



**PRODUCT MANUAL FOR
CONCRETE MASONRY UNITS – AUTOCLAVED
CELLULAR (AERATED) CONCRETE BLOCKS
ACCORDING TO IS 2185 (PART 3): 1984**

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 2185 (PART 3) : 1984
	Title	:	CONCRETE MASONRY UNITS – AUTOCLAVED CELLULAR (AERATED) CONCRETE BLOCKS
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	Please refer ANNEX - A
b)	Grouping guidelines	:	Please refer ANNEX – B
c)	Sample Size	:	24 Blocks for all tests
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) Dimensions and tolerance (Clause 3) (ii) Surface texture and finish (Clause 7) (iii) Block density (Clause 8.3)		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 2185 (Part 3) : 1984 with the following scope:		
	Name of the product	Concrete masonry units – Autoclaved cellular (aerated) concrete blocks	
	Grade	Grade 1 / Grade 2	
	Density in oven dry condition (kg/m ³)	451-550, 551-650, 651-750, 751-850, 851-1000.	
	Nominal sizes	Sizes (Length x Height x Width) upto and including ---- mm	

ANNEX-A

DETAILS OF RAW MATERIAL

1. Cement - Clause 5.1 of IS 2185 (Part 3)
2. Fly ash - Clause 5.1.1 of IS 2185 (Part 3)
3. Lime - Clause 5.2 of IS 2185 (Part 3)
4. Aggregates - Clause 5.3 of IS 2185 (Part 3)
5. Water - Clause 5.4 of IS 2185 (Part 3)
6. Additives and Admixtures - Clause 5.5 of IS 2185 (Part 3)

ANNEX B

Grouping Guidelines

1. Autoclaved cellular (Aerated) concrete blocks are classified based on the parameters as given below:
 - a) Compressive strength grade - Grade 1 and Grade 2
 - b) Density in Oven dry condition (kg/m^3) - 451-550, 551-650, 651-750, 751-850, 851-1000
 - c) Nominal sizes – Length - 400 mm, 500 mm, 600 mm
Width - 200 mm, 250 mm, 300 mm
Thickness - 100 mm, 150 mm, 200 mm, 250 mm

In addition to the above nominal dimensions, blocks in half-lengths of 200 mm, 250 mm, and 300 mm shall also be manufactured. Blocks of sizes other than those given above may also be used if so specified.

 - d) Shapes of blocks – Stretcher, corner, double corner or pier, jamb, header, bull nose, partition block and concrete floor units.
2. Considering the above following grouping guidelines for GoL/CSoL have been developed:
 - a) One sample of any size of block from each grade and density range shall be tested to cover all sizes of blocks in that grade and density range tested.
 - b) Blocks with special faces shall be covered separately.
 - c) Blocks manufactured with different manufacturing process shall be considered as separate variety.
3. The Firm shall declare the varieties of Concrete Blocks 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*

S. No.	Tests used in with Clause Reference	Test Equipment
1.	Dimensions and Tolerance (clause 3)	a) Measuring scale b) Vernier calliper c) Straight edge d) Right angle
2.	Block density (Clause 8.3 & 9.1)	a) Straight edge b) Calliper c) Drying oven d) Balance
3.	Compressive strength (Clause 8.4 & 9.2)	a) Straight edge b) Calliper c) Drying oven d) Balance e) Compression testing machine
4.	Thermal conductivity (Clause 8.5 & 9.3)	a) Thermal conductivity test apparatus
5.	Drying shrinkage (Clause 8.6 & 9.4)	a) Suitable length measuring equipment b) Gauge plugs c) Immersion /curing water tank d) Humidity cabinet / Storage room with Potassium carbonate

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 2185 (Part 3): 1984.

4. CONTROL UNIT – All blocks of same grade manufactured from same mix of raw material in one week 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 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

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	Dimensions and tolerances	3.1 to 3.4, 8.2	IS 2185 (Part 3)	R	24	Each control unit	-
5.1	Cement	5.1	IS 2185 (Part 3)	S	-	-	Cement shall be ISI marked and accompanied with test certificate
5.1.1	Fly ash	5.1.1	IS 2185 (Part 3) IS 3812 (Part 1)	S	One sample in a month or whenever there is change of source of supply.		No further testing is required if received with test certificate or ISI marked.
5.2	Lime	5.2	IS 2185 (Part 3)	S	One	Once in a month	
5.3	Aggregates						
	Sand	5.3 (a)	IS 2185 (Part 3)	S	One sample in a year or whenever there is change of source of supply.		No further testing is required if received with test certificate or ISI marked.-
	Fly ash	5.3 (b)	IS 2185 (Part 3) IS 3812 (Part 2)	S	One sample in a month or whenever there is change of source of supply.		
	Granulated blast furnace slag	5.3 (c)	IS 2185 (Part 3)	S			
5.4	Water	5.4	IS 2185 (Part 3)	S	One sample in a year or whenever there is change of source of supply.		
5.5	Additives or admixtures	5.5	IS 2185 (Part 3)	S	One	Each consignment	

7	Surface texture and finish	7.1, 7.2	IS 2185 (Part 3)	-	24	Each control unit	-
8	Physical Requirements						
8.1	General	8.1	IS 2185 (Part 3)	-	All	-	-
8.3	Block density	8.3, 9.1	IS 2185 (Part 3) IS 6441 (Part 1)	R	3	Each control unit	-
8.4	Compressive strength	8.4, 9.2	IS 2185 (Part 3) IS 6441 (Part 5)	R	12	Each control unit	-
8.5	Thermal conductivity	8.5, 9.3	IS 2185 (Part 3) IS 3346	S	3	Once in six months	Separate sample shall be tested for each Strength Grade and Density
8.6	Drying Shrinkage	8.4, 9.2	IS 2185 (Part 3) IS 6441 (Part 2)	R	3	Once in three months	-

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.