FSC VIETNAM JOINT STOCK COMPANY

General Director	Production Director
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KIM TIN MDF PRODUCT SPECIFICATION

Version : 03 | **4/12/2019**

DIMENSION TOLERANCE (Dung sai kích thước)

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30
All Products	Thickness Tolerance (Độ dày cho phép)	BSEN 324	mm	± 0.2					
	Length & Width Tolerance (Dài ,Rộng cho phép)	BSEN 324	mm	± 2 (Trim Panel)					
				± 2 (Free Trim Panel)					
	Squareness (Độ vuông góc)	BSEN 324	mm/m	± 2					

FORMALDEHYDE EMISSION LEVELS (NỒNG ĐỘ PHÁT THẢI FORMALDEHYDE)

TEST METHOD	UNITS	STANDARD		
ASTM D 6007-14 (Small Chamber)	(ppm)	CARB Phase 2: EPA TSCA Title VI	Thin Panel (≤8mm): ≤0.13	Thick Panel (>8mm): ≤0.11
JIS A 1460 (Desiccators)	(mg/l)	F**** ≤0.3	F*** ≤0.5	F** ≤1.5
BSEN 120/ISO 12460-5 (Perforator)	(mg/100gS)	E0 : ≤3.0	3.0≤E1≤9.0	9.0≤E2≤30

SURFACE QUALITY STANDARD (CHẤT LƯỢNG BỀ MẶT)

Latex : Not over 3 dots and diameter ≤3mm per m2 (Không quá 3 đóm/lỗ cao su và đường kính ≤3mm trên m2)

PHYSICAL & MECHANICAL PROPERTIES OF PRODUCT

(TIÊU CHUẨN CƠ LÝ TÍNH VÁN THÀNH PHẨM)

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30
MDF Standar (MBR) & Latex Free (MLF)	Average Density (Tỷ Trọng Trung Bình)	BSEN 323	Kg/m3	800 - 820	780 - 800	750 - 780	720 - 750	700 - 740	660 - 700
	Board Moisture Content (Độ Ẩm)	BSEN 322	%	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	BSEN 319	N/mm2	0.65	0.65	0.65	0.60	0.55	0.55
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	BSEN 310	N/mm2	23	23	23	22	20	18
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	BSEN 310	N/mm2	N/A	2700	2700	2500	2200	2100
	Screw Holding (Surface) (Lực Bám Vít Mặt)	BSEN 320	N	N/A	N/A	N/A	N/A	1050	1000
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	BSEN 320	N	N/A	N/A	N/A	N/A	850	850
	Thickness Swelling (24h) (Độ Trương Nở)	BSEN 317	% max	≤35	≤30	≤17	≤15	≤12	≤10
	Surface absorbtion (Toluence test)(Mức hấp thụ bề mặt)	in-House	mm (min)	Premium :≥120 Utility :≥80		Premium :≥150 Utility :≥80			

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30
MDF Moisture Resistance (HMR)	**Average Density** (Tỷ Trọng Trung Bình)	BSEN 323	Kg/m3	800 - 820	780 - 800	750 - 780	720 - 750	700 - 740	660 - 700
	Board Moisture Content (Độ Ẩm)	BSEN 322	%	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	BSEN 319	N/mm2	0.7	0.7	0.8	0.8	0.75	0.75
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	BSEN 310	N/mm2	27	27	27	26	24	22
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	BSEN 310	N/mm2	2700	2700	2700	2500	2400	2300
	Screw Holding (Surface) (Lực Bám Vít Mặt)	BSEN 320	N	N/A	N/A	N/A	N/A	1050	1000
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	BSEN 320	N	N/A	N/A	N/A	N/A	850	850
	Thickness Swelling (24h) (Độ Trương Nở)	BSEN 317	% max	≤30	≤18	≤12	≤10	≤8	≤7
	Surface absorbtion (Toluence test)(Mức hấp thụ bề mặt)	in-House	mm (min)	Premium :≥120 Utility :≥80		Premium :≥150 Utility :≥84			

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30
MDF MBR-S	**Average Density** (Tỷ Trọng Trung Bình)	BSEN 323	Kg/m3	N/A	N/A	680-700	680-700	670-690	660-670
	Board Moisture Content (Độ Ẩm)	BSEN 322	%	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	BSEN 319	N/mm2	N/A	N/A	0.65	0.60	0.55	0.45
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	BSEN 310	N/mm2	N/A	N/A	23	22	20	18
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	BSEN 310	N/mm2	N/A	N/A	2700	2500	2200	2000
	Screw Holding (Surface) (Lực Bám Vít Mặt)	BSEN 320	N	N/A	N/A	N/A	N/A	N/A	N/A
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	BSEN 320	N	N/A	N/A	N/A	N/A	N/A	N/A
	Thickness Swelling (24h) (Độ Trương Nở)	BSEN 317	% max	N/A	N/A	≤20	≤18	≤14	≤13

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30
MDF LBR	**Average Density** (Tỷ Trọng Trung Bình)	BSEN 323	Kg/m3	N/A	N/A	680-700	680-700	670-690	N/A
	Board Moisture Content (Độ Ẩm)	BSEN 322	%	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	BSEN 319	N/mm2	N/A	N/A	0.6	0.6	0.55	N/A
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	BSEN 310	N/mm2	N/A	N/A	22	20	18	N/A
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	BSEN 310	N/mm2	N/A	N/A	2200	2200	2000	N/A
	Screw Holding (Surface) (Lực Bám Vít Mặt)	BSEN 320	N	N/A	N/A	N/A	N/A	N/A	N/A
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	BSEN 320	N	N/A	N/A	N/A	N/A	N/A	N/A
	Thickness Swelling (24h) (Độ Trương Nở)	BSEN 317	% max	N/A	N/A	≤20	≤18	≤14	N/A

PRODUCT CATEGORY	TESTING TYPE	TEST METHOD	UNITS	RANGE OF THICKNESS PANEL					
				2.5 - 4.0	> 4.0 - 6.0	> 6.0 - 9.0	> 9.0 - 12.0	> 12.0 - 19.0	>19.0 - 30

CÔNG TY CỔ PHẦN FSC VIỆT NAM

MDF LMR	**Average Density** (Tỷ Trọng Trung Bình)	**BSEN 323**	**Kg/m3**	N/A	N/A	680-700	680-700	670-690	N/A
	Board Moisture Content (Độ Ẩm)	**BSEN 322**	**%**	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	**BSEN 319**	**N/mm2**	N/A	N/A	0.6	0.6	0.55	N/A
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	**BSEN 310**	**N/mm2**	N/A	N/A	22	20	20	N/A
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	**BSEN 310**	**N/mm2**	N/A	N/A	2200	2200	2000	N/A
	Screw Holding (Surface) (Lực Bám Vít Mặt)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	N/A	N/A
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	N/A	N/A
	Thickness Swelling (24h) (Độ Trương Nở)	**BSEN 317**	**% max**	N/A	N/A	≤16	≤14	≤10	N/A
PRODUCT CATEGORY	**TESTING TYPE**	**TEST METHOD**	**UNITS**	**RANGE OF THICKNESS PANEL**					
				2.5 - 4.0	**> 4.0 - 6.0**	**9**	**12**	**17**	**>19.0 - 30**
HDF HMR	**Average Density** (Tỷ Trọng Trung Bình)	**BSEN 323**	**Kg/m3**	N/A	N/A	≥890	≥840	≥800	N/A
	Board Moisture Content (Độ Ẩm)	**BSEN 322**	**%**	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	**BSEN 319**	**N/mm2**	N/A	N/A	≥1.4	≥1.2	≥0.75	N/A
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	**BSEN 310**	**N/mm2**	N/A	N/A	≥45	≥35	≥28	N/A
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	**BSEN 310**	**N/mm2**	N/A	N/A	≥3300	≥2900	≥2500	N/A
	Screw Holding (Surface) (Lực Bám Vít Mặt)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	850	N/A
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	1050	N/A
	Thickness Swelling (24h) (Độ Trương Nở)	**BSEN 317**	**% max**	N/A	N/A	≤10	≤9	≤8	N/A
	Surface absorbtion (Toluence test)(Mức hấp thụ bề mặt)	**in-House**	**mm (min)**	Premium :≥120 Utility :≥80		Premium :≥150 Utility :≥84			
PRODUCT CATEGORY	**TESTING TYPE**	**TEST METHOD**	**UNITS**	**RANGE OF THICKNESS PANEL**					
				2.5 - 4.0	**> 4.0 - 6.0**	**9**	**12**	**17**	**>19.0 - 30**
HDF HBR	**Average Density** (Tỷ Trọng Trung Bình)	**BSEN 323**	**Kg/m3**	N/A	N/A	≥890	≥840	≥800	N/A
	Board Moisture Content (Độ Ẩm)	**BSEN 322**	**%**	5.0 - 8.0					
	Internal Bond (IB-dry) Average (Lực Liên Kết Trong)	**BSEN 319**	**N/mm2**	N/A	N/A	≥1.4	≥1.2	≥0.75	N/A
	Modulus of Rupture (MOR) (Độ Bền Uốn Tĩnh)	**BSEN 310**	**N/mm2**	N/A	N/A	≥45	≥35	≥28	N/A
	Modulus of Elasticity (MOE) (Modul Đàn Hồi)	**BSEN 310**	**N/mm2**	N/A	N/A	≥3300	≥2900	≥2500	N/A
	Screw Holding (Surface) (Lực Bám Vít Mặt)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	850	N/A
	Screw Holding (Edge) (Lực Bám Vít Cạnh)	**BSEN 320**	**N**	N/A	N/A	N/A	N/A	1050	N/A
	Thickness Swelling (24h) (Độ Trương Nở)	**BSEN 317**	**% max**	N/A	N/A	≤16	≤14	≤10	N/A
	Surface absorbtion (Toluence test)(Mức hấp thụ bề mặt)	**in-House**	**mm (min)**	Premium :≥120 Utility :≥80		Premium :≥150 Utility :≥80			