



www.bis.gov.in

उत्पाद मानुयल

द्रवित पेट्रोलियम गैस के लिए रबड़ की नम्य नलियाँ

IS 10908:2023 के अनुसार

PRODUCT MANUAL FOR

FLEXIBLE RUBBER TUBING FOR LIQUEFIED PETROLEUM GAS

ACCORDING TO IS 10908:2023

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम -I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन में रीती और पारदर्शिता के सुसंगिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाईसेंस धारियों द्वारा सन्दर्भ सामग्री के रूप में उपयोग किया जाएगा बीआईएस लाईसेंस /प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज 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 10908:2023
	शीर्षक Title	:	Flexible Rubber Tubing For Liquefied Petroleum Gas-Specification
	संशोधन संख्या No. of Amendments	:	0
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	Shall be homogenous and resistant to outdoor exposure
b)	समूहीकरण दिशा निर्देश Grouping guidelines	:	Tubing of each size (diameter) shall be tested
c)	नमूने का आकार Sample Size	:	10 meter
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer ANNEX –A
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer ANNEX –B
5.	एक दिन में संभावित परीक्षण Possible tests in a day :		

	(i) Workmanship & Finish (ii) Dimensions (iii) Pressure Test (iv) Shore hardness (v) Crushing Test (vi) Burning behaviour	
6.	लाइसेंस का कार्यक्षेत्र Scope of the Licence :	
	IS 10908:2023 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 10908:2023 with the following scope:-	
	Name of the product	Flexible Rubber Tubing For Liquefied Petroleum Gas
	Sizes (Internal Dia)	6.4 mm and/or 7.0 mm

BUREAU OF INDIAN STANDARDS
 Manak Bhawan, 9, Bahadurshah Zafar Marg,
 New Delhi – 110002

ANNEX-A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Dimensions (Clause 4.3)	
(a)	Diameter (4.3.1)	Air conditioner Thermometer Plug gauges/Tapered gauges/Go-No Go plugs/ Internal caliper/ dial gauge with rounded feet Steel scale Measuring tape Vernier slide calipers or Internal caliper,
(b)	Wall thickness (4.3.2)	Micrometer dial gauge with roundedfeet
2.	Grip strength test (Clause 4.4)	Standard nozzle, Oversized nozzle, Grip strength test set up, Weight of 4.5 Kg, Ageing oven, Air conditioner, Pressure Measuring device, stop watch
3.	Pressure test (Clause 4.5)	Stop watch, Pressure testing apparatus with pressure measuring device, Vernier Caliper or micrometer, Length measuring tape, circumferential measuring tape (pitape)
4.	Shore Hardness test (Clause 4.6)	Hardness tester Micrometer Arrangement to maintain Standard Laboratory temperature (27 degrees)
5.	Accelerated Ageing (Clause 4.7)	Air Oven Shore Hardness tester
6.	Flexibility test (Clause 4.8)	Flexibility test apparatus (Fig. 4 of Annex C of IS 10908:2023) Butane gas or Air supply Water manometer Jet permitting flow of gas at 0.225 m ³ /h at 2.6 kPa, regulator scale Mass of 1.6 Kg angle protector Measuring tape/scale Stop watch

7.	Crushing Test (Clause 4.9)	Compression test m/c Stopwatch Scale/Measuring tape Air Pressure leakage test arrangement
8.	Resistance to n-pentane(Clause 4.10)	Weighing Machine Immersion tank Liquid N-pentane (min. 98%) Volumetric measurement cylinder Glassware Stopwatch Air conditioner
9.	Resistance to Ozone (Clause 4.11)	Ozone chamber with ozone conc. of 50 +/- 5 pphm (apparatus as per 5 of IS 3400 (part 20)) Stop watch Jigs
10.	Burning Behaviour (Clause 4.12)	Bunsen burner flame with set up Stop watch scale

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

ANNEX-B

SCHEME OF INSPECTION AND TESTING

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.

The manufacturer shall prepare and implement a calibration plan for the test equipments.

2. **TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
3. **PACKING AND MARKING** – The Standard mark as given in the Schedule of the licence shall be permanently and legibly marked on each tubing provided always that the tubing to which this mark is thus applied conforms to every requirement of the specification

3.1 Labelling and marking shall be done as per the provision of the IS 10908:2023. In addition, the following details shall be mentioned on each pack legibly and indelibly:

- a) BIS Licence No. CM/L
- 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 all the Rubber tubing of the same dimensions, same composition and vulcanized at one 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

(1)				(2)	(3)		
Test Details				Test equipment requirementR: required (or) S: Sub- contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.1	General	4.1	IS 10908:2023	R	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		
4.2	Workmanship and Finish	4.2	IS 10908:2023	R			
4.3.1	Diameter	4.3.1	IS 10908:2023	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		
4.3.2	Wall Thickness	4.3.2	IS 443(Part 8)	R			
4.4	Grip StrengthTest	Annex-B	IS 10908:2023	R	One	Each Control Unit	
4.5	Pressure test	4.5	IS 10908:2023	R	One	Each Control Unit	
4.6	Shore Hardness	4.6	IS 3400 (Part 2/Sec 4)	R	One	Each Control Unit	
4.7	Accelerated AgeingTest	-	IS 3400 (Pt-4)	R	One	Once a week	
4.8	Flexibility test	Annex-C	IS 10908:2023	R	One	Once a week	
4.9	Crushing test	4.9	IS 10908:2023	R	One	Each Control Unit	
4.10	Resistance to n-pentane	Annex-D	IS 10908:2023	R	One	Each Control Unit	
4.11	Resistance to ozone	Annex-E	IS 10908:2023	R	One	Once in six months	
4.12	Burning behavioron exposure to small flame	ANNEX-F	IS 10908:2023	R	One	Each Control Unit	

Note-1: Whether test equipment is required or sub-contracting 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 to BO Head