

MID - ATLANTIC COATINGS, INC.

INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM

TNEMEC FLUORONAR WITH LUMIFLON

New Coating Technology Provide Architects With Superior Coating Systems

Developed by Asahi Glass in 1982, LUMIFLON[®] is the first solvent-soluble fluoropolymer for coatings that can be cured at room temperature, making it highly suitable for field application. Since that time, fluororesin coatings, such as, Themec FLUORONAR, based on LUMIFLON[®] raw materials have been produced and manufactured around the world and applied to more than 150,000 architectural structures worldwide.

The primary benefits of FLUORONAR with LUMIFLON[®] are its superior durability, weatherability and longevity. Because of the strength of FLUORONAR with LUMIFLON[®]'s[®] Carbon-Fluorine (C-F) bonds, and its unique chemical structure, the weatherability can be extended for years. In turn, the fluoropolymer's durability prevents corrosion from water, oxygen and chloride. With its superior weatherability, FLUORONAR with LUMIFLON[®] ensures a longer life on building exteriors and facades, resulting in less need for repainting and a substantial decrease in life cycle costs compared to other coatings on the market today.

In addition to its superior durability, FLUORONAR with LUMIFLON[®] also offers architects the ability to use brighter colors and higher gloss than Kynar[®] PVDF systems. Kynar[®] dispersions are milky and cloudy, reducing the maximum gloss to about 40. FLUORONAR with LUMIFLON[®] resins are clear, meaning that FLUORONAR with LUMIFLON[®] resins have no matting effect, offering gloss values as high as 90. That means FLUORONAR with LUMIFLON[®] offers architects the option to specify brighter and more varied and a broad range of gloss, from satin to high gloss.

FLUORONAR with LUMIFLON[®] has been used in the United States on building exteriors and facades for over 12 years. Architects are learning that FLUORONAR with LUMIFLON[®] coatings can be used on steel, aluminum, fiberglass, concrete and polycarbonate for 25 to 30 years without fading, providing weathering and corrosion protection.

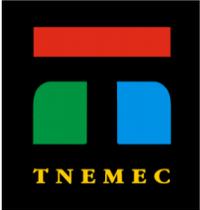
Some of our Local & US project sites include; Fair Oaks Center, Georgetown Pedestrian Bridge, Westat Inc. Georgetown Law Center Sports & Fitness Center, WMATA Largo & Morgan Stations, National Aquarium In Baltimore, Washington Center, Potomac Park Place, Georgia Dome, CNA Chicago Center & Duquesne Pedestrian Skywalk.

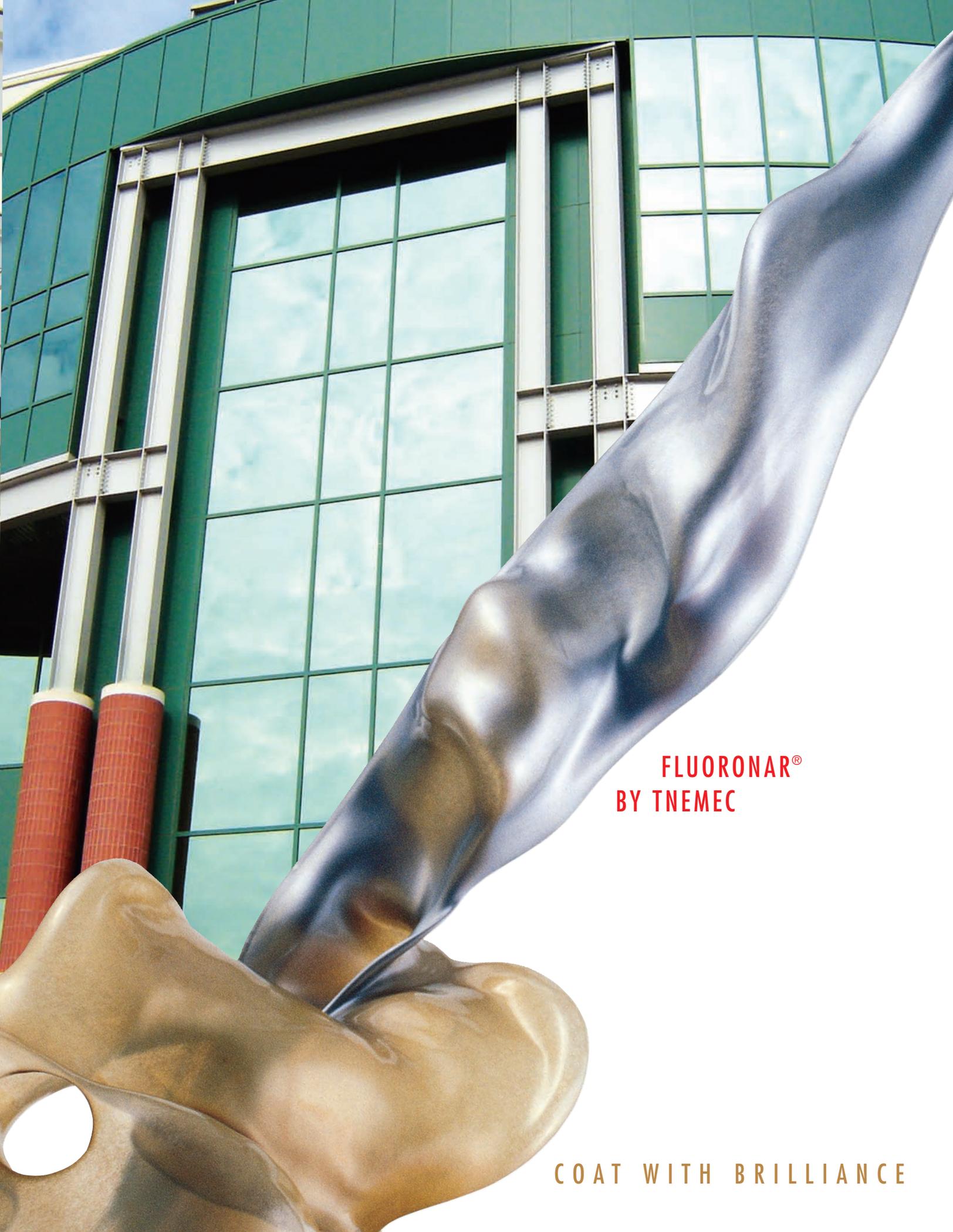
If you have questions or need assistance customizing your High Performance Coatings Specification for Exposed Metals, please contact me.

Sincerely yours,



Todd Guntner, CSI, Coating Consultant
Mid-Atlantic Coatings





FLUORONAR®
BY TNEMEC

COAT WITH BRILLIANCE

COAT WITH FLUORONAR

Somewhere between the research hours and piles of sketches, the pots of coffee and chewed up pencils comes inspiration. Visions transformed into skyscrapers and stadiums, office parks and entertainment complexes. Brilliant works of art. And when it comes to beautifying these inspirations, only the best will do. Fluoronar by Tnemec.

Formulated to offer unequalled aesthetic performance, Fluoronar is a premium topcoat comprised of not only the best fluoropolymer resin, but also high-quality, colorfast pigments and carefully screened additives, all of which ensure color and gloss retention for years to come. Fluoronar is available in a variety of colors. It's also easy to apply and maintain and is tough against chemicals, nature and graffiti. So go ahead, be brilliant with your design—then coat it with Fluoronar.

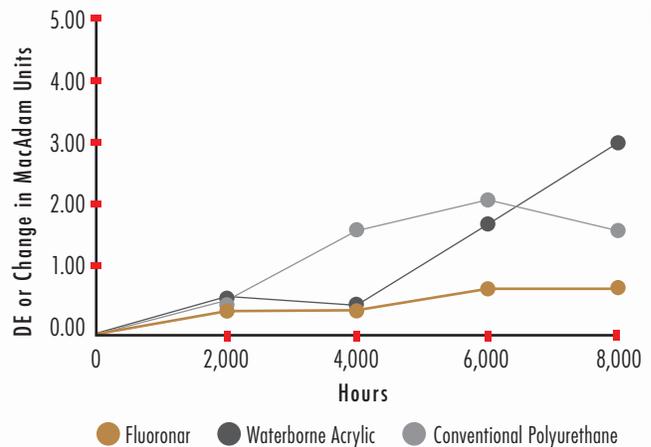
Brilliant color. Guaranteed.

Fluoronar resists chalking, fading and weathering, ensuring your color and gloss remain brilliant for years to come. There's even a warranty to prove it:

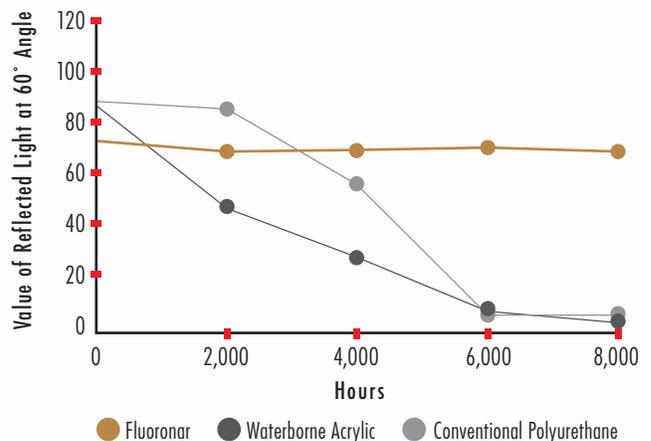
Tnemec Company offers a limited warranty on Fluoronar applicable for up to 15 years on selected standard Tnemec colors. This warranty is equivalent to those offered by manufacturers of coil coated architectural panels, long regarded as having outstanding color retention. Contact your Tnemec representative for warranty details and pre-qualification.

Fluoronar is available in both lustrous metallics and bold, dazzling colors. Fluoronar standard colors are offered in gloss, semi-gloss and satin finishes.

COLOR RETENTION QUV ACCELERATED TESTING (ASTM D4587)



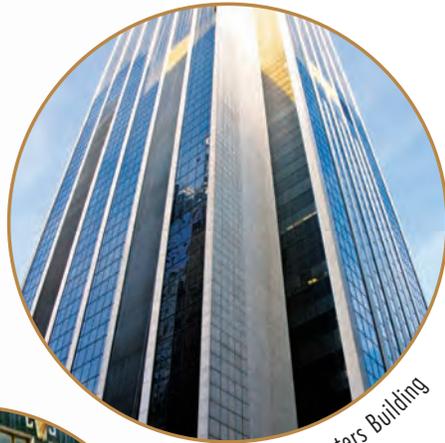
GLOSS RETENTION QUV ACCELERATED TESTING (ASTM D4587)



FLUORONAR VERSUS CONVENTIONAL COATINGS

As illustrated on the graphs above, Fluoronar showed almost no color or gloss change after 8,000 hours of accelerated UV exposure, proving its outstanding aesthetic stability. In comparison, conventional polyurethane held color relatively well but lost gloss less than halfway through the test. Traditional acrylic showed significant color shift around 4,000 hours and began losing gloss almost immediately.

(TR5273)



1. Verizon Headquarters Building



2. George Fuller Building



3. Excalibur Hotel and Casino



4. Georgetown pedestrian bridge

Resins. Pigments. Additives.

A coating's aesthetic performance, or how well it retains color and gloss, is based on three main components—resins, pigments and additives. Fluoropolymer resin is more stable and UV resistant than acrylic or conventional polyurethane resin, but a coating's ability to retain color also relies heavily on the pigment. Because some pigments resist UV light better than others, the pigment selection for a high-performance coating is essential to ensure color retention after several years of exposure. Fluoronar uses higher-quality pigments that are comprised of materials that resist UV damage, while lower-quality pigments—although they may offer the same color initially—quickly degrade, losing their color over time.

Additives are included in coatings for various reasons. They may offer additional corrosion resistance, help with application characteristics or provide hiding. The types and grades of additives can also impact a coating's UV stability. Some deteriorate when exposed to sunlight, providing a negative impact on film integrity and color and gloss retention. Higher-quality additives generally resist UV light and prevent a weak-link from establishing within the coating film. Fluoronar uses additives that have been carefully selected to resist UV exposure and enhance coating stability.

A premier finish, Fluoronar contains only the best resins, pigments and additives. It also has brilliant color options, making it perfect for architectural accents such as metal awning, decking, window detailing and sculptures—as well as general broad surface coverage. Although its initial material cost is more than that of traditional coatings, Fluoronar offers exceptional long-term value, making it excellent for landmark projects and areas where maintenance painting is prohibitive.

Visit www.tnemec.com for case studies, additional product information or to locate your Tnemec representative for complete system recommendations and color samples.

1. Hoffman Architects chose Series 1072 Fluoronar in standard black for the exterior renovation of the Verizon Headquarters Building in New York, NY. Because the renovated sections, located 30 stories in the air, would be extremely costly to repaint every few years, Hoffman Architects selected Fluoronar for durability and long-term performance. 2. Building Conservation Associates (BCA) recommended the art deco metal figures beneath the windows of the 75-year old George Fuller Building in New York, NY, be repainted and protected with Series 1078 Fluoronar Metallic and Series 1076 Fluoronar Clear. The metallic used — *Fuller Bronze* — was a custom color created to match BCA's color requirement. 3. When it came time to repaint the turrets at the Excalibur Hotel and Casino in Las Vegas, Veldon Simpson Architect chose Series 1070 Fluoronar for long-term protection and exceptional color and gloss performance. Previously, they had to be repainted every two years with conventional polyurethane due to the intensity of the desert sun. Fluoronar was chosen in bright red, blue and metallic gold to match the casino's existing colors. 4. Neglected for many years, the Georgetown pedestrian bridges were in desperate need of restoration and renovation. Because of its increased corrosion protection and color retention, Tadjer-Cohen-Edelson Associates chose Series 1072 Fluoronar in dark bronze to coat the bridges' inner and outer steel.



WMATA Largo Station, Landover, MD
Architect: DMJM
Series 1071 Fluoronar, *Chantilly Lace*

TNEMEC COMPANY INCORPORATED



www.tnemec.com

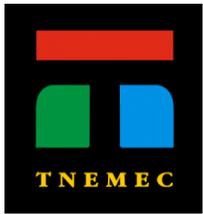
6800 CORPORATE DRIVE, KANSAS CITY, MISSOURI 64120-1372 TEL: 1-800-TNEMEC1

Published technical data and instructions are subject to change without notice. Contact your Tnemec technical representative for current technical data and instructions. Warranty information: The service life of Tnemec's coatings will vary. For warranty, limitation of sellers' liability, and product information, please refer to Tnemec's Product Data Sheets at www.tnemec.com or contact your Tnemec technical representative. © Tnemec Company, Inc. 2005 Printed in USA S10M205 YFLY1070

MID - ATLANTIC COATINGS, INC.

INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM

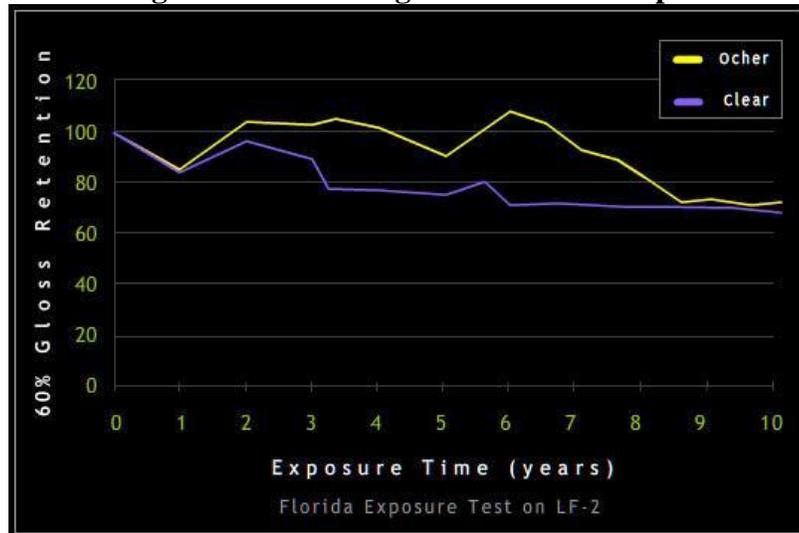


INDEPENDENT TEST DATA & STUDIES OF LUMIFLON

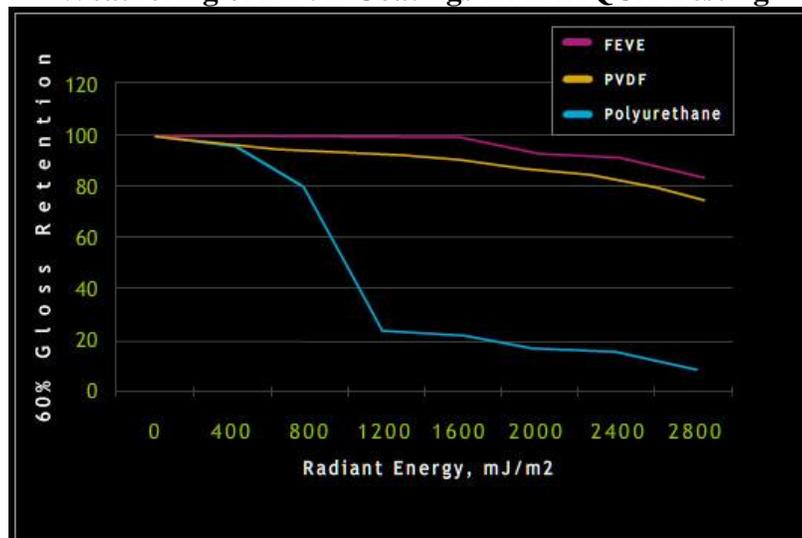
Weatherability of LUMIFLON® Coatings

Due to the chemical nature of the carbon-fluorine bonds found in LUMIFLON® resins, and the regularly alternating FEVE structure, LUMIFLON® offers weatherability far exceeding that available with competitive resins. In both accelerated weathering and natural weathering tests, LUMIFLON® resins yields better color and gloss retention compared to acrylic and polyester urethanes, Kynar® PVDF resins, and siloxanes.

Weathering of FEVE Coating-South Florida Exposure Test



Weathering of FEVE Coatings-EMMAQUA Testing

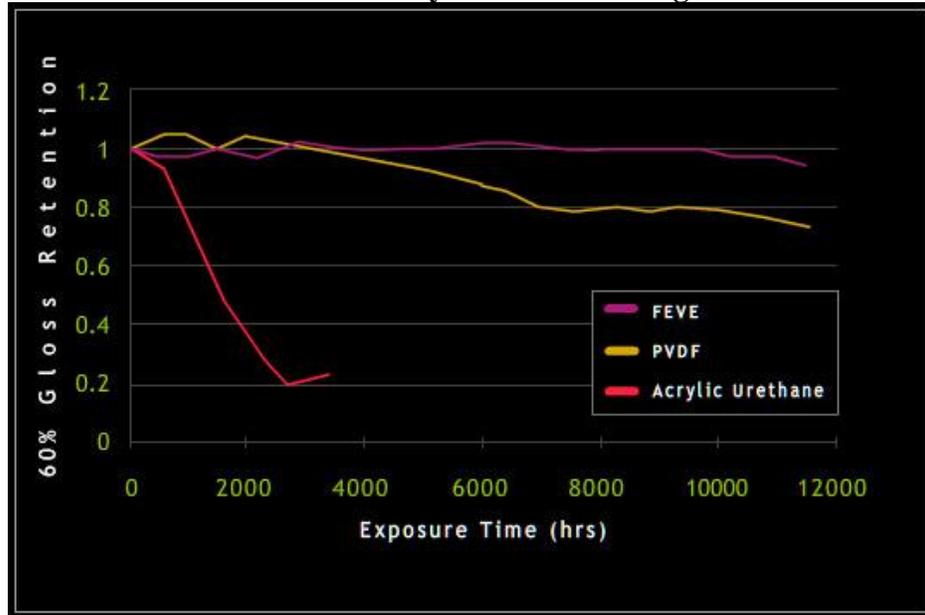


MID - ATLANTIC COATINGS, INC.

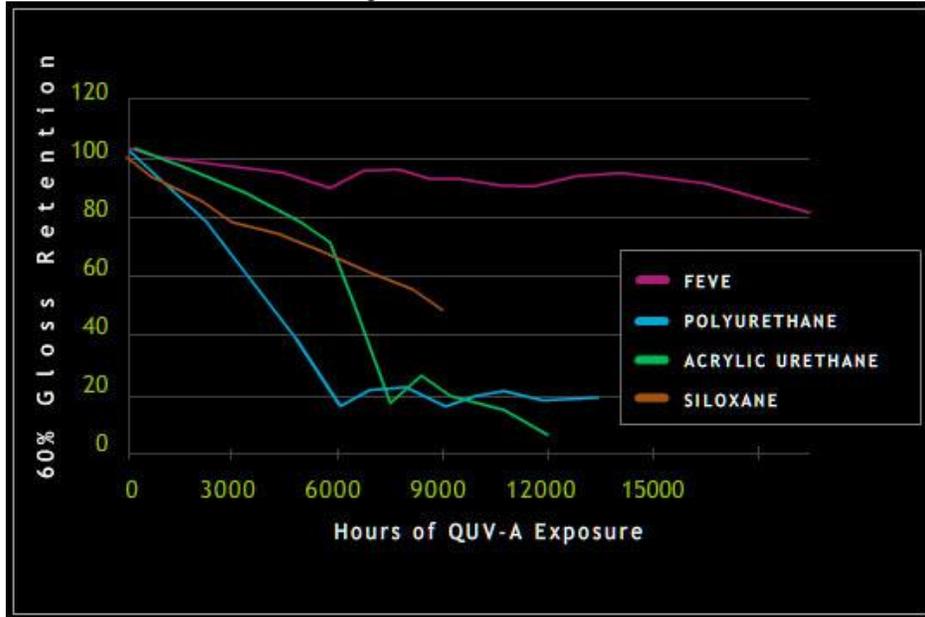
INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM

Weatherability of FEVE Coatings



QUV-A Test Results



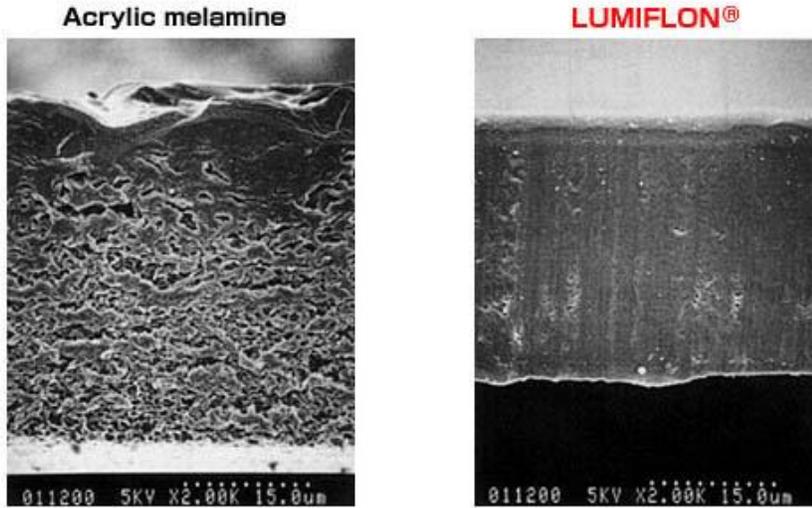
Chemical Resistance of LUMIFLON® Coatings

The Fluoropolymer segments of LUMIFLON® resins also impart excellent chemical resistance. Shown below are photographs of a LUMIFLON® based coating and an acrylic coating after exposure to sulfuric acid in an accelerated test. Note that the LUMIFLON® coating is unaffected by exposure to the acid, while the acrylic urethane is porous, and swollen, indicating attack by the acid.

MID - ATLANTIC COATINGS, INC.

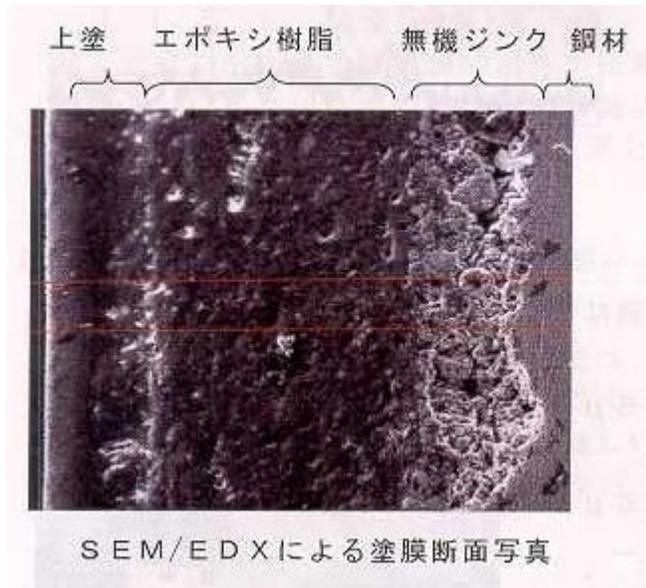
INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM



10% sulfuric acid 70°C × 1hr

LUMIFLON[®] resins also impart corrosion resistance to coatings. They do so by reducing the transmission of corrosion initiators like water, oxygen, and chloride. This is due to the extreme weatherability of LUMIFLON[®] resins. The photographs below show a LUMIFLON[®] based coating on steel panels after 16 years of exposure on a platform in Sugura Bay in Japan. These are severe conditions in a humid marine environment.

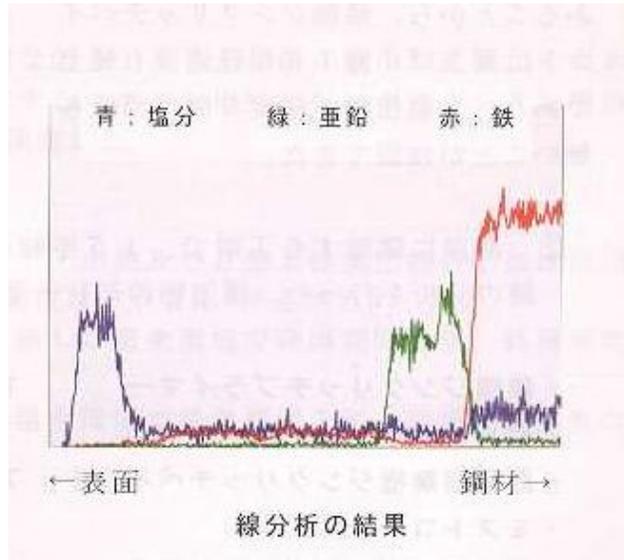


This figure shows a photograph of the coating system applied on the steel coupon. From the left, the layers are the LUMIFLON[®] topcoat, epoxy mid-coat, zinc rich primer, and the steel substrate. Note that the LUMIFLON[®] topcoat is whole, without pinholes or damage that would allow penetration of corrosion initiators.

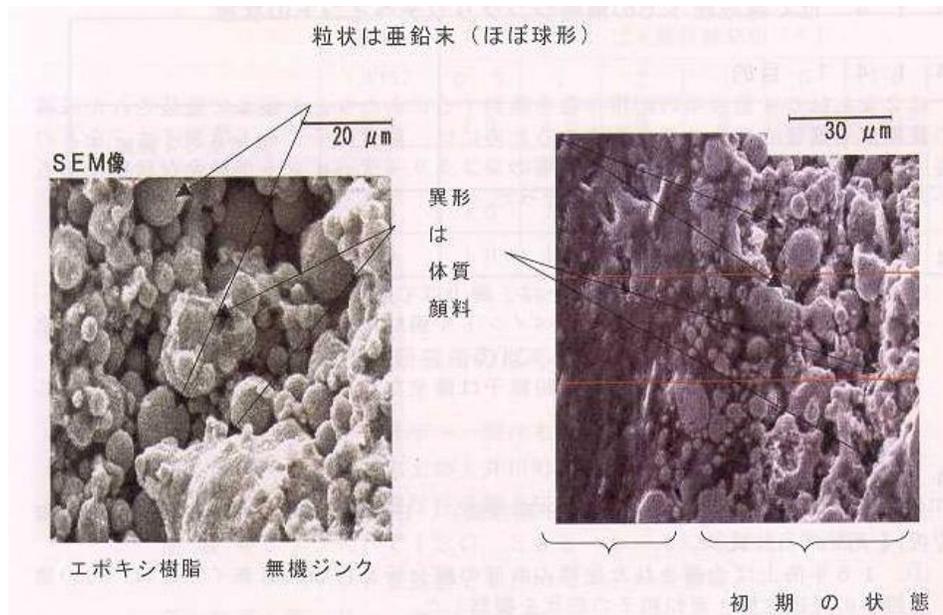
MID - ATLANTIC COATINGS, INC.

INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM



This figure shows the electron Dispersive x-ray scan (EDX) of the coating system. The blue at the left is chloride ion on the surface of the LUMIFLON[®] coating. The green is the epoxy and the red is the metal substrate. Note that no chloride can be seen on the surface of the steel. This means that corrosion has not been initiated, even after 16 years.



This photograph shows the zinc rich primer. The right side shows the initial appearance of the primer, prior to 16 years of exposure on the platform, while the left side shows the zinc rich primer after exposure. Note that the zinc retains its globular appearance, indicating that corrosion of the primer has not occurred.

MID - ATLANTIC COATINGS, INC.

INDEPENDENT REPRESENTATIVE OF TNEMEC COMPANY INCORPORATED

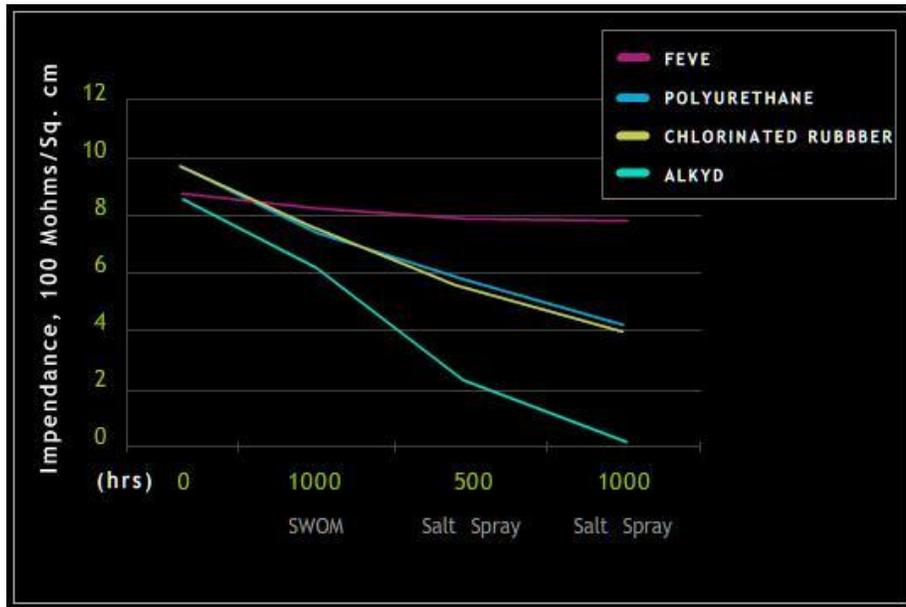
343 NORTH CHARLES STREET, 2ND FLOOR BALTIMORE, MD 21201 TEL: 410-234-3600 FAX: 410-539-1564
CELL: 410-409-2100 CUSTOMER SERVICE 877-330-6645 WWW.TNEMEC.COM

Oxygen Permeability of LUMIFLON[®] Based Coatings

Oxygen is a potential corrosion initiator, like water and chloride. The data in the table below shows first, that the permeability of LUMIFLON[®] based coatings is an order of magnitude lower than that of acrylic urethanes, and second, that this permeability does not change even after 5,000 hours of exposure in the Sunshine Weatherometer. Even after extensive weathering, the LUMIFLON[®] based coating reduces the permeation of oxygen. In contrast, the acrylic urethane is destroyed after less than 2,000 hours of accelerated weathering. LUMIFLON[®] based coatings can therefore be used in industrial coating systems to maintain both the appearance and the anti-corrosion properties of the topcoat.

Topcoat	O ₂ gas permeability (cc·cm / cm ² ·sec·cmHg)	
	Sunshine Weatherometer Exposure	
	0 Hours	5000 Hours
LUMIFLON[®]	4.2×10 ⁻¹¹	3.5×10 ⁻¹¹
Acrylic urethane	2.6×10 ⁻¹⁰	Coating destroyed after 2000hrs

Electrochemical Impedance Spectroscopy Results

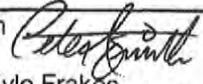
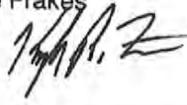


Electrochemical impedance spectroscopy (EIS) can be used to measure the corrosion resistance of coatings. EIS involves setting up a corrosion cell using a coated panel exposed to a salt solution, then sending an alternating current between the electrodes. The impedance at constant frequency is then measured. Results of the test are shown in the figure below. Impedance is measured at time 0, after 1,000 hours of exposure in a Weatherometer, then after exposure in the ASTM B-117 salt fog test. The smaller the slope of the resulting line, the higher the corrosion resistance of the coating. Results show that LUMIFLON[®] based coatings will retain anti-corrosive properties about 5 times longer than will an acrylic urethane

TNE MEC COMPANY, INC.

R & D Test Report No. 5733

Confidential: Not for external distribution. Do not copy.
 Discretionary

Subject: <p style="text-align: center;">1070 EXTERIOR WEATHERING PER AAMA 2604-98</p>	By: Pete Smith  Approved By: Kyle Frakes  Date: 3/11/08 Page: 1 of 1
---	---

PURPOSE: To determine whether Series 1070 Fluoronar meets the exterior weathering requirements of the American Architectural Manufacturers Association (AAMA) 2604-98 standard.

SUBSTRATE: 4" x 12" cold rolled steel Q-panels

SURFACE PREP: SSPC-SP1 Solvent Cleaning

COATINGS TESTED: F066-AA17 (A&B: lab batches) at 6.8 mils DFT
 1070Y0902 (A&B: lab batches) at 3.2 mils DFT

APPLICATION: F066 – conventional suction spray applied
 1070 – conventional suction spray applied

CURE: 7 days @ 75°F (24°C)

TEST METHODS AAMA 2604-98 High Performance Organic Coatings on Aluminum Extrusions and Panels, Test 7.9 Weather Exposure
 TTM-93 [ASTM D 1014] Standard Practice for Conducting Exterior Exposure Tests of Paints on Steel
 TTM-004 [ASTM D 523] Standard Test Method for Specular Gloss
 TTM-21 [ASTM D 2244] Standard Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
 TTM-083 [ASTM D 4214] Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films

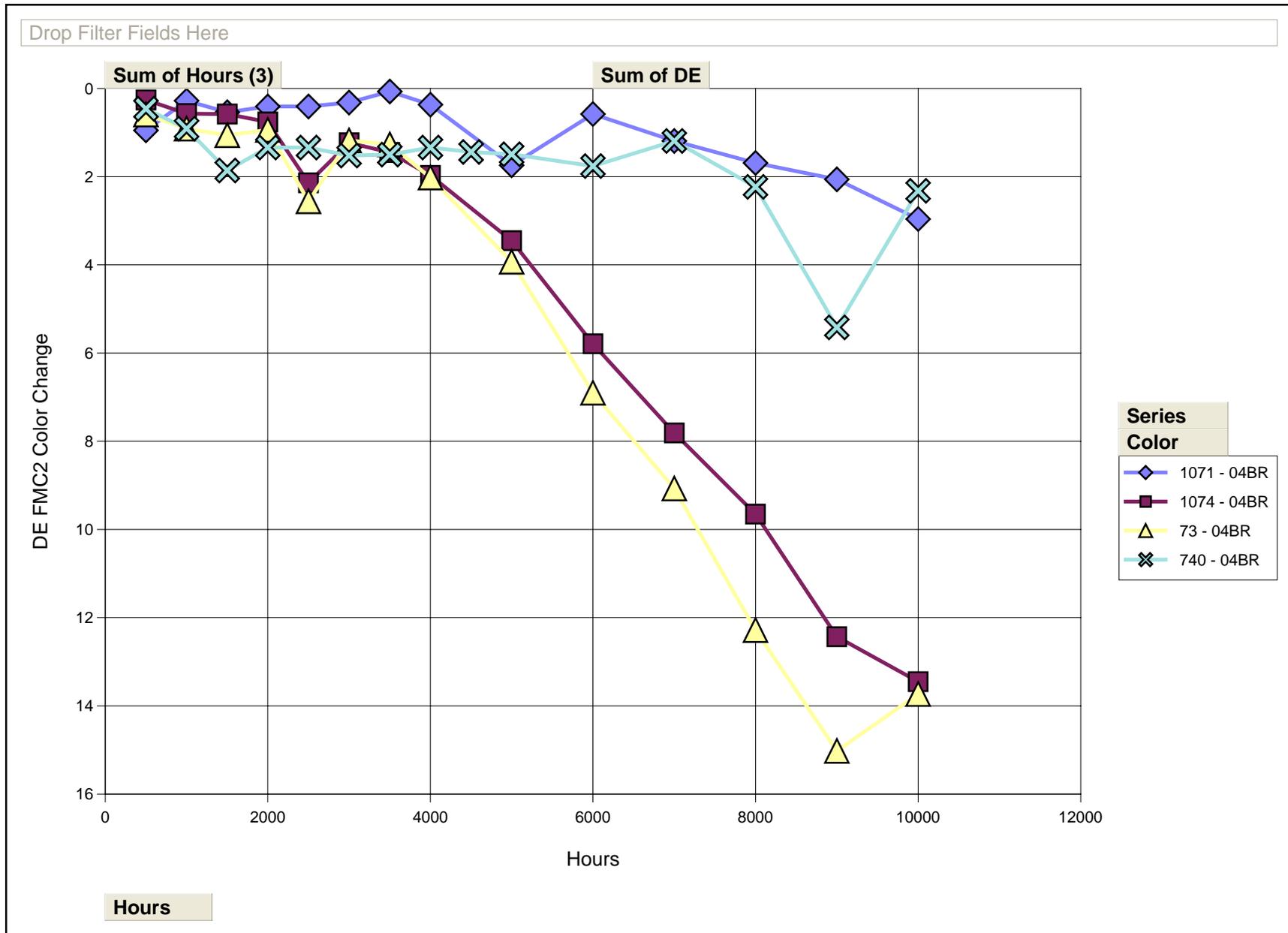
TEST RESULTS:

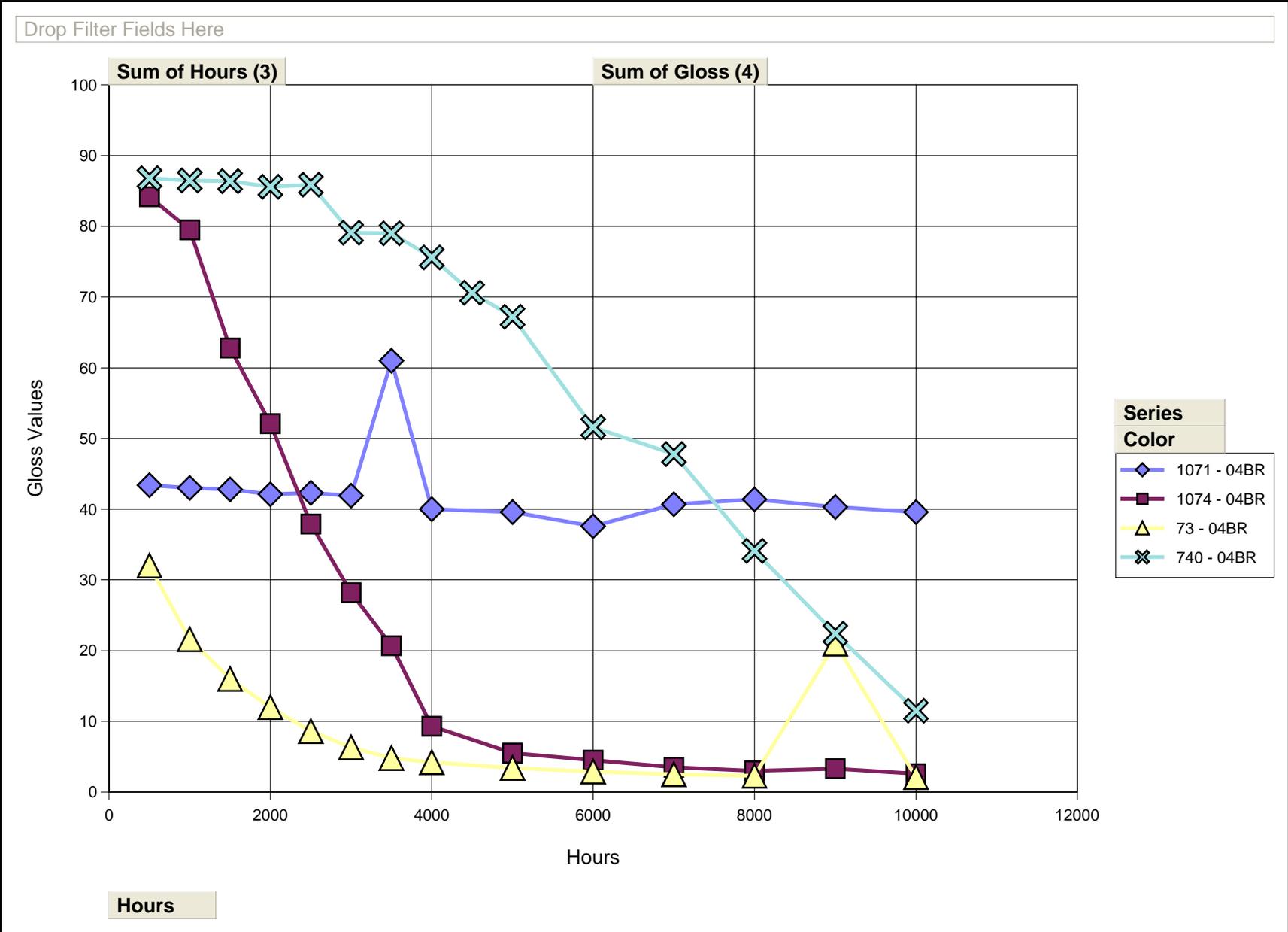
60-Month South Florida Marine Exposure			
Initial 60° Gloss	60° Gloss	DE _H	% Gloss Retention
76.0	64.6	0.35	85.0%

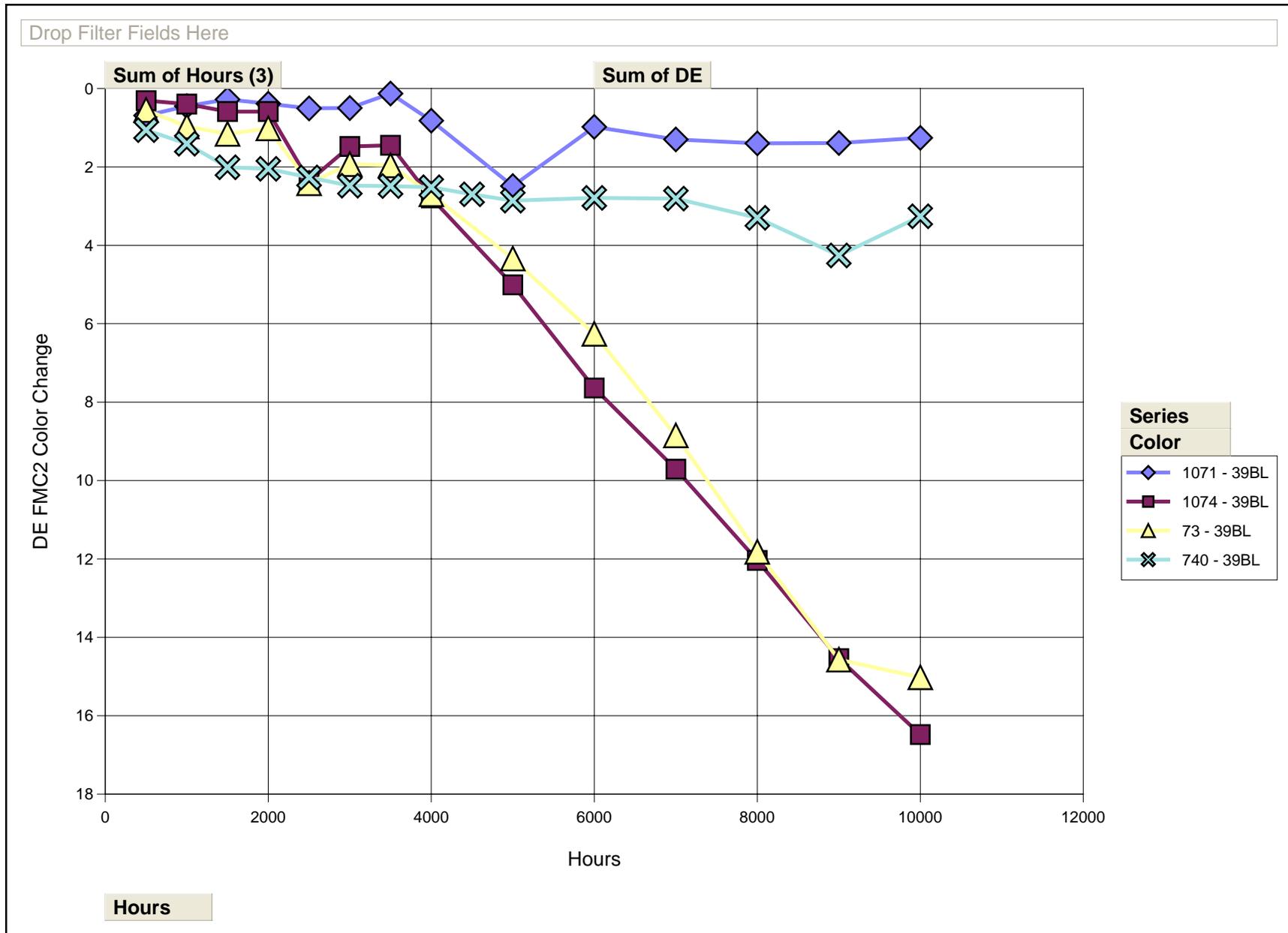
	Series 1070 Fluoronar	AAMA 2604-98
Length Exposure	5 Years 45° South Florida	5 Years 45° South Florida
Color Retention	0.35 DE Hunter	< 5 DE Hunter
Gloss Retention	85%	30% minimum
Chalking	8 (no chalking)	8
Erosion	None	< 10%

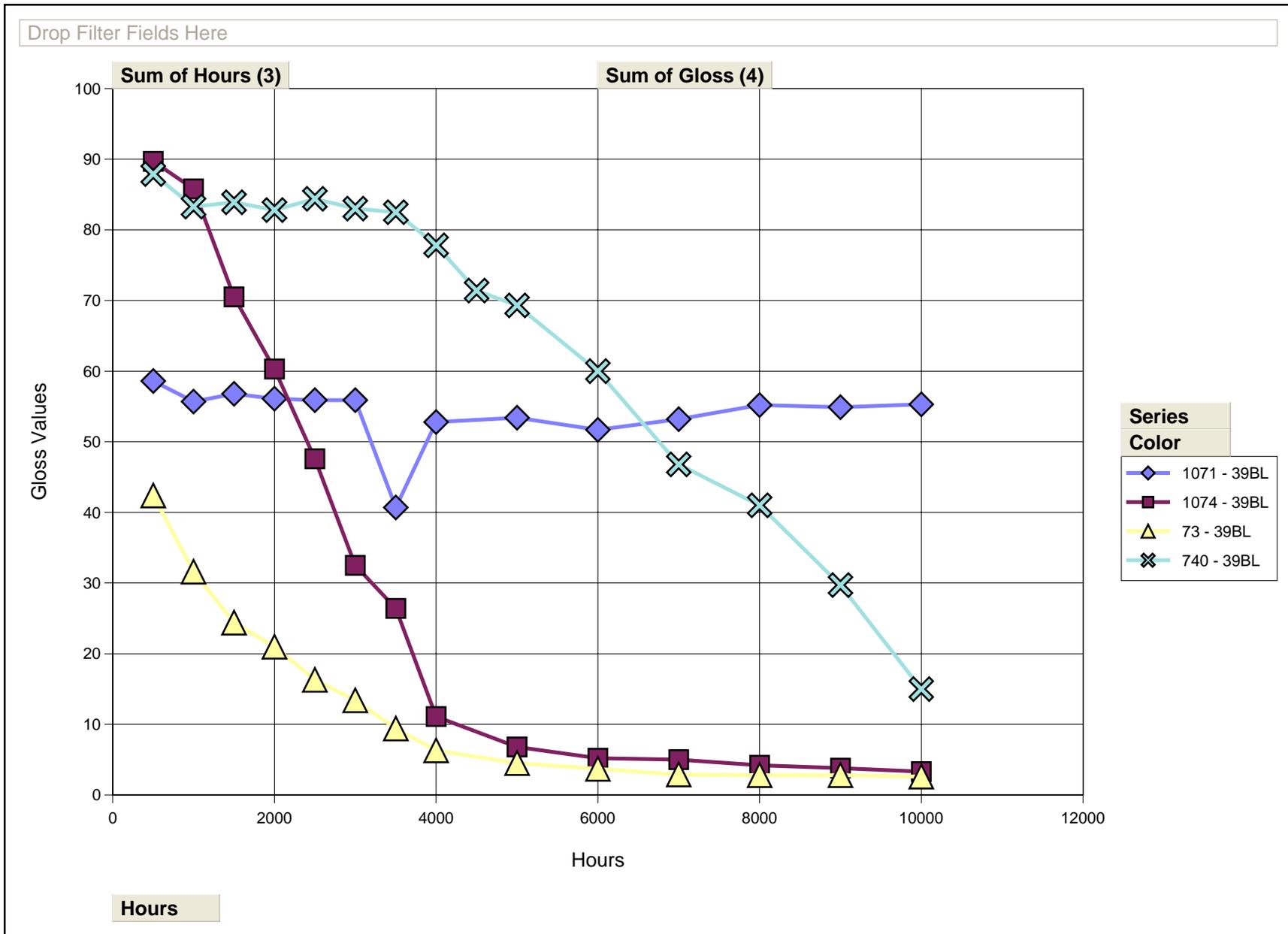
CONCLUSION: Series 1070 exceeds the exterior weathering requirements of the American Architectural Manufacturers Association (AAMA) 2604-98 standard

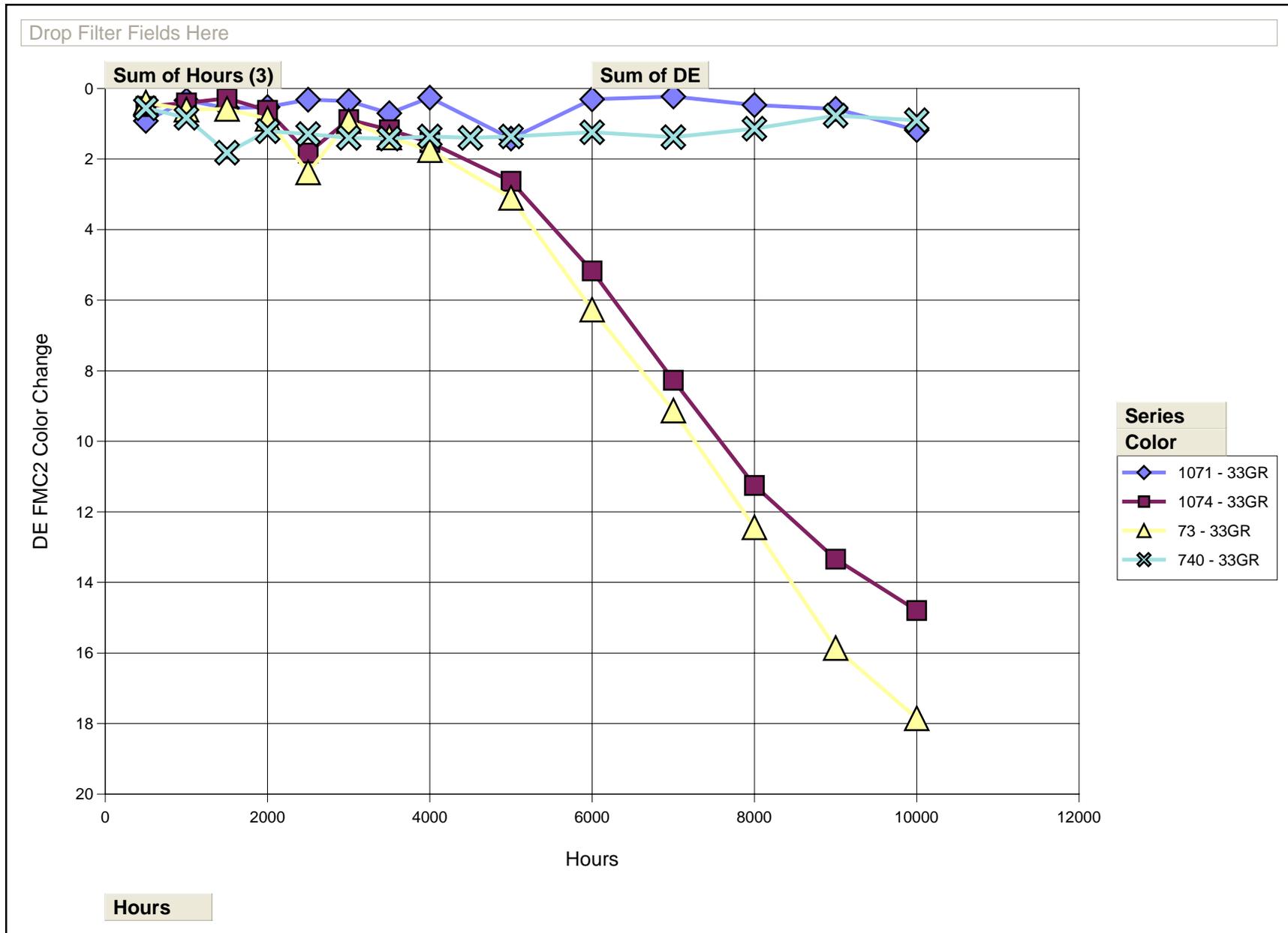
GP.403

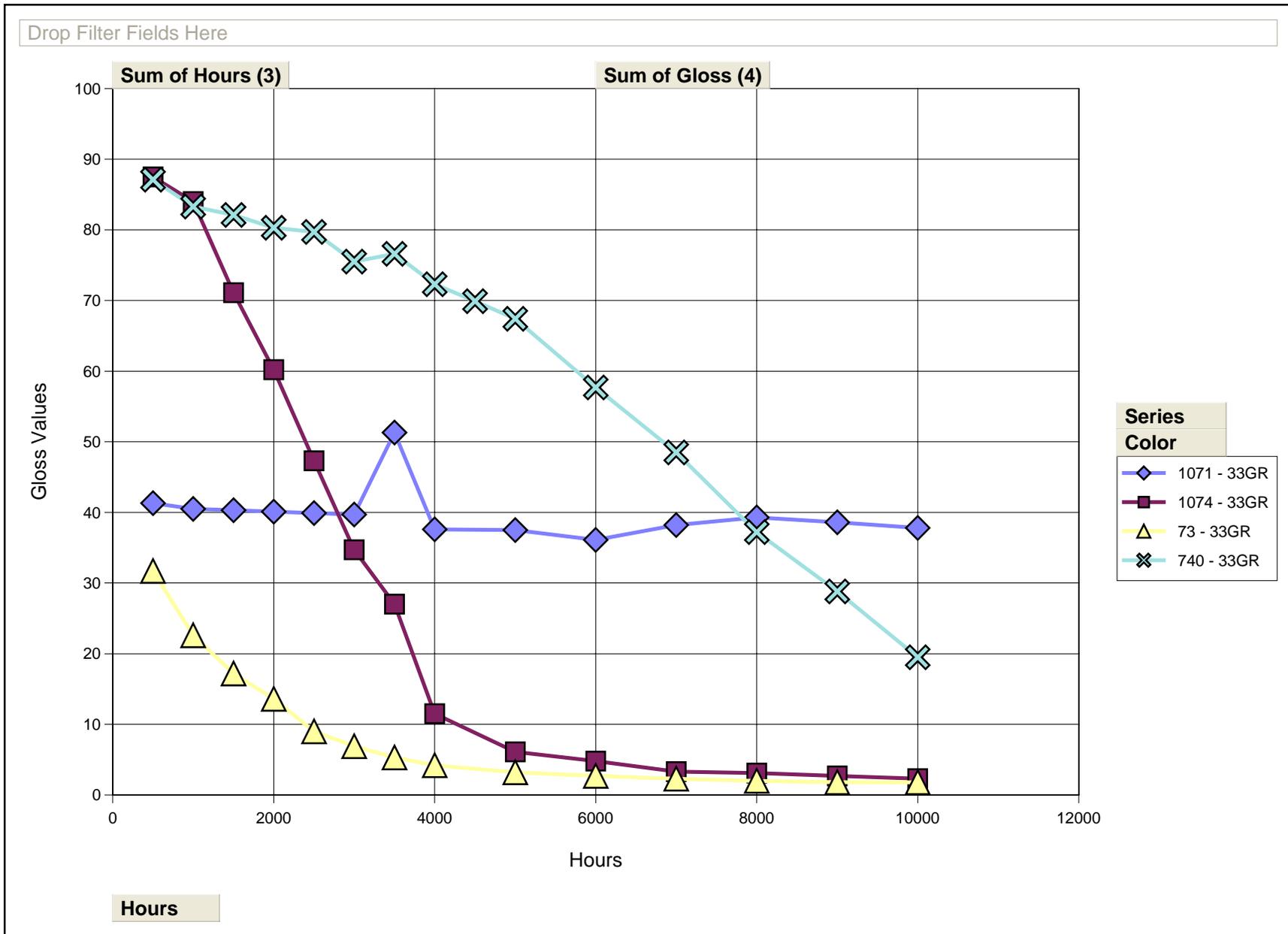


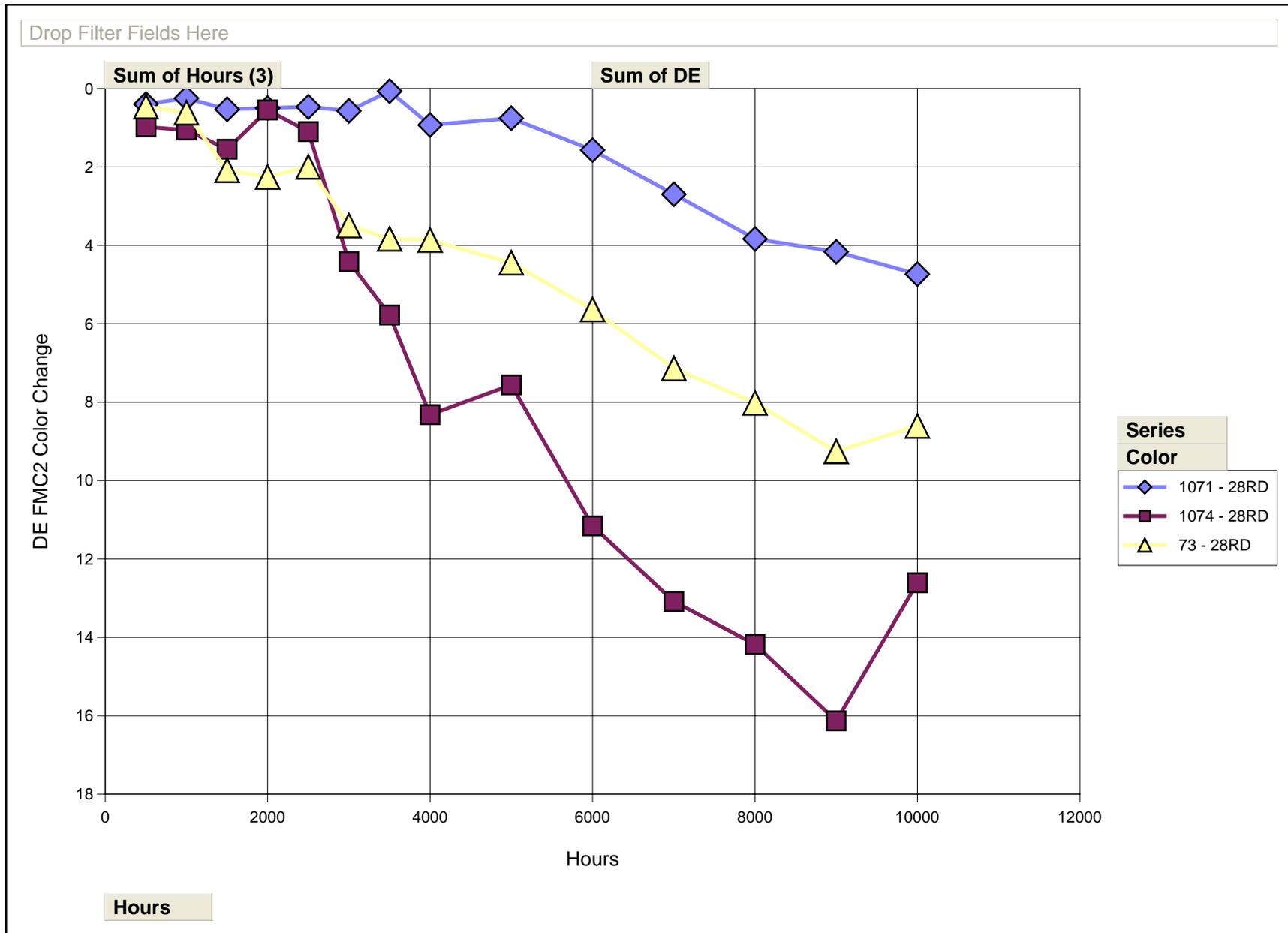


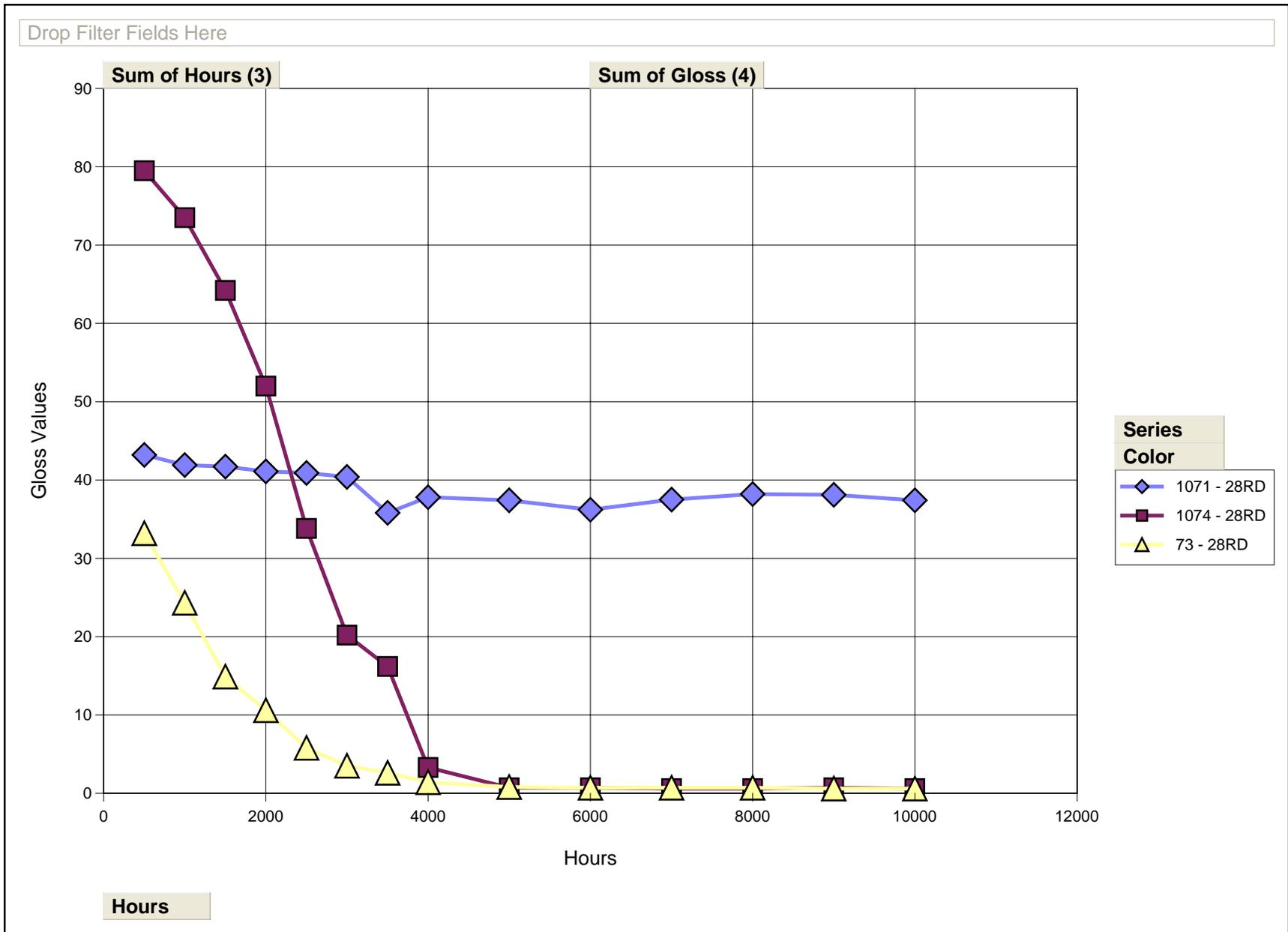












PROJECT PROFILE



Featured Products

Series 66 Hi-Build Epoxoline
Series 135 Chembuild

Series 1072 Fluoronar



The aged roofs of the Fair Oaks Corporate Center were coated in Tnemec's Series 1072 Fluoronar saving the owner half the cost of replacing the entire roof.

Fair Oaks Corporate Center

When the roofing on one of the office buildings at the Fair Oaks Corporate Center site in Fairfax, Virginia, started showing its age, project engineers kept costs from going through the roof by specifying a field-applied fluoropolymer coating system from Tnemec. "The aged roof showed about 25 percent severe rusting and pitting after 20 years," recalled Tnemec coating consultant Todd Guntner. "We were able to recoat it at half the cost of replacement."

Specifications called for the roof structure to be prepared in accordance with SSPC-SP7/NACE No. 4 Brush-Off Blast Cleaning and spot-primed with Series 135 Chembuild, a modified polyamidoamine epoxy for marginally prepared rusty steel and tightly adhering old coatings. The specified primer coat was Series 66 Hi-Build Epoxoline, a polyamide epoxy, applied by brush and roller, followed by a finish coat of Series 1072 Fluoronar, a high-solids fluoropolymer coating that offers an ultra-durable finish with outstanding color and gloss retention.

In order to demonstrate the surface preparation, method of application and performance of the coating system, a test patch was prepared on a section of the roof structure and allowed to weather over a six-month period. "We did the surface preparation, applied the entire coating system and left it to weather through freeze-thaw cycles and changes in weather," Guntner noted. "Then we performed adhesion testing on the mock-up in accordance with ASTM D 3359, Methods A and B."

The ASTM D 3359 standard covers procedures for assessing the adhesion of coating films to metallic substrates by applying and removing pressure-sensitive tape over cuts made in the film. Results of the adhesion testing were added to proprietary test data on Fluoronar, as well as international research on color and gloss retention of fluoropolymer coatings spanning more than 25 years, which Guntner provided to the owner. "The extensive test data was the clincher," Guntner noted. "The project engineer had not seen an air-cured fluoropolymer system that would provide the overall performance of the original roof, including color stability and corrosion resistance."

At 60 percent solids, Fluoronar offered adequate and consistent film thicknesses when applied by brush and roller in the same copper green patina as the building's original roof. "Between the primers and finish coat, a total of 600 gallons of material were needed to complete the project," Guntner estimated. And after more than seven years of weathering, Guntner reported that everything about the project continued to remain "thumbs up."

Project Name
Fair Oaks Corporate Center

Project Completion Date
June 2003

Engineer
Menard Doswell & Company
Fort Worth, TX

Project Location
Fairfax, VA

Owner
Menard Doswell & Company
Fort Worth, TX

Field Applicator
United Coatings Company

PROJECT PROFILE



Featured Products

Series 135 Chembuild

Series 1072 Fluoronar



To make the roofs on the original Westat, Inc. building match those of a new addition, Tnemec's Fluoronar was used. The coating was made to match the newly installed roofs while also offering outstanding color and gloss retention.

Westat, Inc.

When Westat, Inc. expanded its headquarters facility in 2009, two Tnemec products turned out to be just what the owners needed to tie the new addition into the old. Westat is an organization that offers survey and statistical research services to agencies in the U.S. government, as well as businesses, foundation and state and local governments. Some of their research areas include education, social services, housing, energy, science and technology, transportation, and environmental protection.

As the organization continued to expand the number of projects and staff working at its Rockville, Maryland headquarters, a building expansion was needed. The expansion project was completed in 2009. During the expansion, Westat added a 50,000 square foot addition that included new metal roofs. The owner had originally planned on replacing the roofs on the existing building to match the roofs of the new addition, but the approximate \$1 million cost of replacement caused the owners of Westat to consider a high-performance coating as an alternative.

The coatings applicator heard that the owner was looking for a high performance coating for the existing roof that would also match the newly installed section. According to Tnemec coating consultant Todd Guntner, "The applicator immediately thought of Tnemec as the company who could meet this requirement." The applicator contacted Guntner and they developed a system that would provide low maintenance and high performance as well as match the newly installed roofs on the addition.

For the roofs, a system utilizing Series 135 Chembuild, a high-build epoxy with superior wetting for marginally prepared rusty steel and self-priming characteristics, followed by a topcoat of Series 1072 Fluoronar, a high-solids fluoropolymer coating that provides an ultra-durable finish with outstanding color and gloss retention, was the best solution for extended protection and color stability.

The applicator high-pressure water jetted the metal roofs in accordance with SSPC-SP12/NACE No. 5. The roofs then received a coat of Series 135. In order to get the existing roofs to match the copper green patina of the new roofs, Tnemec's color lab created an exact color match. The color-matched topcoat of Series 1072 was then roller-applied at two to three mils DFT. Once applied, the owner was pleased to have chosen coatings that allowed the new roofs to match the original roofs while also providing outstanding color and gloss retention.

Project Name
Westat, Inc.

Project Completion Date
2009

Field Applicator
TL Evans
Beltsville, MD

Project Location
Rockville, MD

Owner
Westat, Inc.
Rockville, MD

PROJECT PROFILE



Featured Products

Series 73 Endura-Shield
Series 90-97 Tneme-Zinc

Series 135 Chembuild
Series 1072 Fluoronar



The CNA Center in Chicago, IL chose Series 1072 Fluoronar in CNA Red for its topcoat to provide outstanding color and gloss retention and greatly extend maintenance cycles.

CNA Center Chicago

Anyone who has been tickled pink, green with envy, or had the blues understands the affect color can have on emotions, so it's understandable why the CNA Center in Chicago is considered a "hot" property with its red exterior featuring a fluoropolymer coating system from Tnemec. "Whenever you see the Chicago skyline, there's this lone red building," according to Tnemec coating consultant Chris Wascher. "From a color perspective, it's one of a kind."

The building's owner wanted to select a coating system that offered the best available life expectancy, so mock-ups of different products were left on the building and evaluated over several months. "They wanted to compare the various coating systems after being exposed to a year's worth of freeze/thaw cycles," Wascher noted. "The mockups were evaluated for aesthetics, as well as adhesion, and the coating system that best kept its gloss and color was the Tnemec system with Series 1072 Fluoronar as the finish coat."

The project was completed in two phases. The first phase consisted of overcoating the exterior steel substrate on the top 42 stories of the 44-story high-rise, as well as aluminum and galvanized louvers located mid-way up the building and on its top two levels. Surface preparation on steel substrates in the first phase was in accordance with SSPC-SP2 Hand Tool Cleaning or SSPC-SP3 Power Tool Cleaning. Existing paint on the aluminum was removed using an environmentally-friendly paint stripper. Exterior steel in phase one was spot-primed with Series 135 Chembuild, a modified polyamidoamine epoxy, followed by an intermediate coat of Series 73 Endura-Shield, an aliphatic acrylic polyurethane. The finish coat was Series 1072 Fluoronar, a high-solids fluoropolymer, in the custom color "CNA Red." Aluminum and galvanized metal substrates were primed with Chembuild and finished with Fluoronar.

The second phase involved removing all exterior coatings from the building's lower two levels down to bare steel in accordance with SSPC-SP6/NACE No. 3 Commercial Blast Cleaning. "Rather than just overcoating these areas, they wanted to start from scratch," Wascher acknowledged. The prime coat used on phase two exterior steel was Series 90-97 Tneme-Zinc, a zinc-rich, aromatic urethane, followed by an intermediate coat of Chembuild and a finish coat of Fluoronar in CNA Red.

Overall, more than 2,300 gallons of coatings were required for the 1.3 million square foot red tower, which was built in 1972. "The ease of application and quick cure times for the coatings made it possible for the applicators to maximize their time," Wascher added. "They absolutely loved the way it looked."

Project Name CNA Center Chicago	Owner CNA Financial Corporation	Field Applicator Eagle Painting & Maintenance Co., Lansing, IL
Project Location Chicago, IL	Engineer Wiss, Janney, Elstner Associates, Inc., Chicago, IL	
Project Completion Date First Phase: November 2008 Second Phase: June 2009		



PROJECT PROFILE

Featured Products

Series 1 Omnithane
 Series 30 Spra-Saf EN
 Series N69 Hi-Build Epoxoline II

Series 73 Endura-Shield
 Series 90-97 Tneme-Zinc

Series 1072 Fluoronar
 Series 1075 Endura-Shield II



All exposed steel on the Duquesne Pedestrian Skywalk in Pittsburgh, PA received a prime coat of Series 90-97 Tneme-Zinc which provides excellent corrosion resistance.

Duquesne Pedestrian Skywalk

When a long-lasting protective coating system was required for a new steel and glass skywalk at Duquesne University, project engineers moved fluoropolymer technology from Tnemec to the head of the class. "The decision was a no brainer," according to Tnemec coating consultant Shawn Malarik. "The project called for a fluoropolymer material that could be brush-and-roller applied to the pedestrian bridge, which arches 65 feet above a busy road on the Duquesne campus. Long-term color and gloss retention was another key requirement."

The eight-story, glass-enclosed skywalk features a steel superstructure, contemporary arch frame design, metal roofing and an aluminum window wall system. The bridge links the center of the campus to the \$30 million Power Center, a recreational facility housing a two-story book store, juice bar, restaurant, two gyms, classrooms, fitness facilities and a ballroom.

All exposed steel was prepared in accordance with SSPC-SP6/NACE No. 3 Commercial Blast Cleaning prior to receiving a shop-applied prime coat of Series 90-97 Tneme-Zinc, a moisture-cured, zinc-rich aromatic urethane with excellent corrosion resistance. Nearly 90 gallons of Tneme-Zinc were required for the project.

Next, an intermediate coat of Series 1075 Endura-Shield II, an aliphatic acrylic polyurethane was brush-and-roller applied in the field. A finish coat of Series 1072 Fluoronar, a satin finish, high-solids fluoropolymer completed the coating system. Approximately 40 gallons of Endura-Shield and 40 gallons of Fluoronar were used on the project. The same three-coat system was also used on an architectural sunshade located adjacent to the university's student center. "That project came about as a direct result of the work on the skywalk," Malarik noted.

The bridge's galvanized deck was chemically treated prior to receiving two coats of Series 30 Spra-Saf EN, a direct-to-metal hydrophobic acrylic polymer. Spra-Saf EN provides early flash-rust resistance, as well as long-term corrosion protection.

"Another Tnemec coating system was used on a parking garage connected to the Duquesne student center. That project used a coat of Series 1 Omnithane, a single-component, moisture-cured resin containing mica-ceous iron oxide and zinc; an intermediate coat of Series N69 Hi-Build Epoxoline II, a polyamidoamine epoxy; and a finish coat of Series 73 Endura-Shield, a semi-gloss aliphatic acrylic polyurethane," reports Malarik.

With more than 10,000 students, Duquesne is consistently ranked among the nation's top Catholic universities for its award-winning faculty and 130-year tradition of academic excellence.

Project Name
 Duquesne Pedestrian Skywalk

Owner
 Duquesne University,
 Pittsburgh, PA

Field Applicator
 Lisanti Painting, Inc.,
 Pittsburgh, PA

Project Location
 Duquesne University,
 Pittsburgh, PA

Engineer
 WTW Architects, Inc.,
 Pittsburgh, PA

Shop Applicator
 Regal Industrial Corp.,
 Donora, PA

Project Completion Date
 September 2006

PROJECT PROFILE



Featured Products

Interior Steel Trusses

Series 37H Chem-Prime H.S.
Series N69 Hi-Build Epoxoline II
Series 1077 Enduralume

Exterior Steel Trusses

Series 90-97 Tneme-Zinc
Series 1078 Fluoronar Metallic
Series N69 Hi-Build Epoxoline II

Interior Metal Ceiling

Series 115 Uni-Bond DF



For the exterior curtain wall of the new Sports & Fitness Facility at the Georgetown University Law Center, Ellerbe Becket selected Tnemec coating systems because "we always try and use Tnemec coatings on our sports centers."

Georgetown University Law Center Sports & Fitness Facility

Margaret Flinner, AIA, architectural director in the Washington, D.C. office of the world-class architectural firm of Ellerbe Becket (EB), is the project designer of the 71,000-square-foot Sports & Fitness Facility on the law school campus of Georgetown University. Formally dedicated in October 2004, the new building contains a swimming pool on the lower level, restaurant and student lounge on the first floor, fitness center and exercise rooms on the second level, topped off by a gymnasium and racquet ball courts on the third floor.

Specializing in sports and athletic venues, Flinner reports to the EB Washington, D.C. office, which is the hub for EB's world-wide higher education recreation center marketing and design. "Because our sports venues showcase lots of exposed, structural steel, we have been specifying Tnemec high-performance coatings for years," Flinner said. "We appreciate the fact that Tnemec coatings contribute to the durability, quality and clean, beautiful lines of our athletic venues."

Working closely with Tnemec coating consultant Todd Guntner, Flinner specifically wanted the look of Tnemec's Series 1078 Fluoronar Metallic to provide color and gloss for the exterior "tree-like" support columns. "Tnemec's coatings beautifully complement the striking, structural steel trusses which support the roof and penetrate the full glass curtain wall, bringing profuse light to all floors of the Center." Flinner selected Series 1077 Enduralume — another member of the Tnemec Premier Finishes family — in a matching grey color to bring the same look and feel indoors.

"We completed phase three of a five phase renovation of the historic Payne Whitney Gym at Yale University, New Haven, Conn.," Flinner said. "The next phase, the natatorium, to include a 50-meter pool and diving facility, will most certainly feature another Tnemec high-performance coating system. As with the Georgetown Law Center Sports & Fitness Facility, Tnemec will be an integral component of our design."

Project Name
Georgetown University Law
Center Sports & Fitness
Facility

Project Location
Washington, D.C.

Project Completion Date
September 2004

Architect
Ellerbe Becket, Washington,
DC

Contractor
Sparkle Painting, Inc.,
Springfield, VA

PROJECT PROFILE



Featured Products

Series 594 Omnithane
Series 27 F.C. Typoxy
Series 1072 Fluoronar



For the pedestrian bridges over the historic C&O Canal, Tnemec met numerous National Park Service restoration demands including custom color matching a special Park Service brown.

Georgetown Pedestrian Bridges

Updating the two bridges connecting canal-side offices to the fashionable Georgetown Park Mall posed a host of difficult challenges for the NPS: remove years of paint and rust; prevent the blast medium from falling into the waters of the C&O Canal; keep the bridges open at all times to the daily, heavy pedestrian traffic; keep noise levels to a minimum (this prevented heavy equipment — compressors, dust collectors, precipitators, sand blasters — on site and allowed only one small barge in the canal) and deliver a finish that would last for a decade and perfectly match the special NPS brown.

Working closely with United Coatings, Tnemec coating consultant Todd Guntner developed creative solutions to meet all these demands. The 16,000 square feet of previously painted steel had to be fully stripped of the badly deteriorated coating. The contracting team chose to clean to bare metal per SSPC-SP11 guidelines, leaving a one mil surface profile on the steel. To achieve this method of cleaning, the crew used needle-guns and rotor-pinners to remove the rust and old paint, as sandblasting was out of the question. Laboring from 7:00 a.m. to 4:00 p.m. in this confined space (5 feet high by 8 feet wide), workers prepared the 80 feet by 3 feet steel beams down to bare metal. To prevent the debris from falling into the Canal, United Coatings built a unique containment structure of wood and plastic tarp around both bridges. Supported by cables, this house of insulated plywood (for noise protection) required the approval of a structural engineer.

For the prime coat, Guntner specified Series 594 Omnithane, a MIO/zinc filled urethane applied at 2.5 to 3.5 mils DFT. For the intermediate coat, Series 27 F.C. Typoxy, a polyamide epoxy, was applied at 3.0 to 5.0 mils DFT. And for the topcoat, Series 1072 Fluoronar, a fluoropolymer specially created to perfectly match the NPS brown color, was applied at 2.0 to 3.0 mils DFT.

“What I learned from this experience is to never say never. It is when the barriers and restrictions appear insurmountable that the greatest opportunity appears! In this case it was a golden opportunity to win the contractor’s trust and give the owner a system, under budget, that will last for years and years,” Guntner says.

Project Name

Georgetown Pedestrian Bridges — spanning the historic Chesapeake and Ohio (C&O) Canal

Project Location

Georgetown, Washington, D.C.

Project Completion Date

December 2004

Owner

The U.S. National Park Service (NPS)

Contractor

Concrete Protection & Restoration, Inc.,
Gwynn Oak, MD

Applicator

United Coatings Company,
Baltimore, MD

PROJECT PROFILE



Featured Products

Series 66 Hi-Build Epoxoline
Series 156 Enviro-Crete

Series 1071 Fluoronar



Series 1071 Fluoronar provides long-term color and gloss retention for the exterior of the Georgia Dome, home of the Atlanta Falcons football team.

Georgia Dome

When the largest cable-supported domed football stadium in the world required a new color scheme for its exterior, the project called for a well-executed game plan by the project management company, the architect, general contractor and a team of coating professionals.

Coating the exterior of the Georgia Dome presented a challenge given the stadium's close proximity to moving traffic, nearby parking and office buildings. In order to avoid damage from overspray, all coatings had to be applied by roller. The exterior skin of the dome consists of architectural concrete masonry units (CMUs) to a height of 12 feet, flat metal panels up to the low roof level at 97 feet and corrugated panels from the lower roof to the compression ring 55 feet above. The embossed metal had a textured galvanized surface originally finished with a Polyvinylidene Fluoride (PVDF) coil-coating. Working from 40-foot-wide stages, coating crews prepared both coated and uncoated substrates by washing them with a pre-paint cleaning chemical at a pressure of 3,000 psi and a temperature of 180 degrees F.

Metal panels were primed with Series 66 Hi-Build Epoxoline, a polyamide epoxy primer, followed by a topcoat of Series 1071 Fluoronar, a high-solids fluoropolymer polyurethane. A single coat of Fluoronar was specified, except on red panels where two coats were applied. Concrete surfaces received two coats of Series 156 Enviro-Crete, a breathable waterborne acrylate.

An ultra-durable finish, Fluoronar was chosen for its user-friendly application characteristics, outstanding color and gloss retention, and strong adhesion to aged coil-applied coatings. "We experienced no problems with this product even when a thunderstorm appeared and rained on a freshly coated surface. It was easy to apply, which saved us a lot of headaches," recalled Charles Wagner, project estimator with Specialty Finishes, Inc., the project's coating contractor.

Jeff Wierenga, AIA, project architect with the firm of Thompson, Ventulett, Stainback and Associates (TVS) acknowledged, "It was a very smooth-running operation from all sides and we were really pleased with how it turned out."

Project Name
Georgia Dome

Owner
Georgia World Congress
Center Authority

Architect
Thompson, Ventulett,
Stainback and Associates

Project Location
Atlanta, GA

Project Management
Darden & Company

General Contractor
Holder Construction

Project Completion Date
July 2008

Coating Applicator
Specialty Finishes, Inc.

PROJECT PROFILE



Featured Products

Series 66 Hi-Build Epoxoline

Series N69 Hi-Build Epoxoline II

Series 73 Endura-Shield

Series 76 Endura-Clear

Series 84 Ceramlon ENV

Series 90-97 Tneme-Zinc

Series 1071 Fluoronar

Series 1075 Endura-Shield II



Series 1071 Fluoronar provides long-term performance and excellent resistance to UV light for the exterior of the National Aquarium in Baltimore.

National Aquarium in Baltimore

As one of the most visited destinations in Maryland, the National Aquarium in Baltimore (NAIB) has kept its interior and exterior structures shipshape for more than a quarter century using the latest coating systems available from Tnemec. "From its beginning, the National Aquarium has been willing to use new technology from Tnemec to achieve and maintain long-lasting aesthetic performance," according to Tnemec coating consultant Todd Guntner.

In 2004, a coating system featuring an advanced fluoropolymer topcoat was used on interior and exterior concrete as part of a 65,000-square-foot expansion. The surface was brush-off blast-cleaned in accordance with SSPC-SP13/NACE No. 6, followed by a prime coat of Series N69 Hi-Build Epoxoline II, a polyamidoamine epoxy. A coat of Series 1075 Endura-Shield II, a semi-gloss acrylic polyurethane, and Series 1071 Fluoronar, an air-dried fluoropolymer, completed the coating system. "Fluoronar was chosen for its resistance to ultraviolet light and its long-term performance," Guntner explained. "In addition, the Aquarium is located right in the harbor, so salt water was an issue, too."

Prior to the introduction of Fluoronar, the same primer and intermediate coatings were used for concrete along with a topcoat of Series 76 Endura-Clear, a high-gloss urethane, to maintain the bright, nautical color scheme used at the Aquarium. "Eventually, when the clear coat needs repainting, the Aquarium intends to use Fluoronar," Guntner said.

Both interior and exterior steel at the NAIB was commercially blast cleaned in accordance with SSPC-SP6/NACE 3 and shop-primed with Series 90-97 Tneme-Zinc, a zinc-rich, moisture-cured urethane. Steel inside the Aquarium's atriums received an intermediate coat of Series 66 Hi-Build Epoxoline, a polyamide epoxy, and a finish coat of Series 73 Endura-Shield, an aliphatic acrylic polyurethane. "We've never had to retouch any coating on the atrium steel," Guntner noted. On exterior steel, an intermediate coat of Series N69 Hi-Build Epoxoline II, a polyamidoamine epoxy, was followed by a coat of Endura-Shield II and a finish coat of Endura-Clear. These applications included a glass curtain wall, handrails, an outdoor pedestrian bridge and artwork resembling a nautical mast.

"Over the years, through expansions and renovations, thousands of gallons of Tnemec coatings have been used at the National Aquarium," added Guntner.

Opened on August 8, 1981, the NAIB has an annual attendance of 1.6 million visitors.

Project Name
National Aquarium in
Baltimore

Owner
National Aquarium in
Baltimore

Shop Applicator
Tidewater Steel

Project Location
Baltimore, MD

Architect
Chermayeff, Sollogub &
Poole, Inc., Boston, MA

Field Applicator
RH Fewster, Baltimore, MD

Project Completion Date
September 2004

PROJECT PROFILE



Featured Products

Series 66 Hi-Build Epoxoline

Series 90-97 Tneme-Zinc

Series 161 Tneme-Fascure

Series 1071 Fluoronar

Series 1075 Endura-Shield II



The Largo (top photo) and Morgan (bottom photo) light rail subway stations in Landover, MD are protected with urethane and fluoropolymer topcoats from Tnemec's line of Premier Finishes.

Washington, D.C. Metro Area Transit Largo/Morgan Stations

Not only does the Washington Metropolitan Area Transit Authority operate the second largest rail transit system and the fifth largest bus network in the United States, it also transports more than a third of the federal government to work and millions of other people to the nation's capital. Construction of the Metrorail system began in 1969, with the first phase beginning operation in 1976. The final leg of the original 103-mile rail network was completed in early 2001. Today, there are 86 Metro stations in service within a 106.3 mile network.

In September 2002, the WMATA board of directors awarded a \$92.8 million contract for construction of the Largo Town Center station and 2,100-space garage along with the Morgan Boulevard station and its 596-space parking lot. Late in 2004, the Blue Line Extension and the two new stations - Morgan Boulevard and Largo Town Center - opened on the east end of the Blue Line. This marked the first construction beyond Metro's original 103-mile planned system and the first Metrorail service beyond the Capital Beltway in Prince George's County, Maryland.

When choosing coating systems to protect the stations' platform areas, cost and durability were of utmost importance to WMATA. Series 1071 Fluoronar and Series 1075 Endura-Shield II were chosen because they are low-maintenance, highly-corrosion resistant topcoats that provide long-term color and gloss retention. Guntner reports, "Tnemec coating systems were one of the few items not value-engineered on this project because the owner really stressed the importance of low maintenance for the coatings due to the limited maintenance budget."

Following commercial blast cleaning in accordance with SSPC-SP6/NACE No. 3, the exposed steel structure and canopy received a shop-applied coat of Series 90-97 Tnemec-Zinc, a zinc-rich, moisture-cured urethane primer, followed by field-applied coats of Series 1075 Endura-Shield II, a semi-gloss acrylic polyurethane, and Series 1071 Fluoronar, a semi-gloss fluoropolymer.

The galvanized decking was prepared by abrasive blast cleaning, followed by a shop-applied prime coat of Series 161 Tneme-Fascure, a polyamide epoxy. A second coat of Series 161 was then applied in the field and topcoated with Series 1071 Fluoronar. An air-dried fluoropolymer, Series 1071 provides an ultra-durable finish and outstanding color and gloss retention even in the most severe exposures.

Tnemec filled the Metro's request for custom colors and created Wickham Gray for the Morgan station and Chantilly Lace for both stations. According to Tnemec coating consultant Todd Guntner, WMATA is thrilled with the products' performance to date.

Project Name

Washington, D.C. Metro Area
Transit Largo/Morgan Stations

Project Completion Date

June 2004

Architect/Engineer

DMJM/Capital Transit, Arlington,
VA

Project Location

Landover, MD

Owner

WMATA, Washington, D.C.

Applicator

John P. Conomos, Inc.,
Bridgeville, PA