



उत्पाद मैनुअल
आई एस 17725:2022 के अनुसार
पूर्वढलित कंक्रीट वृताकार मैनहोल

PRODUCT MANUAL
PRECAST CONCRETE CIRCULAR MANHOLE
ACCORDING TO IS 17725:2022

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता 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 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 uniformity 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.

1.	मानक संख्या IS No.	:	IS 17725:2022
	शीर्षक Title	:	Precast Concrete Circular Manhole
	संशोधनों की संख्या No. of amendments	:	Nil
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Please refer Annex – A Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/ Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer Annex – B
c)	नमूने का परिमाण Sample Quantity	:	2 manholes (One for Water Absorption test and other for remaining tests) shall be tested in the factory for all the requirements

			Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	-	NA
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex – C
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex – D
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	<p>The licence is operated on Factory testing basis. During surveillance inspection, all available varieties covered in the licence scope are to be tested in factory. Two mandays are required for complete testing of the product.</p> <p>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.</p>
6.	लाइसेंस का दायरा /Scope of the Licence:		
License is granted to use Standard Mark as per IS 17725:2022 with the following scope:			
	Name of the product	Precast Concrete Circular Manhole	
	Diameter of Manhole Chamber (mm)	1000/1200 / 1500 / 1800 / 2100	
	Height of Components (mm)	Base Riser height –300/450/600/900/1200/1500/1800 Adjusting Unit Height – 50/75/100 Riser Unit Height – 300/450/600/900/1200/1500	
	Type of Base Unit	- Base slab and base riser cast separately - Base slab and base riser cast monolithically without base slab projection	
	Type of Joint	- Tongue and Groove Joint - Internal flush joint - Single offset joint	

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ANNEX A

Raw Material

Raw Material	Indian Standard
Cement (Cl 6.1)	Cement shall be ISI marked conforming to the relevant Indian Standard as mentioned in Clause 6.1 of IS 17725.
Aggregates (Cl 6.2)	<p>The aggregates shall conform to IS 383 & Clause 6.2 of IS 17725.</p> <p>Whenever, there is a change in the source and/or size and type of coarse and/or fine aggregate, it shall be treated as additional raw material.</p>
Pulverised Fuel Ash (Cl 6.3)	Pulverized fuel ash, if used shall conform to IS 3812 (Part 1).
Ground Granulated Blast Furnace Slag (Cl 6.4)	Ground granulated blast furnace slag, if used shall conform to IS 16714.
Additives or Chemical Admixtures (Cl 6.5)	Chemical admixture used shall conform to IS 9103.
Reinforcement (Cl 6.6)	<p>Reinforcement shall confirm to Clause 6.6 of IS 17725.</p> <p>Whenever, there is a change in the type and/or sizes of reinforcement, it shall be treated as additional reinforcement.</p>
Concrete (Cl 10.2)	The concrete used in manufacture of Precast Concrete Manhole units shall not be less than M 35 Grade.
Water (Cl 5.7)	Water shall conform to IS 456.

ANNEX-B

Grouping Guidelines

1. Precast Concrete Circular Manhole components as per IS 17725 : 2022 are classified as given below:
 - a) Diameter of Manhole Chamber (mm) : 1000/1200 / 1500 / 1800 / 2100
 - b) Height of Components (mm) :
 - Base Riser height –300/450/600/900/1200/1500/1800
 - Adjusting Unit Height – 50/75/100
 - Riser Unit Height – 300/450/600/900/1200/1500
 - c) Type of Base Unit :
 - Base slab and base riser cast separately
 - Base slab and base riser cast monolithically without base slab projection
 - d) Type of Joint :
 - Tongue and Groove Joint
 - Internal flush joint
 - Single offset joint
2. Considering the above, the following grouping guidelines for GoL/CSoL have been developed:
 - a) Each Diameter of Manhole Chamber, Type of Base Unit and Type of Joint shall be tested for all the requirements to cover that particular Diameter of Manhole Chamber, Type of Base Unit and Type of Joint.
 - b) The highest Height of manhole Components shall be tested for all the requirements to cover all the lower Heights upto and including the Height of manhole components tested.
3. The Firm shall declare the varieties of manholes they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
4. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation to the extent possible.
5. Concrete cubes shall be cast in the factory during surveillance visits and the quality of concrete used in manufacturing of manholes shall be assessed through independent testing. Details of mix design may also be obtained from the firm.

ANNEX-C

List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimension and Tolerance/ Manufacture, Workmanship and Finish Clause 4, 5, 7, 10.1, 10.5	<ul style="list-style-type: none"> • Steel Tape, Steel Scale , • Vernier Calipers, • Digital Micrometer, • Straight Edge as per IS 3597, • Go & No-Go Calipers
2	Hydrostatic Pressure Test Cl. 10.6	<ul style="list-style-type: none"> • Hydrostatic Test Arrangement fitted with “water gauge or “pressure gauge of suitable range and least count ” and water filling arrangement as per Annex – F of IS 17725
3	Water Absorption Cl. 10.3	<ul style="list-style-type: none"> • Water Absorption Test arrangement as per IS 3597, Immersion Tank, • Hot Air Oven, • Weighing Balance (LC: 0.1 g)
4	Compressive strength of concrete cube Cl. 10.2	<ul style="list-style-type: none"> • Compressive Strength Test Machine fitted with Load Gauge suitable to test cement concrete test
		<ul style="list-style-type: none"> • Cube Moulds of size 150 x 150 x 150 mm
5	Strength Test Apparatus	<ul style="list-style-type: none"> • Strength Test arrangement with Hydraulic Jack and Load gauge complete assembly as per Annex – E of IS 17725
6	Size of aggregates Cl. 5.3	<ul style="list-style-type: none"> • Sieve Set IS Sieves - 80 mm, 40 mm, 20 mm, 10 mm, 4.75 mm, 2.36 mm, 1.18 mm. 600 micron, 300 micron and 150 micron

ANNEX D

SCHEME OF INSPECTION AND TESTING

1. LABORATORY - Manufacturers shall establish a suitably equipped and staffed in house laboratory (In-house testing facility) for testing of all parameters for ensuring quality of the product.

1.1 The levels of control are given at Table 1. Column 2 of Table 1 indicates tests on manholes where test equipment is required in-house as “R” or raw material tests which can be subcontracted as “S”. Subcontracting of raw materials is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

1.2 The manufacturer shall prepare a calibration plan for the test equipments.

2 TEST RECORDS – The manufacturers shall maintain test records for the tests carried out to establish conformity of the product. For the tests of raw materials being subcontracted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports of raw materials issued by the laboratories shall be available for inspection by BIS.

3 LABELLING AND MARKING – The Standard Mark as given in the Schedule of the licence shall be incorporated clearly and indelibly marked on the outside of each precast concrete manhole component provided always that the product so marked conforms to each requirement of the specification.

3.2 Marking on the product shall be done as per Clause 12 of IS 17725:2022.

3.3 **Additional Marking requirements:** Each product, shall also be marked with the following additional requirement:

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4 CONTROL UNIT – Every 100 precast concrete manholes or part thereof, having the same diameter of manhole chamber, height of components, type of base unit and type of joint manufactured in a month under similar conditions (from same consignment of cement, same concrete mix design and similar curing condition) shall constitute a control unit.

5 LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control submitted by the manufacturer 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 2.0 above.

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

6 REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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 S: Sub-contracting permitted	Recommended Levels of Control		
Clause	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Claus e	Reference				
6	Material						
6.1	Cement	6.1	IS 17725	S	One	Each consignment	Cement received shall be ISI marked and accompanied with test certificate.
6.2	Aggregates	6.2	IS 17725 IS 383	S	One	Once in year for each size	Additional sample shall be tested wherever there is change in source of raw material.
6.3	Pulverized Fuel Ash	6.3	IS 17725 IS 3812 (Pt 1)	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
6.4	Ground Granulated Blast Furnace Slag	6.4	IS 17725 IS 16714	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
6.5	Additives or Chemical Admixtures	6.5	IS 17725 IS 9103	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
6.6	Reinforcement	6.6	IS 17725	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
6.7	Water	6.7	IS 17725	S	One	Once in a year or whenever there is a change in source of water, whichever is earlier	

4	Construction of manhole	4	IS 17725	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.		
5	Dimensions and reinforcement	5	IS 17725	R			
7	Manufacture	7	IS 17725	R			
8 & 10.1	Dimensional Tolerances	8 & 10.1	IS 17725	R			
9	Types of Joints	9	IS 17725	R			
10.5	Workmanship, Manufacture and Finish	10.5	IS 17725	R			
10.2	Compression Test on Concrete Cubes	10.2	IS 516 (Part 1/Sec 1)	R	One consisting of 3 cubes from each consignment of cement	Supply of cement executed against order spread over up to three months shall be taken as one consignment for this test only. One sample may be tested in a month in case same mix is used for different size/class of pipes.	
10.3	Water Absorption Test	10.3	IS 3597	R	One	Each Control Unit	
10.4	Strength requirement	10.4	IS 17725	R	One	Each Control Unit	
10.6	Hydrostatic Pressure Test	10.6	IS 17725	R	One	Each Control Unit	