



PRODUCT MANUAL FOR BLOCK BOARDS ACCORDING TO IS 1659: 2004

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 1659 : 2004
	Title	:	BLOCK BOARDS
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	Adhesive – IS 848
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	One Block Board
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 and tolerance (ii) Defects (iii) Adhesion of plies (iv) Spot test (v) Modulus of Rupture and Modulus of Elasticity.		
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 1659 : 2004 with the following scope:		
	Name of the product	BLOCK BOARDS	
	Grade	BWP/ MR	
	Type	Decorative type / Commercial type	
	Size	Thickness upto and including ____ mm	

ANNEX A
Grouping Guidelines

1. Block Boards are classified based on the parameters as given below:
 - a) Grade: BWP and MR
 - b) Type : Decorative type (DEC) and Commercial type (COM)
 - c) Thickness: 12 mm to 50 mm, and
 - d) Any dimensions as agreed to between the manufacturer and the purchaser are also permitted in addition to the standard dimensions.
2. Requirements for BWP grade is stringent than MR grade plywood, but Mycological test is applicable only for MR grade. Also for manufacturing of block boards of higher thickness, manufacturing capacity and infrastructure required is more critical than block boards with lesser thickness.
3. Considering the above following grouping guidelines for GoL/CSoL have been developed:

One sample of each type (DEC and COM) with highest thickness and any size from each grade (BWP and MR) shall be tested for all requirements to cover Block Boards of that type and grade tested for thickness upto and including the tested sample.
4. The Firm shall declare the varieties of Block Boards they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
5. 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

S. No.	Tests used in with Clause Reference	Test Equipment
1	Dimensions and Tolerance (Clause 7)	a) Measuring Tape b) Steel Scale c) Micro Meter d) Vernier Caliper e) Squareness Gauge f) Straight Edge
2	Dimensional changes caused by humidity (Clause 9.2.1)	a) Humidity and Temperature control cabinets with indicator/measuring equipment b) Steel scale/Tape
3	Resistance to water (Clause 9.2.2)	a) Water bath b) Temperature controlled oven c) Knife d) Stout Table
4	Adhesion of plies (Clause 9.2.3)	a) Knife b) Stout Table
5	Mycological Test (For MR Grade only) (Clause 9.2.4)	a) Flat rectangular dish (enamelled iron/glass/porcelain) with cover b) Saw dust c) Sucrose d) Spore of fungi e) Temperature controlled oven
6	Modulus of rupture and modulus of elasticity (Clause 9.2.5)	Tensile Testing Machine attached with MOE and MOR attachments and 100 mm dial gauge
7	Spot test (Clause 9.2.6)	Chemicals for detection of copper, chromium, Arsenic, Borax : Chrome Azurol-S, Sodium acetate Diphenyl carbazide, Isopropyl alcohol, Distilled water Ammonium molybdate/ Benzidine hydrochloride, Acetic acid/Stannous chloride Turmeric powder, Ethyl alcohol/ HCL, Salicylic acid.
8	Adhesive testing (Clause 6.2)	a) pH Meter b) IS Sieve

9	General test equipments required	a) Humidity Chamber with thermometer & hygrometer b) Desiccator c) Air Conditioner d) Dry-Wet Thermometer e) Electric Hot Plate f) Chemicals and glassware g) Viscosity Cup
---	----------------------------------	---

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 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 1659: 2004.

4. CONTROL UNIT – All Block Boards of similar construction, grade and type manufactured under similar conditions continuously with same mix of adhesive in a day 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				
5.1	Timber	5.1.1	IS 1659	-	One	Each lot received	Record of each lot of timber received shall be maintained
5.1.2	Face veneers for decorative type of block boards	5.1.2	IS 1659	-	One	Each lot received	
5.2	Adhesive	5.2	IS 1659 IS 848	R	One	Each lot	No testing is required, if accompanied with test certificate or ISI marked.
6.1	Preservative treatment	6.1	IS 1659	-	All	-	-
6.2	Core	6.2	IS 1659	R	All	-	-
6.3	Cross band and faces	6.3 6.3.1 to 6.3.3	IS 1659	R	All	-	-
7	Dimension and Tolerance	7.1 to 7.3 8.1.4, 8.1.5 Annex-D, Annex-E	IS 1659	R	5	For each size from each control unit	Samples shall be drawn at regular interval to cover entire production. In case of failure of any sample, entire production shall be checked and only conforming product shall be marked.
8.1.3	Defects	8.1.3 6.3.3	IS 1659	-	All	-	-
9.2.1	Dimensional changes caused by humidity	9.2.1 Annex-F	IS 1659	R	One	Once in a week from	In case of failure of sample, twice the number of samples from next

						each grade and type	two control units shall be tested and control units shall be accepted on passing of retested samples. Original frequency for testing may be resumed on passing of both control units.
9.2.2	Resistance to water	9.2.2 9.2.2.1 9.2.2.2 Annex- G	IS 1659	R	One	Each control unit	In case of failure of sample, twice the number of samples from same control unit shall be tested and control unit shall be accepted if retested sample passes the test.
9.2.3	Adhesion of plies	9.2.3 Annex-H	IS 1659	R	One	Each control unit	
9.2.4	Mycological test	9.2.4 Annex-J	IS 1659	R	One sample in a month from each type		#
9.2.5	Modulus of Rupture and Modulus of Elasticity	9.2.5 Annex-K	IS 1659	R	One	Each control unit	In case of failure of sample, twice the number of samples from same control unit shall be tested and control unit shall be accepted if retested sample passes the test.
9.2.6	Spot test	9.2.6 Annex-L	IS 1659	R	One	Each control unit	

Samples may be drawn in such a manner that all thickness of Block boards manufactured are tested over a period of time. In case of failure of sample in mycological test, a thorough check shall be made about the type of glue used and type of preservative added to the glue.

Note 1 : 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.