



**PRODUCT MANUAL FOR  
CONCRETE MASONRY UNITS -  
HOLLOW AND SOLID CONCRETE BLOCKS  
ACCORDING TO IS 2185 (PART 1): 2005**

*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 2185 (PART 1): 2005
	<b>Title</b>	:	CONCRETE MASONRY UNITS – HOLLOW AND SOLID CONCRETE BLOCKS
	<b>No. of Amendments</b>	:	NIL
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Please refer <a href="#">ANNEX - A</a>
b)	<b>Grouping guidelines</b>	:	Please refer <a href="#">ANNEX – B</a>
c)	<b>Sample Size</b>	:	Blocks - 20 Nos for all tests
3.	<b>List of Test Equipment</b>	:	Please refer <a href="#">ANNEX – C</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer <a href="#">ANNEX – D</a>
5.	<b>Possible tests in a day:</b>		
	(i) Dimensions and tolerance (Clause 4, 9.2)		
	(ii) Physical requirements – General (Clause 9.1)		
6.	<b>Scope of the Licence:</b>		
	“Licence is granted to use Standard Mark as per IS 2185 (Part 1): 2005 with the following scope:		
	<b>Name of the product</b>	Concrete Masonry Units – Hollow and Solid Concrete Blocks	
	<b>Classification (Type) and Grade of concrete block</b>		
	<b>Nominal sizes</b>	Sizes (Length x Height x Width) upto and including----- mm	
	<b>Special requirement (If any)</b>	Special face/shape of block	

**ANNEX A**

**Raw Material**

1. Cement - Clause 6.1 of IS 2185 (Part 1)
2. Aggregates - Clause 6.2 of IS 2185 (Part 1) and IS 383
3. Fly ash - Clause 6.2.2 of IS 2185 (Part 1) and IS 3812 (Part 2)
4. Water - Clause 6.3 of IS 2185 (Part 1) and IS 456
5. Additives and Admixtures - Clause 6.4 of IS 2185 (Part 1) and IS 9103 & IS 2645

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

1. Concrete Masonry Units – Hollow and Solid Concrete Blocks as per IS 2185 (Part 1): 2005 are classified as given below:

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

Classification (Type)	Grade	Groups based on minimum average compressive strength (N/mm <sup>2</sup> ) at 28 days		
		Group I	Group II	Group III
Hollow (open and closed cavity) Concrete blocks	A	A (3.5) A (4.5) A (5.5)	A (7.0) A (8.5) A (10.0)	A (12.5) A (15)
	B	B (3.5) B (5.0)	-	-
Solid Concrete Blocks	C	C (4.0) C (5.0)	-	-

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. Full length and half-length U-blocks may also be manufactured for the purposes of band and lintels.
  - (Blocks of sizes other than above may also be manufactured as per agreement between manufacturer and supplier. In case of special concrete masonry units such as jallie wall blocks and ornamental blocks, the specified sizes may not be applied).
- 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 group of Grade (based on compressive strength) shall be tested to cover all sizes of Blocks of that particular Classification (Type) for all the Grades covered in that group 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*

<b>S. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1	Dimensions (Clause 9.2)	a) Steel scale b) Vernier calliper c) Straight edge d) Right angle
2	Block density (Clause 9.3)	a) Steel scale b) Vernier calliper c) Weighing balance d) Hot air oven
3	Compressive strength (Clause 9.4)	a) Vernier calliper b) Compression testing machine c) Caping [As per clause D-3 of IS 2185 (Part 1) : 2005]
4	Water absorption (Clause 9.5)	a) Weighing balance b) Water bath c) Coarse wire mesh of 10 mm d) Hot air oven
5	Drying shrinkage (Clause 9.6)	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 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 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 1): 2005.

**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				
6.1	Cement	6.1	IS 2185 (Part 1)	S	-	-	Cement shall be ISI marked and accompanied with test certificate
6.2	<b>Aggregates</b>						
	Aggregates	6.2.1	IS 2185 (Part 1) 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-	
	Fly ash	6.2.2	IS 2185 (Part 1) IS 3812 (Part 2)	S	One sample in a year or whenever there is change of source of supply.		
6.3	Water	6.3	IS 2185 (Part 1) IS 456	S	One sample in a year or whenever there is change of source of supply.		
6.4	Additives or Admixtures	6.4	IS 2185 (Part 1) IS 9103 IS 2645	S	One	Each consignment	Further testing is not required if received with test certificate or ISI marked.
8	Surface texture and finish	8.1, 8.2	IS 2185 (Part1)	R	Each finished block	-	-
9	<b>Physical requirements</b>						
9.1	General	9.1, 9.1.1	IS 2185 (Part1)	R	Each finished block	-	-

9.2	Dimensions	4, 9.2, Annex – B	IS 2185 (Part 1)	R	20	Each control unit	-
9.3	Block density	5, 9.3 Annex- C	IS 2185(Part1)	R	3	Each control unit	-
9.4	Compressive Strength	9.4, Table 2, Annex D	IS 2185(Part1)	R	8	Each control unit	-
9.5	Water absorption	9.5, Annex E	IS 2185(Part1)	R	3	Each control unit	--
9.6	Drying shrinkage	9.6, Annex F	IS 2185(Part1)	S	3	Once in three months	-
9.7	Moisture movement	9.7 Annex G	IS 2185(Part1)	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.