



उत्पाद मैनुअल

एटाक्टिक पॉलीप्रोपाइलीन (एपीपी) सुधुढीकरण संशोधित बिटुमिनस जल सह और नमी सह झील्ली फाइबर ग्लास
सुधुढीकरण सहित- विशिष्टि,
आईएस १६५२६: २०१७ के अनुसार

PRODUCT MANUAL
ATACTIC POLYPROPYLENE (APP) MODIFIED BITUMINOUS
WATERPROOFING AND DAMP-PROOFING MEMBRANE WITH GLASS FIBRE
REINFORCEMENT — SPECIFICATION
ACCORDING TO IS 16526: 2017

यह उत्पाद नियमावली सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-I के अंतर्गत प्रमाणन के संचालन में एकरूपता और पारदर्शिता सुनिश्चित करने के लिए संदर्भ सामग्री के रूप में उपयोग की जाएगी। बीआईएस प्रमाणन प्राप्त करने के इच्छुक भावी आवेदक भी इस दस्तावेज़ का उपयोग कर सकते हैं।

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 16526 : 2017
	शीर्षक / Title	: Atactic Polypropylene (APP) Modified Bituminous Waterproofing and Damp-Proofing Membrane With Glass Fibre Reinforcement — Specification
	संशोधनों की संख्या No. of amendments	: Nil
2.	नमूनाकरण दिशानिर्देश / Sampling Guidelines	
a)	कच्चा माल Raw material	: Please refer ANNEX – A <i>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.</i>
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	: Please refer ANNEX – B
c)	नमूने का परिमाण Sample Quantity	: 10m x 1 m for complete testing <i>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 (incase of market surveillance, effort may be made to procure therequired quantity of product sample, as far as possible since raw material sample may not be available in market)</i>

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		Same as the scope of licence. <i>Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.</i>
3.	परीक्षण उपकरण की सूची List of Test Equipment	:	Please refer ANNEX – C
4.	निरीक्षण एवं परीक्षण योजना Scheme of Inspection and Testing	:	Please refer ANNEX – D
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	i. Dimensions width, length and thickness ii. Tear strength iii. Weight iv. Heat resistance v. Softening point <i>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.</i>
6.	लाइसेंस का दायरा /Scope of the Licence:		
“License is granted to use Standard Mark as per IS 16526: 2017 with the following scope:			
Name of the product		Atactic Polypropylene (APP) Modified Bituminous Waterproofing and Damp-Proofing Membrane With Glass Fibre Reinforcement	
Type of Finish		Plain / Plain and Aluminum / Mineral	
Thickness (in mm)			
Any Other Aspect		With or Without Optional Requirement (Puncture Resistance test)	

भारतीय मानक ब्यूरो
 BUREAU OF INDIAN STANDARDS
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 New Delhi – 110002

ANNEX-A
Raw Materials

Raw material	Indian Standard
Central Core	Clause 4.1 of IS 16526:2017
APP Polymer	Clause 4.2 of IS 16526:2017
Bitumen	Clause 4.3 of IS 16526:2017
Mineral Filler	Clause 4.4 of IS 16526:2017
Finishing Material	Clause 4.5 of IS 16526:2017

ANNEX -B
Grouping Guidelines

1. Atactic Polypropylene (APP) Modified Bituminous Waterproofing and Damp-Proofing Membrane With Glass Fibre Reinforcement — Specification as per IS 16526 :2017 are classified as given below:

Type of Finish	Thickness of Membrane (mm)
Plain	1.5, 2
Plain and Aluminum	3, 4, 5
Mineral	3, 4, 5

2. Considering the above, the following grouping guidelines for GoL/ CSoL have been developed:

- One sample with the highest thickness from each type of finish shall be tested for all requirements to cover all the thicknesses up to and including the thickness tested for that particular type of finish.

3. The Firm shall declare the varieties of APP Membrane they intend to cover in the scope of the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

4. During the operation of the Licence, BO shall ensure that all the type of finishes and sizes covered in the Licence are tested in rotation, to the extent possible.

ANNEX- C**List of Test Equipments***(Indicative List, For Guidance Only)*

Sl. No.	Tests used in with Clause Reference	Test Equipment
Requirement for Non-Woven Glass Fibre Mat & Mineral Filler		
1.	Mass, g/m ² (Clause 4.1.1)	Weighing Balance
		Cutting apparatus (Die/ Template/ Steel Rule)
2.	Tensile Strength (Clause 4.1.1)	Tensile testing machine (CRT type) with Clamps
3	Mineral filler fineness (Clause 4.4)	75u Sieve
Requirements for APP Membrane		
4.	Dimensions Width & Length (Clause 5.1)	Measuring Tape
		Measuring Scale
5.	Thickness (Clause 5.1)	Apparatus as per Clause B-1.2.1 or fig 1 of IS 16526
		Cutter
6.	Weight (Clause 5.2)	Weighing Balance
7.	Cold Flexibility (Clause 6)	Mandrels
		Deep Freezer
		Temp. controller
9.	Softening Point (Clause 6)	Ring and Ball apparatus (fig 1 of IS 1205)
		Hot Plate
		Digital Thermometer
		Glass Thermometer
		Stirrer
		Glycerin
		Dextrin
9.	Tensile Strength & Elongation (Clause 6)	Tensile testing machine (CRT type)
		Conditioning Chamber with temp. and humidity control
		Cutting tools for test specimen (fig.3 of IS 7193)
10.	Tear Strength (Clause 6)	Elmendorf apparatus
11.	Heat Resistance (Clause 6)	Hot air Oven with digital controller and vertical specimen holding clips

12.	Penetration (Clause 6)	Penetration apparatus with needle setup as per Cl 3.2 & 3.5 of IS 1203:1978
		Conditioning Chamber with temp. and humidity control
		Water Bath
		Metal or glass container
		Stop Watch
		Transfer Dish
		Thermometer
		Water Bath
		Thermometer
13	Water absorption (Clause 6)	Weighing Balance
		Conditioning Chamber with temp. and humidity control
		Distilled water
		Cutting tools for test specimen
		Immersion trough
14.	Dimension Stability (Clause 6)	Measuring Tape
		Cutter
		Air Conditioner
		Drying Oven
		Measuring Scale Steel
15.	Pressure Head Test (Clause 6)	Pressure Head test apparatus with 300mm water head [fig.1 of IS 13826 (Part 4)]
		Conditioning Chamber with temp. and humidity control
		Hot air oven with temperature controller
16.	Puncture resistance test (Optional) (Clause 6)	Square Mounting Frame
		Steel Cylinder
		Conventional Straight edges or Rules or Dials (arrangement as per fig.2 of IS 16526)
		Air Conditioner & Hygrometer
		Humidity Chamber

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

ANNEX D

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence manufacturers will implement a Quality Assurance Plan (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or sub-contracting/ sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 Recommended Levels of Control/ Control Unit:

- 1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: *All AAP membranes of similar classifications i.e. type of finishes and sizes, manufactured under similar conditions continuously 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. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.
- 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.

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

2. ENSURING COMPLIANCE THROUGH TESTING

The manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/ empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 Test Records- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made 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 AAP membrane provided always that the material so marked conforms to all requirements of the specification.

3.1 Marking on each package of AAP membranes shall be done as per Cl. 10 of IS 16526: 2017

3.2 **Additional Marking requirements:** Each package shall also be marked with the following additional requirement on each packing:

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

4. REJECTION

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*(Recommended Levels of Control by BIS- for Guidance Only)*

(1)				(3)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
4.1.1	Weight per Unit Area	Annex-B1	IS 7193	One	Each Consignment	
4.1.1	Breaking Strength	Annex-B2	IS 7193	One	Each Consignment	
4.3	Bitumen	-	IS 73	One	Each Consignment	No further testing is required, if material received with test certificate or ISI marked.
4.4	Mineral filler fineness	-	IS 460 (Part1)	One	Each Consignment	
4.5	Finishing Material	-	IS 16526	One	Each Control Unit	
5.1	Dimensions (Width & Length)	Annex-B	IS 16526	Physical checking of one roll out of every twenty rolls manufactured shall be done and recorded.		
5.1	Thickness	Cl. B-1, Annex-B	IS 16526	Ten	Each Control Unit	
5.2	Weight	5.2.1	IS 16526	Ten	Each Control Unit	
6	Cold Flexibility	-	IS 13826 (PART 2)	One	Each Control Unit	
6	Softening Point	-	IS 1205	One	Every Alternate Control Unit	
6	Tensile Strength & Elongation	-	IS 13826 (PART 1)	One	Once in a week	
6	Tear Strength	B-4	IS 7193	One	Each Control Unit	
6	Heat Resistance	-	IS 13826 (PART 5)	Two	Each Control Unit	
6	Penetration	-	IS 1203	One	Each Control Unit	
6	Water absorption	-	IS 13826 (PART 6)	One	Once in a week	
6	Dimension Stability	-	-	One	Once in a week	
6	Pressure Head Test	-	IS 13826 (PART 4)	One	Once in a week	
6	Puncture resistance test (Optional)	Annex-C	IS 16526	One	As required	

Samples may be drawn in such a manner that all thickness and types of AAP membranes manufactured are tested over a period of time.