



उत्पाद मानयल
Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage
IS 1537:1976 के अनुसार

PRODUCT MANUAL FOR
Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी 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 1537:1976
	शीर्षक Title	:	Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage
	संशोधनों की संख्या No. of amendments	:	07
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	The metal used for the manufacture of pipes shall be of quality not less than Grade 15 of IS 210
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please see Annex-A
c)	नमूने का आकार Sample Size	:	Visual and dimensional tests, hydrostatic test and coating test to be done on full pipes shall be conducted as part of factory testing. Prepared samples cut from pipes shall be sent to lab for mechanical tests.

3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex – B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex - C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	All tests are possible to be carried out in a day
6.	लाइसेंस का दायरा /Scope of the Licence:		
	Licence is granted to use Standard Mark as per IS 1537:1976 with the following scope:		
	Name of the product	Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage	
	Class Designation	A,B or C,D,E	
	Type of Pipe	e.g. Socket and spigot pipes and/or flanged pipes etc.	
	Nominal Diameter DN (in mm)	From 80 mm to up to and including 1500 mm	

BUREAU OF INDIAN STANDARDS

Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

Annex A to the Product Manual for
Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage as per IS
1537:1976

GROUPING GUIDELINES

1) IS 1537:1976 covers the requirements of cast iron pipes for pressure main lines of water, gas and sewage manufactured by vertical casting in sand moulds. Pipes of nominal diameter (DN) from 80 mm to 1500 mm are covered under the standard. Further, this standard applies for Pipes with Sockets (for lead joints) or flanges.

2) These Pipes can be supplied mainly in 2 class designations i.e. A & B. However, for special uses, Pipes can also be supplied in class designations C,D,E.

3) In view of above, for the purpose of grant of licence as well as inclusion of additional sizes in the existing licence, the following groups having sizes as mentioned below shall be considered :

Group	Nominal Diameter DN	Grouping
1	From 80 mm to up to and including 300 mm	One sample from each group for each class and type shall be tested for all the requirements of the specification to cover all sizes of pipes of that class and type.
2	Over 300 mm to up to and including 600 mm	
3	Over 600 mm to up to and including 1000 mm	
4	Over 1000 mm to up to and including 1500 mm	

4) The requirements of Hydrostatic Test (cl.6.) of IS 1537:1976 shall be carried out in the factory during Factory Testing on full length of pipes, as far as possible.

5) While considering grant of licence/ inclusion of additional sizes, BO to ensure that the applicant/licensee has got the complete manufacturing and testing facilities for all the varieties to be covered in the licence.

6) During operation of the licence, BO shall ensure that pipes of all varieties covered in the licence are tested in the factory and drawn for independent testing on rotation.

ANNEXURE B
to the Product Manual for
Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage as per IS
1537:1976

LIST OF TEST EQUIPMENTS

Major test equipment essentially 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.	Universal Testing Machine (UTM), Class-1 accuracy or better as per IS 1608 (Part 1)	Tensile Test, cl.4.1
2.	Brinell hardness Testing Machine as per IS 1500 (Part-1), Standard Calibration Blocks	Hardness Test, cl.4.2
3.	Hydrostatic Test arrangement	Hydrostatic Test, cl.6
4.	1) Ultrasonic Thickness gauge (UTG) 2) Steel Tape 3) Go and no go gauge 4) Circumferential tape 5) Thread & nut arrangement with Vernier caliper	Sizes, cl.7.
5.	Weigh Bridge, Weighing Scale	Mass, cl.9.
6.	Coating 1) Visual/Coat meter/mylar film 2) Visual/Coat meter/ Pin & Vernier 3) Go gauge/ inside caliper	Coating, cl.10.

Note 1: The above is an indicative list for the purpose of guidance only and may not be treated as exhaustive

ANNEXURE C
TO PRODUCT MANUAL FOR
Specification for Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage as per IS
1537:1976

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 equipment.

2. TEST RECORDS - The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING, MARKING, PACKING - The Standard Mark, as given in the Schedule of the licence, shall be cast, stamped or legibly and indelibly painted/stenciled on each Pipe length, provided always that the material in each container to which this mark is thus applied, conform to every requirement of the specification.

3.1 Marking shall be done as per the provision of the Indian Standard. In addition, the following details shall be mentioned on each pipe:

a) BIS Licence No. CM/L .

b) BIS website details i.e –“For details of BIS certification please visit www.bis.gov.in”.

4. CONTROL UNIT – For the purpose of this scheme, the total quantity of pipes of the same type, class, and nominal size manufactured under similar conditions from the same cast of metal.

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.

All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. TEST CERTIFICATE - For each consignment of BIS Certified material conforming to IS **1537:1976** 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. Any rejected material which is potentially re- salable be sheared or cut or deformed in such a manner that it cannot be used for any other purpose except re-melting. A separate record shall be maintained giving information on quantity and cast number/control unit number, as applicable, relating to all such rejections/defective/sub- standard material of the production not conforming to the requirements of the Specification and the method of its disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material should be defaced.

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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				
3	Manufacture	3.1 to 3.5	IS 1537 IS 210	R	Adequate inspection to ensure that the material supplied conforms to the requirements of the specification. The metal used for the manufacture of Pipes shall be of quality not less than that of Grade 15 of IS 210. The raw material metal procured shall be accompanied with test certificate indicating conformity to the requirements of IS 210.		
4	Mechanical Test						
	i) Tensile Test	4.1	IS 1608 (Part 1)	R	One	Every 4 hours	----
	ii) Hardness Test	4.2	IS 1500 (Part 1)	R	One	Every 4 hours	----

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7, 8, 9	Sizes, Tolerances, Mass	7.1, 7.2, 7.2.1, 8.1, 8.2, 8.3, 8.4, 9.1, 9.1.1, 9.1.2 Table 2 to 9	IS 1537 IS 1536	Adequate Inspection to ensure that each pipe conforms to the requirements of the specification
10	Coating	10.0 to 10.6	IS 1537	Adequate Inspection to ensure that each pipe conforms to the requirements of the specification

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 empanelled by the Bureau.

Note-2: The levels of control given in column 3 are 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

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(Para 6 of the Scheme of Inspection and Testing)

XYZ IRON AND STEEL COMPANY

(Registered office Address and works address)

**TEST CERTIFICATE FOR Specification for Vertically Cast Iron
Pressure Pipes for Water, Gas and Sewage as per IS 1537:1976**BIS
STANDA
RD
MARK

DATE_____

TEST CERTIFICATE No.

To M/s_____

We certified that the material described below fully conforms to **IS 1537:1976** Chemical composition and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No. CM/L_____ are as indicated below against each order No.

(PLEASE REFER TO IS **IS 1537:1976** FOR DETAILS OF SPECIFICATION
REQUIREMENTS)

TEST RESULTS

Order No. & Date	Nomina l Size (DN)	Control Unit No.	Grade	Quantity in tonnes	Tensile Test	Hardness	Hydrostatic Test	Tolerances	Mass	Coating

REMARKS

WAGON NO.

TRUCK NO.

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

FOR XYZ IRON AND STEEL COMPANY