



**उत्पाद मैनुअल आई एस 2185 (भाग 2):1983 के अनुसार
कंक्रीट चिनाई इकाइयाँ भाग II खोखला और ठोस
हल्का कंक्रीट ब्लॉक के लिए**

दस्तावेज संख्या - पी एम/आई एस 2185 (भाग 2)/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 लाइसेंसों 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 II - HOLLOW AND SOLID
LIGHTWEIGHT CONCRETE BLOCKS ACCORDING TO
IS 2185 (PART 2):1983**

Document No.- PM/ IS 2185 (Pt 2)/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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1.	Product	:	IS 2185 (PART 2): 1983
	Title	:	CONCRETE MASONRY UNITS – HOLLOW AND SOLID LIGHTWEIGHT 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	:	Blocks - 20 Nos 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:		
	Dimensions and tolerance (Cl 3), Surface texture and Finish (Cl 7), Physical requirements – General (Clause 8.1)		
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2185 (Part 2): 1983 with the following scope:		
	Name of the product	Concrete Masonry Units – Hollow and Solid Lightweight Concrete Blocks	
	Classification (Type) and Grade of concrete block		
	Nominal sizes	Sizes (Length x Height x Width) upto and including----- mm	
	Special requirement (If any)	Special face/shape of block	

ANNEX A

Raw Material

1. Cement - Clause 5.1 of IS 2185 (Part 2)
2. Lightweight Aggregates - Clause 5.2 of IS 2185 (Part 2) and IS 383
3. Fly ash - Clause 5.1.1 of IS 2185 (Part 2) and IS 3812 (Part 2)
4. Water - Clause 5.3 of IS 2185 (Part 2) and IS 456
5. Additives and Admixtures - Clause 5.4 of IS 2185 (Part 2) and IS 9103 & IS 2645

ANNEX B**Grouping Guidelines**

1. Concrete Masonry Units – Hollow and Solid Concrete Blocks as per IS 2185 (Part 2): 1983 are classified as given below:

- a) **Classification (Type) and Grade:**

Classification (Type)	Grade	Groups based on average compressive strength (N/mm ²) at 28 days
Hollow (open and closed cavity) Load Bearing Concrete blocks	A	7
	B	5
Hollow (open and closed cavity) Non-Load Bearing Concrete blocks	-	4
Solid Concrete Blocks	A	12.5
	B	8.5

- b) **Nominal sizes of blocks:**

Length (mm)	Height (mm)	Width (mm)
400, 500, 600	200, 100	50, 75, 100, 150, 200, 250, 300

- In addition, block shall be manufactured in half lengths of 200, 250 or 300 mm to correspond to the full lengths.
 - Blocks of nominal dimensions other than those specified in 3.2.1 may also be used by mutual agreement between purchaser and supplier. In the case of special concrete masonry units such as jallie or screen wall block and ornamental block, the specified sizes shall not necessarily apply.
- c) **Blocks with special faces:** Blocks with special faces shall be manufactured and supplied as agreed upto between the manufacturer and the purchaser.
 - 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 Classification (Type) and each Grade (based on compressive strength) shall be tested to cover all sizes of Blocks of that particular Classification (Type) and Grade tested.
 - b) Blocks with special faces and special shapes 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 (Clause 3)	a) Steel scale b) Vernier calliper c) Straight edge d) Right angle
2	Block density (Clause 8.3)	a) Steel scale b) Vernier calliper c) Weighing balance d) Hot air oven
3	Compressive strength (Clause 8.4)	a) Vernier calliper b) Compression testing machine c) Caping [As per clause D-3 of IS 2185 (Part 2) : 1983]
4	Water absorption (Clause 8.5)	a) Weighing balance b) Water bath c) Coarse wire mesh of 10 mm d) Hot air oven
5	Drying shrinkage (Clause 8.6)	a) Suitable length measuring equipment (micrometer gauge/dial gauge) b) Measuring frame c) Drying oven (with humidity controller and dishes/trays containing for calcium chloride solution) d) Water bath e) Desiccator with calcium chloride
6	Moisture movement (Clause 8.7)	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 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 2185 (Part 2): 1983.

4. CONTROL UNIT – All Blocks of same type, grade, shape and face 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 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		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
5.1	Cement	5.1	IS 2185 (Part 2)	S	-	-	Cement shall be ISI marked and accompanied with test certificate
5.1.1	Fly ash	5.1.1	IS 2185 (Part 2) IS 3812 (Part 2)	S	One sample in a year or whenever there is change of source of supply.		
5.2	Aggregates	5.2	IS 2185 (Part 2) IS 383	S	One sample in a year or whenever there is change of source of supply.		Further testing is not required if received with test certificate or ISI marked-
5.3	Water	5.3	IS 2185 (Part 2) IS 456	S	One sample in a year or whenever there is change of source of supply.		
5.4	Additives or Admixtures	5.4	IS 2185 (Part 2) IS 9103 IS 2645	S	One	Each consignment	Further testing is not required if received with test certificate or ISI marked.
7	Surface texture and finish	7	IS 2185 (Part2)	R	Each finished block	-	-
8	Physical requirements						
8.1	General	8.1	IS 2185 (Part 2)	R	Each finished block	-	-

8.2	Dimensions	8.2	IS 2185 (Part 2)	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		
8.3	Block density	8.3	IS 2185(Part 2)	R	3	Each control unit	-
8.4	Compressive Strength	8.4	IS 2185(Part 2)	R	8	Each control unit	-
8.5	Water absorption	8.5	IS 2185(Part 2)	R	3	Each control unit	--
8.6	Drying shrinkage	8.6	IS 2185(Part 2)	S	3	Once in three months	-
8.7	Moisture movement	8.7	IS 2185(Part 2)	S	3	Once in three months	-

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled 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.