalent), Provision for maintaining temperature of 60°C & 50°C, Tensile testing machine, Equipment for cutting specimens
10.	Water Permeability, Cl. 5.1 & Table1	Apparatus capable of maintaining constant head of water on Geotextile as per Fig. 1 of IS 14324, falling head apparatus

11.	Water vapour permeability, Cl. 5.1 & Table1	Measuring unit with temperature and water supply control, Thermal guard with temperature control, Test enclosure
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ANNEX B

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: All ground covers manufactured under similar conditions of production from the same raw material in a day.

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 common cluster 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 licence shall be incorporated legibly and indelibly on each roll, provided always that the material so marked conforms to each 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 roll:

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)

	TEST DETAILS			Test equipment requirement R: required (or) S: Subcontracting permitted	LEVELS OF CONTROL		
Clause	Requirement	Test Methods			No. of samples	Frequency	Remarks
		Clause	Reference				
4.1	Linear Density	Annex-D	IS 16202	R	Firm to have adequate in-process controls to check compliance of this parameter as per the requirements and tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
	Shrinkage	4.1	IS 16202	R			
4.2	End & Picks	4.2	IS 16202	R			
5.1 & Table 1	Mass	5.1	1964	R	1	Every control unit	
	Tensile strength (grab), Warp way & Weft way	5.1	IS 1969 (Part 2)	R	1	Every control unit	
	Trapezoid tear strength (a) Warp way (b) Weft way	5.1	IS 14293	R	1	Every control unit	
	Air Permeability	5.1	IS 11056	R	1	Every control unit	
	Index Puncture resistance	Annex-B	IS 16202	R	1	Every control unit	
	UV accelerated exposure testing	Annex-C	IS 16202	S	1	Once in a month	
	Water Permeability	5.1	IS 14324	S	1	Once in a month	

	Water vapour permeability	5.1	ISO 11092	S	1	Once in a month	
5.2	Dimensions	5.2	IS 16202	R	1	Every control unit	