



www.bis.gov.in

उत्पाद मानुयल
कृषि छिड़काव के लिए रबर के होज
IS 1677 : 2018/ ISO 1401 : 2016 के अनुसार

PRODUCT MANUAL FOR
RUBBER HOSES FOR AGRICULTURAL SPRAYING
ACCORDING TO IS 1677 : 2018/ ISO 1401 : 2016

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन में रीति और पारदर्शिता के सुसंगत सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेंस धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेंस/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.

1.	उत्पाद Product	:	IS 1677 : 2018/ISO 1401 : 2016
	शीर्षक Title	:	कृषि छिड़काव के लिए रबर के होज Rubber Hoses For Agricultural Spraying
	संशोधनों की संख्या No. of Amendments	:	Nil
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	No specific requirements
b)	समूहीकरण दिशानिर्देश Grouping guidelines	:	कृपया Annex-A देखें Please refer ANNEX –A
c)	नमूने का परिमाण Sample Size	:	10 meter

3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	कृपया Annex-B देखें Please refer ANNEX – B
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	कृपया Annex-C देखें Please refer 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.	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence :		
	IS 1677 : 2018 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 1677 : 2018 with the following scope :		
	Name of the product	Rubber Hoses For Agricultural Spraying	
	Type	Type A and/or Type B and/or Type C	
	Nominal Bore Diameter	As applicable	

ANNEX-A
**GROUPING GUIDELINES
RUBBER HOSES FOR AGRICULTURAL SPRAYING
ACCORDING TO IS 1677 : 2018**

1. The following grouping guidelines shall be followed for grant of licence and change in scope of licence. Based on the type and nominal bore, hoses shall be classified into two groups as follows:

Group	Nominal Bore Diameter	Type
Group I	6.3 mm, 8 mm, 10 mm & 12.5 mm	Type A, Type B, Type C
Group II	16 mm, 20 mm, 25 mm	Type A, Type B, Type C

2. One sample from each group of the highest size & type (Type C is the highest type and Type A is the lowest) shall be tested for all the requirements of the specification in order to cover the complete range of sizes & types in that group. 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 surveillance, it shall be ensured that samples of all types and sizes covered in licence scope are drawn by rotation.

ANNEX-B
List of Test Equipments
For Rubber Hoses for Agricultural Spraying
According to IS 1677 : 2018

Major test equipment required to test as per the Indian Standard

Sl. No.	Test Equipment	Tests used in with Clause Reference
1.	-Plug gauges -Tapered gauges -Micrometer -Vernier slide calipers or -Internal calliper dial gauge with rounded feet -Go-No Go plugs -Steel scale -Measuring tape -Air conditioner -Thermometer	Dimensions and Tolerances(Clause 6)
2.	-Tensile Testing machine - Dies and cutters -Thickness gauge -Cone gauge -Vernier Calipers	Tensile strength & elongation at break (Clause 7.1)
3.	-Hot air oven with count hour meter -Tensile Testing machine - Dies and cutters -Thickness gauge -Cone gauge -Vernier Calipers -Immersion liquid (As per the requirement of purchaser)	Resistance to ageing (Clause 7.2 & 7.3)
4	-Hydrostatic pressure testing apparatus with pressure measuring device - End plugs -Sliding Vernier Calipers or micrometer, length measuring tape, -circumferential measuring tape (pi tape)	Change in dimensions at proof pressure (Clause 8.1) & Hydrostatic requirements (Clause 8.2)

5.	-Bending Test Apparatus -Conditioning Chamber -Vernier slide calipers or micrometer	Bending test requirements (Clause 8.3)
6.	-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	Adhesion (Clause 8.4)
7.	-Ozone Cabinet -Test piece holder -Jig -Cylinder -Round Rod	Resistance to ozone (Clause 8.5)

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

ANNEX C
SCHEME OF INSPECTION AND TESTING
FOR RUBBER HOSES FOR AGRICULTURAL SPRAYING
ACCORDING TO IS 1677 : 2018

1. **LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.
- 1.1 The manufacturer shall prepare a calibration plan for the test equipment's.
2. **TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
3. **LABELLING AND MARKING** – The Standard Mark, as given in the Schedule of the licence, shall be clearly and durably marked on the hose, at every 1 m, provided always that each hose to which this mark is thus applied, conform to every requirement of the specification.
- 3.1 Each length of hose shall be clearly and durably marked, at least every 1 m, to give the information as per clause 12 of IS 1677. In addition, the following details shall be mentioned on each package legibly and indelibly:
 - a) BIS Licence No. CM/L..... and
 - b) BIS website details i.e. – “For details of BIS certification please visit www.bis.gov.in”.
4. **CONTROL UNIT** –For the purpose of this Scheme, the control unit shall be as follows:-
 - 4.1 RUBBER WATER HOSE- For the purpose of this scheme all the *Rubber* hoses of the same type and size manufactured from a rubber compound masticated and vulcanized at a time shall constitute a control unit.
5. **LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.
 - 5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.
6. **REJECTIONS** – 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 LEVELS OF CONTROL
(Para 5 of Scheme of Inspection and Testing)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S:Subcontracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Samples	Frequency	Remarks
		Clause	Reference				
5	Construction and material	5	IS 1677 : 2018	R	5	Each Control Unit	Visual
6	Dimensions						
6.1	Nominal Bore and Internal diameter		IS 15913	R	5	Each Control Unit	
6.2	Length		-do-	R	5	Each Control Unit	
6.3	Minimum thickness of lining and cover		-do-	R	5	Each Control Unit	
7	Physical Requirements on samples taken from the hose or from moulded sheets of equivalent vulcanization						
7.1, Table 2	Tensile Strength of rubber lining and cover		IS 3400 (Part1)	R	2	Each Control Unit	
7.1, Table 2	Elongation at break of rubber lining and cover		IS 3400 (Part 1)	R	2	Each Control Unit	
7.2, Table 3	Requirements after immersion in fluid		IS 3400 (Part 6)	R	1	Each Control Unit	

7.3	Accelerated ageing:		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.
8	Physical requirement on finished hose						
8.1	Change in dimensions at proof pressure		IS 443 (Part 3)	R	1	Every Control Unit	
8.2.1, Table 4	Hydrostatic pressure		IS 443 (Part 3)	R	1	Every Control Unit	
8.2.2, Table 4	Hydrostatic testing after ageing in liquid		IS 443 (Part 3)	R	1	Every Control Unit	
8.3	Bending –Test requirements		IS 12656	R	2	Every Third Control unit	
8.4	Adhesion		IS 3400 (Pt 24)	R	3	Every Control Unit	

8.5	Ozone resistance		IS 443 (Part 1)	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.
-----	------------------	--	-----------------	---	---	--------------------	---

Note-1: Whether test equipment is required or subcontracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.