

TECHNICAL DATA SHEET

Alfred Flat Sheet - 1mm (0.040in)



Fire Resistant & Non-Combustible Cladding

COMPOSITION		
PROPERTY	0.040" FLAT SHEET	UNITS
Aluminum Plate Alloy	3003-H14	

STANDARD SIZES		
PROPERTY	0.040" FLAT SHEET	UNITS
Standard Thickness (nominal)	0.040	in
	1.0	mm
Standard Widths	48.0	in
	1,220	mm
Custom Width Range	31.5 - 62.0	in
	800 - 1600	mm
Standard Length (max)	120	in
	3050	mm

PRODUCTION TOLERANCES		
PROPERTY	0.040" FLAT SHEET	UNITS
Width	+ / - 0.080	in
	2.0	mm
Length	+ / - 0.157	in
	4.0	mm
Thickness	+ / - 0.004	in
	0.10	mm

ASTM B209 COMPLIANCE : 3003-H14		
CHEMICAL COMPOSITION		
ELEMENT	STANDARD	RESULTS
Aluminum	Remainder	97.75%
Copper	0.05 - 0.2%	0.17%
Iron	0.0 - 0.7%	0.56%
Manganese	1.0 - 1.5%	1.19%
Silicon	0.0 - 0.6%	0.18%
Zinc	0.0 - 0.1%	0.00%
Other Elements	0.0 - 0.15%	0.15%
MECHANICAL PROPERTY LIMITS		
PROPERTY	STANDARD	RESULTS
Tensile (ksi)	20 min - 26 max	21.4
Yield Strength (ksi)	17 minimum	18.5
Elongation	2% minimum	25%

FINISH WARRANTIES		
<i>See warranty tables and sample warranties for conditions and exclusions</i>		
PROPERTY	STANDARD	RESULTS
PVDF Coil Coated Finish	Alfred Plate	20 Years
PVDF Coil Coated Finish (Perforated Panel)	Alfred Plate	10 Years

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TECHNICAL PROPERTIES			
PROPERTY		0.040" FLAT SHEET	UNITS
Panel Weight		0.56	lb/ft ²
		2.71	kg/m ²
Specific Gravity (Product)		2.72	g/cc
Coefficient of Expansion		12.9 x 10 ⁻⁶	in/in/°F (@ 68-212°F)
Modulus of Elasticity	ASTM E8	10.0 x 10 ⁶	Psi
		69.0 x 10 ³	Mpa
Moment of Inertia		5.33 x 10 ⁻⁶	in ⁴ /in
		8.33 x 10 ⁻⁵	cm ⁴ /cm
Section Modulus		2.67 x 10 ⁻⁴	in ³ /in
		1.67 x 10 ⁻³	cm ³ /cm
Tensile Strength	ASTM E8	20.3 x 10 ³	Psi
		140.0	Mpa
Yield Strength	ASTM E8	17.4 x 10 ³	Psi
		120.0	Mpa
Elongation	ASTM E8	25.0	%
Thermal Conductivity	C518	193.0	W/(m•K)

ARCHITECTURAL COATING PROPERTIES			
<i>70% Kynar 500 / Hylar 5000 PVDF Resin Coatings</i>			
<i>AAMA 2605-13 Standard Compliance</i>			
PROPERTY	STANDARD	REQUIREMENT	RESULTS
Dry Film Thickness	ASTM D7091	≥ 23 microns	Pass - 32 microns
Color Uniformity	ASTM D2244	Max. 2 Delta E	Pass - < 2 units
Color Retention - Fade	ASTM D2244	Delta E ≤ 5 units	Pass - < 5 units
Chalk Rating	ASTM D4214	≤ 8 units	Pass - < 8 units
Specular Gloss	ASTM D523	± 5 units	Pass
Dry Film Hardness	ASTM D3363	F - 2H	Pass - 3H
Dry Adhesion	ASTM D3359	No coating removal	Pass - no removal
Abrasion Resistance	ASTM D968	Abrasion Coefficient Value ≥ 40	Pass - 51
Reverse Impact	ASTM D2794	No coating removal	Pass - no removal
Muriatic Acid Resistance <i>(10% HCl, 15 mins)</i>	ASTM D1308	No blistering or visual change	Pass - no blistering or visual changes
Nitric Acid Resistance <i>(HNO₃, 30 mins)</i>	ASTM D1308	≤ 5 Delta E	Pass - 0.2
Alkali Mortar Resistance <i>(10%, 25% NaOH, 60 mins)</i>	ASTM D1308	No removal. No loss of adhesion or visual change	Pass - no adhesion loss
Flexibility	ASTM D4145	2T - no pick off	Pass - no pick off
	ASTM D714	4000 hour exposure	Pass - No #8 blisters
Humidity Resistance	ASTM D2247	Less than "few" blisters Size No. 8	Pass - No #8 blisters
	ASTM B117	2000 hour exposure	Pass - 10 rating
Cyclic Corrosion		Min. rating of 7 scribe or cut edge	Pass - 10 rating
	AAMA 2605-13	Min. blister rating of 8	

FIRE PERFORMANCE FOR NON-COMBUSTIBILITY		
TEST	STANDARD	RESULTS
ASTM E136	Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C Temperature rise < 30°C No sustained flames after 30 sec of test	Pass - meets standard
CAN / ULC-S114-2018*	Standard Method of Test for Determining Non-Combustibility in Building Materials Max loss of mass ≤ 20%, mean of max temperature rise ≤ 36°C	Pass - meets the specified performance requirements
CAN / ULC-S135*	Standard Test Method for the Determination of Combustibility Parameters of Building Materials Total heat release ≤ 3 MJ/m ² , total smoke extinction area ≤ 1.0 m ²	Pass - no deviations to the ULC S135 standard

* Test Conducted on 3mm Plate