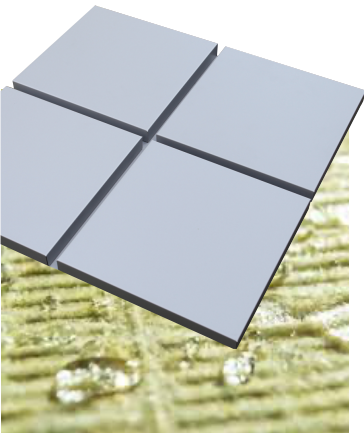


etalbond® FR COMPOSITE MATERIALS

etalbond® FR is flame retardant while maintaining all the important characteristics of etalbond® PE such as resistance to extreme weather conditions, flatness and simple forming techniques.

etalbond® FR is fully recyclable. Both the mineral core and the aluminum sheets get recycled in the special facilities of our factory and can be used again in the production of new material.



	standards	units		
Panel Nominal Thickness		In	0.157	0.236
Min Bond Strength	ASTM D1781	lb/in	22.9	22.9
1. PANEL DIMENSIONS				
1.1 Aluminium layer thickness		in	0.01968	
1.2 Etalbond nominal Weight		lb/ft²	1.5	2.15
1.3 Max. Standard width		in	49.212, 59.055	
1.4 Standard length		in	125.984	
2. PANEL TOLERANCES				
2.1 Panel thickness		in	0.0079	
2.2 Panel width		in	-0.00 / +0.157	
2.3 Panel length		in	≤ 157.48 in: -0.0 / +0.157 157.52 -236.22 in: -0.0 / +0.236 236.26- 314.96 in: -0.0 / +0.394	
2.4 Diagonal difference		in	0.118	
3. TECHNICAL PROPERTIES				
3.1 Moment of Inertia		in³/in	0.308	0.758
3.2 Section modulus		in³/in	2.39 x10 ⁻³	3.92 x10 ⁻³
3.3 Tensile strength (Rm)	ASTM E8 /E8M-09	MPa lb/in²	151	
3.4 Yield strength (Rp0.2)	ASTM E8/E8M-09	MPa	130	
3.5 Elongation (A ₅₀)	ASTM E8/E8M-09	%	3.9%	
3.6 Linear Thermal Expansion		in/in/°F	1.31 x 10 ⁻⁵	
4. SURFACE PREPARATION and PAINT CHARACTERISTICS				
4.1 Surface Preparation		With chemical preparation (Degreasing, Passivation)		
4.2 Lacquering		Coil Coating		
4.3 Visible Surface		PVDF-3 / FEVE-3: 38 µm (Depending on Colour shade), Tolerances according to EN 1396, Comply with AAMA 2605. PVDF-2 / FEVE-2: Target 30 µm (Depending on Colour shade), Tolerances according to EN 1396, Comply with AAMA 2605.		
4.4 Back Surface		Protective Primer		
5. TEMPERATURE BEHAVIOUR				
5.1 Excellent behaviour in temperatures		From -20°C to +80°C		
6. SURFACE QUALITY				
6.1 Dents, marks, hits, grooves, stains etc.		Acceptable when not visible at a distance ≥2 m at an angle of 90°		
7. FIRE CLASSIFICATION				
Flame Spread Index	ASTM E84	5	5	
Smoke Developed Index		15	10	
Flash Ignition Temperature		878° F	-	
Self Ignition Temperature	ASTM D1929	878 °F	-	
Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components (Intermediate Scale Multi-story test)	NFPA 285	4 Hours rated*	NA	
(*) The test is not relevant for metallic cladding materials				

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Johns Manville CladStone™ Water & Fire Block insulation is manufactured from inorganic fibers derived from volcanic rock. Advanced manufacturing technology ensures consistent product quality, with high-fiber density and low shot content for excellent performance. Noncombustible, with water-repellent properties, it is ideal for exterior cavity wall and rainscreen applications.

CladStone™ Water & Fire Block SPECIFICATION COMPLIANCE

Product	ASTM Standards	Thermal Resistance ASTM C518	Flame Spread ASTM E84	Smoke Development ASTM E84	Critical Radiant Flux ASTM E970	Water Vapor Permeance Facing ASTM E96	Water Vapor Sorption ASTM C1104	Odor Emission ASTM C1304	Corrosiveness ASTM C665	Fungi Resistance ASTM C1338	Combustion Characteristics ASTM E136	ASTM C612	ASTM C356	ASTM C1335
TempControl		R-15, R-23, R-30					5% or less by weight							
Sound & Fire Block	ASTM C665, Type 1	N/A	0	0	>0.12 W/cm² (0.11 Btu/ft²s)	N/A						N/A		
SAFB		R-value at 75°F, 3.7 per inch of thickness					<1% by weight; <0.2% by volume at 120°F (49°C), 95% RH	Pass	Pass	Pass	Pass		N/A	N/A
Safing	Unfaced: ASTM C665, Type 1 Faced: ASTM C665 Type III Class A, Category 1	N/A	Unfaced 0; Faced ≤25	Unfaced 0; Faced ≤5	N/A	0.02 perms, maximum						Type 1-4		
Curtainwall		R-value R4-R4.2 per inch												
CladStone Water & Fire Block	ASTM C665, Type 1	R-4.3 per inch	0	0		Unfaced, 50 perms as tested	Absorbs 0.03% by volume					Type IA, IB, II, III, IVA	Linear shrinkage <2% 1200° F (650° C)	Shot content less than 25%

