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उत्पाद मैनुअल

रबर सील – जलापूर्ति, जलनिकासी और मल जल पाईपलाइनो के लिए जुड़ाव वलय — सामग्रियों के लिए विशिष्टि

IS 5382: 2025 के अनुसार

PRODUCT MANUAL

Rubber Seals — Joint Rings for Water Supply, Drainage and Sewerage Pipelines — Specification for Materials

ACCORDING TO IS 5382: 2025

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना। 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 5382 : 2025/ ISO 4633 : 2023
	शीर्षक Title	:	Rubber Seals — Joint Rings for Water Supply, Drainage and Sewerage Pipelines — Specification for Materials
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Materials are to conform to the requirements of Cl. 5 of IS 5382: 2025 (The standards for these requirements are under development and it has been decided to not insist on compliance to these requirements till further orders)
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Separate samples of rubber seals of each type of application and hardness class of any nominal size may be tested to cover those types and hardness classes of all sizes being manufactured, subject to availability of manufacturing and testing facilities. During operation of licence, samples of each variety shall be drawn in rotation.
c)	नमूने का परिमाण Sample Quantity	:	Rubber Sealing Rings, Qty- 5 Nos, Rubber Test Slab- 2, Rubber Small Button -6, Rubber Big Button-3 of each type of rubber

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	Name of the product Material Hardness Class, Nominal Sizes, Type of Application, Optional Requirements
3.	परीक्षण उपकरणों की सूची List of Test Equipment	: Pl. refer to Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:
5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	Dimensions, hardness, tensile strength and elongation at break (Already conditioned samples). 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 5382: 2025 with the following scope:	
	Name of the product	Rubber Seals — Joint Rings for Water Supply, Drainage and Sewerage Pipelines — Specification for Materials
	Material Hardness Class	40/50/60/70/80/90
	Nominal Sizes	DN 150 etc.
	Type of Application	WAWC/WG
	Optional Requirements	Low temperature performance at –25 °C, and /or Volume change in oil and/or Life estimation

BUREAU OF INDIAN STANDARDS
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ANNEX – A

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Dimensional Tolerances, Cl. 5.4	Vernier Calipers, Pi-Tape, Measuring scale/tape
2.	Hardness, Cl. 5.6	IRHD Hardness Tester Apparatus as per IS 3400 (Part 2)
3.	Tensile Strength and elongation at Break, Cl. 5.7	Tensile testing machine, dies and cutters, thickness gauge, cone gauge, test rig (for ring test pieces) as per IS 3400 (Part 1)
4.	Compression set at 23° C and 70° C, Cl. 5.8	Compression set apparatus as per ISO 815-1
5.	Low temperature compression set at -10° C, Cl. 5.8.3	Low Temperature Compression set apparatus as per ISO 815-2
6.	Accelerated ageing in Air, Cl. 5.9	Ageing Oven (As per IS 3400 (Part 4))
7.	Stress relaxation in compression, Cl. 5.10	Compression Device, Counterforce measuring device, Air Oven, temperature measuring equipment as per IS 3400 (Part 28)
8.	Volume change in water, Cl. 5.11	Total immersion apparatus, apparatus for testing one surface only, 1 mg balance, instruments for measuring thickness, length and width of the test piece and measuring change in surface area as per IS 3400 (Part 6)
9.	Ozone resistance, Cl. 5.12	Ozone resistance test apparatus comprising test chamber, source of ozonized air and means of regulating the ozone flow as per IS 3400 (Part 20)
10.	Strength of spliced Joints, Cl. 5.13.2	Tensile Testing Machine
11.	Low Temperature performance at - 25° C, (type L), Cl. 6.1	Low Temperature Compression set apparatus as per ISO 815- 2, Apparatus for Determination of crystallization effects by hardness measurements (ISO 3387)
12.	Volume change in oil, (type O), Cl. 6.2	Apparatus for volume change in water, Standard oils IRM 901 and IRM 903
13.	Lifetime estimation, (type LT), Cl. 6.3	Method- A as per ISO 3384-1: 2019 Compression device, Counterforce-measuring device, air oven, Temperature-measuring equipment Method- B as per ISO 815-1: 2019 Compression assembly, Compression plates, Steel spacer(s), Clamping device, Oven, Pair of tongs, thickness gauge, Timing device

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 finished sealing rings of the same type, dimension, design, manufactured from the same type of rubber and produced in one 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 538225.

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 538225.

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 538225, 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 sealing ring or packing or both 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 consumer pack of each sealing ring or packing or both:

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.	Requirements	Test Method			No. of samples	Frequency	Remarks
		Clause	Reference				
5.1	General	5.1	IS 5382	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			
5.2	Effect on water supply	5.2	-do-	S	One	Each consignment	No testing is required if material is accompanied by supplier's test certificate
5.3	Microbiological deterioration	5.3	-do	S	One	Each consignment	-do-
5.4	Dimensional tolerances		IS16752:2018/ISO 3302-1		Five	Each Control Unit	
5.5	Imperfections and defects		IS16751:2018/ISO 9691:1992	R	Each sealing ring	Each sealing ring	
5.6	Hardness		IS 340 (Part 2):2014/ISO48	R	Three	Each Control Unit	
5.7	Tensile Strength and Elongation at Break		IS 3400 (Part1):2012/ISO 37	R	-do	-do-	
5.8	Compression set in air		ISO 815-1, ISO 815-2	R	-do	-do-	
5.9	Accelerated ageing in air		IS 3400 (Part 4):2012/ISO 188	S	One	Every Tenth Control Unit	See Note
5.10	Stress relaxation in compression						
i)	7 Days		IS 3400 (Part 28):2018/ISO 3384-1:2019	S	One	Every Year	
ii)	100 Days		-do-	S	One	Every 5 years	Also when material supplier or nature of material or

							elastomer formulation changes
5.11	Volume change in water		IS 3400 (Part 6):2012/ISO 1817	S	One	Every Tenth Control Unit	---
5.12	Ozone Resistance		IS 3400 (Part 20):1994/ISO 1431-1	S	One	Once in six months	
5.13	Splices of prevulcanized profile ends		Annex A	S	One	Every Tenth Control Unit	-----
6	Optional Requirements						
6.1	Low temperature performance at - 25 deg C		ISO 815-2, ISO 3387	S	Optional Requirement as agreed between purchaser and manufacturer		
6.2	Volume change in oil		IS 3400 (Part 6):2012/ISO 1817	S	Optional Requirement as agreed between purchaser and manufacturer		
6.3	Life time estimation, (type LT)		ISO 3384-1:2019/ISO 815	S	Optional Requirement as agreed between purchaser and manufacturer		

NOTE: In case of any failure each and every control unit shall be tested till five consecutive control units are found to be satisfactory and only then the frequency suggested in this table may be followed.