



**Digger
Specialties
Inc.**

**POWDER
TECHNICAL**



EAGLE FENCE
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Certified PCI 4000 A2 (AAMA 2604) & A3 (AAMA 2605)

Architectural Grade Powder Coating

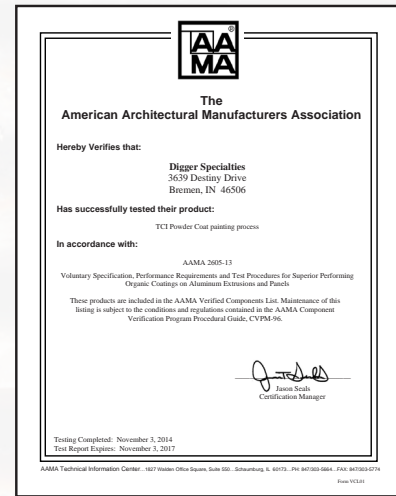
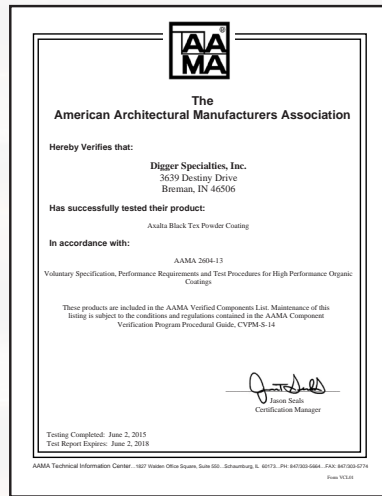
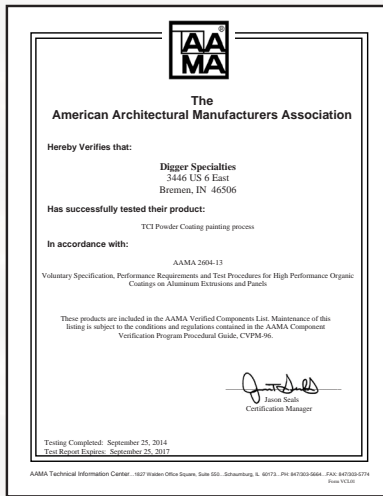
Certified PCI 4000 A2 (AAMA 2604) compliant.

**Regis[®], CourtYard[®],
Westbury[®], ScreenRail,
Designer Fencing, Magena Star[®],
DSI Columns[®] and Aluminum CHR**



Certified PCI 4000 A3 (AAMA 2605) compliant.

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**American Architectural Manufacturers Association (AAMA)
Performance Requirements For Pigmented Organic Coatings Defined.**

AAMA Tests	TYPICAL Polyester TGIC	AAMA 2603	AAMA 2604	AAMA 2605
• Dry Film Hardness	No test	No coating rupture	No coating rupture	No coating rupture
• Dry Adhesion	No test	10% coating removal	No coating removal	No coating removal
• Wet Adhesion	No test	10% coating removal	No coating removal	No coating removal
• Boiling Water Adhesion	No test	No test	No coating removal	No coating removal
• Impact Resistance	No test	No coating removal	No coating removal	No coating removal
• Abrasion Resistance	No test	No test	ACV 20 minimum *	ACV 40 minimum *
• Muriatic Acid Resistance	No test	No visual change	No visual change	No visual change
• Mortar Resistance	No test	No visual change	No visual change	No visual change
• Nitric Acid	No test	No test	5ΔE max. change	5ΔE max. change
• Detergent Resistance	No test	No visual change	No visual change	No visual change
• Window Cleaner Resistance	No test	No test	No visual change	No visual change
• Humidity Resistance	No test	1500 hours	3000 hours	4000 hours
• Salt Spray Resistance	No test	1500 hours **	3000 hours **	No Test
• Cyclic Corrosion Testing	No test	No test	No test	2000 hours **
• Color Retention (S. FL)	No test	1 year minimum fade	5 years max. 5ΔE change	10 years max. 5ΔE change
• Gloss Retention	No test	No test	5 year 30% retention	10 year 50% retention

* Abrasion Coefficient Value

** 0" to 1/16" creepage from scribe is passing

**Typical Polyester
TGIC Powder
(COMPETITORS)**



Starting L: 3.46 Ending L: 32.85
 a: .26 a: .48
 b: -1.6 b: 2.25
 Gloss: 57 Gloss: .85
 Comp. #: 9.5 Comp. #: 33.00

Gloss Ret.: Δ E Change:
 1 year: 48% P 1 year: 16.9 F
 2 years: 9% F 2 years: 28.0 F
 3 years: 4% F 3 years: 29.0 F
 4 years: 2% F 4 years: 26.6 F
 5 years: 1% F 5 years: 23.5 F

F= Failing AAMA 2603.

**AAMA 2603
Powder**



Starting L: 7.88 Ending L: 21.63
 a: -.91 a: -.20
 b: .58 b: -1.52
 Gloss: 29.8 Gloss: 7.4
 Comp. #: 7.8 Comp. #: 21.6

Gloss Ret.: Δ E Change:
 1 year: 78% P/F 1 year: 5.2 P/F
 2 years: 61% P/F 2 years: 7.7 P/F
 3 years: 57% P/F 3 years: 8.3 P/F
 4 years: 40% P/F 4 years: 12.4 P/F
 5 years: 25% P/F 5 years: 13.8 P/F

P= Passing AAMA 2603 • F= Failing AAMA 2604.

**DSI Satin Black
AAMA 2604 Powder**



Starting L: 11.85 Ending L: 16.85
 a: -.05 a: -.95
 b: -1.18 b: -1.75
 Gloss: 22.7 Gloss: 16.3
 Comp. #: 11.8 Comp. #: 16.7

Gloss Ret.: Δ E Change:
 1 year: 96% P 1 year: .5 P
 2 years: 88% P 2 years: 3.3 P
 3 years: 79% P 3 years: 3.5 P
 4 years: 77% P 4 years: 4.5 P
 5 years: 72% P 5 years: 4.9 P

P= Passing AAMA 2604.

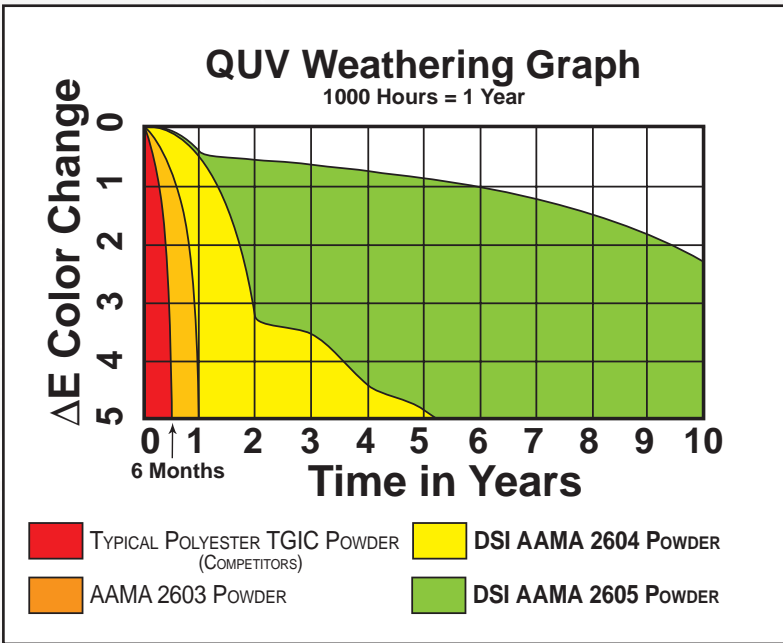
**DSI Satin Black
AAMA 2605 Powder**



Starting L: 12.66 Ending L: 11.65
 a: -.73 a: -.15
 b: -.67 b: -.25
 Gloss: 17.0 Gloss: 16.5
 Comp. #: 10.6 Comp. #: 11.6

Gloss Ret.: Δ E Change:
 1 year: 100% P 1 year: .5 P
 2 years: 99% P 2 years: .9 P
 3 years: 98% P 3 years: .7 P
 4 years: 98% P 4 years: .9 P
 5 years: 97% P 5 years: 1.0 P

P= Passing AAMA 2604 and AAMA 2605.



QUV Accelerated Weathering Tester

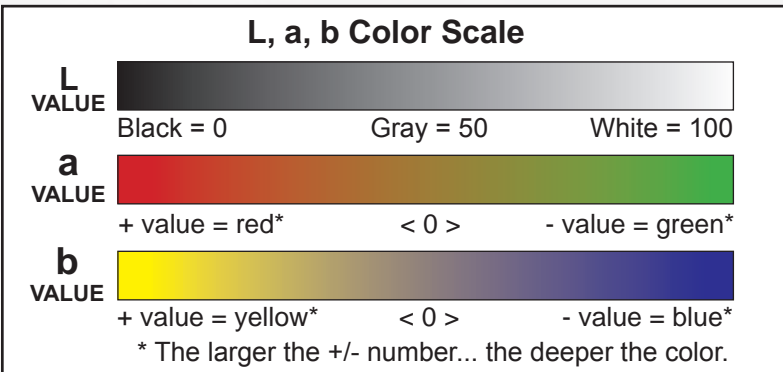
Fluorescent lamps, moisture, and heat provide weathering simulation at an estimated rate of **1000 hours = 1 year** per QUV documentation.



Gloss Tester
 Measures the gloss level of coating.



Color Spectrometer
 Measures color value per L.a.b. scale shown.



POWDER COATING



1

The raw premium-grade aluminum is inspected to be free of blemishes and is not exposed to the outdoor elements.



2

The product enters a heated acidic cleaning stage to remove extrusion debris and fabrication oils.



3-6

CLEAN: City water rinse
CLEANER: Recycling reverse osmosis water rinse
CLEANTEST: Pure reverse osmosis water rinse
SEALER: Dried-in-place aluminum sealer



7-8

A 200 MPH air blast removes water drops from the pre-treated aluminum. A convection oven completes the dry-off process.



9

Powder is applied with 18 automated and 2 manual spray guns. Compressed process air is dried to -35°F Dew Point for superior adhesion.



10

The powder coating is then bonded and adhered to the aluminum sub-straight in a 400 degree cure stage.



The powder coating application booth produces zero VOC emissions. Powder is stored and applied in a climate controlled positive pressure environmental room. Ten pre-treat system titration checks twice per shift maintain system parameters and ten QC checks are completed every hour on product coming off the powder-coating line. Parts are not touched by human hands during the pre-treat, dry-off, application and cure process to maintain ultimate cleanliness of powder-coated parts.



DSI is a PCI 4000 certified and verified AAMA 2604 and AAMA 2605 compliant powder coating applicator. The powder coating process is accredited by the American Architectural Manufacturing Association and the Powder Coating Institute. Our powder coating is custom blended from a Super Durable Polyester TGIC (Triglycidyl Isocyanurate) resin-base, using premium pigmentation to meet AAMA 2604 specifications. Our AAMA 2605 is a fluorocarbon polymer resin system.





Automated Chemical Test
 Pretreatment chemicals are monitored and added automatically but titration is checked manually twice per shift.



Cure Oven Temperature Test
 Cure oven air temperatures and part temperatures, during the cure process, are monitored frequently to ensure proper curing of powder coating.



System Titration Test
 Ph levels are checked twice per shift as part of the pretreatment titration check.



Coating Thickness Test
 Coating thickness is measured and plotted every hour.



ASTM D3359 Crosshatch Test
 Hourly crosshatch testing is completed per ASTM D3359 to test coating adhesion.



PCI#8 Solvent Cure Test
 Solvent testing per PCI#8 is completed hourly to test for complete cure.



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We have tried to make this catalog comprehensive and factual. We reserve the right to discontinue at any time, without notice, colors, materials, equipment and availability. Since some information may have been updated since the time of printing, we are not responsible for typographical or pictorial errors. Materials shown may vary slightly from actual colors. ©Digger Specialties 2016 SP02/16 99647

Note: Data from year 1 through 4 is based on testing from DSI QUV weathering machine. Year 5 is estimated based on data from years 1-4. Photos taken at 4000 hours/4 year time frame.