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उत्पाद मैन्युअल
बहु – पटलित एल्यूमिनियम केबल आवरक –विशिष्टि
IS 16012: 2012 के अनुसार

Product Manual for
Poly-Laminated Aluminium Cable Wrap-Specification
According to IS 16012: 2012

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.	**भारतीय मानक संख्या** **IS No.**	:	IS 16012:2012
	शीर्षक **Title**	:	Poly-Laminated Aluminium Cable Wrap
	संशोधनों की संख्या **No. of amendments**	:	0
2.	**नमूना दिशानिर्देश** **Sampling Guidelines**		
a)	**कच्चा माल** **Raw material**	:	The material used for aluminium and aluminium alloy foil shall conform to the chemical composition of the Grades 19000 or 40800 of IS 737. The material shall be supplied in fully annealed. 'O' temper. If agreed by the purchaser, the material may be supplied in any other tempers. Polyethylene for this purpose of this standard includes low density polyethylene (LDPE) and linear low density polyethylene (LLDPE). Copolymer for the purposes of this standard is ethylene acrylic acid resin.

			Conformity of raw material may be established through Test certificate of supplier, test reports issued by third party labs or NABL accredited labs or in house testing. No testing is required if material is ISI marked. **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**	:	**Please refer Annex-A**
c)	**नमूने का परिमाण** **Sample Quantity**	:	10 pieces/sheets **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**	:	Laminate Type, Dimensions (Thickness, Width, Length) 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**	:	**Please refer to Annex- B**
4.	**निरीक्षण और परीक्षण की स्कीम** **Scheme of Inspection and Testing**	:	**Please refer to Annex- C**
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**		
	All tests. **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:**		
	IS 16012: 2012 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 16012: 2012 with the following scope:		
7.	**उत्पाद का नाम** **Name of the product**	Poly - Laminated aluminium cable wrap	

	Laminate Type	LDPE/LLDPE/Copolymer (ethylene acrylic acid resin.)
	Thickness of Aluminium foil	from .. mm up to and including .. mm
	Thickness of polyethylene/copoly	from .. mm up to and including .. mm
	Width	from .. mm up to and including .. mm

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ANNEX-A
TO PRODUCT MANUAL FOR
Poly - Laminated aluminium cable wrap
According to IS 16012:2012

GROUPING GUIDELINES

For grant of licence (GoL)/Change in Scope of Licence (CSoL), the following grouping guidelines shall apply:

1. Samples of each laminate type (LDPE/LLDPE/Copolymer (ethylene acrylic acid resin.)) intended to be covered in the scope of licence, shall be tested.

2. Samples of highest and lowest Nominal Thickness of aluminium foil and polyethylene/copoly shall be tested to cover entire range of nominal thickness of aluminium foil and polyethylene/copoly. Sample of any width may be tested.

3. While considering grant of licence/ inclusion of new varieties, it shall be ensured that the firm has necessary manufacturing and testing facilities for all the varieties proposed to be covered under the scope of BIS Certification.

4. During the operation of licence, BOs shall ensure testing of different varieties covered in the licence in rotation, to the extent possible

ANNEX – B

LIST OF TEST EQUIPMENTS
(INDICATIVE LIST, FOR GUIDANCE ONLY)

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

Sl. No.	**Test Equipment/Chemicals and Identification Numbers (Where applicable)**	**Tests Used in with Clause Reference**
1	Micrometer, Vernier Calipers, Measuring tape/scale	Dimensions and Tolerances, Cl. 9, Internal Diameter of Core Cl. 11.1
2	Electrically operated tensile tester, Test piece preparation apparatus including arrangement for boiling industrial alcohol to separate the laminate	Peel Strength, Cl. 10
3	Analytical Balance	Mass, Cl. 11.2 and 11.3

Note: The above is an indicative list for the purpose of guidance only

ANNEX- C
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 subcontracting/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: For the purpose of this scheme, entire quantity of laminated foil of the same laminate type, same foil and laminate thickness, and same width, manufactured from the same consignment of aluminium/polyethylene and copolymer, under similar conditions in a shift shall be taken as one 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.

2. ENSURING COMPLIANCE THROUGH TESTING- 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 license and Licence Number (i.e. CM/L…) shall be suitably incorporated on each foil package, provided always that the product thus marked and packed conforms to all the requirement of the specification.

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

3.2 Additional Marking requirements: Additionally, the following shall also be marked on each foil package:

a) "For BIS certification details please visit www.bis.gov.in"
b) Any other requirement not specified in the Indian Standard

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)		(4)
TEST DETAILS				**LEVELS OF CONTROL**		**REMARKS**
Clause	**Requirements**	**Test Method**		**No. of Samples**	**Frequency**	
		Clause	**Reference**			
4	Material	4	IS 16102	One	Each consignment	No testing is required if material is accompanied with test certificate of supplier or test report of NABL accredited lab or is ISI marked
7	Freedom from Defects	7	IS 16102	One	manufacturers shall maintain adequate inspections/in process controls to ensure freedom from defects	__
9	Dimensions and Tolerances	9	IS 16102	Five	Each control unit	__
10	Peel Strength	Annex A	IS 16102	One	Each control unit	__
11.1	Internal diameter of core	11.1	IS 16102	Five	Each control unit	__
11.2	Poly GSM tolerance	11.2	IS 16102	One	Each control unit	__
11.3	Total GSM Tolerances	11.3	IS 16102	One	Each control unit	__