



**PRODUCT MANUAL FOR
ASBESTOS CEMENT PIPES AND FITTINGS
FOR SEWERAGE AND DRAINAGE
ACCORDING TO IS 6908 : 1991**

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 6908 : 1991
	Title	:	ASBESTOS-CEMENT PIPES AND FITTINGS FOR SEWERAGE AND DRAINAGE
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	As per clause 3.1 of IS 6908 : 1991
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Sample shall be tested in the factory for all requirements
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 :		
	Licence is operated on factory testing basis and sample shall be tested for complete requirements in factory		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 6908 : 1991 with the following scope:		
	Name of the product	ASBESTOS-CEMENT PIPES AND FITTINGS FOR SEWERAGE AND DRAINAGE	
	Class	Class 1/ Class 2/ Class 3/ As applicable	
	Nominal diameter of pipes	--- mm upto and including --- mm	
	Types and Nominal diameter of fittings		
	Type of Joint		

ANNEX A

Grouping Guidelines

1. Asbestos cement pipes, fittings and joints for sewerage and drainage are classified as given below:
 - a) Pipe crushing strength : Class 1 / Class 2 / Class 3
 - b) Pipe size (Nominal Diameter) - 100 mm to 1000 mm
 (Pipes of nominal diameter and class other than those specified in Table 1 of IS 6908 : 1991 may also be manufactured and in such cases dimensions shall be as per mutual agreement between manufacturer and purchaser).
 - c) Type of Joint – (a) Asbestos cement coupling with rubber sealing rings
 (b) Cast Iron detachable joints with rubber sealing rings and bolts and nuts.
 - d) Fittings:
 - (i) Class strength – Same as that of the pipes
 - (ii) Types – Bends/ Angle junctions/ Equal or unequal tees/ Double sockets/ Sleeves and Saddles
 - (iii) Dimensional and Geometrical characteristics – As specified by manufacturer
 - (iv) Nominal diameter – As per nominal diameter of the pipes

2. Asbestos cement pipes, joints and fittings are grouped as given below based on Class and Nominal Diameter:

Class	Size Group based on Nominal diameter		
	Group 1	Group 2	Group 3
1	100 – 300 mm	350 – 700 mm	750 -1000 mm
2	100 – 300 mm	350 – 700 mm	750 -1000 mm
3	100 – 300 mm	350 – 700 mm	750 -1000 mm

3. Considering the above, following grouping guidelines for GoL/CSoL have been developed:
 - a) One Pipe of any nominal diameter, preferably the highest size, from each class and size group shall be tested for all the requirements to cover all the sizes of Pipes in that particular size group and class tested.
 - b) One Joint/fitting of each Type and of any nominal diameter from each size group and strength class shall be tested for all the requirements to cover all the sizes of Joints/fittings in that particular size group, class and type tested.

4. For covering nominal diameter and classes other than those specified in Table 1 of IS 6908, the manufacturer shall submit the detailed dimensions.

5. The Firm shall declare the varieties of Pipes/Joints/Fittings 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 varieties 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.	Tests used in with Clause Reference	Test Equipment
1.	Dimensions and Geometrical characteristics (Clause 3.4 and 4.4)	a) Steel tape/Tape b) Micrometre c) Vernier calliper d) Inside and Outside calliper e) Steel Scale
2.	Regularity of internal diameter (Clause 3.4.5)	a) Metal disc for checking internal diameter as per clause 3.4.5
3.	Straightness (Clause 3.4.6)	a) Straightness test arrangement as per IS 5913 b) Vernier calliper
4.	Hydraulic pressure test (Clause 3.5.1 & 4.5.1) and Sealing characteristics (Clause 5.4)	Hydraulic pressure testing arrangement for pipes and joints with pressure gauge
5.	Transverse crushing strength (Clause 3.5.2 & 4.5.2)	Transverse crushing strength test arrangement with load gauge etc
6.	Longitudinal bending strength (Clause 3.5.3)	Longitudinal bending test arrangement with load gauge etc.
7	Acid resistance test (Clause 3.5.4 & 4.5.3)	a) Acetic Acid b) Sodium Hydroxide c) Thymol Blue Indicator d) Thermometer e) Glassware

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 – As per the requirements of IS 6908 : 1991

4. CONTROL UNIT – 200 Pipes or 200 Joints or 200 fittings of same class and size or part thereof manufactured in one 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.

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			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	PIPES						
3.1	Composition	3.1	IS 6908	S	One	Each consignment	#
3.2	General appearance and Finish	3.2.1, 3.2.2	IS 6908	-	All pipes	-	-
3.4	Dimensions and Geometrical Characteristics						
3.4.1	Nominal diameter	3.4.1, 3.4.4	IS 6908	R	One	50 pipes or part thereof from each control unit	@
3.4.2	Thickness	3.4.2, 3.4.4	IS 6908	R			
3.4.3	Length	3.4.3, 3.4.4	IS 6908	R			
3.4.5	Regularity of the internal diameter (Optional test)	3.4.5	IS 6908	R			
3.4.6	Straightness (Optional test)	3.4.6	IS 6908	R			
3.5	Physical, Mechanical and Chemical characteristics						
3.5.1	Hydraulic pressure test (Optional test)	3.5.1	IS 6908 IS 5913	R	One	Each control unit	\$
3.5.2	Transverse crushing strength	3.5.2					
3.5.3	Longitudinal bending strength (Optional test)	3.5.3					
3.5.4	Acid resistance test (Optional test)	3.5.4					

4	FITTINGS						
4.1	Composition	4.1	IS 6908	S	One	Each consignment	#
4.2	General appearance and Finish	4.2	IS 6908	-	All fittings	-	-
4.4	Dimensions and Geometrical Characteristics						
4.4.2	Nominal diameter	4.4.2, 4.4.4	IS 6908	R	One	50 fittings or part thereof from each control unit	@
4.4.3	Thickness	4.4.3, 4.4.4	IS 6908	R			
4.5	Physical, Mechanical and Chemical characteristics						
4.5.1	Hydraulic pressure test (Optional test)	4.5.1	IS 6908 IS 5913	R	One	Each control unit	\$
4.5.2	Transverse crushing strength	4.5.2					
4.5.3	Acid resistance test (Optional test)	4.5.3					
5	JOINTS						
5.2	Composition	5.2	IS 6908 IS 8794	S	One	Each consignment	#
5.3	Rubber rings	5.3	IS 6908 IS 5382	S	One	Each consignment	**
5.4	Internal hydrostatic test	5.4	IS 6908 IS 5913	R	One	Each consignment received or each control unit manufactured	-

Cement shall be ISI marked. For other material such as Asbestos fibre, ground silica or Pozzolana etc, no further testing is required if accompanied with the Test Certificate or ISI marked.

** No further testing is required if accompanied with the Test Certificate or ISI marked.

@ In case of any failure, each pipe/joint/fitting shall be checked and only those passing the requirement shall be marked.

\$ In case of failure, two samples from same control unit shall be tested and control unit may be accepted only if samples retested pass.

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.