

AAMA Standards Comparison - Organic Coatings on Aluminum Extrusions and Panels

Attribute	AAMA 2603-02 (Basic Pigmented Coatings)	AAMA 2604-10 (High Performance Coatings)	AAMA 2605-11 (Superior Coatings)
Minimum Initial Dry Film Thickness	≥ 20 microns (0.8 mil) for 80% of measurements, ≥ 17 microns (0.68 mil) or 85% of film thickness specified	≥ 30 microns (1.2 mil) for 80% of measurements, ≥ 25 microns (0.68 mil) or 85% of film thickness specified. Minimum primer ≥ 7.75 microns (0.4 mil)	≥ 30 microns (1.2 mil) for 80% of measurements, ≥ 25 microns (1.0 mil) or 85% of film thickness specified.
Specular Gloss (per ASTM D 523)	Within ± 5 units of manufacturer's recommended values		
Outdoor Weathering Exposure Time	1 year, South Florida	5 years, South Florida	10 years, South Florida
Chalking Resistance (After Weather Exposure) (ASTM D 4214, Met. A)	1 year: Chalk ≤ 8 rating	5 years: Chalk ≤ 8 rating	10 years: Chalk ≤ 8 rating for colors, ≤ 6 rating for white
Color Retention (After Weather Exposure)	Slight change	5 year fade: delta E ≤ 5	10 year fade: delta E ≤ 5
Gloss Retention (After Weathering)	No Specification	5 years ≥ 30% retention	10 years ≥ 50% retention
Erosion Resistance (After Weathering)	No Specification	5 years ≤ 10% loss	10 years ≤ 10% loss
Impact Resistance	No film removal at initial test (not subject to weathering exposure)		
Humidity Resistance (per ASTM D 2247 or D 4585)-no visually apparent change and "few" blisters < size 8 per ASTM D 968)	1500 hr at 100°F & 100% humidity	3000 hr at 100°F & 100% humidity	4000 hr at 100°F & 100% humidity
Chrome Pretreatment	No Specification	If used, ≥ 30 mg/ft ² by weight	Optional ≥ 40 mg/ft ² by weight
Film Erosion	No Specification	≤ 10%	≤ 10%
Abrasion Resistance (per ASTM D 968)	No Specification	Abrasion Coefficient ≥ 20	Abrasion Coefficient ≥ 40
Salt Spray Corrosion Resistance	1500 hr ≤ 8 blisters, ≥ 7 scribe	3000 hr ≤ 8 blisters, ≥ 7 scribe	4000 hr ≤ 8 blisters, ≥ 7 scribe
Chemical Resistance	No loss of adhesion, blistering or visually apparent change after exposure to muriatic acid, mortar and detergent	No loss of adhesion, blistering or visually apparent change after exposure to muriatic acid, mortar, detergent, window cleaner and nitric acid	
Sealant Compatibility	Sealant must meet AAMA 800 and have no effect on coating		
Boiling Water Film Adhesion	No Specification	No loss of adhesion after 20 minutes in 212°F water	
Color Uniformity	No variation outside of limits established by color range sample approval.		
Dry Film Hardness	No rupture when tested per ASTM D 3363.		
Dry & Wet Film Adhesion	Meet requirements of ASTM D 3359.		
T-Bend Test for Coating Flexibility	No Specification		Minimum of 2-T flexibility with no pick-off at the area of the bend.

Reference Standards:	Title
AAMA 2603-02	Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
AAMA 2604-10	Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
AAMA 2605-11	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
AAMA 800-10	Voluntary Specifications and Test Methods for Sealants
ASTM B117-09	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM B244-09	Standard Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments
ASTM C207-05	Standard Specification for Hydrated Lime for Masonry Purposes
ASTM D523-08	Standard Test Method for Specular Gloss
ASTM D714-02(09)	Standard Test Method for Evaluating Degree of Blistering of Paints
ASTM D968-05e1	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1400-94	Standard Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base
ASTM D1654-08	Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
ASTM D1730-93	Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
ASTM D2244-09b	Standard Practice for Calculation of Color Tolerances and Differences from Instrumentally Measured Color Coordinates
ASTM D2247-10	Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
ASTM D2248-01a(07)	Standard Practice for Detergent Resistance of Organic Finishes
ASTM D3359-01a(07)	Standard Test Methods for Measuring Adhesion by Tape Test
ASTM D3363-05	Standard Test Method for Film Hardness by Pencil Test
ASTM D4145-10	Standard Test Method for Coating Flexibility of Prepainted Sheet
ASTM D4214-07	Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D4585-07	Standard Practice for Testing the Water Resistance of Coatings Using Controlled Condensation
ASTM D5793-95(10)	Standard Practice for Determination of Chromium Treatment Weight on Metal Substrates by X-Ray Fluorescence
ASTM D7091-05	Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals