



**उत्पाद मैनुअल आई एस 2185 (भाग 4):2008 के अनुसार
कंक्रीट चिनाई इकाइयाँ: भाग IV - पूर्वनिर्मित फोम
सेलुलर कंक्रीट ब्लॉकलिए**

दस्तावेज संख्या - पी एम/आई एस 2185 (भाग 4)/1/फ़रवरी 2023

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/ प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
CONCRETE MASONRY UNITS: PART IV - PREFORMED FOAM
CELLULAR CONCRETE BLOCKS ACCORDING TO
IS 2185 (PART 4):2008**

Document No.- PM/ IS 2185 (Pt 4)/1/Feb 2023

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.

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PRODUCT MANUAL FOR CONCRETE MASONRY UNITS: PART IV - PREFORMED FOAM CELLULAR CONCRETE BLOCKS ACCORDING TO IS 2185 (PART 4):2008

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1.	Product	:	IS 2185 (PART 4) : 2008
	Title	:	Concrete Masonry Units – Preformed Foam Cellular Concrete Blocks
	No. of Amendments	:	Nil
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 :		
	General (Cl 9.1), Dimensions (Cl 9.2), Surface finish (Cl 8), Block density (Cl 9.3)		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 2185 (Part 4) : 2008 with the following scope:		
	Name of the product	Concrete masonry units – Preformed Foam Cellular concrete blocks	
	Grade		
	Density in oven dry condition (kg/m ³)		
	Nominal sizes	Sizes (Length x Height x Width) upto and including ----- mm	

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ANNEX-A

DETAILS OF RAW MATERIAL

1. Cement - Clause 6.1 of IS 2185 (Part 4)
2. Fly ash - Clause 6.3 of IS 2185 (Part 4)
3. Foaming agent - Clause 6.5 of IS 2185 (Part 4)
4. Sand - Clause 6.2 of IS 2185 (Part 4)
5. Water - Clause 6.4 of IS 2185 (Part 4)
6. Admixtures - Clause 6.6 of IS 2185 (Part 4)

ANNEX B**Grouping Guidelines**

1. Preformed Foam Cellular concrete blocks are classified based on the parameters as given below:

- a) Compressive strength grade – G-2.5, G-3.5, G-6.5, G-12, G-17.5, G-25
- b) Density in Oven dry condition (kg/m^3) – 800, 1000, 1200, 1400, 1600 & 1800
- c) Nominal sizes – Length - 400 mm, 500 mm, 600 mm
 Width - 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 specified above may also be used, if so agreed between purchaser and manufacturer. In the case of special concrete masonry units such as jallie or screen wall block and ornamental block, the specified sizes may not necessarily apply.

Blocks with special faces shall be manufactured and supplied if so specified.

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 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 4)	a) Measuring scale b) Vernier calliper c) Straight edge d) Right angle
2.	Block density (Clause 9.3)	a) Straight edge b) Calliper c) Drying oven d) Balance
3.	Compressive strength (Clause 9.4)	a) Straight edge b) Calliper c) Drying oven d) Balance e) Compression testing machine
4.	Water absorption (Clause 9.5)	a) Weighing balance b) Water bath c) Coarse wire mesh of 10 mm d) Hot air oven
5.	Thermal conductivity (Clause 9.8)	a) Thermal conductivity test apparatus
6.	Drying shrinkage (Clause 9.6)	a) Suitable length measuring equipment b) Gauge plugs c) Immersion /curing water tank d) Humidity cabinet / Storage room with Potassium carbonate
7.	Moisture movement (Clause 9.7)	a) Thermostatically controlled water bath b) Steel scale c) Hot air oven

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 4): 2008.

4. CONTROL UNIT – All blocks of same grade and density 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				
4	Dimensions and tolerances	4	IS 2185 (Part 4)	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		
6.1	Cement	6.1	IS 2185 (Part 4)	S	-	-	Cement shall be ISI marked and accompanied with test certificate
6.2	Sand	6.2	IS 2185 (Part 4)	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.
6.3	Fly ash	6.3	IS 2185 (Part 4) IS 3812 (Part 1)	S	One sample in a month or whenever there is change of source of supply.		
6.4	Water	6.4	IS 2185 (Part 4)	S	One sample in a year or whenever there is change of source of supply.		
6.5	Foaming Agent	6.5	IS 2185 (Part 4)	S	One	Each consignment	
6.6	admixtures	6.6	IS 2185 (Part 4)	S	One	Each consignment	

8	Surface finish	8	IS 2185 (Part 4)	-	24	Each control unit	-
9	Physical Requirements						
9.1	General	9.1	IS 2185 (Part 4)	-	All	-	-
9.3	Block density	9.3	IS 2185 (Part 4)	R	3	Each control unit	-
9.4	Compressive strength	9.4	IS 2185 (Part 4)	R	8	Each control unit	-
9.5	Water absorption	9.5	IS 2185 (Part 4)	R	3	Each control unit	-
9.6	Drying Shrinkage	9.6	IS 2185 (Part 4)	R	3	Once in three months	-
9.7	Moisture Movement	9.7	IS 2185 (Part 4)	R	3	Once in three months	-
9.8	Thermal conductivity	9.8	IS 2185 (Part 4)	S	3	Once in six months	Separate sample shall be tested for each Strength Grade and Density

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.