



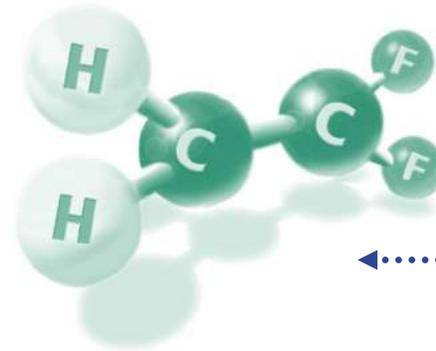
Differentiated Performance  
&  
Long-Life Architectural  
Coatings

Ron Partridge  
Sr. Account Manager Kynar® PVDF Coatings



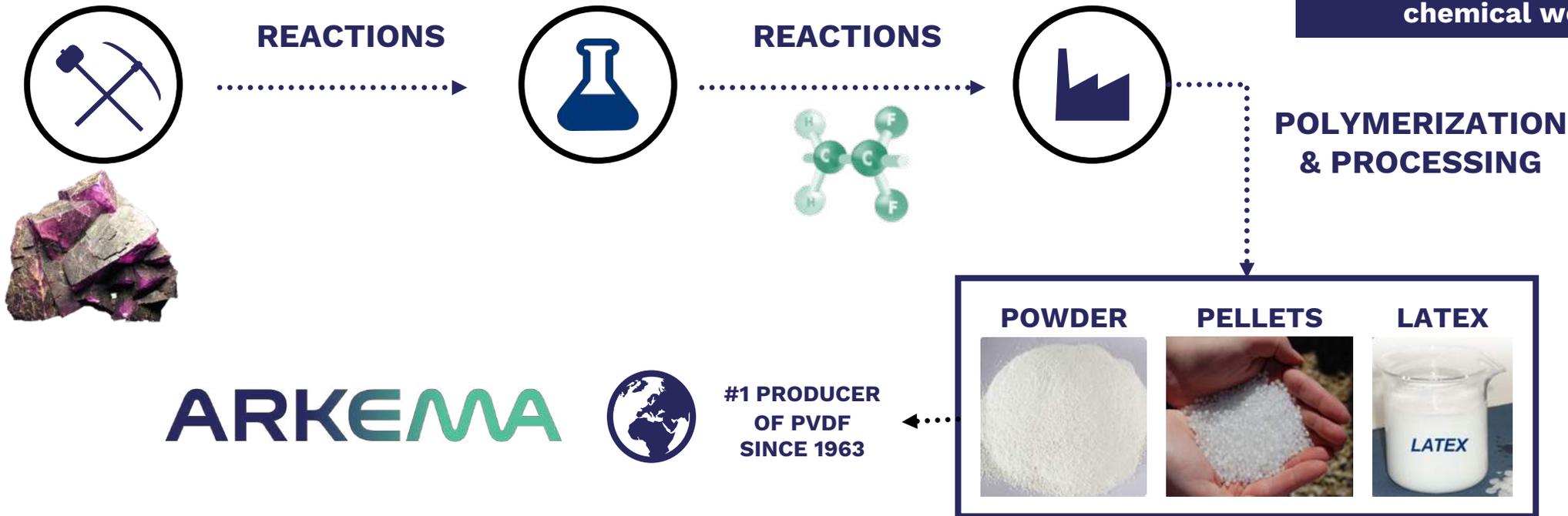
# What Is Kynar® PVDF Resin?

## Polyvinylidene difluoride (PVDF)



**KYNAR®**  
**KYNAR AQUATEC®**  
**KYNAR 500®FSF®**

The (C-F) Bond is one of the strongest bonds in the chemical world



# Kynar® PVDF Industrial Applications

**Fluoropolymers** have long been known for their **non-stick properties, chemical resistance, resistance to UV damage, toughness and purity**

**Polyvinylidene Fluoride (PVDF)** is a premier resin in this category

**These unique performance attributes extend the life of architectural coatings**



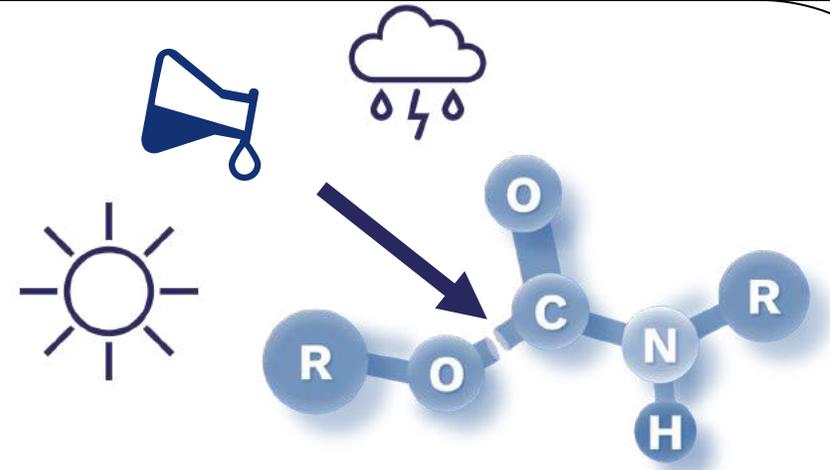
# How Coatings Fail?

→ **Over time, the chemical backbone of the binder is broken down from heat, UV light, oxygen**

- Leads to Chalking (binder degradation)

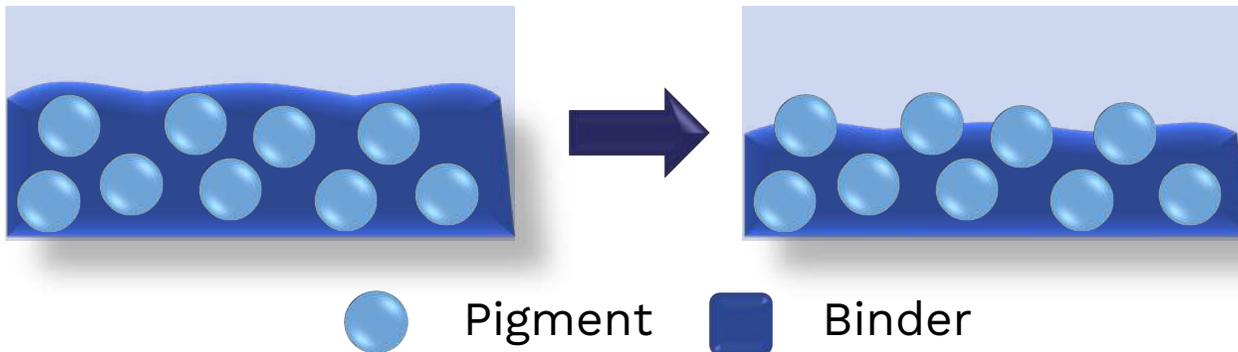
→ **Pigment is now exposed**

- Leads to Gloss Loss
- Potential Color Fade (degradation of binder & pigment)



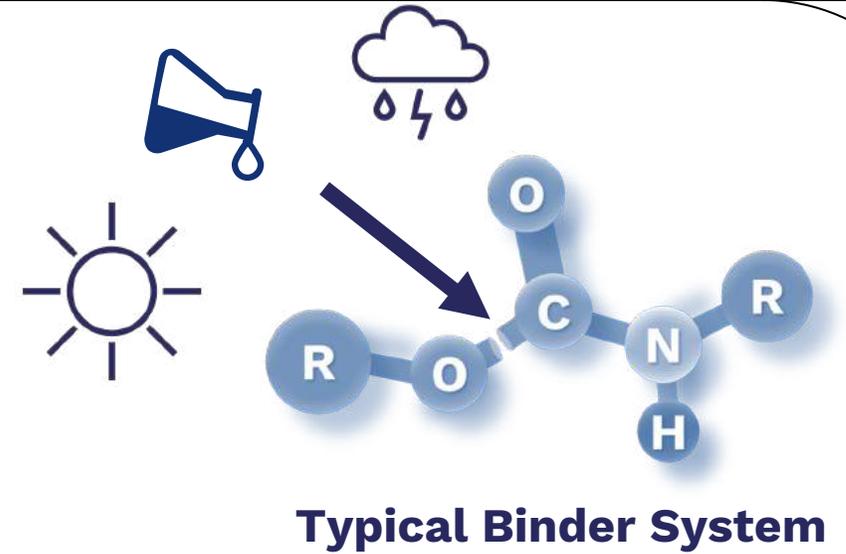
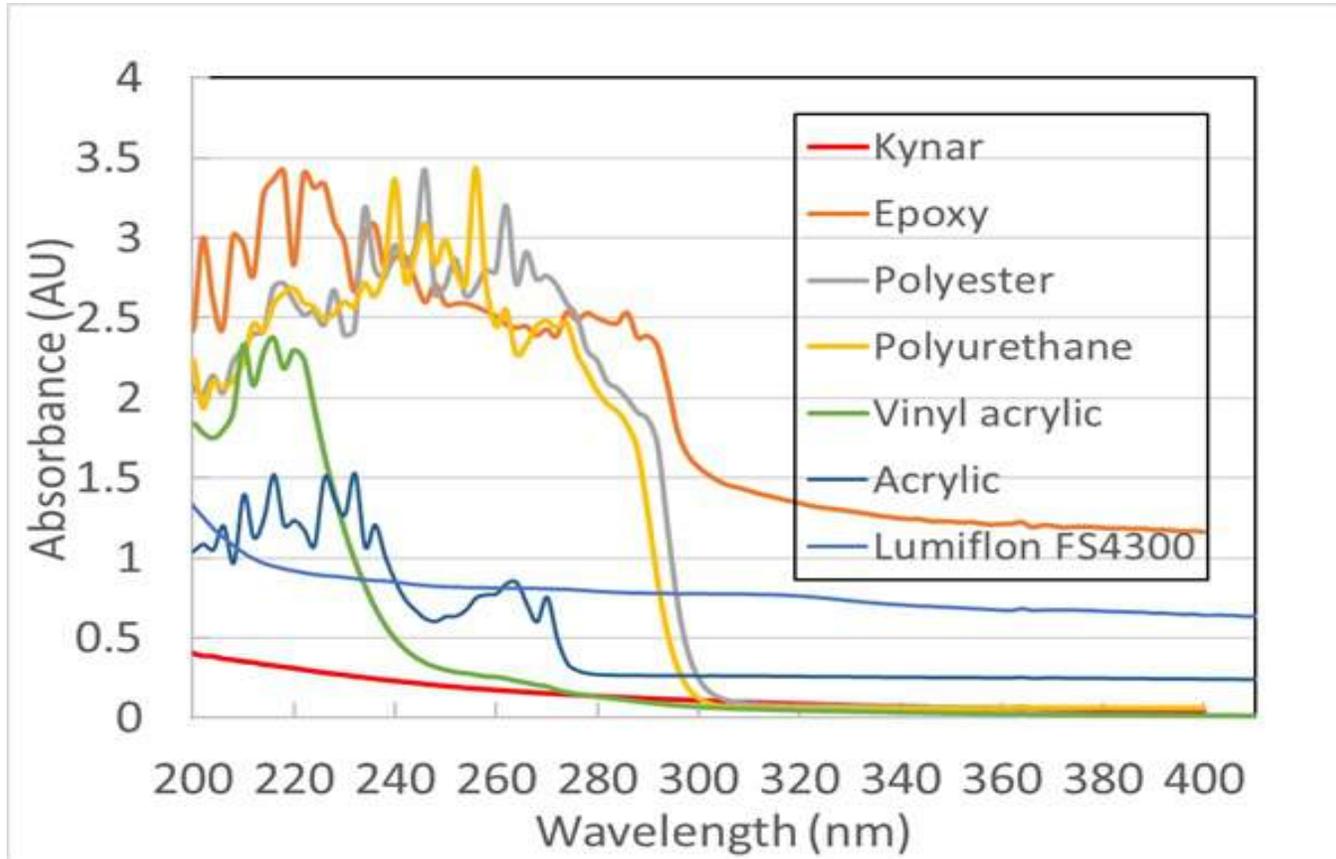
**Typical Binder System**

## ***Degradation of Coating Film:***



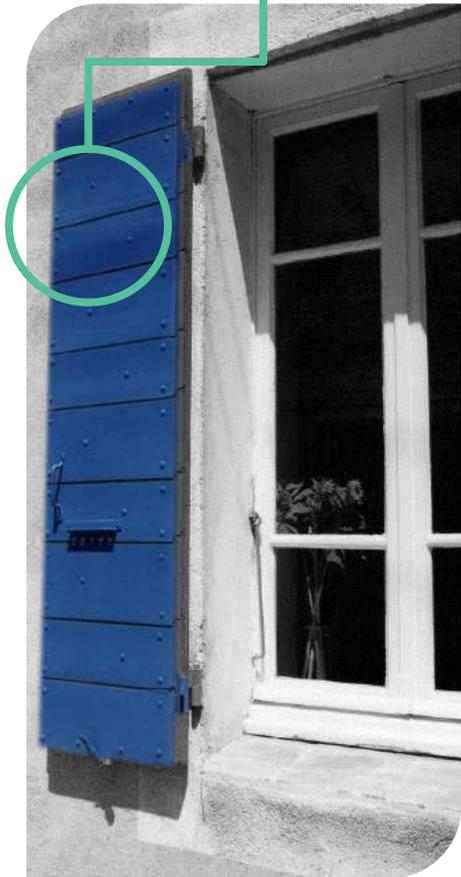
# Why Resin Binders Fail?

## UV Absorption

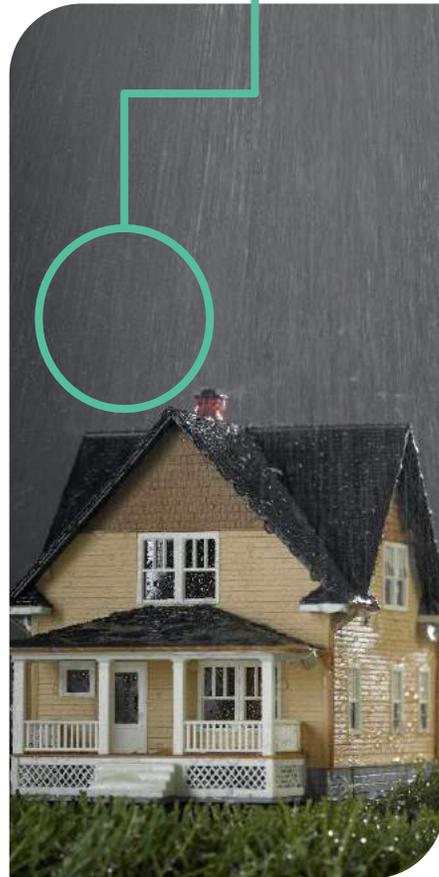


# Important Coating Attributes

**COLOR  
RETENTION**



**WEATHERABILITY**



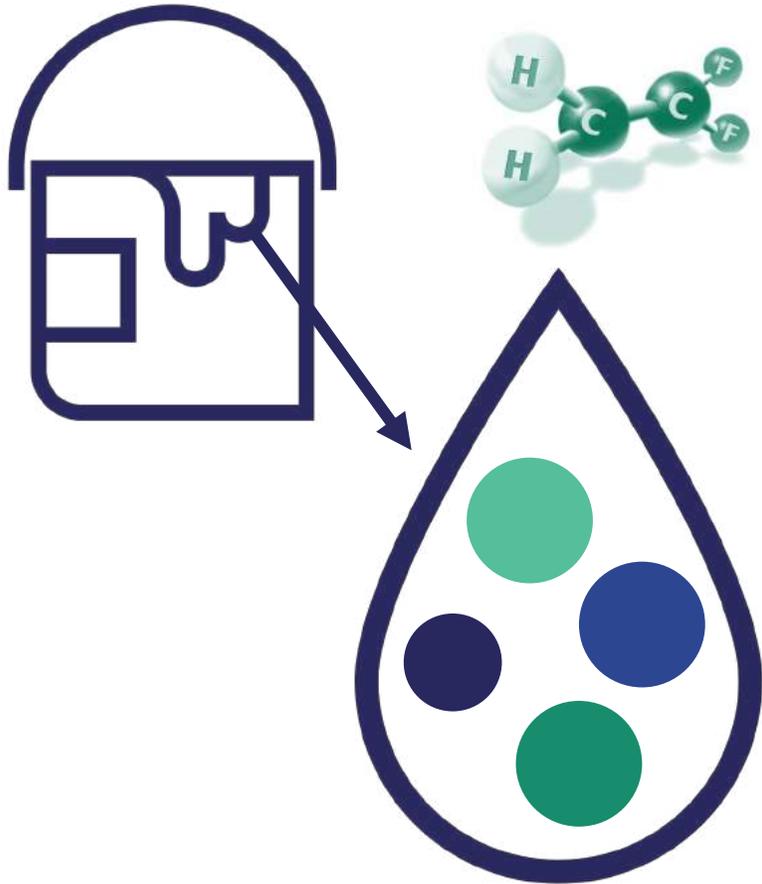
**SUBSTRATE  
PROTECTION**



**LOW  
MAINTENANCE**



# What is in a Coating?



**BINDER**  
**KYNAR® PVDF**

**PIGMENT**  
Color, IR reflection, UV blocking

**CARRIER**  
Water or Solvent

**ADDITIVES**  
Rheology modifiers, thickeners, etc.

**Retention of Color**

**Resistance to Dirt  
Pick-Up**

**Resistance to  
Mildew & Fungi**

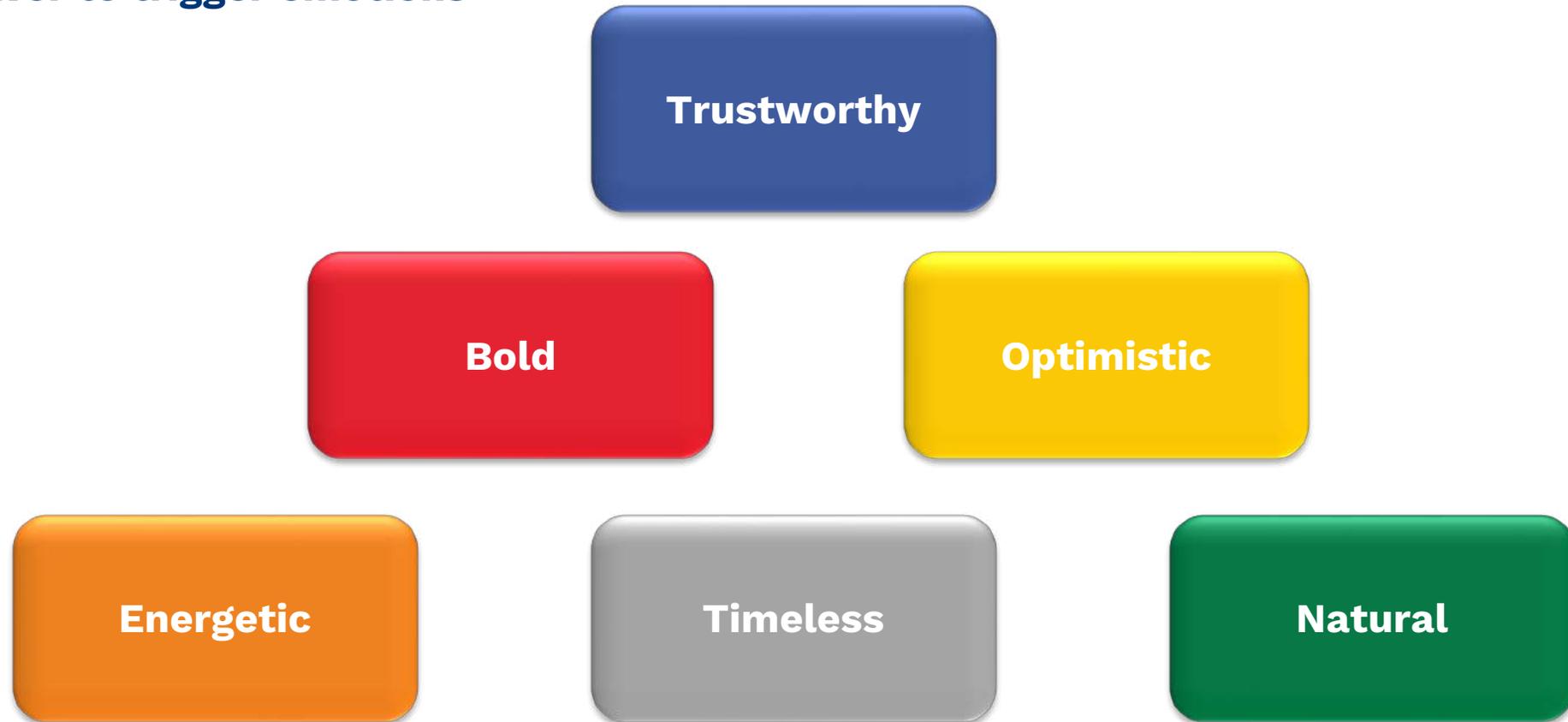
**Resistance to Film  
Erosion**

**Resistance to Rain and  
Elements**

**Kynar® PVDF is universally known within the architectural community  
as one of the world's most weather resistant coatings resin**

# Brand Colors Are Crucial

**Color has power to trigger emotions**



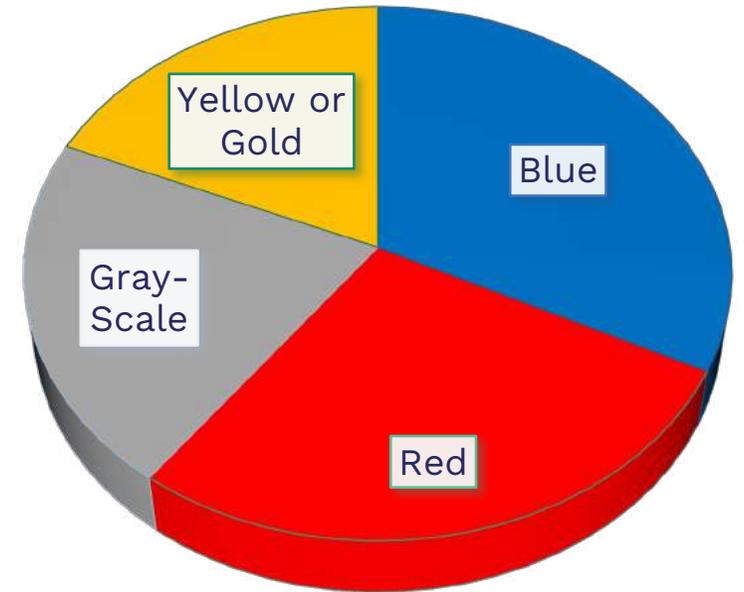
Singh, S. (2006), "Impact of color on marketing", *Management Decision*, Vol. 44 No. 6, pp. 783-789

# Brand Colors Are Crucial

- **Color will influence 60-80% of customers' purchase**
- **51% of Big Brands use only one color in their logos**
- **Ability to recognize without actually reading**



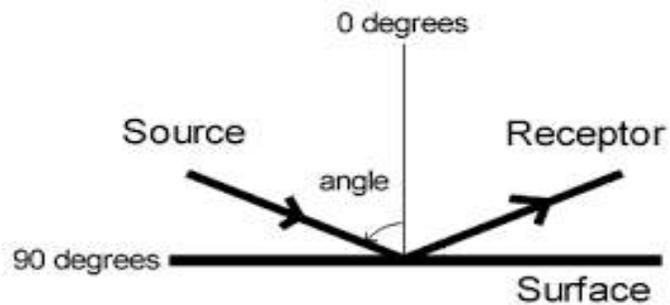
**LOGO COLORS IN FORBES LIST OF 100 MOST VALUABLE BRANDS**



**How do you maintain that color?**

# How Do We Measure Weathering Performance?

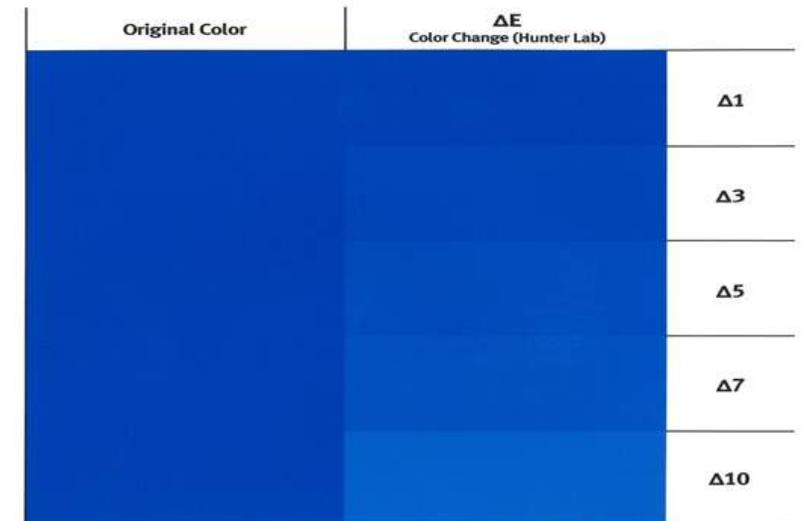
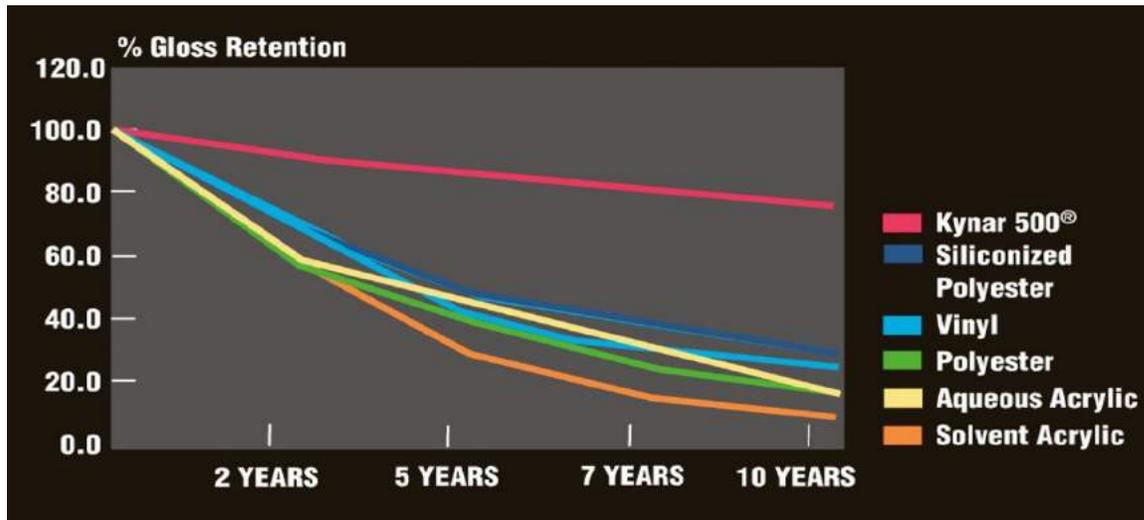
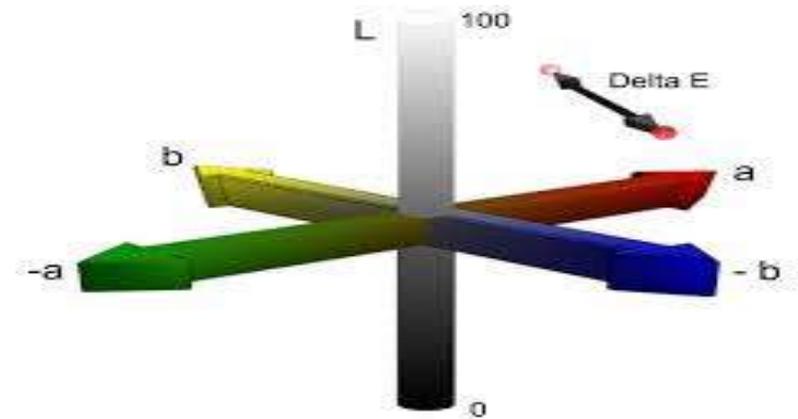
- Gloss Retention**



Gloss Measurement



- Color Retention**



# Weathering Test Methods

**Accelerated**



**Real Time**



# Types Of Kynar® Coatings

## KYNAR 500® FSF®



**Solvent-based  
PVDF fluoropolymer**

**PRIMARILY FACTORY APPLIED**

- ☞ METAL SURFACES ONLY(COIL + EXTRUSION)
- ☰ UNIFORM FINISH
- ☞ COIL COATING OR SPRAY APPLIED
- ☹ BAKE AT HIGH TEMPERATURE >375°F
- ⚠ HIGH VOC

**Water or Solvent-based  
PVDF fluoropolymer**

- ♻️ EXTREMELY DURABLE FINISH / LONG LIFE
- ☀️ EXCEPTIONAL COLOR RETENTION
- ☁️ MOLD & MILDEW RESISTANT
- ☞ RESISTS DIRT PICK-UP

## KYNAR AQUATEC®



**Water-based  
PVDF fluoropolymer**

**FIELD OR FACTORY APPLIED**

- ☞ VARIETY OF SUBSTRATES
- ☞ BRUSH, ROLL, SPRAY APPLIED
- ☞ 1 OR 2 COMPONENT
- ☞ AIR DRY OR LOW TEMP BAKE
- ⚠ **LOW VOC**
- ☞ **LOW ODOR**

# Types Of Kynar® Coatings

## KYNAR 500®

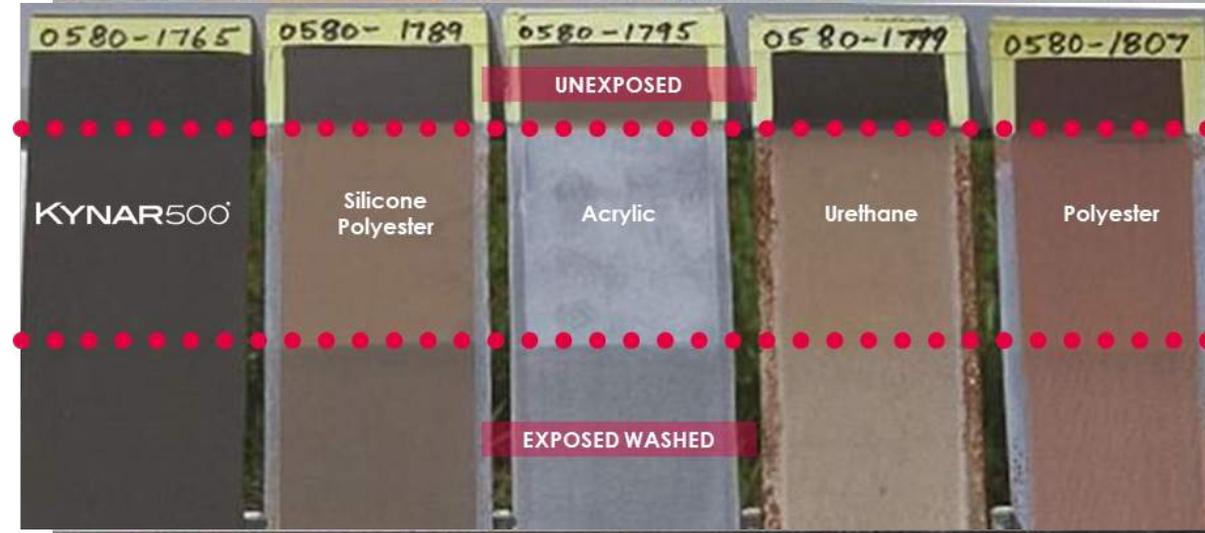
**Semi-crystalline, PVDF homopolymer**

**55+ years exceptional coating performance**

- **UV resistance (color, chalk, gloss)**
- **Dirt pick-up resistance**
- **Abrasion resistant**
- **Mold, mildew, and fungus resistance**

**Formulated into dispersion coatings with acrylic**

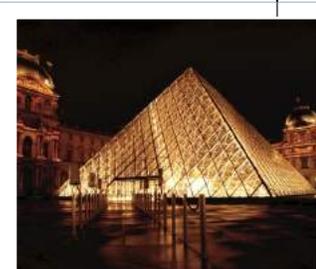
- **Coil coating or spray applied (70:30 PVDF/Acrylic)**
- **Extruded and preformed metal**



Metal Siding



Metal Roofs



Metal Window/Door Frames

# Kynar Aquatec®: The New Standard For High Performance Coatings

## Excellent Retention of Color



**20+ years South Florida S45° exposure**

**PVDF-based finishes once only available for commercial applications**



**Water-based innovation now allows for PVDF-based coatings for the homeowner**



# Superior Fade And Chalk Resistance

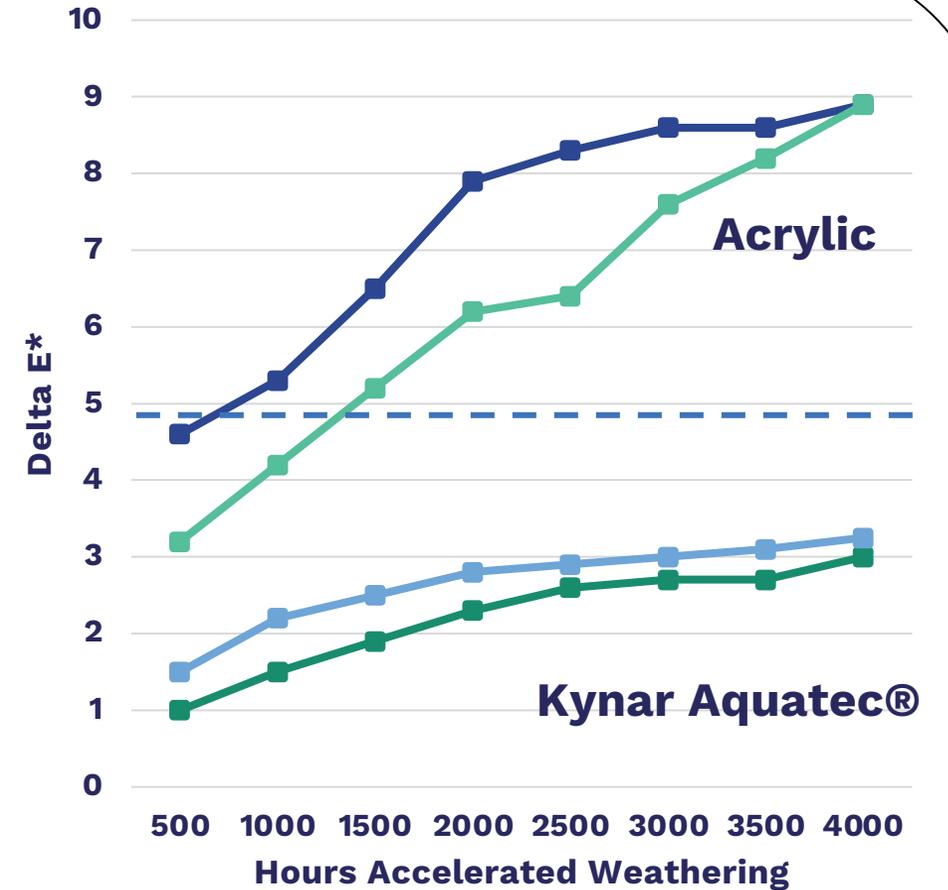
## KYNAR AQUATEC®

### Excellent Retention of Color

Acrylic Based Coating



Kynar Aquatec® Based Coating



A Delta E of 1 is barely detectable by the human eye  
 A Delta E < 5 is required for high performance standards

- Acrylic Iron Grey
- Acrylic Timber Bark
- Kynar Aquatec® Iron Grey
- Kynar Aquatec® Timber Bark

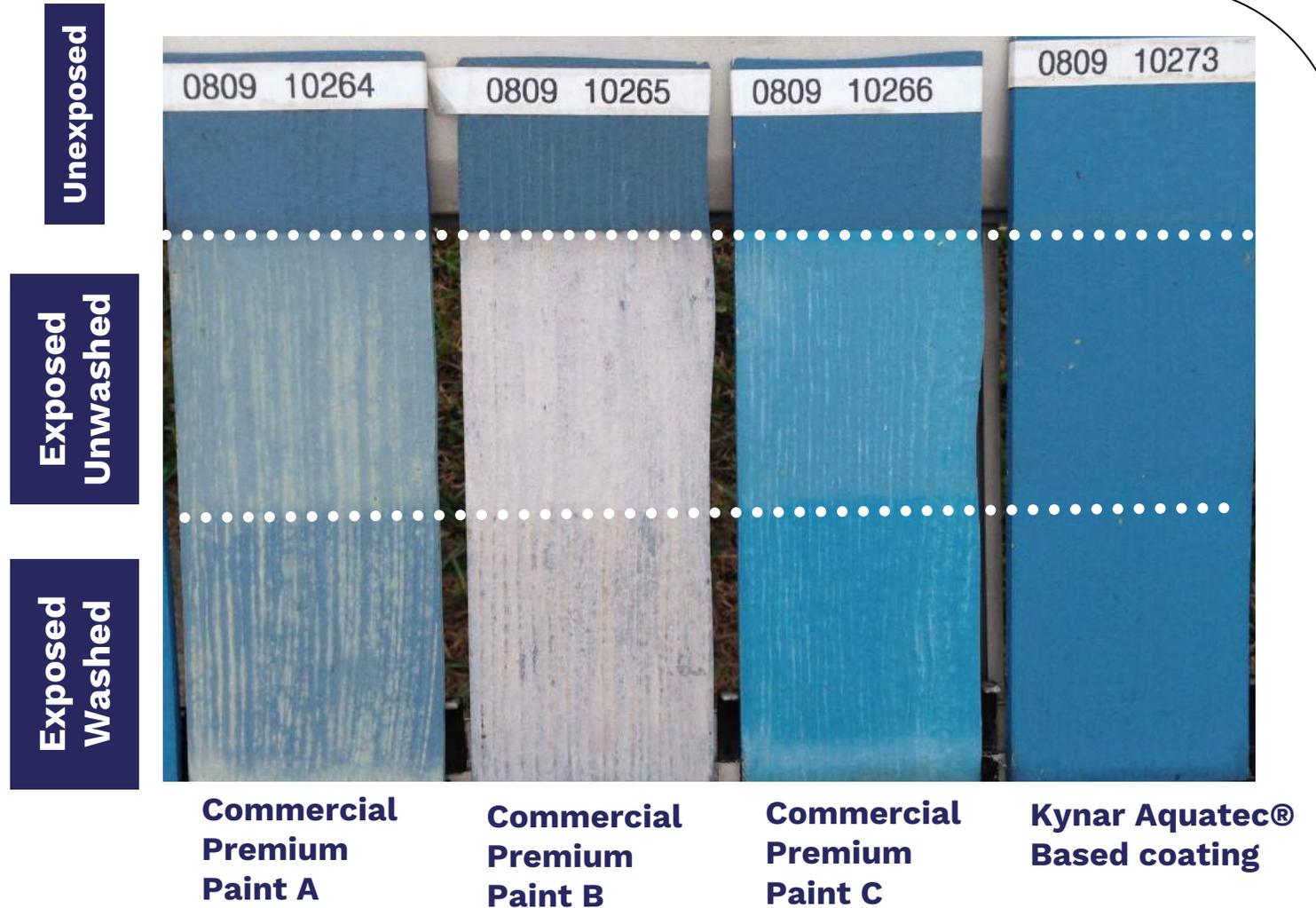
# Superior Fade And Chalk Resistance

**KYNAR AQUATEC®**

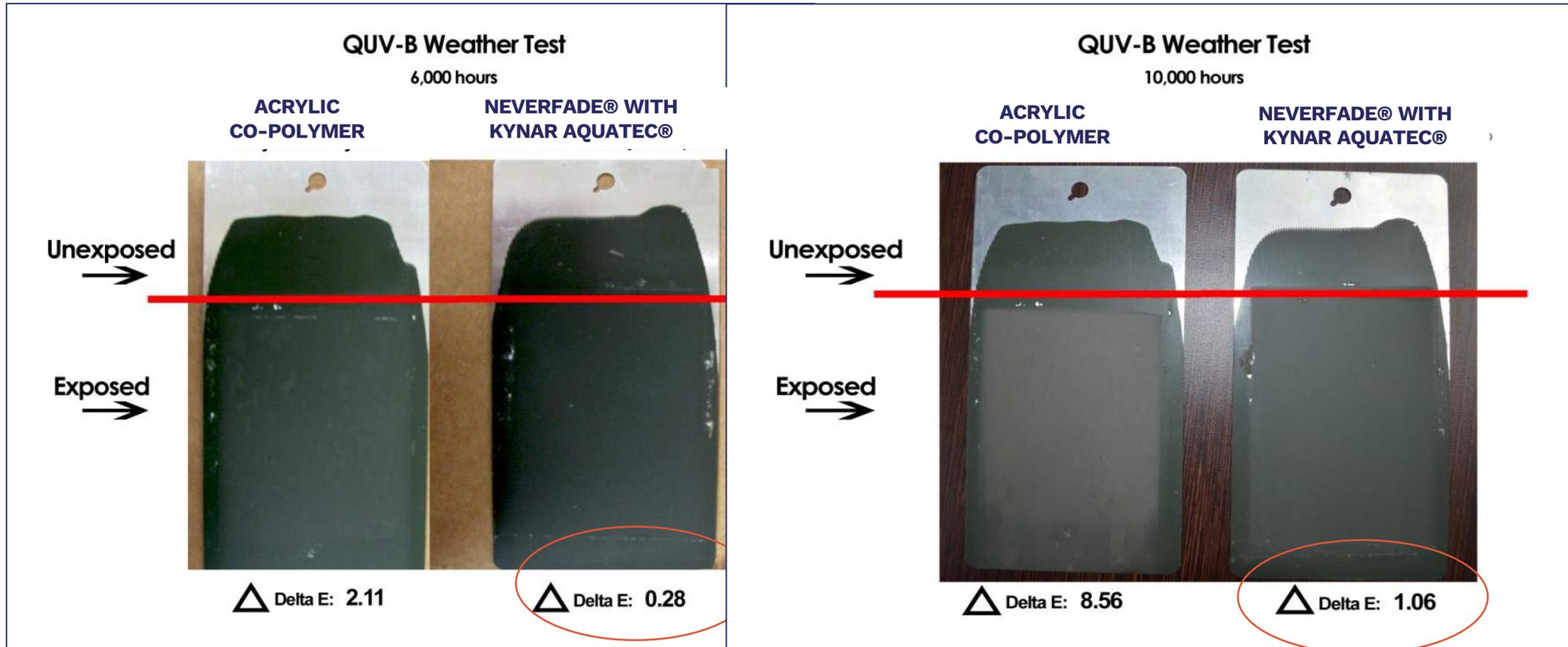
**Excellent Retention of Color**

**Excellent Resistance to Film Erosion**

**After 64 months  
South Florida  
45° South  
exposure**



# Superior Fade And Chalk Resistance

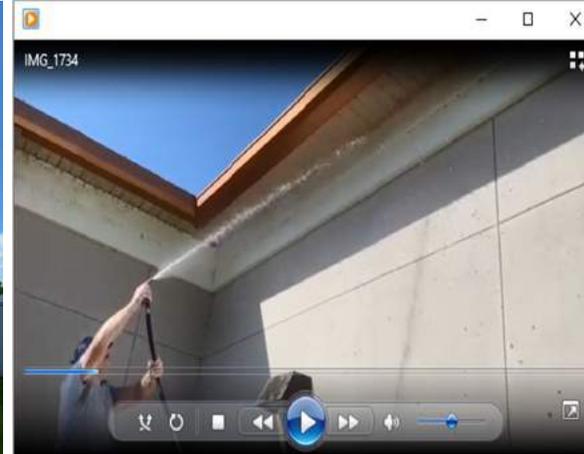


Courtesy of APV Engineered Coatings

**ASTM D154, CYCLE 1**  
Color....Satin, Hunter Green

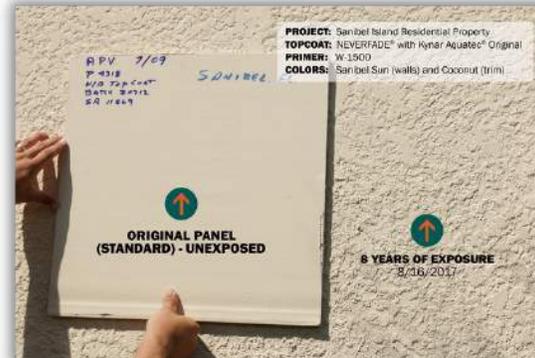
# Low Maintenance Exteriors

## Florida Roofing and Sheet Metal Contractors Association Headquarters Orlando, FL



**Ease of Cleaning**

## Private Residence Sanibel Island, FL



**Resistance to Mildew & Fungi**

# Dirt, Mold & Mildew Resistance Due To The Chemistry Of PVDF

- **Stays white, stays clean**
- **Maintains Solar Reflectance, lowers AC bills**



**Resistance to Dirt,  
Mold & Mildew**



Photos courtesy of APV Engineered Coatings



**ACRYLIC BASED RESIN  
COATING**

**KYNAR® PVDF  
BASED COATING**

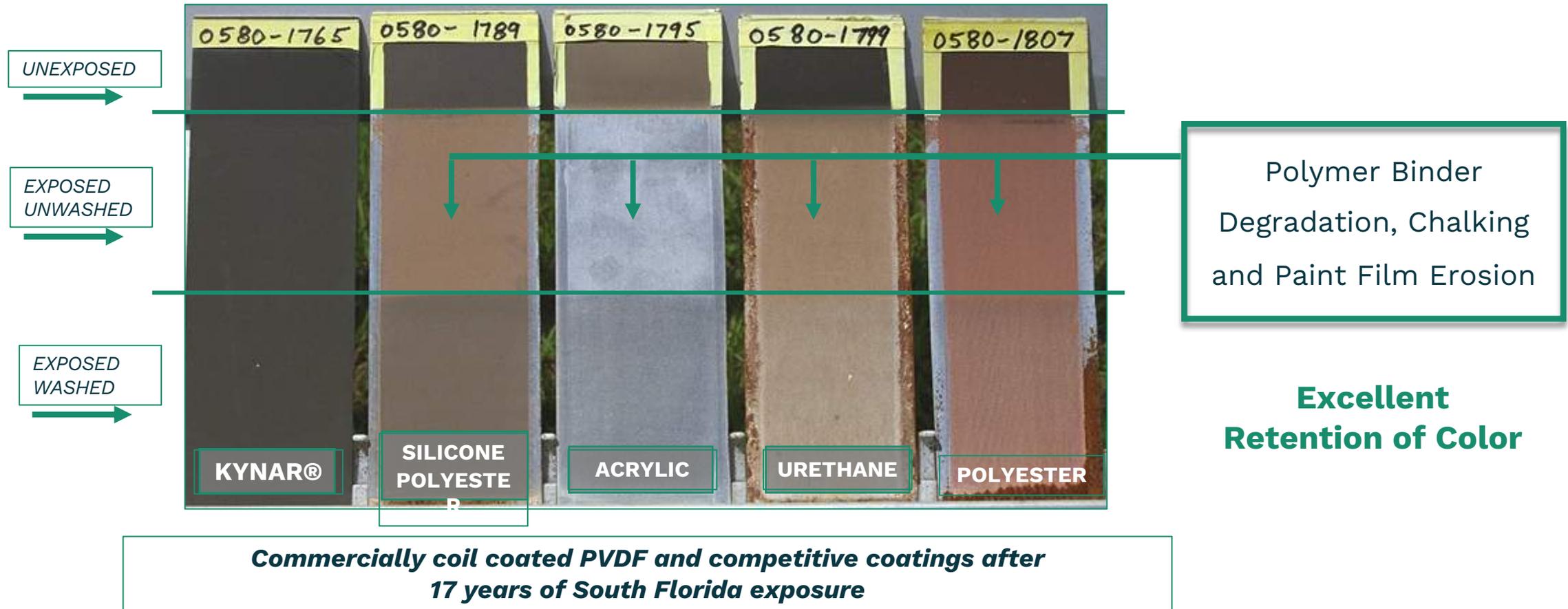
**DIRT PICK-UP**



**MOLD, MILDEW,  
FUNGUS**



# How Different Types Of Coatings Compare



# Kynar Aquatec® vs. FEVE Coatings

## **KYNAR AQUATEC®** **PVDF**

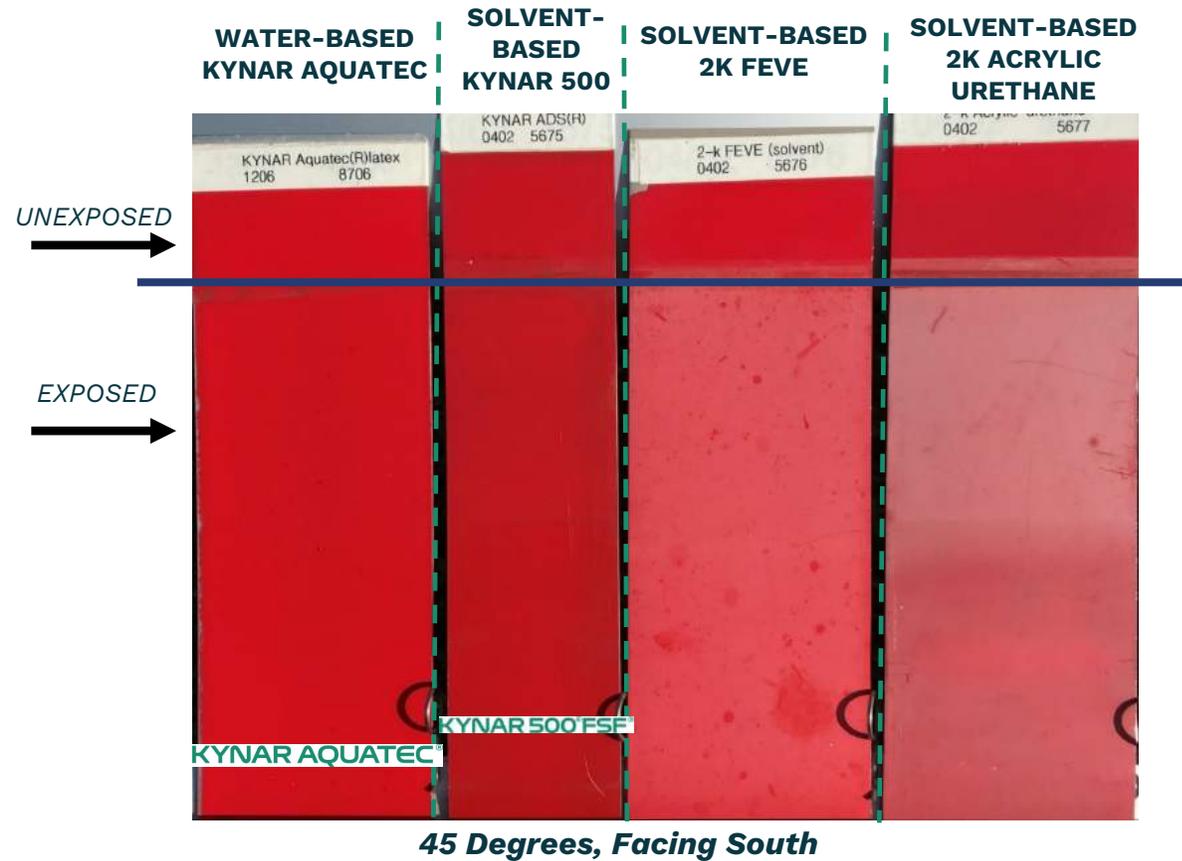
- THERMOPLASTIC FLUOROPOLYMER
- LOW VOC / SCAQMD RULE 1113 COMPLIANCE
- LOW ODOR
- ALL SUBSTRATES
- HIGHLY DURABLE & FLEXIBLE
- 1 OR 2 COMPONENT
- AIR DRY OR LOW TEMP BAKE

- EXCEPTIONAL COLOR RETENTION
- EXCEPTIONAL GLOSS RETENTION
- CHEMICAL RESISTANCE
- INCORPORATE INORGANIC/ ORGANIC PIGMENT
- USUALLY BLENDED WITH OTHER POLYMERS TO BALANCE PROPERTIES

## **FEVE** **Fluoroethylene Vinyl Ether**

- THERMOSET FLUOROPOLYMER
- NORMALLY SOLVENT-BASED, HIGH VOC
- STRONG ODOR
- METAL ONLY
- HARD, BRITTLE, NOT ELASTIC
- NORMALLY 2 COMPONENT
- AIR DRY OR LOW TEMP BAKE

# Comparing High Performance Coatings



## TYPES OF COATINGS IN

### CSI DIVISION 09 96 00 HIGH PERFORMANCE COATINGS

- PVDF
- FEVE
- Urethane
- DTM Urethane
- Silicones
- 2K Epoxy
- Elastomeric Acrylic
- 100% Acrylic Latex
- Acrylic Polyester Urethane

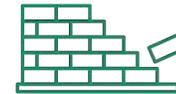
How do you  
know what  
you're  
getting  
?

# Importance of Working with a Kynar® Licensee

## PARTNERING WITH THE SUPPLY CHAIN FROM THE GROUND UP

- **Arkema sets minimum PVDF content requirements to be able to use the Kynar® name**
- **Highest levels of PVDF polymer which is directly related to longevity**
- **Ensures long term resistance to color fade and chalking**
  - Demonstrated performance based on 20 years of South Florida weathering
- **Arkema periodically checks the weathering performance of licensees coatings**
  - You know what you are getting in terms of performance and quality
  - Helps to ensure real world performance
- **Working through a licensee and completing jobs successfully is a door opener to Arkema and its support of the contractor**
  - Listed on Arkema's website
  - Joint events and marketing cooperation, etc.
- **Licensees provide training & support to the applicators to ensure that the work is done properly**

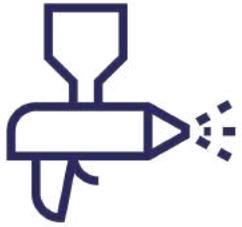
# Uses For Kynar Aquatec® Based Coatings



## SUBSTRATES

- STUCCO
- WOOD
- EIFS
- FLEXIBLE VINYL
- RIGID PVC
- MASONRY
- CONCRETE
- FIBER CEMENT
- ALUMINUM (Including Anodized)
- STEEL (Including Galvanized)
- OTHER FERROUS & NON-FERROUS METALS
- COMPOSITE MATERIALS
- COATED SURFACES

# How Are Kynar Aquatec® Coatings Applied?



SPRAY



BRUSH



ROLL

- 1. Applies easily, no unique application method required**
- 2. Standard AMPP® surface preparation procedures**
- 3. Can be applied over existing coatings**
- 4. Good self leveling properties**

# Sealants For Use With Kynar® PVDF Coatings

**Bostik is the only Arkema recommended supplier of adhesives and sealants for Kynar 500® and Kynar Aquatec® resin-based painted surfaces.**

## Pro MS-50™



- **Asphalt Compatible**
- **AAMA 808.03 – Exterior perimeter sealing compound**
- **ASTM C920 Class 50**
- **Non Yellowing – Stay White**

## 915/916/915FS



- **Miami Dade Approved**
- **Class 35 Joint Movement**
- **Meets or exceeds ASTM C920**
- **Meets or exceeds AAMA 803.3 (915/916)**
- **-40°F to 150°F service temperature**
- **915FS skin time 90 minutes**

## DUO-SIL ULTRA®



- **Excellent gun-ability**
- **Paintable in 1 hour**
- **ASTM C920, Class 50**
- **AAMA 803.3-10**
- **80+ colors**

# How to Specify

## **PROTECT YOUR INVESTMENT™ by Specifying Kynar® PVDF Based Finishes**

- **DIRECTLY WITH OUR LICENSEES**
  - <https://www.kynaraquatec.com/en/>
- **ON OUR WEBSITE DOWNLOAD SPECIFICATIONS**
  - <https://www.kynaraquatec.com/en/product-info/specifying-kynar-aquatec/>
- **THROUGH BSD SPECLINK (RIB North America)**
  - **SECTION 099668 FIELD-APPLIED WATER-BASED FLUOROPOLYMER COATINGS - ARKEMA**



Our products are specified in

# SpecLink

[www.bsdspeclink.com](http://www.bsdspeclink.com)

# SSPC Paint 47

**Launched in December 2020, Specifiers of protective and architectural restoration coatings systems can now easily specify Kynar Aquatec® Fluoropolymer coatings using the SSPC Paint 47 standard.**

- Covers a variety of Substrates (not just metal)
- Field-Applied or Factory-Applied
- Same 10-year Florida Weathering Standard as AAMA-2605
  - Color retention Delta E of < 5 units
  - Gloss retention >50%
  - Chalk rating ≥ 8 (≥ 6 for whites).



Standard	Referenced Substrate	Primary application conditions	Years of Florida weatherability referenced in standard	Color used for Florida weatherability	Color fade requirement for non-whites?	Referenced Resin Type
AAMA 2605	Aluminum	Factory bake	10	Any	Yes	None
MPI 311/ 315	Any	Field-applied	-	-	No	Latex
SSPC Paint 36	Steel	Field-applied	1 – 4	White or off-white	No	2-component polyurethane
<b>SSPC Paint 47</b>	<b>Any</b>	<b>Any</b>	<b>10</b>	<b>Any</b>	<b>Yes</b>	<b>Fluoropolymer</b>

# Sanibel Island Home

RESIDENTIAL

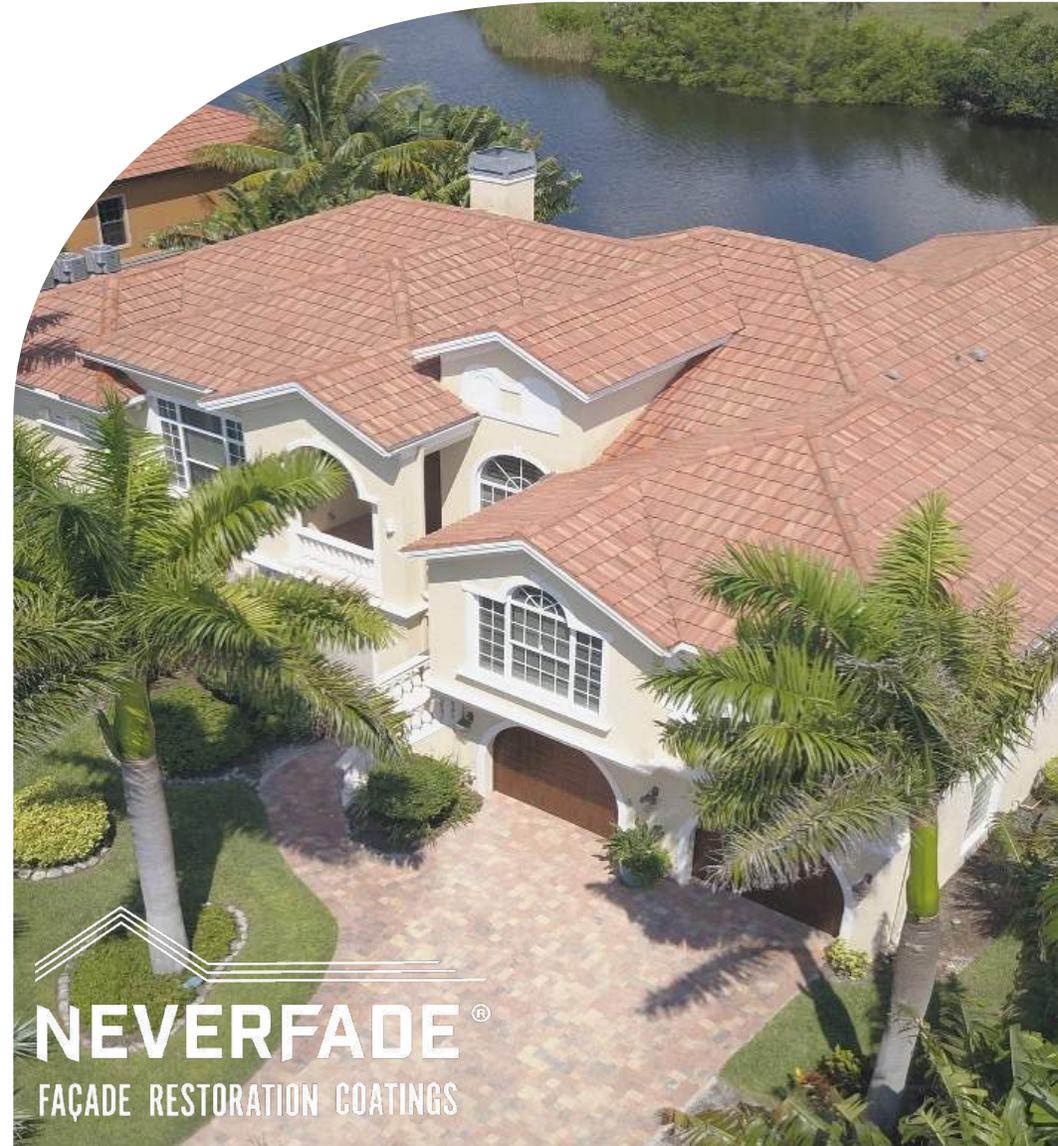
SANIBEL ISLAND, FL

**SUBSTRATE: STUCCO**

**COLOR: CUSTOM YELLOW + WHITE**



Courtesy of APV Engineered Coatings



**NEVERFADE**®  
FAÇADE RESTORATION COATINGS

# Jafco Childrens Ability Center

COMMERCIAL

SUNRISE, FL

**SUBSTRATE: STUCCO & STEEL**

**COLOR: CUSTOM (MULTIPLE COLORS)**



Courtesy of APV Engineered Coatings



# Solano Community College

SCHOOL

VALLEJO, CA

**SUBSTRATE: CONCRETE**

**COLOR: CUSTOM (BLUE & RED)**



Courtesy of APV Engineered Coatings



**NEVERFADE**<sup>®</sup>  
FAÇADE RESTORATION COATINGS

# Irvine Office Building

COMMERCIAL

NEWPORT BEACH, CA

**SUBSTRATE: ANODIZED AL**

**COLOR: CUSTOM METALLIC**



Courtesy of APV Engineered Coatings



**NEVERFADE**<sup>®</sup>  
FAÇADE RESTORATION COATINGS

# Pinnacle Condos

MULTI-FAMILY

SUNNY ISLES BEACH, FL

**SUBSTRATE: STUCCO & AL**

**COLOR: TAN**



Courtesy of APV Engineered Coatings



**NEVERFADE**<sup>®</sup>  
FAÇADE/RESTORATION COATINGS

# Trump Hollywood

MULTI-FAMILY

HOLLYWOOD BEACH, FL

**SUBSTRATE: STUCCO & AL**

**COLOR: WHITE**



Courtesy of APV Engineered Coatings



# Albany High End Condo

MULTI-FAMILY

NEW PROVIDENCE, BAHAMAS

**SUBSTRATE: ALUMINUM**

**COLOR: CUSTOM METALLIC**



Courtesy of APV Engineered Coatings



# Regeneron Office Building

COMMERCIAL

SLEEPY HOLLOW, NY

**SUBSTRATE: ALUMINUM**

**COLOR: WHITE**



Courtesy of APV Engineered Coatings



# More Highlights



ISLAMORADA,  
FL

**PISTORINO AND ALAM  
HURRICANE-PROOF  
DEMONSTRATION HOUSE**



HONOLULU,  
HI

**15 CRAIGSIDE SENIOR  
LIVING COMMUNITY**



WASHINGTON  
D.C.

**MARKET SQUARE  
HISTORIC OFFICE  
BUILDING**



CAVE CREEK, AZ

**MURALS BY ARTIST  
KELLY MATTES**



Courtesy of APV Engineered Coatings

# More Highlights



TAMPA, FL

**WESTIN TAMPA  
WATERSIDE HOTEL**



OCALA, FL

**MARION COUNTY SCHOOL  
SYSTEM**



MIAMI, FL

**GLAZIER RESIDENCE  
WINDOW PROFILE  
UPDATE**



MIAMI, FL

**6000 INDIAN CREEK  
CONDO COMPLEX**



Courtesy of APV Engineered Coatings

# More Highlights



ORLANDO, FL

**FLORIDA'S ASSOCIATION  
OF ROOFING  
PROFESSIONALS (FRSA)  
HEADQUARTERS**



LOS ANGELES,  
CA

**CNN TOWER IN LOS  
ANGELES DOWNTOWN  
PROPER**



WASHINGTON  
D.C.

**1120 LAFAYETTE CENTER  
SHOPPING PLAZA**



FAIRFIELD, NJ

**PARKER LABORATORIES  
OFFICE BUILDING**



Courtesy of APV Engineered Coatings

# More Highlights



PHILADELPHIA, PA

**BULL'S BBQ CITIZENS  
BANK PARK**



PHILADELPHIA, PA

**BOATHOUSE ROW  
WOMEN'S ROWING CLUB**



CHESAPEAKE BAY, VA

**THOMAS POINT  
LIGHTHOUSE**



BAYONNE, NJ

**UNITES STATES COAST  
GUARD**



Courtesy of Acrymax Technologies

# More Highlights



Los Angeles, CA

**Spruce Goose Hanger**



Panama City, FL

**Tom P Haney Technical College**



Panama City, FL

**Marina Bay Condominiums**



Honolulu, HI

**One Water Front Towers**



**TEX-COTE®**

Courtesy of Texcote LLC

# Additional Information

## **Contact Information:**

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**Sr. Account Manager**

**Cell: 484-678-7243**

**Ron.Partridge@Arkema.com**

[www.kynaraquatec.com](http://www.kynaraquatec.com)

- Specifications
- Case Studies
- Product Literature
- Cool Roof Savings Calculator
- Download the Kynar Aquatec® Brochure

**DOWNLOAD HERE**

**Thank you for your time!**



The screenshot displays the Kynar Aquatec website. The top navigation bar includes 'Arkema Global Website', 'For Architects', 'For Property Owners & Managers', 'For Formulators', 'For Applicators', 'Jump to... Kynar500.com', 'Main Brands', and 'Arkema Worldwide'. Below the navigation, the page title is 'Kynar Aquatec®' and the main heading is 'Product Characteristics'. The text describes the resin-based architectural coatings and provides a 'READ MORE' button. A large image on the right shows a building with yellow and red walls. The ARKEMA logo is visible in the background.

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