Duranar

Lasting Color

DURANAR®

ARCHITECTURAL COATINGS

COIL & EXTRUSION

COLOR GUIDE

PPG IdeaScapes™

Glass • Coatings • Paint

PPG Coil Coatings

DURANAR® COATINGS PRODUCT DATA

PRODUCT DESCRIPTION

DURANAR fluoropolymer coil coatings are designed to provide outstanding aesthetics and durability in a wide range of architectural uses under normal environmental conditions. More than 35 years of field use have proven them to be the standard of excellence in architectural fluoropolymer finishes. DURANAR coil coatings combine PPG proprietary resin and pigment technologies with 70% of the resin system being fluoropolymer base resins. The coatings are highly resistant to chalking, fading, chipping, and peeling when properly applied by an approved applicator. DURANAR coil coatings meet or exceed AAMA 620/621 and the performance requirements (section 7) of American Architectural Manufacturers Association (AAMA) 2605-05 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels. They are approved for use on properly cleaned and treated aluminum and coated steel substrates such as G90 hot dip galvanized, Galfan®, Galvalume®, and Zincalume®*. They are not intended for use on hot or cold rolled steel substrates for exterior exposure applications.

DURANAR LG, a low luster, matte finish for DURANAR coil coating formulations, is also available for use where non-glare is required or desired, such as for airport, government, and military applications. DURANAR LG provides a unique appearance that is functional and aesthetically appealing. Its low-luster reflectance provides a smoother appearance to walls or roof panels, and it is available in any color in which DURANAR coil coatings are offered.

SYSTEM OVERVIEW

DURANAR coatings are two-coat systems consisting of a corrosion inhibitive primer and a fluoropolymer topcoat. They are available in a wide range of consistent, stable colors and are extremely inert, providing long-term durability as well as resistance to chemical attack and surface damage caused by acid rain, salt spray, and humidity encountered under normal environmental conditions. DURANAR coil coatings require minimal maintenance and minor scratches can be easily repaired in the field.

COMMERCIAL USES

DURANAR coil coatings are formulated to provide excellent performance against weathering in all environments. (Where added protection against industrial or seacoast influences is required, DURANAR PLUS, DURANAR XL PLUS, or DURANAR XL are recommended.) The DURANAR two-coat system is an excellent choice for architectural applications such as storefronts, building panels, curtainwalls, and roof panels.

DURABILITY

DURANAR coil coatings are chemically inert, providing excellent resistance to color and gloss fade as well as environmental stress including acid rain and ultraviolet attack. The coatings require very little maintenance, and most surface contaminants may be removed by conventional detergents or cleaning solvents. (Harsh chemicals or solvents must not be used on DURANAR coated surfaces.) All pigments are tested for a minimum of ten years in south Florida prior to approval for use in any DURANAR coil coating system. Additionally, DURANAR coil coatings are tested at exposure sites throughout the world in all types of climatic and industrial conditions to ensure the coatings' performance and durability.

PPG Coil Coatings

DURANAR® COATINGS

PRODUCT DATA

DURANAR SPECIFICATIONS	Aluminum Substrate	Coated Steel[1] Substrate
Dry Film Thickness (nominal)		
ASTM D1400	0.20 – 0.30 mil primer 0.70 – 0.80 mil topcoat	0.20 mil primer 0.75 mil topcoat
Gloss		
ASTM D523		
Standard @ 60°	25 - 35	25 - 35
DURANAR LG @ 85°	<10	<10
Pencil Hardness		
ASTM D3363	F-2H	F-2H
Flexibility[2]		
T-bend, ASTM D4145	0-2 T-bend; No pick-off	2 T-bend; No pick-off
Adhesion		
ASTM D3359	No adhesion loss	No adhesion loss
Reverse impact 1/16" crosshatch		
Reverse Impact		
ASTM D2794		
1.5 x metal thickness (aluminum)	No cracking or adhesion loss	No cracking or adhesion loss
3.0 x metal thickness (coated steel)	No cracking or adhesion loss	No cracking or adhesion loss
Acid Resistance		
ASTM D1308		
10% muriatic acid — 24 hrs.	No effect	No effect
20% sulfuric acid — 18 hrs.	No effect	No effect
Acid Rain Test		
Kesternich SO_2, DIN 50018	15 cycles min. No objectionable color change	15 cycles min. No objectionable color change
Alkali Resistance		
ASTM D1308	No effect	No effect
10%, 25% NaOH, 1 hr.		
Salt Spray Resistance		
ASTM B117	Passes 4000 hrs.	Passes 1000 hrs.
5% salt fog @ 95°F	Less than 1/16" avg. creepage from scribe; None or few #8 blisters	Less than 1/8" avg. creepage from scribe; None or few #8 blisters
Humidity Resistance		
ASTM D714,	Passes 4000 hrs.	Passes 1500 hrs.
ASTM D2247	No #8 blisters	No #8 blisters
100% relative humidity @ 95°F		
Exterior Exposure		
10 yrs. @ 45°, south Florida		
ASTM D2244	Max. 5 fade	Max. 5 fade
ASTM D4214	Max. 8 chalk	Max. 8 chalk

[1] Coated Steel includes the following types of steel: G90 hot dip galvanized, Galfan, Galvalume, and Zincalume.

[2] Fracturing or rupturing of substrate will rupture coatings. Heavy gauge and clad steel substrates impose limitations on formability. DURANAR coatings are generally flexible beyond the point of substrate rupture.

DURANAR WARRANTY INFORMATION

PPG offers a comprehensive warranty on DURANAR coil coatings. For complete warranty information and a copy of the DURANAR coil coatings warranty, please call PPG at **1-800-258-6398**.

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Cleaning Coil and Extrusion Coatings

Coil & Extrusion Coatings present a relatively non-adherent, inert surface to airborne soil. If needed, a variety of methods for removal of surface deposits is available. However, note these precautions:

- Do not use wire brushes, steel wool, sandpaper, abrasives or other similar cleaning tools which will mechanically abrade the coating surface.
- Some of the cleaning agents listed below should be tested in an inconspicuous area before use on a large scale. Always test a small area first.

Hot or Cold Detergent Solutions
A 5% solution in water of commonly used commercial and industrial detergents will not have any deleterious effect on a Coil or Extrusion surface. These solutions should be followed by an adequate rinse of water. Use cloth, sponges or a soft bristle brush for application. Cleaning should be done on the shaded side of the building or, ideally, on a mild, cloudy day.

Solvents
Most organic solvents are flammable and/or toxic, and must be handled accordingly. Keep away from open flames, sparks and electric motors. Use adequate ventilation, protective clothing and goggles. Remove non-water soluble deposits (tar, grease, oil paint, graffiti, etc.) from Coil & Extrusion surfaces using these solvents with caution:

- **Alcohols**

  Denatured alcohol (ethanol)
  Isopropyl (rubbing) alcohol
  Methanol (wood alcohol)

- **Petroleum Solvents**

  VM&P naphtha
  Mineral spirits
  Turpentine (wood or gum spirits)

- **Aromatic Solvents**

  Xylol (xylene)
  Toluol (toluene)
  (These solvents should be used with caution on a Coil & Extrusion surfaces. Limit contact to five minutes. Test a small area first.)

- **Ketones, Esters, Lacquer Thinner**

  Methyl ethyl ketone (MEK)
  Methyl isobutyl ketone (MIBK)
  Ethyl acetate (nail polish remover)
  Lacquer thinner
  (These solvents should be used with **great caution** on a Coil or Extrusion surface. Limit contact to one minute. Test a small area first. Panel manufacturer and coating supplier are not responsible for damage from unrestricted use of these.)

- **Acetone/Paint Remover**

  Do not use acetone or paint remover on Coil or Extrusion surfaces.

Chemical Solutions

- Sodium hypochlorite solution (laundry bleach, Clorox)
- Hydrochloric acid (muriatic acid)
- Oxalic acid
- Acetic acid (vinegar)

Hydrochloric acid (10% muriatic acid), diluted with ten volumes of water, may assist in removing rust or alkali mortar stains from Coil & Extrusion surfaces. Limit contact to five minutes. **Caution**: Acid solutions are corrosive and toxic. Flush all surfaces with water after use.

Oxalic acid solutions or acetic acid (vinegar) may be used for the same purpose. Flush with water after use.

Laundry bleach may assist in removing certain stains.

Mildew Removal
Remove mildrew with a basic solution of the following:

- 1/3 cup detergent (Tide, for example)
- 2/3 cup trisodium phosphate (Soilex, for example)
- 1 quart sodium hypochloride, 5% solution (Clorox, for example)

Rinse with clear water immediately.

Excess Sealant Removal
Precautions should be taken to prevent sealants from getting on the painted surface. Sealants may be very difficult to remove. If any does get on a Coil or Extrusion surface, it should be removed promptly with a solvent such as alcohol or a naphtha type.

Caution: It may be possible for solvents to extract materials from sealants which could stain the painted surface or could prove harmful to sealants; therefore, these possible effects must be considered. Test a small area first.

***DURANAR*®** Coatings (2-COAT SYSTEM)

BONE WHITE **Classic**
UC43350/5MW86823
PD800000

BRIGHT WHITE
UC55026/5MW86849
PD800001

CANDLELIGHT BEIGE
UC96693/5MW86845
PD800002

NATURAL WICKER
UC105747/5MI86860
PD200006

MYSTIC BEIGE
UC105739/5MI86822
PD200004

CARAMEL LATTE
UC105737/5MI86798
PD200002

ADOBE
UC105740/5MN86841
PD200003

FAIRVIEW TAUPE
UC105741/5MN86754
PD200005

MALT
UC105738/5MI86783
PD200007

PORTABELLO
UC105733/5MN86918
PD200008

BUCKHEAD BROWN
UC105734/5MN86923
PD200009

COCOA BEAN
UC105735/5MN86924
PD200010

CLAYPOT
UC105746/5MR86782
PD600000

CHIPOTLE
UC106668/5MR86840
PD600001

MARRAKESH RED
UC106667XL*/3XMR86899P*

ROASTED RED PEPPER
UC102320XL*/3XMR86927*

DILL WEED
UC105744/5MG86755
PD400000

ECO-GREEN
UC105755/5MG86919
PD400001

GLADE GREEN
UC105745/5MG86770
PD400002

URBAN MIST GREEN
UC106679/5MG86920
PD400003

NEWPORT NEWS BLUE
UC105743/5ML86769
PD500001

BAYVIEW BLUE
UC106660/5ML86929
PD500002

BLUE THUNDER
UC106680/5ML86921P
PD500003

BERMUDA BLUE
UC106661/5ML86922P
PD500000

BUTTERSILK
UC106670/5MY86944
PD300000

SESAME SEED
UC105742/5MY86898
PD300001

ECLIPSE GRAY
UC106669/5MA86799
PD900000

BLACK **Classic**
UC40577/5MB86928
PD900001

UC Code = extrusion (liquid) code number
5M/3XM Code = coil (liquid) code number
PD Code = extrusion (powder) code number

* ***DURANAR*** XL Coatings (3-coat system) color requires XL clear coat due to pigmentation

Duranar® Coatings (2-Coat System)

LT110044 Bone White

LT120020 Fashion Gray

LT150023 Sandstone

LT170075 Aged Copper

LT110018 Colonial White

LT120007 Colonial Gray

LT150034 Beige

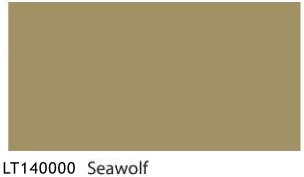
LT130128 Rosewood

LT110051 Ivory

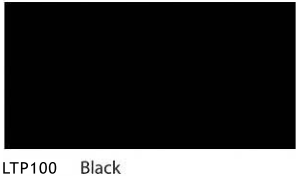
LT120219 Charcoal Gray

LT150045 Sage Brown

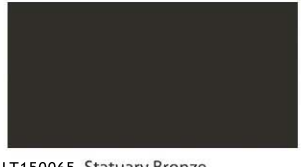
LT130111 Coral



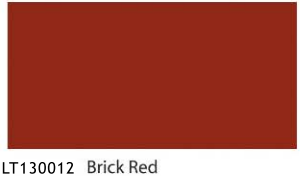
LT140000 Seawolf



LTP100 Black



LT150065 Statuary Bronze



LT130012 Brick Red

DURANAR Sunstorm™ Coatings (2-COAT SYSTEM)

SUNLIGHT SILVER
UC106681F/5VMA86954P

PLATINUM MICA
UC106682F/5VMA86955P

STERLING SILVER
UC106662F/5VMA86956P

RENAISSANCE SILVER
UC106663F/5VMA86957P

GALAXY SILVER
UC106683F/5VMA86958P

SATIN NICKEL
UC106684F/5VMA86959P

SILVERSTORM
UC106685F/5VMA86960P

COSMIC GRAY MICA
UC106686F/5VMA86961P

MANHATTAN BEIGE PEARL
UC106687F/5VMI86962P

NATURAL SUEDE MICA
UC106666F/5VMA86963P

MOONDUST MICA
UC106688F/5VMA86964P

CASHMERE PEARL
UC106689F/5VMN86965P

SILVERSMITH **Classic**
UC70092F/5VMA86003P

CHAMPAGNE BRONZE **Classic**
UC70202F/5VMN82395P

HARVEST GOLD PEARL
UC106690F/5VMN86966P

ROMAN BRONZE MICA
UC106691F/5VMN86967P

DRIFTWOOD MICA
UC106692F/5VMN86968P

BISTRO BRONZE
UC106693F/5VMN86969P

DARK BRIAR MICA
UC106694F/5VMN86970P

CAFÉ NOIR PEARL
UC106695F/5VMN86971P

RUSSET PEARL
UC106696F/5VMR86972P

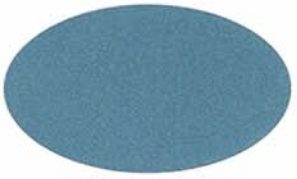
LIQUID COPPER MICA
UC106697F/5VMR86973P

LEXUS BRONZE
UC106698F/5VMN86974P

HAZELNUT MICA
UC106699F/5VMR86975P

PACIFIC SPRUCE MICA
UC106700F/5VMG86976P

FRESCO GREEN PEARL
UC106701F/5VMG86977P



SEASIDE BLUE PEARL
UC106702F/5VML86978P

BREAKWATER BLUE MICA
UC106665F/5VML86979P

UC Code = Extrusion Code Number
5VM Code = Coil Code Number

The ***DURANAR*** color chips provided in our color guide are as close as possible to the ***DURANAR*** paint color, however color chip reproduction has limitations. Panels of the actual ***DURANAR*** finish are available upon request. The color guide represents the range of available colors, but custom color matches are available within the limits of durable color pigments.

DURANAR XL Coatings (3-COAT SYSTEM)

SILVER **Classic**
UC51131XL/3ZMA86386P

SILVER GRAY **Classic**
UC50958XL/3ZMA86715P

PEWTER **Classic**
UC51713XL/3ZMA86280P

MEDIUM GRAY **Classic**
UC51595XL/3ZMA86440P

METALLIC MIST
UC106703XL/3ZMA86980P

PLATINUM
UC106704XL/3ZMA86981P

STEEL-CITY SILVER
UC106705XL/3ZMA86982P

CHAMPAGNE GOLD **Classic**
UC51568XL/3ZMA82897P

WHITE ICE METALLIC
UC106706XL/3ZMA86983P

SILVER SHADOW
UC106707XL/3ZMA86984P

GRAPHITE GRAY
UC106708LB*/3ZMB86985P

CHOCOLATE BRONZE
UC106709XL/3ZMN86986P

VANILLA SAND
UC105757VL**/3ZMI86987P

FAWN METALLIC
UC106710XL/3ZMN86988P

AUTUMNWOOD METALLIC
UC106711LB*/3ZMN86989P

SUMMER SUEDE METALLIC
UC106712XL/3ZMN86990P

ICED CAPPUCCINO
UC106713XL/3ZMN86991P

MOCHA-CCINO
UC105758XL/3ZMN86992P

VINTAGE BRONZE
UC106714XL/3ZMN86993P

MINERAL BROWN METALLIC
UC106715XL/3ZMN86994P

EARTHEN GOLD
UC106716LB*/4ZMY86995B*

CINNAGOLD DUST
UC106717XL/3ZMR86996P

COPPER CANYON
UC106718XL/3ZMN86997P

BURLESQUE
UC106719XL/3ZMR86998P

SILVER SAGE METALLIC
UC106720XL/3ZMG86999P

SEA MIST GREEN
UC106721XL/3ZMG87000P

OXFORD BLUE METALLIC
UC106722LB*/3ZML87001P

MIDNIGHT BLUE ICE
UC106723LB*/3ZML87002P

UC Code = Extrusion Code Number
3ZM/4ZM Code = Coil Code Number

* ***DURANAR*** XLB Coatings (4-coat system) with barrier coat
** VL suffix = mica clear coat over a solid color coat

Lasting Choices...

With the *DURANAR*® Coating Systems

Choose premium performance and lasting color from the wide array of ***DURANAR*** high performance finishes. Whatever your application, you'll get good looking, long lasting results. All ***DURANAR*** coatings contain fluoropolymer resin — chemically inert, to protect your building from the environmental stresses around it. ***DURANAR*** finishes resist dirt pickup, chalking, fading, and UV degradation. Exposed to salt spray, ***DURANAR*** coatings will not whiten or pit, and will not degrade when exposed to the alkali on a construction site. Mineral acids and detergents will not stain ***DURANAR*** finishes. Adhesion, film integrity and flexibility are excellent: the ***DURANAR*** film resists chipping, cracking, crazing, erosion, abrasion, and impact.

All ***DURANAR*** Coil and Extrusion Coating systems meet the industry's toughest performance requirements. This includes the following standards for:

Extrusion coatings

- AAMA 2605 *Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels*

Coil coatings

- AAMA 620 *Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates*
- AAMA 621 *Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates*

Proven performance and durability are the reasons why ***DURANAR*** coil and extrusion coatings protect more architectural metal substrates than any other fluoropolymer formulations.

Another reason is PPG's nationwide network of PPG ***DURANAR*** coatings applicators and coaters. This select group of coil and extrusion applicators/coaters not only delivers the highest levels of product quality, but they also back their work with unequalled levels of customer service.

For pricing information on ***DURANAR*** coil and extrusion coatings, contact an authorized ***DURANAR*** coatings applicator/coater. A list is available from PPG or via the web @ www.ppgideascapes.com.

The *DURANAR* Systems Include:

Duranar 2-Coat System: PPG primer and ***DURANAR*** color coat; for example UC105740/5MN86841 Adobe. This system is available in both liquid and powder form. Each coating has unique benefits associated with it.

Duranar XL 3-Coat System: PPG primer, ***DURANAR*** color coat and clear ***DURANAR*** XL top coat – mandatory for all metallics to provide complete chemical resistance against acids and alkaline materials; for example UC51131XL/3ZMA86386P Silver-Classic. Add the XL advantage: for additional protection against abrasion and atmospheric contaminants, the clear "XL" fluoropolymer topcoat may be applied as an option over any ***DURANAR*** color.

Duranar Sunstorm 2-Coat System: PPG primer and mica-containing ***DURANAR*** color coat; for example UC70092F/5VMA86003P Silversmith-Classic.

Duranar XLB 4-Coat System: PPG primer, ***DURANAR*** barrier coat, ***DURANAR*** color coat containing metallic flakes, and clear Duranar XL topcoat; for example UC106708LB Graphite Gray.

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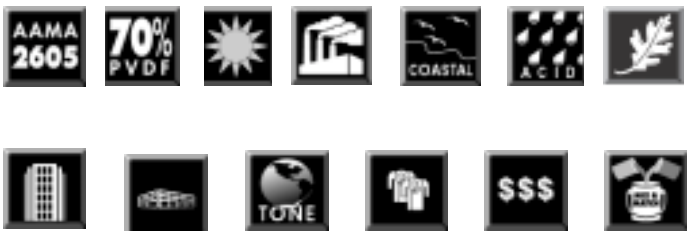
FLUROPON®

END USES

For use on monumental curtain walls, panels, column covers, skylights, louvers, windows, storefronts, or other architectural applications when a high performance finish is desired.



Fluropon meets or exceeds all AAMA 2605[(1)] performance requirements. These coatings are field-proven, high performance exterior quality finishes comprised of 70% Kynar 500® or Hylar 5000® fluoropolymer resin systems, ceramic pigments and other select inorganic pigments. This powerful chemical bond provides superior resistance to ultraviolet radiation resulting in exceptional color retention, resistance to chalking, and resistance to chemical degradation which makes Fluropon a preferred choice among architects and aluminum building component manufacturers.

Fluropon® coatings enhance the aesthetics of your building by providing durable color options for aluminum panels and extrusions including curtain walls, louvers and grills, soffit, fascia, mullions, column covers, skylights, windows, and door and access systems.

Fluropon is available in a wide variety of color hues including whites, blacks, greens, blues, browns and reds. (For pearlescent, metallic, or bright options, read Fluropon Classic® II, Fluropon Classic®, and Fluropon® Premiere.)

TO SPECIFY, WRITE: Factory spray applied, baked-on 70% Kynar 500 or Hylar 5000 PVDF fluoropolymer resin based Fluropon paint coating as manufactured by Valspar.

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FLUROPON®

PERFORMANCE PROPERTIES		
AAMA 2605	Industry Specification	Meets or exceeds all sections[2]
7.2	Specular Gloss at 60° ASTM D 523[3]	Typical: Medium (25-35), Lower sheen formulations are also available
7.3	Pencil Hardness ASTM D 3363	F minimum
7.4	Film Adhesion	Pass
7.5	Impact Resistance	Pass
7.6	Abrasion Resistance	Pass
7.7	Chemical Resistance	Pass
7.8	Corrosion Resistance Humidity Resistance 100% relative humidity @ 95° F 4,000 hours ASTM D 2247	Rating 8: No more than few field blisters per Figure No. 4, ASTM D 714
	Salt Spray Resistance 4000 hours ASTM B 117	Scribe: Rating 7, 1/32" – 1/16" (1-2 mm) Field: Rating 8
7.9.	South Florida Exposure – 10 Years South of latitude 27°N @ 45° South ASTM D 2244 ASTM D 4214	Color : No more than 5Δ Hunter units Chalk: Rating no less than 8 Gloss retention: No less than 50% Erosion resistance: Less than 10%
	Flame Test ASTM E 84	Class A coating

APPLICATION CHARACTERISTICS		
	Application Method	Conventional or electrostatic spray
	Substrate	Aluminum only
4.3	Total Dry Film Thickness Primer: Fluroprime Yellow 733X310[4], White 731x313, Gray 732X311 and Yellow 733X007 Color coat	1.2 mils minimum 0.2-0.4 mils 1.0-1.3 mils
	Viscosity: ASTM D 562 (Stormer)	65 to 75 KU
	Weight/Gallon: ASTM D 1475	9.8 to 10.2 pounds per gallon (4.4 kg to 4.62 kg per liter)[5]
	Solids by Volume: ASTM D 2697	28% to 32% as supplied[5]
	Solids by Weight: ASTM D 2369	41% to 45% as supplied[5]
	Reducing Thinner: (80/20 Blend)	Xylol/butyl carbitol
	VOC (Theoretical): ASTM D 3960	5.5 to 5.9 pounds per gallon[5]
	Clean-Up Solvent:	MEK
	Recommended Bake Temperature:	450°F (232°C) for 10 minutes
	Flash Point: ASTM D 3278	70°F (21°C)

(1)American Architectural Manufacturers Association's ten-year superior performing specification with increased performance to AAMA 605.2 (2) Applied in accordance with Valspar technical specification sheet on properly pretreated aluminum surfaces. (3) American Society for Testing and Materials. (4) Recommended for most colors. (5) Varies by color.

For details on health, safety and handling information, Material Safety Data sheets are available at www.paintandcolor.com.

For more information, visit www.paintandcolor.com or contact the Extrusion Coatings Division:

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645 Coronation Drive •West Hill, Ontario MIE 4R6 Canada •FAX 416. 284.6549 •TELEPHONE 416. 284.1681
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VALSPAR COLORS

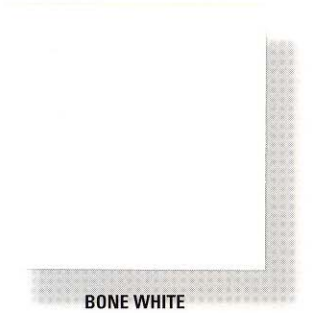
FLUROPON

Colour samples shown here represent a range of frequently selected colours and are matched as closely to paint colour and gloss as reproduction technology allows. Custom colour matches are within the limits of durable colour pigment.

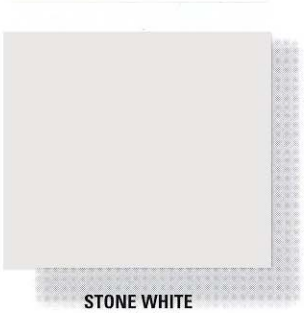
Appearance of Fluropon finishes may vary slightly upon factory application. The Valspar Corporation recommends final colour approval from actual production line samples and not laboratory panels or colour chips. Limits for acceptable colour variations should be established between the applicator and the approval source.

TO SPECIFY WRITE: *Factory applied, baked-on 70% PVDF (Kynar 500 or Hylar 5000) (fluoropolymer) resin based paint coating (INSERT: Fluropon or Fluropon Classic II) as manufactured by The Valspar Corporation.*

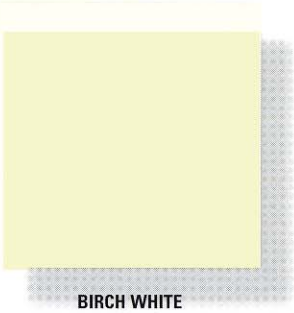
FLUROPON®



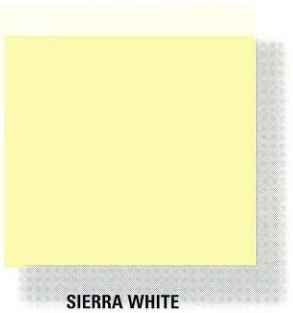
BONE WHITE
LT411078



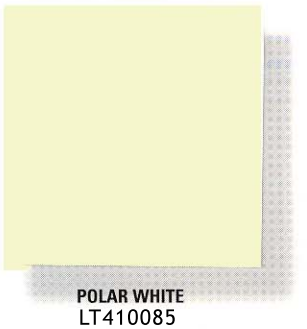
STONE WHITE
LT411113



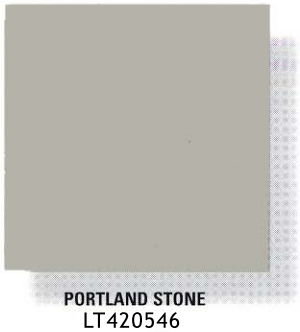
BIRCH WHITE
LT410418



SIERRA WHITE
LT410468



POLAR WHITE
LT410085

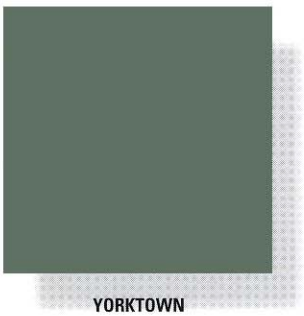


PORTLAND STONE
LT420546

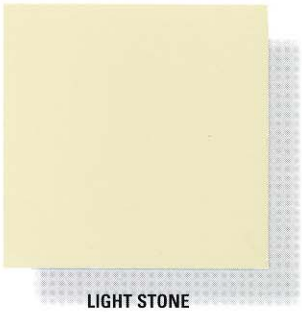
SANDSTONE
LT441434

SANDCASTLE
LT440449

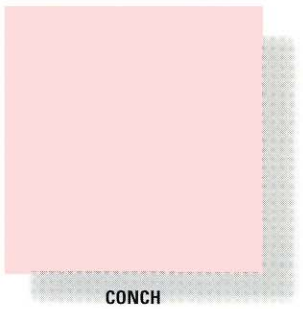
HERRINGBONE
LT440423



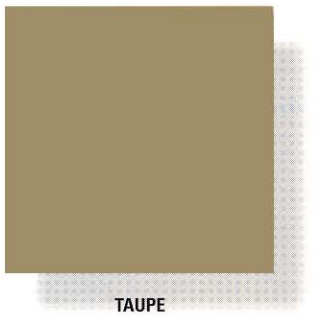
YORKTOWN
LT420565



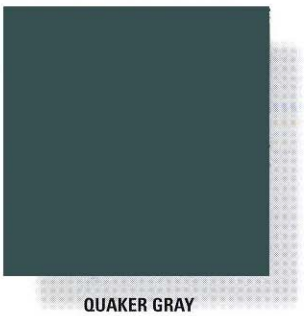
LIGHT STONE
LT441606



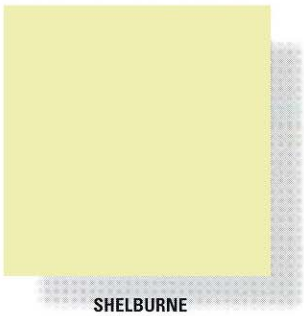
CONCH
LT430498



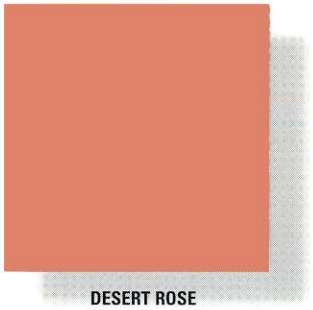
TAUPE
LT440376



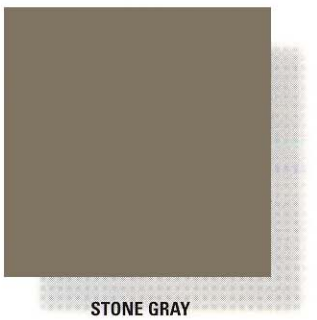
QUAKER GRAY
LT420584



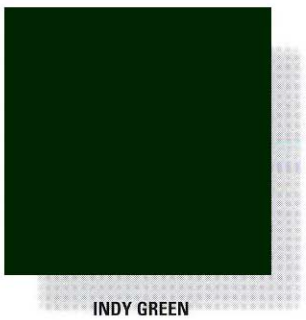
SHELBURNE
LT440556



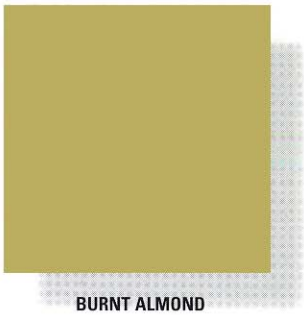
DESERT ROSE
LT430253



STONE GRAY
LT420701



INDY GREEN
LT471600

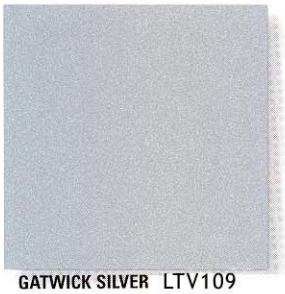


BURNT ALMOND
LT440742

SAHARA TAN
LT440806

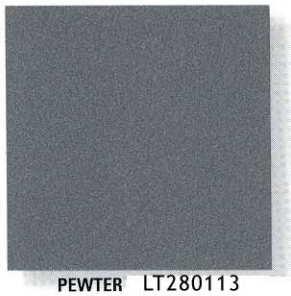
Actual color samples on metal should be requested for true color representation.
These samples can be requested on your website.

FLUROPON CLASSIC® II


GATWICK SILVER LTV109


BRIGHT SILVER LT280041

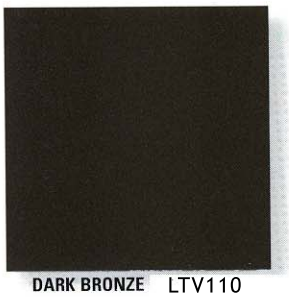

ICE SILVER LT280142


PEWTER LT280113


CHAMPAGNE GOLD LT280105

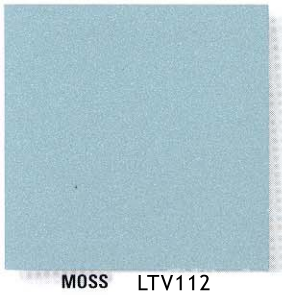

CHAMPAGNE BRONZE LT280199

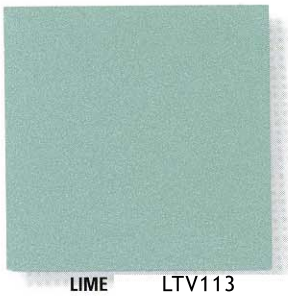

MEDIUM BRONZE LT280706


DARK BRONZE LTV110


BLUE SILVER LTV111


AQUA SPARKLE BLUE

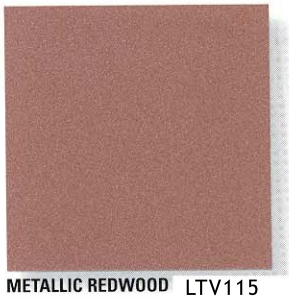

MOSS LTV112


LIME LTV113


SEAFOAM GREEN LTV114


PALMETTO LT280181


ROSALIND ROSE LT280394


METALLIC REDWOOD LTV115


ROSE METALLIC


GOLD WATCH


HARVEST GOLD LTV116

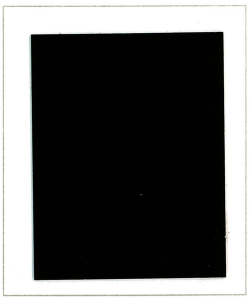

GOLD LTV117

CENAMELIZE®

Radiant Fluoropolymer Aluminum Finish

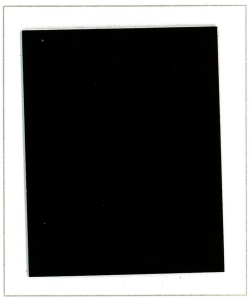
When it comes to a Two-Coat aluminum finish, always specify the best . . . Certified Enameling.

Consistently serving the industry since 1953, Certified's products meet or exceed AAMA 605.2 standards and come with a full five year warranty on all CENAMELIZE® finishes. Available in a variety of colors our new radiant finishes out perform all the standards . . . easy maintenance, competitive with anodize and backed by an industry leader – Certified Enameling, Inc.

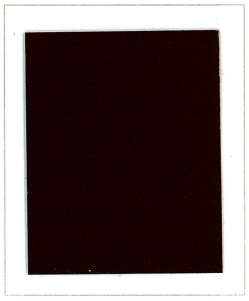


Black #495

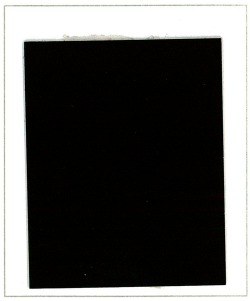
Silver #495



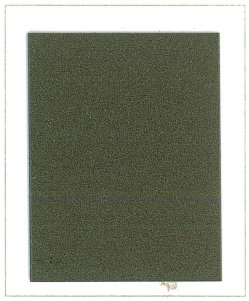
Dark Bronze #495



Burgundy #495



Med. Bronze #495



Champagne #495

ADVANTAGES

- Color consistent
- Field repairability
- Ruggedized finish
- Fade tolerance
- Low gloss
- Graffiti resistive
- Crack & chip resistant
- Exceptional flexibility
- Proven extended life

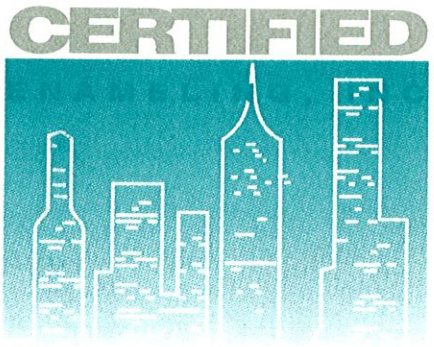
Why anodize when you can CENAMELIZE®?

CENAMELIZE®

Radiant Fluoropolymer Aluminum Finish

When it comes to a Two-Coat aluminum finish, always specify the best . . . Certified Enameling.

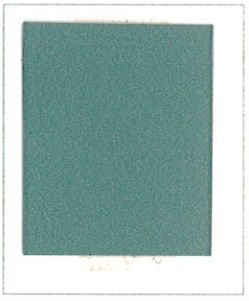
Consistently serving the industry since 1953, Certified's products meet or exceed AAMA 605.2 standards and come with a full five year warranty on all CENAMELIZE® finishes. Available in a variety of colors our new radiant finishes out perform all the standards . . . easy maintenance, competitive with anodize and backed by an industry leader – Certified Enameling, Inc.



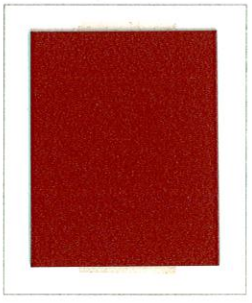
tahoe blue #495

azurite copper #495

leaf gold #495



sea foam green #495



autumn red #495XL

sahara sand #495

ADVANTAGES

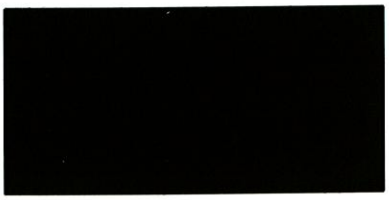
- Color consistent
- Field repairability
- Ruggedized finish
- Fade tolerance
- Low gloss
- Graffiti resistive
- Crack & chip resistant
- Exceptional flexibility
- Proven extended life

Why anodize when you can CENAMELIZE®?

PROCESSES BY MARTIN, INC.

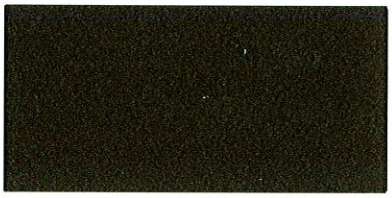
Colors shown are available in Class I or Class II Formulations as Stock Colors. Also available as custom formulation in all other applicable Martin Class Finishes.

MARTIN STATUARY BRONZE



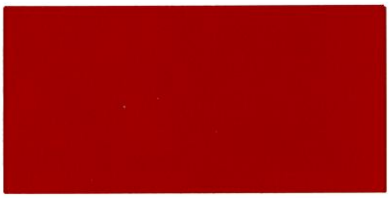
MARTIN BLACK

MARTIN SILVER XL

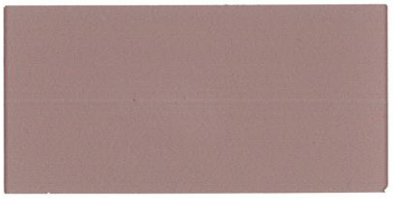


MARTIN MEDIUM BRONZE

MARTIN CHARCOAL



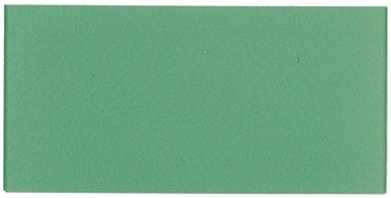
MARTIN BANNER RED XL*



MARTIN ROSEWOOD

MARTIN FASHION GRAY

MARTIN BRICK RED



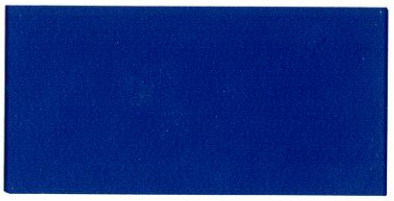
MARTIN PATINA

MARTIN COLONIAL GRAY

MARTIN INTERSTATE GREEN*

MARTIN BOYSENBERRY

MARTIN BONE WHITE



MARTIN ARABIAN BLUE*

ALL COLORS SHOWN ARE AS CLOSE AS POSSIBLE TO ACTUAL COLORS OFFERED WITHIN THE LIMITATIONS OF COLOR CHIP REPRODUCTION. METALLIC COATINGS ON PRODUCTION PANELS WILL HAVE THE UNIQUE ABILITY TO CHANGE IN LIGHTNESS AND COLOR WITH A CHANGE IN VIEWING ANGLE.

*Exotic Color Pigmentation Subject To Premium Pricing, applicable to all Martin Class Finishes.
"XL" colors shown also available in Silicone Polyester Class II.

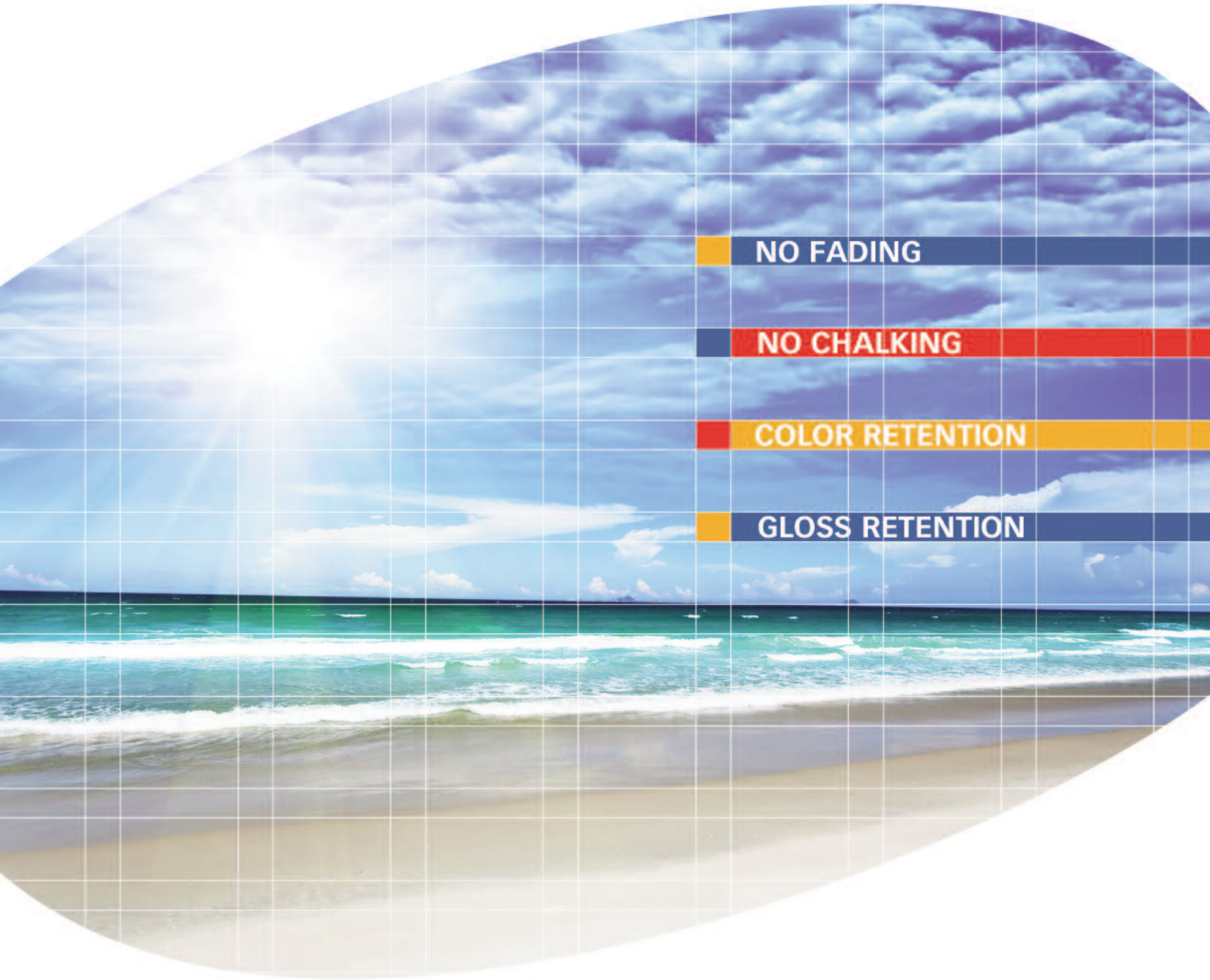
PERFORMANCE REQUIREMENTS

The application warranty covering the Kynar and Silicone Polyester finishes shall remain in effect for 5 years from date of application as follows:
Film Integrity: No change in 5 years.
Chalk Resistance: Value of 6 after 5 years as defined in ASTM-D659.
Color Change: Will not fade more than 7 NBS color units in 5 years.
Salt spray, air pollution and smog will have no adverse effect upon the finish within 5 years.
Terms and Conditions of above warranty are subject to conditions applied for prior to actual application of the paint.

Kynar 500® FSF®

CASE STUDIES IN PERFORMANCE

PVDF-BASED COATINGS VERSUS POLYESTER POWDER AND OTHER COATINGS



ARKEMA

The world is our inspiration

The truth is on the test fence.

Metal has rapidly become the material of choice for exterior use due to its rugged durability, design versatility and aesthetic possibilities. However, for all its bravado and beauty, metal doesn't necessarily have a tough skin and is only available in a single color. To be both functional and decorative, metal must be coated with a finish that beautifies with color and doesn't chalk; that won't lose its color and sheen; that won't pit, chip or age before its time.

Kynar 500® resin-based finishes are available worldwide through a strict licensing program. This licensed distribution ensures the quality, consistency and high performance of Kynar 500® resin-based coatings.

Performance Testing

Objective

To measure and compare the performance of Kynar 500® resin-based coating systems with competitive coatings for their resistance to weather.

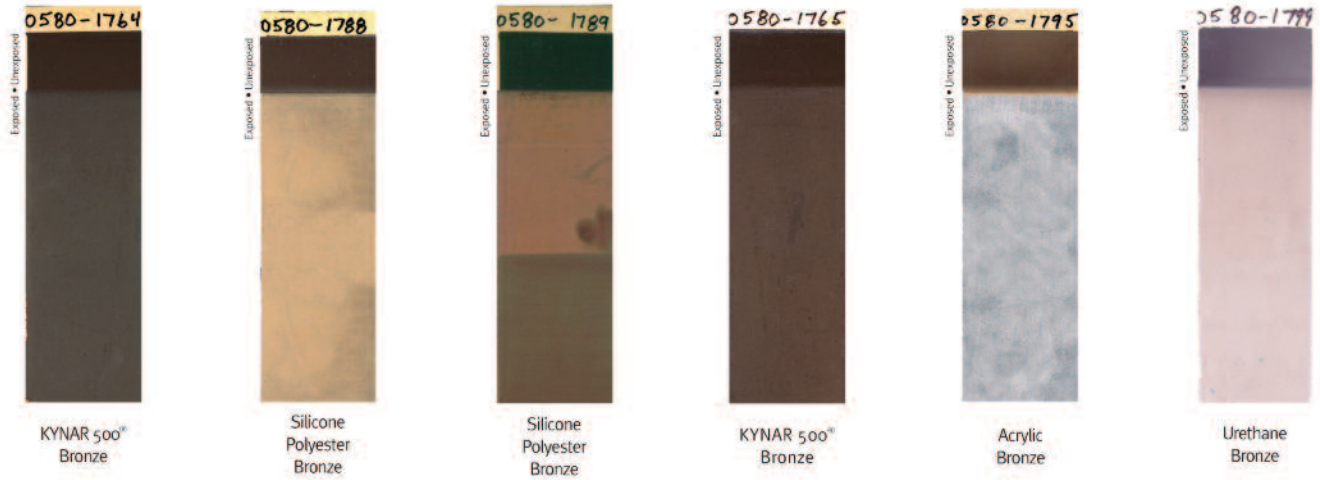
Background

Panels coated with liquid Kynar 500® resin-based coatings and powder coated with other resin systems were exposed on a South Florida test fence for 10 to 17 years. The panels were evaluated periodically during exposure for chalk, gloss and color changes. See table below.

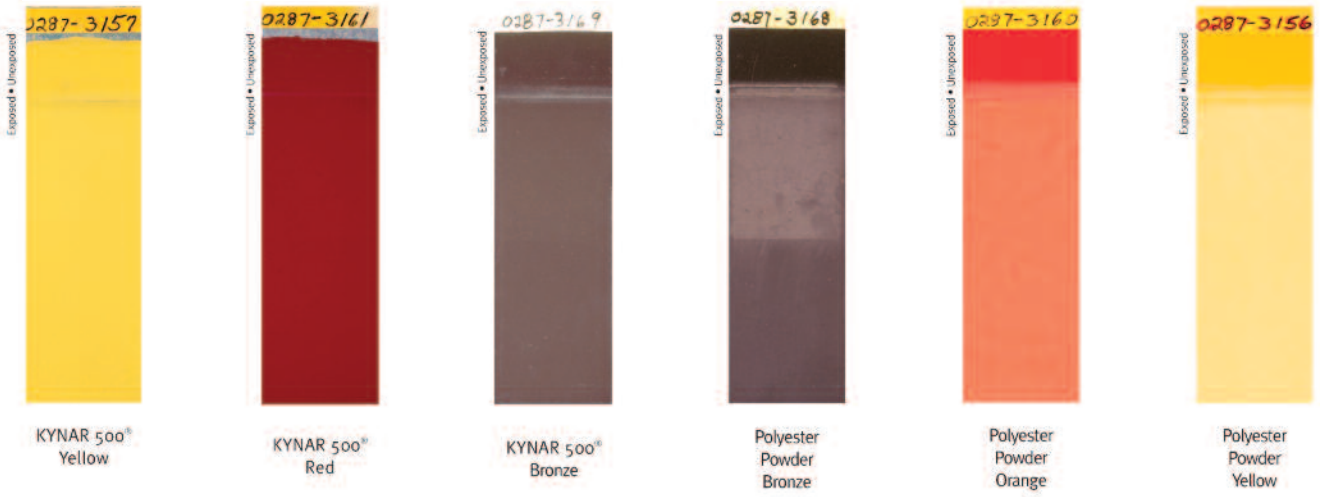
Conclusion

Kynar 500® resin-based coatings outperform polyester powder, urethane, silicone polyester and acrylic coatings in every category: better color retention, better resistance to chalking. The proof is in the pictures of the coated panels. Just compare the unexposed portion (top panels) with the exposed portion (bottom panels). Performance as promised. Time after time. Kynar 500® resin-based coatings.

Florida Exposure 45° South. 17 Years Exposure.



Florida Exposure 45° South. 10 Years Exposure.



PANEL NO.	DESCRIPTION	EXPOSURE TIME	ORIGINAL GLOSS 60°	FINAL GLOSS 60°	COLOR CHANGE Δ	CHALK (EXPOSED) ASTMD-4214
1764	Kynar 500®, Bronze	17 years	31	8	6.71	8
1788	Silicone Polyester, Bronze	17 years	44	1	27.06	4
1789	Silicone Polyester, Bronze	17 years	34	1	36.11	4
1765	Kynar 500®, Bronze	17 years	30	10	8.74	8
1795	Acrylic, Bronze	17 years	26	coating worn to substrate		
1799	Urethane, Bronze	17 years	36	1	38.26	6
3157	Kynar 500®, Yellow	10 years	15	15	5.35	10
3161	Kynar 500®, Red	10 years	52	36	8.77	10
3169	Kynar 500®, Bronze	10 years	43	22	4.79	10
3156	Polyester Powder, Yellow	10 years	28	3	23.37	6
3160	Polyester Powder, Orange	10 years	34	1	24.66	6
3168	Polyester Powder, Bronze	10 years	38	1	10.91	6

Kynar 500®-based coatings are typically solvent-based, but are often confused with powder coatings through the following question, "How does a Kynar 500® -based coating compare to a powder coating?" The easiest answer is that all coating systems, whether liquid or powder, contain a specific resin that acts as the first line of defense against weathering. Ultimately, the resin determines the durability. Kynar 500®-based coating is simply a resin commonly known as polyvinylidene fluoride. Other coating resins include acrylic, polyester, silicone polyester and urethane. In today's market, liquid Kynar 500®-based coatings are the most common, but Kynar 500-based coating is also available as a powder coating. Whether you are looking for a liquid coating or a powder coating, the key to product performance is the resin chemistry. For the ultimate long-term durability, time has shown Kynar 500®PVDF resin is the one to choose.

In color-matched accelerated weathering tests, shown at right, Kynar 500® -based coating panels clearly outperformed the latest "super durable polyester" powder technology. Contact us at www.kynar500.com for more information on Kynar 500®-based coatings.

Kynar 500 Brown

Super Durable Polyester Brown

Kynar 500 Blue

Super Durable Polyester Blue

CASE STUDY: TAIYO STEEL

In 1981 in Funabashi Japan, Taiyo Steel Co., Ltd. built a plant for their new coil coating line employing metal walls. A decision was made to make the south wall an industrial test fence, to evaluate the outdoor weatherability of Taiyo Steel's precoated metal products. Ten meter high steel panels were coated with acrylic, polyester, silicone polyester and Kynar 500® FSF® resin-based coatings.

In just two short years, there was a significant difference in color retention, gloss retention and chalk resistance between Kynar 500® FSF® resin-based coatings and other systems.

After fourteen years, the Kynar 500® FSF® resin-based coating was the only system that kept its original appearance, clearly outperforming the other coatings year-in and year-out.

Taiyo Steel

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www.kynar500.com

ADV 2012-001 -BC/PP 2/12

Finish Performance Comparison

Finish Performance Comparison: Baked Enamel, 50% / 70% Kynar, Class I Anodize, Class II Anodize, Weathering Performance, Color Options, Gloss Options, Hardness, Salt Spray / Chemical Resistance

	Finish Options				
	Paint Systems			Anodize Systems	
	Baked Enamel	50% Kynar	70% Kynar	Class I	Class II
Weathering Performance					
Color & Gloss Retention	Poor[1]	Good[2]	Excellent[3]	Excellent	Good
Chalk Resistance	Poor[1]	Good[2]	Excellent[3]	Excellent	Good
Color Options	Extensive	Extensive	Extensive	Few	Few
Gloss Options	25-35	25-35	40-80[4]	40-80[4]	40-80[4]
Hardness	Very Good	Good	Fair	Excellent	Very Good
Salt Spray Resistance	Poor	Fair	Good	Fair	Poor
Chemical Resistance	Fair	Good	Excellent	Good[5]	Poor
Effect of Poor Substrate Quality	Moderate	Moderate	Moderate	Significant	Significant
Warranty	1 Year	5 Years	10 Years	5 Years	None
Initial Cost	Low	Moderate	High	Low	Very Low

PAINTED MATERIAL PRECAUTIONS

Kynar coated powder coat finishes provide long-lasting protection against weathering, aging and pollution on architectural, commercial and residential buildings around the world. The sustainability of Kynar resins is unparalleled in the industry, however there are certain precautions that customers need to be aware of.

Flat Sheet. Be aware that flat sheet, leveled and sheared, may return to coil memory when baked in a cure oven, subsequently causing some tolerance issues.

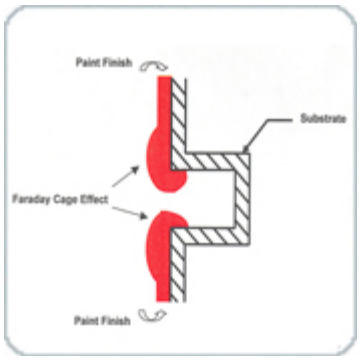
Welded or stud welded attachments. Welded or stud welded attachments may cause flat sheet or break metal to distort when baked. Once distorted, the sheet or break metal may not return to its original shape when cooled. Welding will almost always cause distortion on aluminum sheet that will be noticeable after painting.
Assembled parts. Solution entrapment from the pretreatment process can be problematic to assembled parts. material that will carry water, must be drilled to allow drainage of the water in capture areas. Sun Valley processes all assemblies to allow drainage prior to sending for finishing.
Enclosed tubes. Tubes with welded ends rarely are completely sealed and water will leak inside the tube. Enclosed tubes will require drain holes for the entrapped liquid.
Radius material. The heat from the baking process may distort radius material out of tolerance.
Extrusion Thickness. If extrusion wall thickness varies significantly on your project, color uniformity may be at risk. This is due to the differential in baking to reach the metal temperatures required to cure the paint. If a heavy walled extrusion is painted with a thin bead die, the bead die may over-bake, resulting in a darker appearance and lower gloss, as well as warpage of the metal.

Contaminants

Fisheye. The pretreatment system is not equipped to remove non-water soluble oils. These types of oils contaminate the system and cause "fisheye" problems with the paint finish.
Fisheye is a defect in the paint film appearing as a circular depression resembling a crater but not revealing bare substrate.
Corrosion. Storing metal outside prior to painting can cause corrosion that unless removed by sanding will cause staining and poor aesthetic quality.
Extrusion process residue. Residue from lead and wax used in the rolling process of tubes and extrusions will cause contamination problems if all if it is not removed. The lead and wax may run out in the baking process and cause damage to the paint finish and metal.

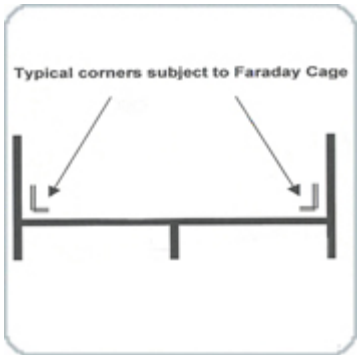
Prior to painting Sun Valley cleans, polishes out scratches and visually inspects all surfaces.

FARADAY CAGE EFFECT



Faraday cage effect is the electrostatic force that prevents charged particles form penetrating into recessed areas. charged paint particles are attracted to the closest grounded surface, as shown.

Limitations due to an electrostatic painting system might make it impossible to achieve minimum recommended dry film thickness on all areas of an extrusion. Areas subject to the faraday cage effect are inside corners and recessed areas such as channels and cavities.



The following criteria defines the acceptable quality level resulting from faraday cage effect.

If recess depth is from 50 - 100% of the width, there will be color coverage within the recess, but less than the specified dry film thickness.

If recess depth is from 100 - 200% of the width paint will be present, but the substrate may show through in some areas. The deeper the recess, the lighter the coverage will be within the recess. The substrate exposure will be less noticeable on pastel and light colors, and most noticeable on dark colors.

Recess depths greater than 200% of the width may not have any paint coverage at the bottom of the recess.