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उत्पाद मैनुअल
Polyurethane unit outsoles-Specification
13893: 1994 के अनुसार

PRODUCT MANUAL FOR
POLYURETHANE UNIT OUTSOLES-SPECIFICATION
ACCORDING TO IS 13893: 1994

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 13893: 1994
	शीर्षक Title	:	Polyurethane unit outsoles-Specification
	संशोधनों की संख्या No. of amendments	:	02
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirements 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	:	Not applicable

c)	नमूने का परिमाण Sample Quantity	:	4 pairs. Test Pieces to be provided separately if samples for testing cannot be taken out from the product 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)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please see Annex – A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-B Note : Please see Cl. 5 of the SIT for Applicability of SIT for Small and Micro Scale Enterprises
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	Thickness, hardness, tensile strength, elongation at break, abrasion resistance, Flexing resistance, Hydrolysis resistance, Tear strength - on conditioned samples as applicable 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 13893:1994 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 13893:1994 with the following scope:		
	Name of the product		Polyurethane unit outsoles

**BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002**

ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Thickness, Cl. 4.2	Thickness dial gauge calibrated in 0.1 mm or equivalent apparatus
2	Relative Density, Cl. 4.3.1	Balance (LC-1 mg), Balance straddle, Beaker (250 ml), Copper wire, oven, sinker, cutting device
3	Hardness, Cl. 4.3.1	Thickness dial gauge calibrated in 0.1 mm / Graduated eyepiece with 0.1 mm scale spacing of travelling microscope
4	Abrasion resistance, Cl. 4.3.1	abrasion machine as per 5.1 of IS 3400 (Part 3), abrasive sheet, Hollow drill, balance, standard reference compounds. Conditioning chamber, arrangement for keeping ambient temperature, standard reference compounds
5	Flexural Strength, Cl. 4.3.1, Cut growth after 30,000 cycles	flexing machine, (D 3, Figure 1) of Annex D of IS 15488 (Part 1): 2023, vernier callipers, chisel thermometer with LC of 1 °C, thickness guage
6	Hydrolysis resistance	Micrometer, Oven, Dessicator, Flexing machine (as per Annex C of ISO 5423) in a refrigerated cabinet, Piercing chisel, Cutting/buffing machine to reduce the thickness of the test piece, Conditioning chamber
7	Tensile Strength, Cl. 4.3.1 and Elongation at break, Cl. 4.3.1	Tensile testing Machine as per 7.4 of IS 3400 Part 1, die cutters as per 7.1 of IS 3400 Part 1, Steel Scale, vernier caliper, micrometer/dial thickness guage (as per 7.1 of IS 3400 Part 1), cone guage, Test rig for ring test pieces, conditioning chamber, arrangement to maintain temp of 27 +/-2 and 65 +/-2 %RH
8	Tear strength	Tensile testing machine as per Cl 5.3 of IS 3400 Part 12, Die for test specimens, Nick cutter, arrangement to maintaining temp of 27 +/-2

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 : 50,000 pairs or Fortnight production (whichever is earlier), or any other quantity of PU unit outsoles as defined by the manufacturer

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 outsole 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.

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.

5. Applicability of SIT for Small and Micro Enterprises (SMEs):

5.1 Compliance to the Scheme of Inspection and Testing is OPTIONAL for Micro, and Small Scale Units with respect to the requirements for Clause 1 (Quality Assurance Plan), Clause 2 (Ensuring Compliance through Testing). However, ALL units shall ensure compliance of their products to the requirements of the Indian Standard.

5.2 The requirements of SIT with respect to Clause 3 (Packing and Marking) and Clause 4 (Rejection) shall be followed by all.

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 Methods Clause Reference			No. of Sample	Frequency	Remarks
4.1	Design	4.1	IS 13893	R	Manufacturer shall ensure adequate inspection and in process control to ensure product meets specified design (and size)		
4.2	Thickness		IS 15298 (Part 1) : 2015.	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.3	Physical requirements						
i)	Relative Density		Annex C-1 of IS 10702	R	One	Each control unit	
ii)	Hardness		IS 12240 (Part 2)	R	One	Each control unit	
iii)	Abrasion resistance	Annex B	IS 3400 (Part 3)	R	One	Each control unit	
iv)	Flexing resistance	Annex D	IS 15844 (Part 1)	S	One	Once in a month	Not applicable for rigid sole)

v)	Hydrolysis resistance		IS 15298 (Part 1)	S	One	Once in a month	Not applicable for rigid sole)
vi)	Tensile Strength		IS 3400 (Part 1)	R	One	Each control unit	
vii)	Elongation at break		IS 3400 (Part 1)	R	One	Each control unit	
viii)	Tear strength	Method A	IS 3400 (Part 12)	R	One	Each control unit	