

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		
See warranty tables and sample warranties for conditions and exclusions		
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
		2.12 x 10 ⁻⁶	cm ⁴ /m
Section Modulus		2.67 x 10 ⁻⁴	in ³ /in
		4.23 x 10 ⁻⁵	cm ³ /m
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			
70% Kynar 500 / Hylar 5000 PVDF Resin Coatings AAMA 2605-13 Standard Compliance			
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 (10% HCl, 15 mins)	ASTM D1308	No blistering or visual change	Pass - no blistering or visual changes
Nitric Acid Resistance (HNO ₃ , 30 mins)	ASTM D1308	≤ 5 Delta E	Pass - 0.2
Alkali Mortar Resistance (10%, 25% NaOH, 60 mins)	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 pick off
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	AAMA 2605-13	Min. rating of 7 scribe or cut edge	Pass - 10 rating
		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