

भारतीय मानक
Indian Standard

IS 3087 : 2025

**सामान्य प्रयोजनों के लिए मध्यम घनत्व की
लकड़ी और अन्य लिग्नोसेल्यूलोसिक
सामग्री से बने पार्टिकल बोर्ड — विशिष्टि**

(तीसरा पुनरीक्षण)

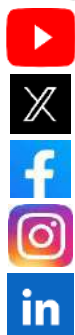
**Medium Density Particle Boards of
Wood and other Lignocellulosic
Materials for General Purpose —
Specification**

(Third Revision)

ICS 790.060.20

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Price Group 7

Wood and Other Lignocellulosic Products Sectional Committee, CED 20

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Wood and Other Lignocellulosic Products Sectional Committee had been approved by the Civil Engineering Division Council.

Particle board is a panel product manufactured from particles of wood or other lignocellulose material, for example, flakes, granules, shavings and slivers or splinters, combined together by use of an organic binder together with one or more of the agents, such as heat, pressure, moisture and a catalyst.

Particle boards are recommended for use in interior locations. High moisture resistance (HMR) grade particle boards may be used in humid tropical wet conditions, whereas moisture resistance (MR) grade particle boards may be used in humid conditions subtropical and tropical dry, and regular grade (REG) may be used in arid/semi-arid/temperate conditions. This standard covers classification and requirements of particle board for general purposes including furniture applications.

This standard also gives requirements of formaldehyde content and formaldehyde emission. Both formaldehyde content and emission are specified under Class E_1 and Class E_2 . Class E_1 is more stringent than Class E_2 .

This standard was first published in 1965 and subsequently revised in 1985 and 2005. In this revision, the following major modifications have been incorporated:

- a) Particle boards have been classified based on uses and service conditions;
- b) Requirements have been modified against each classification of particle boards; and
- c) Marking clause has been modified

In formulation of this standard, assistance has been derived from ISO 16893 : 2016 'Wood-based panels — Particleboard'.

The composition of the Committee responsible for the revision of this standard is given in [Annex B](#).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

MEDIUM DENSITY PARTICLE BOARDS OF WOOD AND OTHER LIGNOCELLULOSIC MATERIALS FOR GENERAL PURPOSE — SPECIFICATION

(Third Revision)

1 SCOPE

1.1 This standard covers the requirements of medium density particle boards for general purposes having density in the range of 500 kg/m³ to 900 kg/m³.

1.2 This standard does not cover veneered particle boards, high-density and low-density particle boards, and particle boards faced with impregnated paper surfaces.

2 REFERENCES

The standards listed in [Annex A](#) contain provisions which through reference in the text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

3 TERMINOLOGY

For purpose of this standard, the definitions given in IS 707 shall apply.

4 CLASSIFICATION

4.1 Medium density particle boards shall be classified according to [Table 1](#).

4.2 Formaldehyde Classes

In terms of formaldehyde class, each grade of particle boards shall be further classified in two classes as follows:

- a) Formaldehyde Class, E_1 ; and
- b) Formaldehyde Class, E_2 .

5 MATERIALS

5.1 Wood and Any Other Lignocellulosic Material

Any species of wood or any other lignocellulosic material may be used for the manufacture of particle

boards. However, the purchaser may, at his discretion, specify a particular species of wood or any specific lignocellulosic material for the manufacture of particle boards.

5.2 Adhesive

Any suitable type of resin adhesive may be used for bonding, provided that the particle boards comply with the requirements given in [9](#).

5.3 Sizing Material

Paraffin wax dissolved in mineral spirit or alternatively emulsified with water, or melted shall be used as sizing material.

5.4 Preservative

A suitable preservative may be added to the mix during the adhesive mixing stage. The following preservatives are regarded as suitable, and their percentage is given based on the oven-dry weight of the particles as follows:

- a) Sodium pentachlorophenate to the extent of 2 percent; and
- b) Trichlorophenol to the extent of 5 percent.

6 MANUFACTURE

6.1 The particles of wood or other lignocellulosic materials for the manufacture of particle boards are produced by cutting wood and/or any other suitable lignocellulosic materials into shavings, flakes, or splinters using a suitable chipping machine. The particles are then dried in a mechanical drier, further graded to the required sizes, and thoroughly blended with the requisite quantity of adhesives in mechanical mixers or applicators. The required sizing material may be added at this stage, either mixed with the binder or separately introduced into the mixer. Care to be taken to ensure that the moisture content of the binder does not excessively increase the moisture content of the chips. The well-blended chips are then formed into a mat and pressed into panels by passing them through a multi-daylight press under controlled heat, pressure, and time conditions. The hot-pressed boards are cooled,

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conditioned to attain equilibrium moisture content, and sanded on both sides to achieve uniform thickness. Finally, the boards are trimmed and cut to standard sizes.

6.2 In the case of multi-layer particle boards, the construction shall be well-balanced about the central plane. In the case of single-layer particle boards, the particles shall be uniformly laid. Care shall be taken to ensure that no asymmetric grading of chips takes place.

7 FINISH

The particle boards shall be of uniform thickness, flat, and of uniform density throughout the length and width of the boards. Both surfaces of the particle board shall be sanded to a smooth finish.

8 DIMENSIONS AND TOLERANCES

8.1 Any dimensions (length and width) as agreed to between the manufacturer and the purchaser may be used and shall be declared by the manufacturer. The dimensions shall be measured as per IS 2380 (Part 2). Prevailing dimensions (length $\times$ width) of plywood boards are as given below:

Length, mm : 5 490, 4 880, 3 660, 3 050, 2 745,
2 440, 2 135, 1 830, 1 525, 1 220,
1 000 and 915

Width, mm : 1 830, 1 525, 1 220, 1 000, 915, 610
and 305

8.2 Thickness

The thickness of the particle boards shall be 3 mm, 4 mm, 6 mm, 9 mm, 11 mm, 12 mm, 15 mm, 16 mm, 17 mm, 18 mm, 22 mm, 25 mm, 30 mm, 35 mm, 40 mm, 44 mm and 45 mm.

NOTE — Any other thickness as agreed to between the manufacturer and the purchaser may also be used.

8.3 Squareness and Edge Straightness

Edge straightness and squareness shall be measured as per IS 2380 (Part 2).

8.4 Tolerances

The tolerances on the dimensions of finished particle boards shall be as given in [Table 2](#).

9 REQUIREMENTS

9.1 The particleboards shall conform to the requirements given in [Table 3](#) to [Table 8](#), as per the respective grades.

9.2 The method of preparation and conditioning of specimens for tests shall be as specified in IS 2380 (Part 1). The test specimens shall be cut out from portions 150 mm away from the edges for the tests as mentioned in [9](#). Three number of test specimens shall be taken for each of the tests for density, moisture content, thickness swelling, internal bond, internal bond (after cyclic test or boil test), modulus of elasticity, modulus of rupture and screw withdrawal test. However, for formaldehyde content and steady-state formaldehyde emission test, specimens shall be taken as per IS 13745 and IS/ISO 12460 (Part 1) respectively.

9.3 For 24 h thickness swelling, each test specimens are of size 50 mm $\times$ 50 mm shall be taken. The thickness shall be measured of each test piece to an accuracy of 0.01 mm at the intersection of the diagonals, (see [Fig. 1](#)).

10 SAMPLING AND CRITERIA FOR CONFORMITY

10.1 Sampling

10.1.1 Lot

In any consignment, all the particle boards of same classification and formaldehyde class, dimensions, and manufactured under similar conditions of production shall be grouped together to constitute a lot.

10.1.2 The conformity of a lot, to the requirements of this standard, shall be ascertained on the basis of tests on particle boards selected from it.

10.1.3 These particle boards shall be selected at random (see IS 4905). For method of sampling refer IS 7638.

10.2 Criteria for Conformity

10.2.1 All the particle boards selected in accordance with [10.1.3](#) shall be measured for length, width, thickness, edge straightness, and squareness tests. These dimensions shall comply with the requirements specified in [8](#), before proceeding with further testing.

10.2.2 If all the boards in [10.2.1](#) are found to be conforming, then from each of the particle boards, the test specimens shall be cut out from portions 150 mm away from the edges for the tests as mentioned in [9](#).

10.2.3 A lot shall be considered as conforming to the requirements of this standard, if all the samples and test specimens pass the requirements as prescribed in [8](#) and [9](#).

10.2.4 If any sample fails to conform the requirements, further samples shall be taken from the lot, double in number, and the lot shall be considered to have passed, if these samples conform to the requirements prescribed.

11 MARKING

11.1 Each particle board shall be legibly and indelibly marked with the following particulars:

- a) Manufacturer's name and initials or recognized trade mark, if any;

- b) Grade and formaldehyde class of particle board;
- c) Nominal dimensions (length, width and thickness);
- d) Batch number; and
- e) Date of manufacture

11.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

Table 1 Classification of Medium Density Particle Board

(Clause [4.1](#))

Sl No.	Particle Board Grade	Service Conditions	Typical Examples of Applications (See Note)
(1)	(2)	(3)	(4)
i)	Regular (REG) grade Grade A Grade B	Dry conditions arid/semi-arid/temperate	General uses, carcass, furniture, cabinets, substrate for any decorative finish
ii)	Moisture resistance (MR) grade	Humid conditions subtropical and tropical dry	General uses, carcass, furniture, cabinets for kitchen and bathroom, moulded chair and table and substrate for any decorative finish
iii)	High moisture resistance (HMR) grade	High humid conditions tropical wet	General uses, furniture, cabinets for kitchen and bathroom moulded chair and table

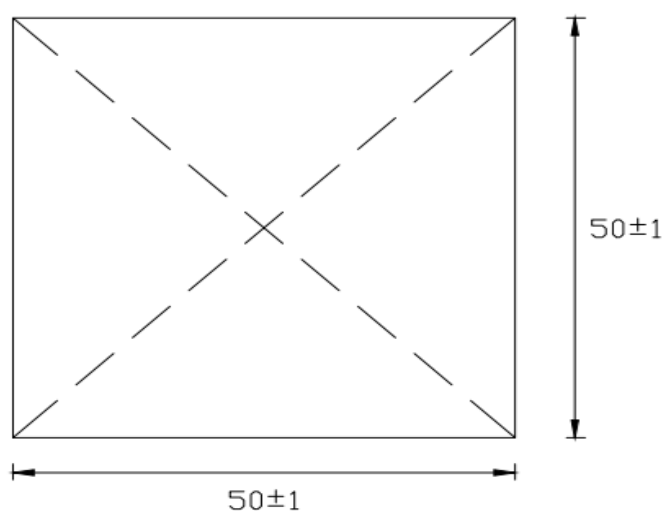
NOTE — The examples given for different applications of particle boards are typical. Particle boards may be used for other similar applications, depending on the grade and service conditions as agreed between the manufacturer and purchaser.

Table 2 Requirements for Dimensions

(Clause [8.4](#))

Sl No.	Properties	Tolerance
(1)	(2)	(3)
i)	Length	± 5 mm/m
ii)	Width,	± 5 mm/m
iii)	Thickness, sanded/finished panel	± 0.3 mm
iv)	Squareness, <i>Max</i>	2 mm/m or 0.2 percent
v)	Edge straightness, <i>Max</i>	2 mm/m or 0.2 percent

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All dimensions in millimetres.

FIG. 1 TYPICAL SKETCH OF SPECIMEN

Table 3 Requirements for Density and Moisture Content

(Clause [9.1](#))

Sl No.	Properties	Requirements	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Density, kg/m^3	500 – 900	IS 2380 (Part 3)
ii)	Variation from mean density, percent	$\pm 10 \%$	
iii)	Moisture content, percent	5 – 15	

Table 4 Requirements for Regular (REG) — Grade A Particle Board

(Clause [9.1](#))

Sl No.	Properties	Requirements (Average)									Method of Test, Ref to
		Nominal Thickness (mm)									
		≤ 3.0	> 3.0 to ≤ 4.0	> 4.0 to ≤ 6.0	> 6.0 to ≤ 13.0	> 13.0 to ≤ 20.0	> 20.0 to ≤ 25.0	> 25.0 to ≤ 32.0	> 32.0 to ≤ 40.0	> 40.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
i)	Modulus of rupture (MoR), N/mm ² , <i>Min</i>	13.0	13.0	12.0	11.0	11.0	10.5	9.5	8.5	7.0	IS 2380 (Part 4)
ii)	Moduels of elasticity (MoE), N/mm ² , <i>Min</i>	1 800	1 800	1 800	1 800	1 600	1 500	1 350	1 200	1 050	
iii)	Internal bond strength, N/mm ² , <i>Min</i>	0.45	0.45	0.45	0.40	0.30	0.30	0.25	0.20	0.20	IS 2380 (Part 5)
iv)	Screw withdrawal strength (face), N, <i>Min</i>	1 250									IS 2380 (Part 14)
v)	Screw withdrawal strength (edge), N, <i>Min</i>	—				700					

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Table 5 Requirements for Regular (REG) — Grade B Particle Board

(Clause [9.1](#))

Sl No.	Properties	Requirements (Average)									Method of Test, Ref to
		Nominal Thickness (mm)									
		≤ 3.0	> 3.0 to ≤ 4.0	> 4.0 to ≤ 6.0	> 6.0 to ≤ 13.0	> 13.0 to ≤ 20.0	> 20.0 to ≤ 25.0	> 25.0 to ≤ 32.0	> 32.0 to ≤ 40.0	> 40.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
i)	Modulus of rupture (MoR), N/mm ² , <i>Min</i>	11.5	11.5	11.5	10.5	10.0	9.5	8.5	7.0	5.5	IS 2380 (Part 4)
ii)	Internal bond strength, N/mm ² , <i>Min</i>	0.31	0.31	0.31	0.28	0.24	0.20	0.17	0.14	0.14	IS 2380 (Part 5)
iii)	Screw withdrawal strength (face), N, <i>Min</i>	1 250									IS 2380 (Part 14)
iv)	Screw withdrawal strength (edge), N, <i>Min</i>	—				700					

Table 6 Requirements for Moisture Resistance (MR) Grade Particle Board

(Clause 9.1)

SI No.	Properties	Requirements (Average)									Method of Test, Ref to
		Nominal Thickness (mm)									
		≤ 3.0	> 3.0 to ≤ 4.0	> 4.0 to ≤ 6.0	> 6.0 to ≤ 13.0	> 13.0 to ≤ 20.0	> 20.0 to ≤ 25.0	> 25.0 to ≤ 32.0	> 32.0 to ≤ 40.0	> 40.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
i)	Modulus of rupture (MoR), N/mm ² , <i>Min</i>	13.0	13.0	13.0	13.0	13.0	12.0	11.0	8.0	7.5	IS 2380 (Part 4)
ii)	Modulus of elasticity (MoE), N/mm ² , <i>Min</i>	1 800	1 800	1 800	1 800	1 700	1 400	1 400	1 200	1 200	
iii)	Internal bond strength, N/mm ² , <i>Min</i>	0.50	0.50	0.45	0.45	0.40	0.35	0.30	0.25	0.25	IS 2380 (Part 5)
iv)	24 h thickness swelling (due to general absorption), percent, <i>Max</i>	25	23	20	16	14	13	13	12	12	IS 2380 (Part 17)
v)	Screw withdrawal strength (face), N, <i>Min</i>	1 250									IS 2380 (Part 14)
vi)	Screw withdrawal strength (edge), N, <i>Min</i>	—				850					
vii)	Moisture resistance:										
	a) Option1, cyclic test: 1) Internal bond strength, N/mm ² , <i>Min</i> Or	0.18	0.18	0.18	0.15	0.13	0.12	0.10	0.09	0.08	IS 2380 (Part 5) See Note 1
	b) Option 2, boil test: 1) Internal bond strength, N/mm ² , <i>Min</i>	0.09	0.09	0.09	0.08	0.07	0.07	0.07	0.06	0.06	IS 2380 (Part 5) See Note 2

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Table 7 Requirements for High Moisture Resistance (HMR) Grade Particle Board

(Clause [9.1](#))

SI No.	Properties	Requirements (Average)									Method of Test, Ref to
		Nominal Thickness (mm)									
		≤ 3.0	> 3.0 to ≤ 4.0	> 4.0 to ≤ 6.0	> 6.0 to ≤ 13.0	> 13.0 to ≤ 20.0	> 20.0 to ≤ 25.0	> 25.0 to ≤ 32.0	> 32.0 to ≤ 40.0	> 40.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
i)	Modulus of rupture (MoR), N/mm², <i>Min</i>	20.0	18.0	17.0	16.0	15.0	13.0	12.0	10.0	8.0	IS 2380 (Part 4)
ii)	Modulus of elasticity (MoE), N/mm², <i>Min</i>	2 300	2 200	2 100	2 000	1 900	1 700	1 600	1 600	1 400	
iii)	Internal bond strength, N/mm², <i>Min</i>	0.50	0.50	0.45	0.45	0.40	0.35	0.30	0.25	0.25	IS 2380 (Part 5)
iv)	24 h thickness swelling (due to general absorption), percent, <i>Max</i>	18	16	14	12	12	10	10	9	8	IS 2380 (Part 17)
v)	Screw withdrawal strength (face), N, <i>Min</i>	1 250									IS 2380 (Part 14)
vi)	Screw withdrawal strength (edge), N, <i>Min</i>	—				850					
vii)	Moisture resistance:										
	a) Option1, cyclic test: 1) Internal bond strength, N/mm² , <i>Min</i> OR	0.25	0.24	0.23	0.22	0.18	0.16	0.14	0.12	0.10	IS 2380 (Part 5) See Note 1

Table 7 (*Concluded*)

SI No.	Properties	Requirements (Average)									Method of Test, Ref to
		≤ 3.0	> 3.0 to ≤ 4.0	> 4.0 to ≤ 6.0	> 6.0 to ≤ 13.0	> 13.0 to ≤ 20.0	> 20.0 to ≤ 25.0	> 25.0 to ≤ 32.0	> 32.0 to ≤ 40.0	> 40.0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	b) Option 2, boil test:	0.16	0.15	0.15	0.14	0.12	0.09	0.08	0.07	0.06	IS 2380 (Part 5)
	1) Internal bond strength, N/mm ² , <i>Min</i>										See Note 2

NOTES — For [Table 6](#) and [Table 7](#), procedure for cyclic test and boil test shall be as follows:

1 Cyclic test — Specimens are immersed in water at $27\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for a period of 72 h, followed by drying in air at $27\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 24 h and then heating in dry air at $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 72 h. Three such cycles shall be followed and then the specimens are tested for internal bond strength.

2 Boil test (accelerated water resistance test) — Specimens are immersed in water at $27\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and water is brought to boiling and kept at boiling temperature for 2 h. After $120\text{ min} \pm 5\text{ min}$ remove the test pieces and immerse them in water at $27\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for $60\text{ min} \pm 5\text{ min}$. The test pieces shall have their faces vertical and be separated from each other and from the sides and the bottom of the water bath by at least 15 mm. Remove the test pieces from the water, dry them with a paper towel and place them, with their faces horizontal, in the drying oven at $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for $960\text{ min} \pm 15\text{ min}$. Remove the test pieces from the oven, allow them to cool to approximately room temperature and bond the loading blocks to the faces (If the surfaces of the test pieces are rough or uneven, they may be smoothed before bonding to the blocks by rubbing on a piece of abrasive paper which is held on a flat surface) and then tested for internal bond strength.

Table 8 Requirements for Formaldehyde Content and Steady-State Formaldehyde Emission

(Clause [9.1](#))

SI No.	Properties	Requirements	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Formaldehyde content F_c , mg/100 g for oven dry board	For Formaldehyde Class, E_1 : $F_c \leq 8$ For Formaldehyde Class, E_2 : $8 < F_c \leq 30$	IS 13745
ii)	Steady-state formaldehyde emission, F_c , mg/m ³ (optional test)	For Formaldehyde Class, E_1 : $F_c \leq 0.124$ For Formaldehyde Class, E_2 : $F_c > 0.124$	

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ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

IS No.	Title	IS No.	Title
IS 707 : 2011	Timber technology and utilization of wood, bamboo and cane — Glossary of terms (<i>third revision</i>)	(Part 14) : 1977	Screw and nail withdrawal test (<i>first revision</i>)
IS 2380	Methods of test for wood particleboards and boards from other lignocellulosic materials:	(Part 17) : 1977	Determination of swelling in water (<i>first revision</i>)
(Part 1) : 1977	Preparation and conditioning of test specimens (<i>first revision</i>)	IS 4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (<i>first revision</i>)
(Part 2) : 1977	Accuracy of dimensions of boards (<i>first revision</i>)	IS 7638 : 1999	Wood/Lignocellulosic based panel products — Methods of sampling (<i>second revision</i>)
(Part 3) : 1977	Determination of moisture content and density (<i>first revision</i>)	IS/ISO 12460 (Part 1) : 2007	Wood-based panels — Determination of formaldehyde release: Part 1 Formaldehyde emission by the 1-cubic meter chamber method
(Part 4) : 1977	Determination of static bending strength (modulus of rupture and modulus of elasticity in bending) (<i>first revision</i>)	IS 13745 : 2020	Method for determination of formaldehyde content in wood-based panels by extraction method called perforator method (<i>first revision</i>)
(Part 5) : 1977	Determination of tensile strength perpendicular to surface (<i>first revision</i>)		

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ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Wood and Other Lignocellulosic Products Sectional Committee, CED 20

<i>Organization</i>	<i>Representative(s)</i>
Institute of Wood Science & Technology, Bengaluru	SHRI RAJESH S. KALLAJE (Chairperson)
Association of Furniture Manufacturers and Traders India, Mumbai	SHRI RAJESH CHHABRIA SHRI DHANESH BHATIA (<i>Alternate I</i>) SHRI AMIT VAZE (<i>Alternate II</i>)
Balaji Action Buildwell, New Delhi	SHRI RAJESHWAR NAIR SHRI VIVEK JAIN (<i>Alternate I</i>) SHRI RISHABH JAIN (<i>Alternate II</i>)
Bamboo Society of India, Bengaluru	SHRI PUNATI SRIDHAR DR S. R. SHUKLA (<i>Alternate I</i>) DR JAGADISH VENGALA (<i>Alternate II</i>)
Central Public Works Department, New Delhi	SHRI PREM MOHAN SHRI DINESH KUMAR UJJANIA (<i>Alternate</i>)
Central Institute of Coir Technology, Bengaluru	DR O. L. SHANMUGASUNDARAM SHRIMATI SUMY SEBASTIAN (<i>Alternate</i>)
Century Plyboard India Ltd, Kolkata	SHRI AJAY BALDAWA SHRI JAGANNATH DAS (<i>Alternate</i>)
CSIR - Advance Materials and Processes Research Institute(AMPRI), Bhopal	DR ASOKAN PAPPU
CSIR - Central Building Research Institute, Roorkee	SHRIMATI HEMALATA DR JEESHAN KHAN (<i>Alternate I</i>) SHRI PRASANTA KAR (<i>Alternate II</i>)
Federation of Indian Plywood & Panel Industry, New Delhi	DR C. N. PANDEY SHRI JAYDEEP CHITLANGIA (<i>Alternate</i>)
Greenpanel Industries Ltd, Tirupati	SHRI SUBHASH KUMAR AGARWAL DR PURSHOTTAM (<i>Alternate</i>)
Greenply Industries Ltd, Kolkata	SHRI SHIV PRAKASH SHRI PARTHA NATH (<i>Alternate</i>)
IKEA India Pvt Ltd, Bengaluru	SHRI NISHANT VERMA SHRI GAURAV MITTAL (<i>Alternate I</i>) SHRIMATI OKSANA KOZYRYATSKAYA (<i>Alternate II</i>)
Institute of Wood Science & Technology, Bengaluru	SHRI ANAND NANDANWAR SHRIMATI SUJATHA D. (<i>Alternate</i>)
Mutha Industries, Agartala	SHRI NEERAJ MUTHA SHRI ANIL MUTHA (<i>Alternate</i>)

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<i>Organization</i>	<i>Representative(s)</i>
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North East Centre for Technology Application and Research, Shillong	DR KRISHNA KUMAR SHRI LYNKSIAR N. KHONGWIR (<i>Alternate I</i>) SHRI PANJUMA KAKOTY (<i>Alternate II</i>)
The South Indian Plywood Manufacturers Association, Chennai	SHRI MOIZ VAGH
The Western India Plywood Ltd, Kannur	SHRI P. K. MAYAN MOHAMED DR E. SREENIVASAN (<i>Alternate</i>)
Timpack Pvt Ltd, Byrnihat	SHRI INDER PAL SINGH BHUSRI SHRI ANGAD SINGH BHUSRI (<i>Alternate</i>)
Wood Technologist Association, Yamuna Nagar	SHRI GAJENDRA SINGH RAJPUT SHRI MANOJ GWARI (<i>Alternate</i>)
In Personal Capacity (<i>F 106 Anjan Apartment Coconut Garden, PO Nagarbhavi, Bengaluru</i>)	DR S. K. NATH
BIS Directorate General	SHRI DWAIPAYAN BHADRA, SCIENTIST 'E'/DIRECTOR AND HEAD (CIVIL ENGINEERING) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary
SHRI PRADEEP SINGH SHEKHAWAT
SCIENTIST 'D'/JOINT DIRECTOR
(CIVIL ENGINEERING), BIS

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