



उत्पाद मैनुअल

भा. मा. 17814: 2022 के अनुसार

नालीदार धातु नम्य सुरक्षा गैस होज असेम्बली के लिए

दस्तावेज संख्या-पी एम/आई एस 17814/1/जनवरी 2023

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR CORRUGATED METAL FLEXIBLE SAFETY GAS HOSE ASSEMBLIES ACCORDING to IS 17814:2022

Document No.-PM/IS 17814/1/ January 2023

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.

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PRODUCT MANUAL FOR CORRUGATED METAL FLEXIBLE SAFETY GAS HOSE ASSEMBLIES ACCORDING TO IS 17814: 2022

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1.	Product	:	IS 17814: 2022				
	Title	:	Corrugated Metal Flexible Safety Gas Hose Assemblies				
	No. of Amendments	:	Nil				
2.	Sampling Guidelines:						
a)	Raw material	:	➤ Mates- as per IS 6911 ➤ Outer wire braid- as per IS 6528 ➤ Stainless steel for End fitting and non-permanently attached parts- as per IS 6911 ➤ Free cutting brass for End fitting and non-permanently attached parts- as per IS 319 ➤ Seals/gaskets- as per IS 11149 (Materials as per IS 6911 and IS 6528 are under mandatory BIS Certification and manufacturer shall ensure that materials used in manufacturing respective components as above, shall be only ISI Marked material and received with test certificate.)				
b)	Grouping guidelines	:	NA, as only one variety is covered in Standard				
c)	Sample Size	:	CMFSG hose assemblies: Nine of 1.0 m length; two of 1.20 m length and, five of 0.50 m length.				
d)	Operation of licence	:	Since, Test facility for product is not available in any BIS or BIS recognized laboratory, therefore, Licence is to be granted and operated on factory testing basis. Total 5 man-days are required for conducting complete testing in factory as per IS 17814: 2022. Two surveillance inspections in a operative year shall be done during which complete testing shall be done. Day-wise description of various tests as per IS 17814 is as follows: <table><tr><th>Day</th><th>Tests to be done on the specific day</th></tr><tr><td>1st day</td><td>All tests except following- working temperature test (Cl. 4.12.2.5), Salt spray test (Cl. 4.12.2.6.1), Hydrochloric acid test (Cl. 4.12.2.6.2), Household cleaning agent test (Cl. 4.12.2.6.3) and Water absorption test on gasket (Cl. 4.12.5)</td></tr></table>	Day	Tests to be done on the specific day	1 st day	All tests except following- working temperature test (Cl. 4.12.2.5), Salt spray test (Cl. 4.12.2.6.1), Hydrochloric acid test (Cl. 4.12.2.6.2), Household cleaning agent test (Cl. 4.12.2.6.3) and Water absorption test on gasket (Cl. 4.12.5)
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			4 th day	Working temperature test (Cl. 4.12.2.5)
			7 th day	Household cleaning agent test (Cl. 4.12.2.6.3)
			8 th day	Salt spray test (Cl. 4.12.2.6.1) and Water absorption test (Cl. 4.12.2.5)
			11 th day	Hydrochloric acid test (Cl. 4.12.2.6.2)
3.	List of Test Equipment	:	Please refer ANNEX –A	
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –B	
5.	Possible tests in a day	:	All tests except following- working temperature test (Cl. 4.12.2.5), Salt spray test (Cl. 4.12.2.6.1), Hydrochloric acid test (Cl. 4.12.2.6.2), Household cleaning agent test (Cl. 4.12.2.6.3) and Water absorption test on gasket (Cl. 4.12.5)	
6.	Scope of the Licence:	:	Licence is granted to use Standard Mark as per IS 16544:2022 with the following scope:	
	Name of product	:	Corrugated Metal Flexible Safety Gas Hose Assemblies	
	Nominal size	:	10 mm (3/8")	
	Item code	:	CMFSG-Model 1	

Annex A
List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sr. No.	Tests used in with Clause Reference	Testing Equipment
1.	Burst Pressure Test, 3.10, Annex A	Burst Pressure Test Equipment with Pressure Gauge
2.	Mercurous Nitrate Test, 4.4, IS 2305: 1988 Torque test, 4.4 End Fittings-Threads, 4.4	Mercurous Nitrate Di-Hydrate Mercurous nitrate Monohydrate Concentrated Nitric Acid Torque wrench Thread Gauges
3.	Electric Continuity Test, 4.6, Annex B	Ohm meter, Steel rule
4.	Dimensions and Tolerances, 4.11	Vernier Caliper, Measuring tape
5.	Equipment to maintain ambient conditions, 4.12.1	Digital Humidity/ Barometer/ Temperature Indicator
6.	Leak Tightness Test, 4.12.2.1, Annex C	Leak Tightness Test Equipment with Pressure Gauge
7.	Structural Strength Test, 4.12.2.2 , Annex D	Structural Test Equipment with Pressure Gauge, Steel Rule
8.	Traction Test, 4.12.2.3, Annex E	Traction Test Equipment with Feed Rate Measurement
9.	Durability of Marking, 4.12.2.4, Annex F	Cotton cloth, Weight
10.	Working Temperature Test, 4.12.2.5, Annex G	Oven Cryogenic Equipment to obtain -40°C (for non-SS hose)
11.	<u>Corrosion Resistance, 4.12.2.6 (Annex H):</u> Salt Sprat Test, 4.12.2.6.1 (Annex H-1) Hydrochloric Acid Test, 4.12.2.6.2 (Annex H-2)	Salt Spray Chamber with Temperature Indicator and Timer, Sodium Chloride, Distilled Water Glass Vessel, Hydrochloric Acid, Distilled Water

	Household Cleaning Agent Test, 4.12.2.6.3 (Annex H-3)	Glass Vessel, Sodium Hypochlorite Acid, Distilled Water
12.	Bending Test, 4.12.2.7 (Annex J)	Bending Test Equipment with 30 mm dia mandrel, 20 kg load, counter and cycles/minute adjustment
13.	Torsion Resistance Test, 4.4, 4.12.2.8 (Annex K)	Torsion Resistance Tester with counter and cycles/minute adjustment
14.	Impact/ Crushing Resistance Test, 4.12.2.9 (Annex L)	Impact Testing Machine with 5 kg weigh
15.	End Fitting Drop Test, 4.12.2.10 (Annex M)	End Fitting Drop Test Fixture
16.	Torque Test, 4.12.2.11 (Annex N)	Digital Torque Wrench, Bench vice
17.	Water Absorption Test, 4.12.5 (Annex P)	Weighing Balance, Distilled Water, Boiling under Reflux with Air Condenser Arrangement
18.	For All Tests	Digital Stop Watch, Air Conditioner

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.

1.1 The manufacturer shall prepare 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. LABELLING AND MARKING – As per the requirements of IS 16544: 2022.

4. CONTROL UNIT- All the hoses manufactured under similar conditions from same consignment of raw material in a day, 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

(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
	Requirements						
3.10	Burst Pressure	3.10, Annex A	IS 17814	R	1	Monthly Once	
4.1	General	4.1	IS 17814	R	--	Each hose	
4.2, 4.4	Material	4.2, 4.4	IS 17814 IS 6911 IS 6528 IS 2305 IS 319 IS 5116 IS 11149	S	One	Each consignment	No further testing is required in case material is received with test certificate or is ISI Marked. Materials as per IS 6911 and IS 6528 are under mandatory BIS Certification and manufacturer shall ensure that materials used in manufacturing respective components as above, shall be only ISI Marked material and received with test certificate.

4.3	Connection between Hose and Fittings	4.3	IS 17814	R	--	Each hose	
4.4	Torque test	4.4	IS 17814	R	One	Each Control unit	
4.6	Electric Continuity Requirements	4.6, Annex B	IS 17814	R	One	Once in a week	(or) Whenever there is a change in supplier/ material
4.7	Insulation Requirements	4.7	IS 17814	R	Each hose		
4.8	Insulation Materials	4.8	IS 17814	R	Each hose		
4.10	Dangerous substances	4.10	IS 17814	R	One	Once in a month	(or) Whenever there is a change in supplier/ material
4.11	Dimensions and Tolerances	4.11	IS 17814	R	One	Each control unit	
4.12	Type Tests Requirements as per Cl. 4.12.2 (Hose Lengths and sequence as specified in Table 1)						
4.12.2.1	Leak Tightness Test (Initial and Final)	4.12.2.1, Annex C	IS 17814	R	Each hose		
4.12.2.2	Structural Strength/ Hydrostatic Test	4.12.2.2, Annex D	IS 17814	R	One	Each control unit	
4.12.2.3	Traction Test	4.12.2.3, Annex E	IS 17814	R	One	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.2.4	Durability of Marking	4.12.2.4, Annex F	IS 17814	R	One	Each control unit	
4.12.2.5	Working Temperature Test	4.12.2.5, Annex G	IS 17814	R	Two	Once in a month	(or) Whenever there is a change in supplier/ material

4.12.2.6, Annex H	<i>Corrosion Resistance</i>						
	Salt Spray Test	4.12.2.6.1, Annex H-1	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
	Hydrochloric Acid Test	4.12.2.6.2, Annex H-2	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
	Household Cleaning Agent Test	4.12.2.6.3, Annex H-3	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.2.7	Bending Test	4.12.2.7, Annex J	IS 17814	R	1	Each control unit	
4.12.2.8	Torsion Resistance Test	4.12.2.8, Annex K	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.2.9	Impact/ Crushing Resistance Test	4.12.2.9, Annex L	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.2.10	End Fitting Drop Test	4.12.2.10, Annex M	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.2.11	Torque Test	4.12.2.11, Annex N	IS 17814	R	1	Once in a month	(or) Whenever there is a change in supplier/ material
4.12.5	Water Absorption Test	4.12.5, Annex P	IS 17814	R	1	Yearly Once	(or) Whenever there is a change in supplier/ material

Note-1: 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.