



PM/ IS 11722/ 1/ May 2020

**PRODUCT MANUAL FOR
Thin Walled Flexible Quick Coupling Pipes
According to IS 11722:1986**

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.	Product	:	IS 11722:1986
	Title	:	Thin Walled Flexible Quick Coupling Pipes
	No. of amendments	:	5
2.	Sampling Guidelines		
a)	Raw material	:	For pipes of OD less than 150mm and OD greater than 150mm Steel Sheet/strip used shall conform to IS 513 Pt.1 and IS 10748 respectively.
b)	Grouping Guidelines	:	Please refer Annex - A
c)	Sample Size	:	2 No.s.+ Coupler
3.	List of Test Equipment	:	Please refer Annex - B
4.	Scheme of Inspection and Testing	:	Please refer Annex - C
5.	Possible tests in a day	:	Dimensions and Tolerances, Workmanship and Finish Galvanizing, Tensile Test, Flattening Test, Leakage Test, Hydraulic test, Angularity of Joints
6.	Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 11722:1986 with the following scope:		
	Name of the product	Thin Walled Flexible Quick Coupling Pipes	
	Type	A, ..	
	Type of coupler	Mechanically clamped, Pressure activated	
	Sizes	25.4mm , ..	

ANNEXURE A
TO PRODUCT MANUAL FOR
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GROUPING GUIDELINES

Coupling pipes covered under this standard are classified into three Types A, B & C and sizes ranging from OD 25.4mm to 304.8mm.

For the purpose of grant of licence / change in scope of licence, the following shall be applied:

- a) The lowest and highest sizes of each type of coupled pipes applied for shall be tested for all requirements to cover the tested and intermediate sizes for the type of pipes.
- b) Design/drawing of couplers should be approved by BIS before use. In case of change of design/drawing of coupler, prior approval from BIS is essential.

It shall be ensured that the applicant / licensee has got adequate manufacturing and testing facilities for the sizes & types of pipes to be covered in the licence.

During the operation of license, BO shall ensure that all sizes & Product types covered in the license are drawn for independent testing on rotation over a period of time.

ANNEXURE B
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LIST OF TEST EQUIPMENTS

Major test equipment required to test as per requirements of Indian Standard.

Sl. No.	Test Equipment/Chemicals and Identification Numbers (Where applicable)	Tests Used in with Clause Reference
1	Vernier Calipers, Micrometer, Pi Tape, Measuring Tape, Spirit level Vial	Dimensions (6) Tolerances (7) Length (8) Straightness (12)
2	<ul style="list-style-type: none"> • Volatile organic solvent such as ether, trichloroethylene, carbon tetrachloride • Alcohol • Antimony Trichloride • Antimony Trioxide • Concentrated hydrochloric acid • Conditioning chamber • Technical grade copper sulphate • Distilled Water • Copper Hydroxide/ Copper Carbonate (Technical Grade) • Hydrometer • Weighing balance • Clean soft cotton cloth, 100 ml glass burette with stopcock, rubber tube, reservoir (for Volumetric method) and other glassware as applicable 	Galvanizing (9)
5	Copper carbonate (laboratory grade) or Copper hydroxide (laboratory grade), Copper Sulphate Crystals – Technical grade, Ammonium Hydroxide, Alcohol, Distilled water, Volatile organic solvent such as ether, trichloroethylene, carbon tetrachloride, etc. and other chemicals and reagents applicable, brush, hydrometer, Room Air conditioner with temperature control facility, Thermometer.	Galvanizing (9)
6	HST test equipment-Pump, Pressure Gauge, plugs as per size	Hydraulic Test (14)
7	Leakage test arrangement, Burette, Bowl	Leakage Test (12)
8	Universal Testing Machine (UTM)	Flattening Test (13.1)
9	UTM with flattening test attachments, Air Conditioner, Thermometer	Tensile Test (13.2)
10	Angle Protractor	Angularity of Joint (11)

Note: The above is an indicative list for the purpose of guidance only

ANNEXURE C
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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. PACKING AND MARKING – The Standard Mark as given in the Schedule of the license and Licence Number (i.e. CM/L.....) shall be incorporated, and the marking and packing shall be done as per the provisions of the Indian Standard, provided always that the product thus marked and packed conforms to all the requirement of the specification.

4. CONTROL UNIT – For the purpose of this scheme, pipes of same size and type manufactured from steel of same cast on a tube mill under identical conditions shall constitute one 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.

5.2 General requirements relating to the supply of material shall conform to IS 1387. The material used for the manufacture of coupled pipes shall conform to cl 4 and cl 10 of IS 11722:1986.

6. TEST CERTIFICATE-For each consignment of BIS Certified material conforming to IS 11722:1986 there shall be a test certificate which shall contain the Standard Mark, the cast/Control Unit number and the corresponding test results (as given in Annexure-I enclosed)

7. 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. In addition, for disposal of substandard pipes compliance to cl 16 of IS 11722:1986 shall be ensured.

TABLE 1: LEVELS OF CONTROL

(1)				(2)	(3)		(4)
TEST DETAILS					LEVELS OF CONTROL		REMARKS
Clause	Requirements	Test Method		Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency	
		Clause	Reference				
2	Material	2.1	IS 11722: 1986	R S	One -	Each Cast -	For manufacturers with rolling facilities to produce skelp/strips in-house. For other manufacturers steel sheets/strips procured shall be ISI marked.
5	Workmanship and Finish	5.1	IS 11722: 1986	R	Each Tube	Each Tube	
6 & 7	Dimensions and Tolerances	6.1 Table-1 7.1	IS 11722: 1986	R	Two	One hour's production of each control unit	In case of failure all the tubes shall be checked and only those tubes found conforming shall be Marked.
8	Length	8.1	IS 11722 : 1986	R	-do-	-do-	
9	Galvanizing	9.1	IS 11722 : 1986 IS 4736	R	-do-	One shift production of each size and type	
13.1	Flattening Test	13.1	IS 11722 : 1986 IS 2328	R	One	One hour's production of each control unit	Should the test pieces fail, two more samples shall be selected. If both samples pass, the material shall be deemed to comply with the requirements of the specification.
13.2	Tensile Test	13.2	IS 1608 Pt.1	R	Two	Each Control Unit	Should any of the test pieces fail, two further samples shall be selected for testing. If both the samples pass, the material represented by the test sample shall be deemed to comply with the requirements of tensile test
14	Hydraulic Test	14.1 14.2	IS 11722 : 1986	R	Each tube	Each tube	
12	Straightness	12.1	IS 11722 : 1986	R	-do-	-do-	

(1)			(2)	(3)		(4)	
TEST DETAILS				LEVELS OF CONTROL		REMARKS	
Clause	Requirements	Test Method	Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency		
		Clause	Reference				
10	Couplers for thin walled coupling pipes	Design/drawing of couplers should be approved by BIS before use. In case of change of design/drawing of coupler, prior approval from BIS is essential.					
	i) Coupler	10.1, 15.1, 15.2 & Appendix A	IS 11722: 1986	R	One	One hour production of couplers formed or bonded to pipes of each control unit	
	ii) Rubber Parts	10.2, 15.1, 15.2 & Appendix A	IS 11722: 1986 IS 5382	S	One	Each Consignment	No testing is required for consignment received with ISI mark or with manufacturer's test certificate.
	iii) Leakage Test	10.3, 15.1, 15.2 & Appendix A Table-2	IS 11722: 1986	R	Each Coupled pipe	Each Coupled pipe	
11	Angularity of Joints	11.1 Table-3	IS 11722 : 1986	R	One	One hour production of couplers formed or bonded to pipes of each control unit	In case of failure all coupled pipes produced during the hour shall be checked and only those tubes found conforming shall be Marked.

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 empaneled 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.

ANNEXURE I



(Para 6 of the Scheme of Inspection and Testing)

XYZ STEEL COMPANY

(Registered office Address and works address)

TEST CERTIFICATE FOR Thin Walled Flexible Quick Coupling Pipes

TEST CERTIFICATE No. _____

DATE _____

To M/s _____ We certified that the material described below fully conforms to IS 11722:1986 Chemical composition and Physical properties of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L _____ are as indicated below against each order No.

(PLEASE REFER TO IS 11722:1986 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	(Nom Size)	Control Unit No.	Type	Tolerances	Qty in tonnes	CHEMICAL COMPOSITION [#]	PHYSICAL PROPERTIES					Angularity of Joint	Remarks (rubber parts [#])
							Tensile Test	Flattening test	Leakage test	Hydraulic test	Galvanizing		

[#] If agreed between

REMARKS

WAGON NO.

TRUCK NO.

(It is suggested that size A4 paper be used for this test certificate)

FOR XYZ STEEL COMPANY