



PRODUCT MANUAL FOR CHEQUERED CEMENT CONCRETE TILES ACCORDING TO IS 13801: 2013

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 13801: 2013
	Title	:	Chequered Cement Concrete Tiles
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	a) Cement – Clause 5.1 of IS 13801: 2013 b) Aggregates – Clause 5.2 of IS 13801: 2013 c) Pigments – Clause 5.3 of IS 13801: 2013
b)	Grouping guidelines	:	Please refer ANNEX- A
c)	Sample Size	:	Qty - 25 Tiles
3.	List of Test Equipment	:	Please refer ANNEX- B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX- C
5.	Possible tests in a day:		
	(i)	Dimensions (Clause 7)	
	(ii)	Thickness of wearing layer (Clause 8.3)	
	(iii)	Flatness of the tile surface (Clause 12.1)	
	(iv)	Perpendicularity (Clause 12.2)	
	(v)	Straightness (Clause 12.3)	
6.	Scope of the Licence:		
	d)	“Licence is granted to use Standard Mark as per IS 13801: 2013 with the following scope:	
		Name of the product	Chequered Cement Concrete Tiles
		Size (mm)	Length x Breadth x Thickness
		Class	General Purpose Tiles/ Heavy Duty Floor Tiles
		Type	Plain cement tiles/ Chequered coloured tiles / Terrazo chequered tiles (with or without pigments and chip size smallest upto 12mm/20mm)
		No of layer	Monolayer/ Double layer

ANNEX A

Grouping Guidelines

1. IS 13801: 2013 covers Chequered Cement Concrete Tiles as given below:
 - a) Classification - General Purpose Tiles
- Heavy Duty Floor Tiles
 - b) No of Layers - Monolayer
- Double Layer
 - c) Plain Chequered Tiles and Chequered Coloured Tiles
 - d) Terrazzo Chequered Tiles - Chip of size varying from smallest to 12mm/20 mm (Pigmented/non-pigmented)
 - e) Sizes – 200 x 200, 250 x 250, 300 x 300, 400 x 400 mm
(Half tiles for use with full tiles are also permitted. Shapes and size of tiles other than above are permitted as per agreement between the supplier and purchaser)
2. Considering the above, the following grouping guidelines is developed for GoL/CSoL:
 - a) One sample of tile of highest size from each classification and type (i.e. Plain Chequered/ Chequered Coloured / Terrazzo Chequered) shall be tested for all requirements to cover tiles of all sizes upto and including the tested size for that particular classification and type.
 - b) If heavy duty floor tile is tested, then general purpose tile for the applicable sizes and type may also be covered.
 - c) If double layer tile is tested, monolayer tile of same classification and type may also be covered.
 - d) Tiles of special shape and size shall be covered in the licence separately and considering the relaxation specified at 2(b) and (c) above.
3. The Firm shall declare the varieties 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 varieties covered in the Licence are tested in rotation, to the extent possible.

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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimensions and Tolerances (Clause 7 and 8) Special shape and size (Clause 9)	<ul style="list-style-type: none"> - Metal ruler of specified length - Vernier calliper - Micrometer/ Dial thickness gauge - Suitable gauges and templates
2	Flatness of the tile surface (Clause 12.1)	<ul style="list-style-type: none"> - Metal ruler of specified length - Filler gauges - Fine thread
3	Perpendicularity (Clause 12.2)	<ul style="list-style-type: none"> - Filler gauges - Metal ruler of specified length - Engineer's Square with one arm longer than the side of tile
4	Straightness (Clause 12.3)	<ul style="list-style-type: none"> - Metal ruler of specified length - Filler gauges - Fine thread
5	Water Absorption (Clause 12.4)	<ul style="list-style-type: none"> - Water tank of adequate size - Thermostatically control oven - Stop watch - Weighing balance
6	Wet Transverse Strength (Clause 12.5)	<ul style="list-style-type: none"> - Water tank of adequate size - Apparatus for determination of wet transverse strength as per Clause F-2 capable of applying load gradually and at uniform rate not exceeding 2000 N/ min.) - Vernier calliper - Dial calliper piston type for thickness measurement - Plywood - 3 mm in thickness and 20 mm in length - Stop watch

7	Resistance to wear (Clause 12.6)	<ul style="list-style-type: none">- Abrasion testing Machine (As per Clause G-2 of IS 1237)- Tile cutter- Tile grinder- Thermostatically control oven- Weighing balance- Arrangement for measuring change in thickness as per clause G-1-3-3 and Fig 1 and 2 of IS 1237: 2012 with dial gauge set up (with least count of at least 0.01 mm)- Abrasive powder (As per clause G-3 of IS 1237: 2012)- Vernier calliper- Metal ruler of specified length
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The above list is indicative only and may not be treated as exhaustive.

ANNEX C

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 13801: 2013
4. **CONTROL UNIT** - All tiles of same type, class, shape and size manufactured from identical raw material and under similar conditions of manufacturing in a 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 Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
5.1	Cement	5.1	IS 13801	S	-	-	Cement shall be ISI marked and received with test certificate.
5.2	Aggregates	5.2	IS 13801 IS 383	S	One	Once in a year for each source and size of aggregates received	Additional sample shall be tested whenever there is change of source of supply of material. No further testing is required, if accompanied with test certificate or ISI marked.
5.3	Pigments	5.3, 5.3.1, 5.3.2, 5.3.3, 5.3.4	IS 13801	S	One	Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked
7 and 8	Dimensions and Tolerances	7, 7.1.1. Table 1, 8.1, 8.2 (Except 8.3)	IS 13801	R	Two	Every hour production from each machine	-
9	Special shape and size	9	IS 13801	R	Two	Every hour production from each machine	Supplied as per agreement between the supplier and the purchaser. \$\$
10	General quality	10	IS 13801	R	Each Tile	-	Adequate visual inspection shall be done to ensure quality of tiles as per Standard.
11	Finish	11.1, 11.2	IS 13801	R	Each Tile	-	

12	Physical requirements						
12.1	Flatness of the tile surface	12, 12.1, Annex B	IS 13801	R	Two	Every hour production from each machine	-
12.2	Perpendicularity	12, 12.2, Annex C	IS 13801	R	Two	Every hour production from each machine	-
12.3	Straightness	12, 12.3, Annex D	IS 13801	R	Two	Every hour production from each machine	-
12.4	Water absorption	12, 12.4, Annex E	IS 13801	R	*6 Tiles	Each control unit	If any sample fails in the requirement, twice the number of samples from same control unit shall be tested and control unit accepted if retested sample passes.
12.5	Wet transverse strength	12, 12.5, Annex F	IS 13801	R	*12 Tiles	Each control unit	
8.3	Thickness of wearing layer	8.3, Table 2	IS 13801	R	*12 Tiles	Each control unit	
12.6	Resistance to wear	12, 12.6, Annex G	IS 13801	R	*6 Tiles	Each control unit	

*samples shall be chosen in such a way that it is a representative of all day's production.

\$\$ Half tiles and special tiles to be checked for dimensions as per the number of samples and frequency as that of full tiles

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.