



**PRODUCT MANUAL FOR**  
**Cast Iron Detachable Joints for Use with Asbestos Cement Pressure Pipes**  
**According to IS 8794:1988**

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.	<b>Product</b>	:	IS 8794: 1988
	<b>Title</b>	:	Cast Iron Detachable Joints for Use with Asbestos Cement Pressure Pipes
	<b>No. of Amendments</b>	:	2
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Grey cast iron used for manufacture of CI Joints shall of requisite quality conforming to any of the grade specified in IS 210.
b)	<b>Grouping guidelines</b>	:	Please refer <a href="#">ANNEX – A</a>
c)	<b>Sample Size</b>	:	One set (02 Flanges & 01 Collar) 1 Test piece each - for Tensile & Brinell Hardness Test
3.	<b>List of Test Equipment</b>	:	Please refer <a href="#">ANNEX – B</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer <a href="#">ANNEX – C</a>
5.	<b>Possible tests in a day</b>	:	Freedom from defects (Clause 3.2), Tensile test (Clause 4.1) Brinell Hardness test (Clause 4.2), Hydrostatic test (Clause 5) Dimensions and mass (Clause 6) ,Coating (Clause 8)
6.	<b>Scope of the Licence :</b>		
	“Licence is granted to use Standard Mark as per IS 8794 : 1988 with the following scope:		
	Name of the product	Cast Iron Detachable Joints for Use with Asbestos Cement Pressure Pipes	
	Pressure Class	As applicable	
	Size*	Nominal Diameter upto and including----- mm	

\*Cast iron detachable joints of nominal diameter more than 600 mm may also be included in the scope of licence, if manufactured by the firm.

**ANNEX A****Grouping Guidelines**

1. Cast Iron Detachable Joints for Use with Asbestos Cement Pressure Pipes are classified on the basis and pressure class as given below:
  - a) Pressure Class – 10, 15, 20 and 25 ( Other pressure classes such as 12, 18, 24, 30, 35 and 36 may also be manufactured where detailed dimensions shall be as agreed to between manufacturer and purchaser).
  - b) Size (Nominal Diameter) - 50 mm to 1000 mm (Pipes of nominal diameter above 1000 mm may also be manufactured as per agreement between manufacturer and user).
2. CI Joints are grouped as given below based on Size (Nominal Diameter):

<b>Group</b>	<b>Size (Nominal Diameter) of Joints (mm)</b>
1	50 -150
2	200-600
3	700 - 1000
4	1000 - 1200
5	>1200

3. Considering the above, following grouping guidelines for GoL/CSoL have been developed:
  - a) Two Joints of any size (Nominal Diameter) from each group and each Pressure class shall be tested for all the requirements to cover all the sizes of Joints in that particular group and class tested.
4. Manufacturer shall submit testing data/details for the following Joints:
  - (a) Pressure class other than 10, 15, 20 and 25
  - (b) Sizes above 1000 mm.
5. The Firm shall declare the varieties of Pipes/Joints they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
6. During the operation of the Licence, BO shall ensure that all the types and sizes covered in the Licence are tested in rotation, to the extent possible.

## ANNEX B

### List of Test Equipment

*Major test equipment required to test as per the Indian Standard*

S. No.	Test Equipment	Tests used in with Clause Reference
1.	Tensile Testing Machine Micrometer Steel Scale Vernier Calliper Sample Cutter	Tensile test (4.1)
2.	Brinell Hardness tester, Magnifying glass scale	Brinell Hardness test (4.2)
3.	Hydrostatic testing equipment with pressure gauge, suitable End Plugs, Hammer 700gms	Hydrostatic test (5)
4.	Steel tape, Vernier caliper, Inside and Outside calipers, Steel Scale, Radius gauge, Micrometer ball ended, Suitable templates, Weighing scale	Dimensions and Mass (6)
5.	Hot air oven with temp indicator Ice box or deep freezer Thermometer, Stop Watch, Penknife and associated tools	Coating (8)

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

## ANNEX C

### 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 equipment.

**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 license and Licence Number (i.e. CM/L.....) shall be incorporated, and the marking shall be done as per the provisions of the Indian Standard, provided always that the product thus marked conforms to all the requirement of the specification.

**4. CONTROL UNIT** – For the purpose of this scheme, Cast Iron Joints of same pressure class manufactured using casting from same 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 Standard 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. Manufacturing of cast iron joints shall conform to cl 3 of IS 8794:1988.

**6. TEST CERTIFICATE** - For each consignment of BIS Certified material conforming to IS 8794:1988 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.

**TABLE 1: LEVELS OF CONTROL**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Samples	Frequency	Remarks
		Clause	Reference				
3.2	Freedom from Defects	3.2	IS 8794 : 1988	R	Adequate inspection to ensure that the joints are free from defects.		
4.1	Tensile test	4.1, 4.3 Appendix-A	IS 8794 : 1988	R	Two	Each Control unit	
4.2	Brinell Hardness test	4.2,4.3,3.3	IS 8794 : 1988 IS 1500 Pt.1	R	Two	Each Control unit	
5	Hydrostatic test	5.1,5.1.1	IS 8794 : 1988	R	Each piece	Each piece	
6	Dimensions	6.1, 6.2 & 6.4 Table 1 to 3	IS 8794 : 1988 IS 1592	R	Two	One hour's production of each size in a control unit	
6.3	Mass	6.3 Table-4	IS 8794 : 1988	R	-do-	-do-	
7	Tolerances	7.1	IS 8794 : 1988	R	-do-	-do-	
8	Coating	8.4	IS 8794 : 1988	R	One	Once in a week	

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.

**ANNEXURE I**  
 (Para 6 of the Scheme of Inspection and Testing)  
 XYZ CAST IRON COMPANY  
 (Registered office Address and works address)



**TEST CERTIFICATE FOR Horizontally** Cast Iron Detachable Joints for Use with Asbestos Cement Pressure Pipes

TEST CERTIFICATE No. \_\_\_\_\_ DATE \_\_\_\_\_  
 To M/s \_\_\_\_\_ We certified that the material described below fully conforms to IS 8794:1988 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 8794:1988 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

**TEST RESULTS**

Order No. & Date	(Nom Size)	Control Unit No.	Class	Tolerances	Qty in tonnes	Coating #	Mechanical Properties		Hydrostatic test	Grade as per IS 210#	Remarks
							Tensile Test	Hardness			

# As agreed between

REMARKS  
 WAGON NO.  
 TRUCK NO.  
 (It is suggested that size A4 paper be used for this test certificate)

FOR XYZ CAST IRON COMPANY