



उत्पाद मैनुअल
पानी, गैस और सीवेज के लिए सेंट्रीफ्यूगली कास्ट (स्पून) आयरन प्रेशर पाइप
IS 1536:2023 के अनुसार
PRODUCT MANUAL FOR
Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage
According to IS 1536:2023

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मैनुअल प्रमाणीकरण की संचालन रीति में सुसंगतता और पारदर्शिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ 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 1536:2023
	शीर्षक Title	:	Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage
	संशोधन संख्या No. of amendments	:	Nil
2.	नमूनाकरण दिशानिर्देश Sampling Guidelines	:	
a)	कच्चा माल Raw material	:	No specific requirements for raw material in the specification
b)	समूहिकरण दिशानिर्देश Grouping Guidelines	:	Please refer Annex - A
c)	नमूने का परिमाण Sample Size	:	1 pipe + 2 rings or 2 test bars
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex - B
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer Annex - C

5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	All tests
6.	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence :		
	Licence is granted to use Standard Mark as per IS 1536:2023 with the following scope:		
	Name of the product	Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage	
	Type	Socket and Spigot Pipes/ Flanged pipes	
	Class	LA/A/B/C/D/E	
	Size	80mm, 100mm, 125mm, 150mm, 200mm, 250mm, 300mm, 350mm, 400mm, 450mm, 500mm, 600mm, 700mm, 750mm, 800mm, 900mm, 1000mm	
	Joint	Push on joint/ Flexible joint/ Flanged joint	
	Type of Mould used	Metal/Sand	

BUREAU OF INDIAN STANDARDS
ManakBhawan, 9, Bahadur Shah ZafarMarg,
New Delhi – 110002

ANNEXURE A
TO PRODUCT MANUAL FOR
Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage
According to IS 1536:2023

GROUPING GUIDELINES

1. Grouping of Cast (Spun) Iron Pressure pipes is carried out on the basis of following:
 - a) Class
 - b) Size
 - c) Joint
2. Accordingly, for the purpose of the GOL/CSoL the product is grouped as under:

Class (in ascending order within the row)	Joint	Size Range	Group	Remarks
LA A B C D E	Push on Joint, Flexible Joint	80-300	1	Sample of a class of given joint and of highest size in a group shall be drawn and tested for considering inclusion/ grant of license of pipes of the class for all sizes in the group for the given joint. Regarding Class of Pipe, each Class shall be tested to cover it in the scope of licence.
		350-600	2	
		700-1000	3	
A B C D E	Flanged Joint	80-300	4	Sample of a class and of highest size in a group shall be drawn and tested for considering inclusion/ grant of license of pipes of the class for all sizes in the group. Regarding Class of Pipe, each Class shall be tested to cover it in the scope of licence.
		350-600	5	
		700-1000	6	

3. For the size Group 700-1000mm (Group 3 & Group 6), Since the samples are bulky and difficult to transport, prepared samples for Tensile test, Brinell Hardness test & Coating test shall be sent to BIS lab/OSL and all other requirements shall be tested in factory.
4. It shall, however, be ensured and recorded that manufacturer has testing and manufacturing facility for all types/classes/sizes/joints of pipes included in the scope of license.
5. During the operation of license, BO shall ensure that all Classes & Product types covered in the license are drawn for independent testing on rotation over a period of time.

ANNEXURE B
TO PRODUCT MANUAL FOR
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LIST OF TEST EQUIPMENT

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

Sl. No.	Tests Used in with Clause Reference	Test Equipment/Chemicals
1	Ring Test and Tensile Test (11.2)	Universal Testing Machine (along with knife edges holders)
2	Brinell Hardness Test (11.3)	Brinell Hardness Tester, with Standard Reference Blocks for calibration, Conditioning Facilities - control the temperature within a range, such as $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$
3	Hydrostatic Test (12)	Hydrostatic Test Setup with pressure gauge/Pressure Digital Transducer, water pump, end plugs of various sizes, Stop Watch
4	Sizes and Dimensions (13) & Tolerances (14)	Vernier Caliper, Micrometer, Measuring tape Gantries, Inner/Outer Calipers, Measuring Scale, Ultrasonic Thickness gauge (UTG), Circumferential tape, Suitable templates, gauges
5	Coating Test (15)	Oven/Muffle Furnace (maintaining 65°C) Refrigerator (maintaining 0°C), Thermometer, Penknife and associated tools

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

ANNEXURE C
TO PRODUCT MANUAL FOR
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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 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. 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, pipes of same class, size, joint manufactured from the same cast 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.

6. TEST CERTIFICATE-For each consignment of BIS Certified material conforming to IS 1536:2023 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)		(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				
9	Rubber Gasket	9.1 to 9.3	IS 1536: 2023 IS 12820, IS 5382 IS 638	S	1	Each Consignment	Pl. see Note-3
11.2	Ring Test (for pipes cast in metal moulds)	11.1,11.2, 11.4 Annex A	IS 1536: 2023	R	1	Every 4 hours	Manufacturers procuring ISI marked pipes and processing further for threading joints need not carry out tensile test, ring test and Brinell hardness test.
	Tensile Test	11.1,11.2, 11.4, Annex A	IS 1536: 2023 IS 1608 Pt.1	R	2 1	Every 4 hours for each control unit (For sizes below 700 DN) Every 25 pipes or part thereof of control unit for pipes of DN 700mm and above)	
11.3	Brinell Hardness Test	11.3,6.2,11.4	IS 1536: 2023 IS 1500 Pt.1	R	1	Every 4 hours	
12	Hydrostatic Test	12.1, 12.2 Table-1,2	IS 1536: 2023	R	1	Each pipe	
13, 14	Sizes, Dimensions & Tolerances	13 to 14, Table 3 to 11	IS 1536: 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		
15	Coating	15.1 & 15.2	IS 1536: 2023	R	1	Once in a week	

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 and approval from Head BO.

Note-3: Conformity of each consignment of Rubber gaskets to the requirement of the standard may be established through supplier's test certificate or test report issued by laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau. In case the rubber gaskets are ISI marked no testing is required

ANNEXURE I

(Para 6 of the Scheme of Inspection and Testing)

XYZ CAST IRON COMPANY

(Registered office Address and works address)

TEST CERTIFICATE FOR**Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage**

BIS STANDARD MARK

TEST CERTIFICATE No. _____

DATE _____

To M/s. _____

We certified that the material described below fully conforms

to IS 1536:2023. 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 1536:2023 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	(Nom Size)	Control Unit No.	Class & Joint	Dimensions and Tolerances	Qty in tonnes	Coating #	Mechanical Properties		Hydrostatic test	Remarks
							Tensile Test/Ring test	Brinell Hardness test		

As agreed between manufacturer and purchaser

REMARKS

WAGON NO.

TRUCK NO.

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

FOR XYZ CAST IRON COMPANY