



**PRODUCT MANUAL FOR  
AUTOCLAVED REINFORCED CELLULAR  
CONCRETE FLOOR AND ROOF SLABS  
ACCORDING TO IS 6073 : 2006**

*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.	<b>Product</b>	:	IS 6073 : 2006
	<b>Title</b>	:	AUTOCLAVED REINFORCED CELLULAR CONCRETE FLOOR AND ROOF SLABS
	<b>No. of Amendments</b>	:	NIL
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Please refer ANNEX – A
b)	<b>Grouping guidelines</b>	:	Please refer ANNEX – B
c)	<b>Sample Size</b>	:	Ten slabs for all tests
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – C
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – D
5.	<b>Possible tests in a day :</b>		
	As licence is operating on factory testing basis, complete testing to be carried out in factory.		
6.	<b>Scope of the Licence :</b>		
	“Licence is granted to use Standard Mark as per IS 6073 : 2006 with the following scope:		
	Name of the product	AUTOCLAVED REINFORCED CELLULAR CONCRETE FLOOR AND ROOF SLABS	
	Type	Floor slab / Roof slab	
	Class	Class A/B/C/D/E	
	Size		

**ANNEX A**

**Raw Material**

- 1) Cement used for the manufacture of floor / roof slab shall be ISI marked conforming to the relevant Indian Standard as mentioned in clause 4.2 of IS 6073.
- 2) Lime – Class C of IS 712
- 3) Sand – Clause 4.4 of IS 6073
- 4) Fly ash – IS 3812 (Part 1).
- 5) Granulated blast furnace slag – IS 12089
- 6) Water – Clause 5.4 of IS 456.
- 7) Pigment – Clause 4.8 of IS 6073
- 8) Steel used for reinforcement shall be ISI marked conforming to the relevant Indian Standard as mentioned in clause 4.9 of IS 6073.

**ANNEX B****Grouping Guidelines**

1. Autoclaved reinforced cellular concrete floor and roof slabs as per IS 6073 : 2006 are categorized as under:

<b>Classification based on oven dry density (without reinforcement) and compressive strength</b>	<b>Class A / Class B / Class C/ Class D and Class E</b>	
<b>Size</b>	<i>Preferred dimensions</i>	<i>Preferred dimensions (modular)</i>
<b>Length</b>	1 m to 6 m	Nominal length shall be in multiples of 1 m
<b>Width</b>	300 mm to 600 mm	Nominal width shall be in multiples of 0.5 m
<b>Thickness</b>	75 mm to 250 mm with increment of 25 mm	Thickness shall be in multiples of 0.1 m

(Sizes other than specified above may also be used as per mutual agreement between purchaser and supplier.)

2. Considering the above, the following grouping guidelines for GoL/CSoL have been developed:
- (a) Separate sample of roof slab / floor slab of highest length, width and thickness from each classification shall be tested to cover slabs of all sizes (length, width and thickness) upto and including the size tested for that particular classification.
3. The Firm shall declare the varieties of slabs 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.

**ANNEX C****List of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>Sl. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1	Sizes (Clause 6) - Dimensions & tolerances - Form tolerances	- Steel tape/ steel scale - Vernier caliper - Straight edge - Right angle / Square scale
2	Density of element [Clause 8(a)]	- Straight edge - Caliper - Drying oven - Weighing balance
3	Drying shrinkage [Clause 8(b)]	- Suitable length measuring equipment - Gauge plugs - Immersion /curing water tank - Humidity cabinet / Storage room with Potassium carbonate
4	Compressive strength and Thermal conductivity [Clause 8(d)]	- Drying oven - Conditioning chamber - Compression testing machine - Vernier caliper - Straight edge - Weighing balance - Thermal conductivity test arrangement as per clause 3 or 4 of IS 3346
5	Fire resistance [Clause 8(e)]	- Furnace as per clause 3 of IS 3809 - Loading equipment - Thermocouples - Equipment for measurement of overpressure in furnace
6	Design load and deflection (Clause 9.2) and Ultimate load (Clause 9.3)	- Conditioning chamber - Loading arrangement - Deflection measurement arrangement

*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 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 6073 : 2006

**4. CONTROL UNIT** – All Floor/Roof Slabs of the same class and size manufactured in a day from same mix design under similar condition of manufacturing shall be considered as 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**

Test Details				Levels of Control			
Cl.	Requirement	Test Methods		Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency	Remarks
		Clause	Reference				
4.2	Cement	4.2	IS 6073	-	-	Cement used shall be ISI marked and received with test certificate of manufacturer.	
4.3	Lime	4.3	IS 6073 IS 712	S	One	Once in a month	No further testing is required if received with test certificate or ISI marked. Additional sample shall be tested, whenever there is change of source of supply.
4.4	Sand	4.4	IS 6073	S	One	Once in a month	
4.5	Fly ash	4.5	IS 6073 IS 3812 (Part 1)	S	One	Once in a month	
4.6	Granulated Blast Furnace Slag	4.6	IS 6073 IS 12089	S	One	Once in a month	
4.7	Water	4.7 5.4	IS 6073 IS 456	S	One	Once in a year	
4.8	Pigment	4.8	IS 6073	S	One	As per purchaser requirement	
4.9	Reinforcement	4.9	IS 6073	-	-	Reinforcement material used shall be ISI marked and received with test certificate of manufacturer.	
6	Sizes	6.1 to 6.3 Table 1	IS 6073	R	Two	Each control unit	-
7	<b>Manufacture and Finish</b>						
7.1	Reinforcement (Except corrosion Protection of Steel)	7.1	IS 6073	R	Two	Each control unit	-

7.1	Reinforcement (Corrosion Protection of Steel)	7.1	IS 6073 IS 6441(Part 4)	R	One	Once in a week	-
7.2	Formation of cells of cellular concrete	7.2	IS 6073	R	Two	Each control unit	-
7.3	Finishes	7.3	IS 6073	R	Two	Each control unit	-
7.4	Joints	7.4	IS 6073	R	Two	Each control unit	-
8	<b>Physical Properties</b>						
8 (a)	Density of element (Excluding reinforcement)	8	IS 6073 IS 6441(Part 1)	R	Two	Each control unit	Sample may be drawn from partially utilized reinforced mould, if available
8 (b)	Drying Shrinkage	8	IS 6073 IS 6441(Part 2)	R	Two	Each control unit	
8 (c)	Residual water content at the time of delivery to the user	8	IS 6073	R	As declared by the manufacturer		
8 (d)	Compressive Strength	8	IS 6073 IS 6441(Part 5)	R	One	Each control unit	-
	Thermal conductivity	8	IS 6073 IS 3346	S	One	Once in six months on each type of slab or whenever there is change in compressive strength or density of the slab, whichever is earlier.	
8 (e)	Fire Resistance	8	IS 6073 IS 3809	S	Two	Once in a year or whenever there is a change in the composition/structural design of element, whichever is earlier.	

9	<b>Structural Requirements</b>						
9.2	Design load and deflection	9.2 Annex B	IS 6073	R	Two	Each control unit	-
9.3	Ultimate Load	9.3 Annex B	IS 6073	R	One	Once in a week	-

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.