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## Technical Specifications



## MDF

Mechanical Properties	Test Method	Unit	Range of thickness (mm)						
			≥ 2.5 - 4	≥ 4 - 6	≥ 6 - 9	≥ 9 - 12	≥ 15 - 18	25	
<b>Standard Grade Medium Density Fibreboard (E2)</b>									
Tolerance of Dimension	Thickness	IS 2380 (Part II): 1977	mm	± 0.2					
	Length & Width	IS 2380 (Part II): 1977	mm	+ 2mm (width) & + 5mm (length) for nett sized panel					
Squareness	IS 2380 (Part II): 1977	mm/m	< 1.5						
Squareness (diagonal)	IS 2380 (Part II): 1977	mm	< 5						
Average density	IS 2380 (Part III): 1977	kg/m <sup>3</sup>	600 - 900	600-900	600-900	600-900	600-900	600-900	
Board Moisture	IS 2380 (Part III): 1977	%	min 5 - max 8						
Modulus of Rupture	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	28	28	28	28	28	25	
Modulus of elasticity in bending	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	2800	2800	2800	2800	2800	2500	
Internal bond (dry)	IS 2380 (Part V): 1977	N/mm <sup>2</sup> (Avg)	0.8	0.8	0.8	0.8	0.8	0.7	
Screw Retaining Force	Face	IS 2380 (Part XIV): 1977	N (min)	1500	1500	1500	1500	1500	
	Edge	IS 2380 (Part XIV): 1977	N (min)	1250	1250	1250	1250	1250	
Thickness Swelling (2 hour)	IS 2380 (Part XVII): 1977	% (max)	7	7	7	7	7	7	
Formaldehyde Emission	Perforator	BS EN 120	mg/100g E2 > 15 ≤ 30						

## HMR Grade Medium Density Fibreboard (E2)

Modulus of Rupture	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	28	28	25
Modulus of elasticity in bending	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	2800	2800	2500
Internal bond (dry)	IS 2380 (Part V): 1977	N/mm <sup>2</sup> (Avg)	0.9	0.9	0.8
Thickness Swelling (2 hour)	IS 2380 (Part XVII): 1977	% (max)	4	4	4

## High Density Fibreboard (HD HMR)

Average density	IS 2380 (Part III): 1977	kg/m <sup>3</sup>	800 - 900
Thickness Swelling (2 hour)	IS 2380 (Part XVII): 1977	% (max)	4

## Chipboards

Mechanical Properties	Test Method	Unit	Range of thickness (mm)				
			≥ 8 - 9	≥ 9 - 12	≥ 15 - 18	≥ 25-36	
<b>Standard P2 Grade Chipboard</b>							
Tolerance of Dimension	Thickness	IS 2380 (Part II): 1977	mm	± 0.3			
	Length & Width	IS 2380 (Part II): 1977	mm	± 5.0 for nett sized panel			
Squareness	IS 2380 (Part II): 1977	mm/m	< 2.0				
Squareness (diagonal)	IS 2380 (Part II): 1977	mm	< 5				
Average density	IS 2380 (Part III): 1977	kg/m <sup>3</sup>	500-900	500-900	500-900	500-900	
Board Moisture	IS 2380 (Part III): 1977	%	min 5 - max 8				
Modulus of Rupture	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	11	11	11	11	
Modulus of elasticity in bending	IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	2000	2000	2000	2000	
Internal bond (dry)	IS 2380 (Part V): 1977	N/mm <sup>2</sup> (Avg)	0.3	0.3	0.3	0.3	
Screw Retaining Force	Face	IS 2380 (Part XIV): 1977	N (min)	NA	1250	1250	1250
	Edge	IS 2380 (Part XIV): 1977	N (min)	NA	NA	750	750
Thickness Swelling (2 hour)	IS 2380 (Part XVII): 1977	% (max)	12	12	12	12	
Formaldehyde Emission (E2)	Perforator	BS EN 120	mg/100g > 8.0 ≤ 20				
Formaldehyde Emission (E1)	Perforator	BS EN 120	mg/100g Formaldehyde emission being less than 8mg/100gm				

## MFMDF & MFC

Test	Standard	Average Values Attained
<b>Pre-lamination surface</b>		
Surface Abrasion	Annexure C C1 10.10	> 450
Steam Test	Annexure D C1 10.11	No Change on Surface Finish
Heat Test @ 70 Deg c for 24hrs (Cracking Test)	Annexure D C1 10.12	No Change on Surface Finish
Cigarette Burn Test	Annexure F C1 10.13	No Change on Surface Finish
Stain Test	Annexure G C1 10.14	No Change on Surface Finish
Resin		Melamine Formaldehyde Resin

## Carb TSCA Title VI Grade / E0 Grade (MDF & Chipboard)

Mechanical Properties	Test Method	Unit	Range of thickness (mm)				
			≥ 6 - 9	≥ 9 - 12	≥ 15 - 18	25	
<b>Carb TSCA Title VI Grade Medium Density Fibreboard / E0 Grade</b>							
Tolerance of Dimension	Thickness	IS 2380 (Part II): 1977	mm	± 0.2			
	Length & Width	IS 2380 (Part II): 1977	mm	+ 2mm (width) & + 5mm (length) for nett sized panel			
Squareness		IS 2380 (Part II): 1977	mm/m	< 1.5			
Squareness (diagonal)		IS 2380 (Part II): 1977	mm	< 5			
Average density		IS 2380 (Part III): 1977	kg/m <sup>3</sup>	600-900	600-900	600-900	600-900
Board Moisture		IS 2380 (Part III): 1977	%	min 5 - max 8			
Modulus of Rupture		IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	28	28	28	25
Modulus of elasticity in bending		IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (Avg)	2800	2800	2800	2500
Internal bond (dry)		IS 2380 (Part V): 1977	N/mm <sup>2</sup> (Avg)	0.8	0.8	0.8	0.7
Screw Retaining Force	Face	IS 2380 (Part XIV): 1977	N (min)	1500	1500	1500	1500
	Edge	IS 2380 (Part XIV): 1977		1250	1250	1250	1250
Thickness Swelling (2 hour)		IS 2380 (Part XVII): 1977	% (max)	7	7	7	7
Formaldehyde Emission	Small Chamber	ASTM D6007-14	ppm	Formaldehyde emission under 0.11 ppm			

### Carb TSCA Title VI Grade Chipboard / E0 Grade

Tolerance of Dimension	Thickness	IS 2380 (Part II): 1977	mm	± 0.3		
	Length & Width	IS 2380 (Part II): 1977	mm	± 5.0 for nett sized panel		
Squareness		IS 2380 (Part II): 1977	mm/m	< 2.0		
Squareness (diagonal)		IS 2380 (Part II): 1977	mm	< 5		
Average density		IS 2380 (Part III): 1977	kg/m <sup>3</sup>		500-900	500-900
Board Moisture		IS 2380 (Part III): 1977	%	min 5 - max 8		
Modulus of Rupture		IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (min)		11	11
Modulus of elasticity in bending		IS 2380 (Part IV): 1977	N/mm <sup>2</sup> (min)		2000	2000
Internal bond (dry)		IS 2380 (Part V): 1977	N/mm <sup>2</sup> (min)		0.3	0.3
Screw Retaining Force	Face	IS 2380 (Part XIV): 1977	N (min)		1250	1250
	Edge	IS 2380 (Part XIV): 1977			750	750
Thickness Swelling (2 hour)		IS 2380 (Part XVII): 1977	% (max)		12	12
Formaldehyde Emission (E2)	Perforator	JIS A 1460	mg/L	Formaldehyde emission under 0.604 mg/L		

## HPL

Mechanical Properties	Test Method	Unit	Range of thickness (mm)	
				≥ 0.8 - 1.0
<b>Mechanical and Surface Properties of HPL</b>				
Tolerance of Dimension	Thickness	IS 2046 (5.3):1995	mm	± 10%
	Length & Width	IS 2046 (5.3):1995	mm	± 5.0 for nett sized panel
Resistance to immersion in Boiling Water	Thickness	IS 2046 (5.3.1):1995	mm	3.75
	Mass increasing	IS 2046 (5.3.1):1995	mm	3.65
Resistance to Scratching		IS 2046 (4.4.3):1995	N	3.0N
Resistance to impact test		IS 2046 (4.4.2):1995	N	65.0N
Resistance to color change			Visual	Blue Standard
Resistance to Dry Heat	Zenon Light		Visual	Should pass test
Dimension Stability at Clevated temp	Logitudinal		%	0.5
	Transverse		%	0.58
Surface Abrasion		Annexure C C1 10.10		500
Steam Test		Annexure D C1 10.11		No change on surface Finish
Heat Test @ 70 Deg c for 24hrs (Cracking Test)		Annexure E C1 10.12		No change on surface Finish
Cigarette Burn Test		Annexure F C1 10.13		No change on surface Finish
Stain Test		Annexure G C1 10.14		No change on surface Finish
Resin			Phenol and Melamine formaldehyde Resin	



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