



PRODUCT MANUAL FOR AUTOCLAVED REINFORCED CELLULAR CONCRETE WALL SLABS ACCORDING TO IS 6072:1971

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 6072: 1971
	Title	:	AUTOCLAVED REINFORCED CELLULAR CONCRETE WALL SLABS
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	Please refer ANNEX- A
b)	Grouping guidelines	:	Please refer ANNEX- B
c)	Sample Size	:	15 Slabs & 30 Blocks
3.	List of Test Equipment	:	Please refer ANNEX – C
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – D
5.	Possible Tests in a day	:	(i) Size - Cl. 5.1 (ii) Form Tolerances - Cl. 5.3 (iii) Manufacturing and Finish - Cl. 6.1
6.	Scope of Licence	:	Please refer ANNEX – E

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ANNEX- A**Raw Material**

Raw Material	Indian Standard
Cement	Cl. No 3.1 of IS 6072:1971
Lime	Cl. No 3.2 of IS 6072:1971
Sand	Cl. No 3.3 of IS 6072:1971
Fly Ash	Cl. No 3.4 of IS 6072:1971
Granulated blast furnace slag	Cl. No 3.5 of IS 6072:1971
Water	Cl. No 3.6 of IS 6072:1971
Pigment	Cl. No 3.7 of IS 6072:1971
Reinforcement	Cl. No 3.8 of IS 6072:1971

ANNEX B

Grouping Guidelines

1. Autoclaved reinforced cellular concrete wall slabs as per IS 6072:1971 are categorized as given below:
 - a) Classification - Five Classes A/ B/ C/ D/ E, based on Oven-dry density (without reinforcement) and Compressive Strength.
 - b) Dimensions - Length x Width (Breadth) x Thickness:
 - (i) Preferred Dimensions:
 - Length - 1 to 6 m
 - Width (Breadth) – 600 mm
 - Thickness - 150 to 250 mm with increments of 25mm
 - (ii) Sizes other than those specified at (i) above may also be used by mutual agreement between the purchaser and the supplier.
2. Considering the above, the guidelines given below shall be followed for GoL/ CSoL:
 - Sample of highest Dimension from each Class shall be tested for all requirements to cover wall slabs of all Dimensions upto and including the Dimension tested for that particular Class.
3. The Firm shall declare the varieties of wall slabs they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer
4. 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 – C**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

Sl.no	Test used in with clause reference	Test equipment
1.	Size, Form Tolerances & Finish Cl. No 5.1, Cl. No 5.3 & Cl. No 6.3	- Measuring scale - Vernier calliper - Straight edge - Right angles - Measuring Tape - Flat inspection table - feeler gauge - Saw for cutting (rotating carborundum or steel or similar device) [this is required for all tests which need unreinforced blocks]
2.	Density of Element, (Excluding Reinforcement) - Cl. No 7.1(a)	- Hot air oven - Balance - Vernier calliper - Straight edge
3	Drying Shrinkage - Cl. No 7.1(b)	- Suitable length measuring equipment - Gauge plugs - Immersion /curing water tank with the arrangement to maintain water temperature at 27 ± 2 deg C - Humidity cabinet / Storage room with Potassium Carbonate
4.	Residual water content at the time of delivery to the use - Cl. No 7.1(c)	- Hot air oven - Balance - Vernier calliper
5	Compressive strength & Thermal Conductivity - Cl. No 7.1(d)	-Steel Scale -Vernier Calliper -Drying Oven -Digital Balance -Conditioning chamber -Straight edge -Digital Compression Testing Machine -Thermal conductivity test apparatus as per clause 3 or 4 of IS 3346
6	Protective coating test of reinforcement – Cl. No 6.1	-Conditioning chamber as per IS 6441 (Pt 4) -Moisture or Vapour Barrier (e.g. asphalt or bitumen emulsion layer) -arrangement to remove concrete from reinforcement

7	Fire resistance test – Cl. No 7.1(e)	-Fire resistance test apparatus -Loading equipment -Thermocouples -Equipment for measurement of overpressure in furnace
8	Structural Requirements: Loading - Cl. No 8.1 Design load and Deflection - Cl. No 8.2 Ultimate load - Cl. No 8.3	-Load and Deflection test apparatus with load arrangement. -Bearing Support steel plate 25 mm -Digital indicator with frame -Porous fibre board thickness 12 mm

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

ANNEX D

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 equipments.

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

3. LABELLING AND MARKING – As per the requirement of IS 6072:1971.

4. CONTROL UNIT - Autoclaved reinforced cellular concrete wall slabs of the same Class and Dimensions manufactured from the same mix design under similar conditions of manufacturing 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 Standards 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		
CI No	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3.1	Cement	3.1	IS 6072	S	--	Cement used shall be ISI marked and received with test certificate of manufacturer	
3.2	Lime	3.2	IS 6072	S	One	Once in a month	
3.3	Sand	3.3	IS 6072	S	One	Once in a month	
3.4	Fly Ash	3.4	IS 6072	S	One	Once in a month	
3.5	Granulated blast furnace slag	3.5	IS 6072	S	One	Once in a month	
3.6	Water	3.6	IS 6072	S	One	Once in a year	
3.7	Pigment	3.7	IS 6072	S	--	As per purchaser requirement	
3.8	Reinforcement	3.8	IS 6072	S	--	Reinforcement material used shall be ISI marked and received with test certificate of manufacturer	
5.1	Size	5.1, 5.2	IS 6072	R	Two	Each Control Unit	
5.3	Form Tolerances	5.3	IS 6072	R		Each Control Unit	
6.1	Reinforcement - Protective Coating	6.1	IS 6072 & IS 6441 (Pt 4)	R	One	Once in three months	
	Manufacturing and Finish	6.1.1, 6.1.2, 6.2, 6.3	IS 6072	R	Two	Each Control Unit	

7.	PHYSICAL PROPERTIES						
7.1	Density of Element (Excluding Reinforcement)	7.1(a)	IS 6072 & IS 6441 (Pt 1)	R	One	Each Control Unit	
	Drying Shrinkage	7.1(b)	IS 6072 & IS 6441 (Pt 2)	S	One	Once in three months for each Class	
	Residual water content at the time of delivery to the user	7.1(c)	IS 6072 & IS 6441 (Pt 1)	R	As declared by the manufacturer		
	Compressive Strength	7.1(d)	IS 6072 & IS 6441 (Pt 5)	R	One	Each Control Unit	
	Thermal Conductivity		IS 6072 & IS 3346	S	One	Once in six months or whenever there is any change in compressive strength or density, whichever is earlier	
	Fire Resistance	7.1(e)	IS 6072 & IS 3809	S	One	Once in two years or whenever there is any change in the composition/structural design, whichever is earlier	
8.	Structural Requirement -Loading	8.1 to 8.3	IS 6072 & IS 875 (Pt 1 to 5)	R	Two	Each Control Unit	
	Design Load and Deflection						
	Ultimate Load				One	Once in a month	

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.

ANNEX-E**SCOPE OF LICENCE**

Licence is granted to use Standard Mark as per IS 6072:1971 with the following scope	
Name of the product	Autoclaved Reinforced Cellular Concrete Wall Slabs
Class	A/ B/ C/ D/ E
Dimensions – Length x Width (Breadth) x Thickness, mm	Sizes upto & including -----