

PHYSICAL & MECHANICAL PROPERTIES OF PLAIN PARTICLE BOARD

IS 3087 : 2005

S.no.	Test Description	Test Ref. IS-2380:1977	Unit	Grade I		Grade II	
				Standard Value	ASIS Value	Standard Value	ASIS Value
1	Dimension Length Width Thickness	8.1 to 8.2	mm mm %	±5 ±5 ±5	Complies Complies Complies	±5 ±5 ±5	Complies Complies Complies
2	Density	PART III	kg/m ³	500-900	640-720	500-900	640-720
3	Variation from mean Density	PART III	%	± 10	± 3	± 10	± 4
4	Water Absorption (Max.)	PART XVI	%				
	(i) After 2 hrs soaking			10	5	40	15
	(ii) After 24 hrs soaking			20	9	80	28
5	Linear expansion (Swelling in water) Due to general absorption after 2 hrs Soaking	PART XVII	%				
	(a) Thickness		%	8.00	4.00	12.0	7.00
	(b) Length		%	0.50	0.30	0.50	0.35
	(c) Width		%	0.50	0.30	0.50	0.35
6	Swelling in thickness due to surface absorption			6	2.50	9	5.00

7	Modulus of Rupture, (min.)	PART IV	N/mm ²				
	Average			15	18	11	14
	Minimum			13	15	10	12
8	Modulus of Elasticity (Min.)	PART IV	N/mm ²				
	(a) Average			2500	2800	2000	2400
	(b) Minimum Individual			2250	2256	1800	1450
9	Internal Bond	PART V	N/mm ²				
	(a) Up to 20mm thickness:			0.45	0.55	0.30	0.40
	(b) Above 20mm thickness:			0.40	0.48	0.30	0.35
10	Screw withdrawal Strength (Min.)	PART XIV	N	1250	1500	1250	1440
	Face						
	Edge (for thickness 12mm & above)			850	1050	700	900
11	Tensile strength perpendicular to surface		N/mm ²				
	(a) Cyclic test	PART XIX	N	0.20	0.35	NA	NA
	(b) After Accelerated water resistance test	PART XX	N	0.15	0.25	NA	NA
12	Formaldehyde Content Test (IS – 13745:1993)	11.11	mg/100g	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	14.40	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	15.60

PHYSICAL & MECHANICAL PROPERTIES OF PRELAMINATED PARTICLE BOARD

IS 12823 : 2015

S.no.	Test Description	Test Ref. IS- 2380:1977	Unit	Grade I, Type I		Grade -I, Type II		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 mm %	±5 ±5 5	Complies Complies Complies	±5 ±5 5	Complies Complies Complies	±5 ±5 5	Complies Complies Complies
2	Density	PART III	kg/m ³	500-900	500-900	640-720	640-720	500-900	640-720
3	Variation from mean Density	PART III	%	± 10	± 10	± 3	± 3	± 10	± 4
4	Water Absorption (Max.)	PART XVI	%						
	(i) After 2 hrs soaking			7	4	7	4	15	8
	(ii) Ater 24 hrs soaking			15	8	15	8	30	16
5	Thickness Swelling in 2 hrs., (max)	PART XVII	%	8	4	8	4	12	6
6	Modulus of Rupture, (min.)	PART IV	N/mm ²						
	Average			15	19	15	19	11	15
	Minimum			13	16	13	16	10	13
7	Modulus of Elasticity (Min.)	PART IV	N/mm ²						
	(a) Average			2500	2800	2500	2800	2500	2800
	(b) Minimum Individual			2200	2400	2200	2400	2200	2400
8	Internal Bond	PART V	N/mm ²						
	(a) Up to 20mm thickness:			0.45	0.55	0.45	0.55	0.30	0.40

	(b) Above 20mm thickness:			0.40	0.48	0.40	0.48	0.30	0.35
9	Internal Bond	PART V	N/mm2						
	(a) After cycle test			0.20	0.25	0.20	0.25	NA	NA
	(b) After accelerated water resistance test			0.15	0.20	0.15	0.20	NA	NA
10	Screw withdrawal Stregnth (Min.)	PART XIV	N						
	Face			1250	1500	1250	1500	1250	1440
	Edge			850	1050	850	1050	750	950
11	Abrasion Resistance (Min.) in number of revolution	Annexure-B	No.of Revolution						
	Type – I			1000	1100	1000	--	1000	--
	Type – II			450	--	450	500	450	475
	Type – III			250	--	250	--	250	--
	Type – IV			75	--	75	--	75	--
12	Resistance to Steam	Annexure-D	--	Passes	Complies	Passes	Complies	Passes	Complies
13	Resistance to Crack	Annexure-E	--	Passes	Complies	Passes	Complies	Passes	Complies
14	Resistance to Cigarette burn	Annexure-F	--	Passes	Complies	Passes	Complies	Passes	Complies
15	Resistance to Stain	Annexure-G	--	Passes	Complies	Passes	Complies	Passes	Complies
16	Formaldehyde Content Test(IS-13745:1993)	11.11	mg/100g	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	15.50	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	16.00	E ₁ : Fc ≤ 8mg/100g E ₂ : 8 Fc ≤ 30mg/100g	17.00