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उत्पाद मैनुअल

रबड़ हौज, वस्त्रादि-प्रबलित, सामान्य-प्रयोजनार्थ पानी अनुप्रयोग हेतु— विशिष्टि

IS 444: 2025 के अनुसार

PRODUCT MANUAL

Rubber Hoses, Textile-Reinforced, for General-Purpose Water Applications — Specification

ACCORDING TO IS 444: 2025

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 444: 2025
	शीर्षक Title	:	Rubber Hoses, Textile-Reinforced, for General-Purpose Water Applications — Specification
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Not applicable
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX –A
c)	नमूने का परिमाण Sample Quantity	:	5 meter
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		Name of the Product: Type: Inside Diameter: 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		
	i. Construction ii. Dimensions iii. Tensile Strength & Elongation at break iv. Proof Pressure v. Change in length at proof pressure vi. Minimum burst pressure vii. Adhesion between components		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 444: 2025 with the following scope:		
	Name of the product	Rubber Hoses, Textile-Reinforced, for General-Purpose Water Applications	
	Type	Type 1 and/or Type 2 and/or Type 3	
	Sizes	Internal diameter	

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MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
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ANNEX-A
Grouping Guidelines

1. Rubber Hoses, Textile-Reinforced, for General-Purpose Water Applications as per IS 444: 2025 are classified based on their pressure rating & internal diameter as follows: -

Type	Type 1, Type 2 and Type 3
Internal diameter	10, 12.5, 16, 19, 25, 32, 38, 50, 63, 76 and 100mm

2. To cover the various sizes & types in the scope of the licence, the following guidelines of grouping based on their pressure rating & internal diameter for grant of licence/inclusion of new variety in the licence :-

Types	Group-1	Group-2	Group-3
Type 1	10 to 19 mm	25 to 32 mm	38 to 100mm
Type 2	10 to 19 mm	25 to 32 mm	38 to 100mm
Type 3	10 to 19 mm	25 to 32 mm	38 to 100mm

One sample from each size group (preferably the highest size) & type shall be tested for all the requirements of the specification in order to cover the complete range of size & type. It shall however be ensured and recorded that applicant/licensee has got complete manufacturing as well as testing facilities for the sizes required to be covered as per grouping.

3. During the operation of the Licence, BO shall ensure that all Sizes & types covered in the Licence are tested in rotation, to the extent possible.

ANNEX-B

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Dimensions, Clause 6.	– Air conditioner – Thermometer – Plug gauges – Tapered gauges – Micrometer – Vernier slide calipers or – Internal calliper dial gauge with rounded feet – Go-No Go plugs – Steel scale – Measuring tape
2.	Tensile strength & elongation at break, Clause 7.1 & Table 2	– Tensile Testing machine – Dies and cutters – Thickness gauge – Cone gauge – Vernier Calipers
3.	Resistance to ageing, Clause 7.1 & Table 2	– Hot air oven with count hour meter – Tensile Testing machine – Dies and cutters – Thickness gauge – Cone gauge – Vernier Calipers
4.	Proof pressure at 23 °C, Clause 7.2 & Table 3	– Air conditioner – Thermometer – Hydrostatic pressure testing apparatus with pressure measuring device – End plugs
5.	Change in length at proof pressure, Clause 7.2 & table 3	– Sliding Vernier Callipers or micrometer, – Length measuring tape, – circumferential measuring tape (π tape)
6.	Minimum burst pressure, Clause 7.2 & Table 3	– Hydrostatic pressure testing apparatus with pressure measuring device – End plugs
7.	Adhesion between components, Clause 7.2 & Table 3	– Adhesion Test machine capable of maintaining a substantially constant rate of traverse of the moving head during the test and fitted with an autographic recorder – Grips – Mandrel
8.	Flexibility at 23 °C, Clause 7.2 & Table 3	– Air conditioner – Thermometer – Flexibility test equipment

ANNEX C

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 the Rubber hoses manufactured from a rubber compound masticated and vulcanized at a time shall constitute 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**.

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. All the Rubber hoses 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 on the each Rubber hoses.

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) Test Details				(2) Test equipment requirement R: required (or) S: Sub-contracting permitted	(3) Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Material and Construction		IS 444	R	5	Each Control Unit	Visual
6	Dimension	Appropriate record shall be maintained					
6.1	Internal diameters and tolerances		IS 15913	R	5	Each Control Unit	
6.2	Concentricity		-do-	R	5	Each Control Unit	
6.3	Tolerance of length		-do-	R	5	Each Control Unit	
6.4	Minimum thickness of lining and cover		-do-	R	5	Each Control Unit	
7	Physical properties						
7.1 & Table 2	Rubber compound						
(i)	Minimum tensile strength		IS 3400 (Part1)	R	2	Each Control Unit	

(ii)	Minimum elongation at break		IS 3400 (Part 1)	R	2	Each Control Unit	
(iii)	Resistance to ageing: Change in tensile strength from original value (max). Change in elongation at break from original value (max)		IS 3400 (Part 1) & IS 3400 (Part 4)	R	1	Every Fifth Control unit	In case any of the samples fail to meet the relevant requirements the entire material in the control unit shall be considered unfit for the purposes of marking. In case of any failure each control unit shall be tested till 5 consecutive control units are found to be passing. Thereafter, frequency suggested in this table may be followed.
7.2 & Table 3	Finished hose						
(i)	Proof pressure at 23° C		IS 443 (Pt 3)	R	1	Every Control Unit	
(ii)	Change in length at proof pressure		IS 443 (Pt 3)	R	1	Every Control Unit	
(iii)	Minimum burst pressure		IS 443 (Pt 3)	R	1	Every Control Unit	
(iv)	Adhesion between component		IS 3400 (Pt 24)	R	3	Every Control Unit	
(v)	Ozone resistance		ISO 7326	S	1	Once in six months	The testing of Resistance to Ozone shall be carried out once in six months and also at the time of any change in composition and/or source of raw material.
(vi)	Flexibility at 23°C		IS 12656	R	2	Every Control Unit	

(vii)	Low-temperature flexibility		IS 12657	S	1	Once in six months	The testing of low temperature flexibility shall be carried out once in six months and also at the time of any change in composition and/or source of raw material.
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