

PHYSICAL & MECHANICAL PROPERTIES OF MEDIUM DENSITY FIBRE BOARD

IS 12406 : 2003

S.no.	Test Description	Test Ref. IS- 2380:1977	Unit	Grade I			Grade II	
				Standard Value	ASIS Value	HDXMR Observed Value	Standard Value	ASIS Value
1	Dimension Length Width Thickness	8.1 to 8.2	mm/m mm/m mm	±3 ±3 ±0.3	Complies Complies Complies	Complies Complies Complies	±3 ±3 ±0.3	Complies Complies Complies
2	Density	PART III	kg/m ³	600 to 900	720 to 740	840 to 860	600 to 900	700 to 720
3	Variation from mean Density	PART III	%	± 10	± 3	± 3	± 10	± 5
4	Board Moisture Content	PART III	%	5 to 10	± 5	± 4	5 to 10	± 6
5	Water Absorption (Max.)	PART XVI	%	6	3	3	9	6
	(i) After 2 hrs soaking							
	(ii) After 24 hrs soaking							
	Up to & including 6mm thickness							
	(a) 7mm to 12mm thick							
	(b) 13mm to 19mm thick							
(c) 20mm thick and above								
6	Linear expansion (Swelling in water) Due to general absorption after 24 hrs Soaking	PART XVII	%	4.00	3.00	2.00	7.00	3.00
	(a) Thickness							
	(b) Length							
	(c) Width							
7	Due to surface absorption (in thickness) After 2 hrs. Soaking:	PART XVII	%	4.00	2.00	1.50	5.00	3.00

8	Modulus of Rupture, (min.)	PART IV	N/mm ²					
	(a) Up to 20mm thickness : Average Minimum Individual			28 25	30.0 27.0	32.0 29.0	28 25	29.0 26.0
	(b) Above 20mm thickness : Average Minimum Individual			25 22	28 25	32 28	25 22	27 24
9	Modulus of Elasticity (Min.)	PART IV	N/mm ²					
	(a) Average			2800	3000	3150	2800	2900
	(a) Up to 20mm thickness : Average Minimum Individual			2500	2700	2900	2500	2600
	(b) above to 20mm thickness : Average (min.) Minimum Individual			2500 2300	2700 2500	2800 2600	2500 2300	2600 2400
10	Internal Bond (a) Average	PART V	N/mm ²					
	(a) Up to 20mm thickness : : Average Minimum Individual			0.90 0.80	0.95 0.85	1.20 0.95	0.80 0.70	0.85 0.75
	(b) Above 20mm thickness: Average Minimum Individual			0.80 0.70	0.85 0.75	0.92 0.85	0.70 0.60	0.75 0.65
11	Screw withdrawal Stregnth (Min.)	PART XIV	N					
	Face			1500	1800	2010	1500	1700
	Edge (for thickness>12mm)		N	1250	1500	1850	1250	1450
12	Internal Bond		N/mm ²					
	(a) After cyclic test : Average	PART XIX		0.45	0.50	0.60	NA	NA
	(b) After accelerated water resistance test Average	PART XX	0.30	0.40	0.50	NA	NA	
13	Formaldehyde Content Test(IS-13745:1993)	11.11	mg/100g	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	18.20	16.30	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	17.12

PHYSICAL & MECHANICAL PROPERTIES OF PRELAMINATED MEDIUM DENSITY FIBRE BOARD

IS 14587 : 1998

S.no.	Test Description	Test Ref. IS-2380:1977	Unit	Grade I, Type I		Grade -I, Type II		HDXMR Observed Value	Grade -II, Type II	
				Standard Value	ASIS Value	Standard Value	ASIS Value		Standard Value	ASIS Value
1	Dimension Length Width Thickness	8.1 to 8.2	mm/m mm/m mm	±3	Complies	±3 ±3 ±0.3	Complies Complies Complies	Complies Complies Complies	±3 ±3 ±0.3	Complies Complies Complies
				±3	Complies					
				±0.3	Complies					
2	Density	PART III	kg/m ³	600 to 900	725 to 745	600 to 900	725 to 745	840 to 860	600 to 900	705 to 725
3	Variation from mean Density	PART III	%	± 10	± 3	± 10	± 3	± 3	± 10	± 3
4	Water Absorption (Max.)	PART XVI	%	6	3	6	3	3	9	5
	(i) 2 hours			12	4	12	6	4	18	10
	(ii) 24 hours									
5	Thickness swelling in 2 hrs., (max.)	PART XVII	%	4	2	4	2.50	2	7	4
6	Modulus of Rupture, (min.)	PART IV	N/mm ²	28	32	28	30	32	28	29
	Average			25	28	25	27	28	25	26
	Minimum									
7	Internal Bond	PART V	N/mm ²							
	(a) Up to 20mm thickness:			0.90	1.00	0.90	1.00	1.10	0.80	0.90
	(b) Above 20mm thickness:									
8	Internal Bond		N/mm ²					0.20		
	(a) After cycle test	PART XIX		0.45	0.50	0.45	0.50	0.60	NA	NA
	(b) After accelerated water resistance test	PART XX		0.30	0.40	0.30	0.40	0.50	NA	NA

9	Screw withdrawal Stregnth (Min.)	PART XIV	N	1500	1900	1500	1800	2000	1500	1700
	Face		N	1250	1650	1250	1500	1700	1250	1450
	Edge (for thickness 12mm and above)									
10	Abrasion Resistance (Min.) in number of revolution	Annexure-B	No.of Revolution	1000	1200	1000	--	--	1000	--
	Type – I			450	--	450	500	525	450	480
	Type – II			250	--	250	--	--	250	--
	Type – III			75	--	75	--	--	75	--
11	Resistance to Steam	Annexure-C	--	Passes	Complies	Passes	Complies	Complies	Passes	Complies
12	Resistance to Crack	Annexure-D	--	Passes	Complies	Passes	Complies	Complies	Passes	Complies
13	Resistance to Cigarette burn	Annexure-E	--	Passes	Complies	Passes	Complies	Complies	Passes	Complies
14	Resistance to Stain	Annexure-F	--	Passes	Complies	Passes	Complies	Complies	Passes	Complies
15	Formaldehyde Content Test(IS-13745:1993)	11.11	mg/100g	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	17.00	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	17.50	17.00	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	18.50