

Kynar 500[®]

polyvinylidene fluoride based coatings

CASE STUDIES IN PERFORMANCE

**PVDF-BASED COATINGS VERSUS POLYESTER POWDER
AND OTHER COATINGS**



No Chalking

No Fading

Color Retention

Gloss Retention

The truth is on the test fence.

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.

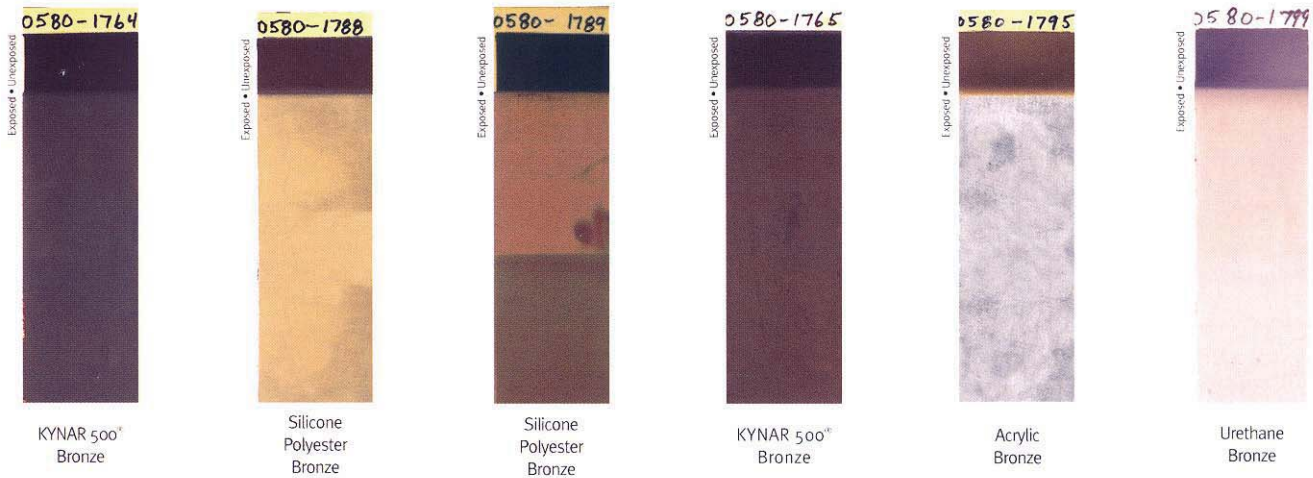
CONCLUSION

KYNAR 500 resin-based coatings outperform polyester powder, urethane, silicone polyester and acrylic coatings in every category: better color retention, better resistance to chalking.

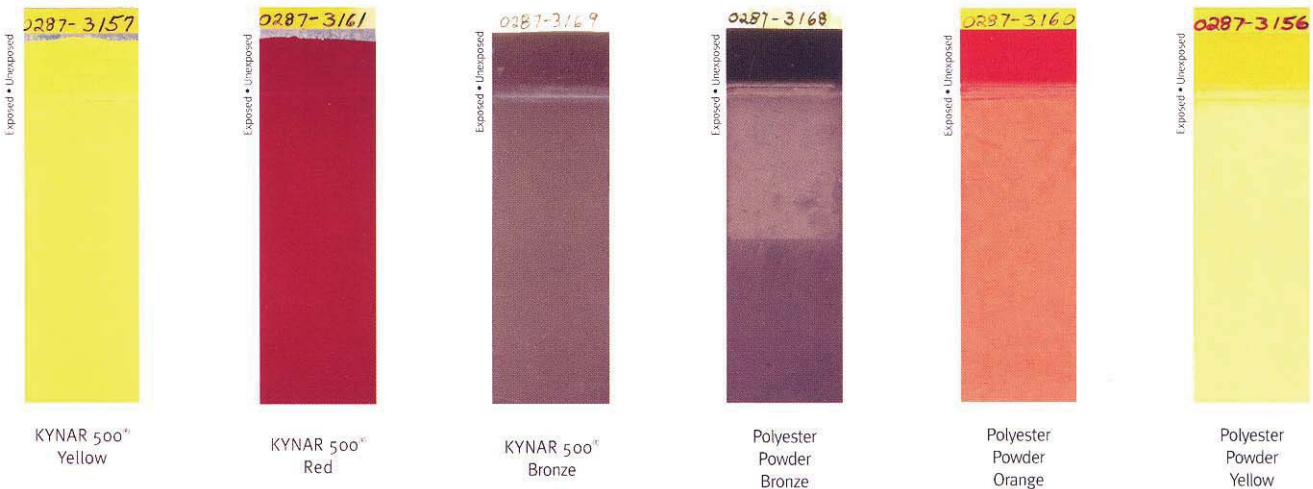
The proof is in the pictures of the coated panels. Just compare the unexposed portion (top panels) with the exposed portion (bottom panels).

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) ASTM D-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**



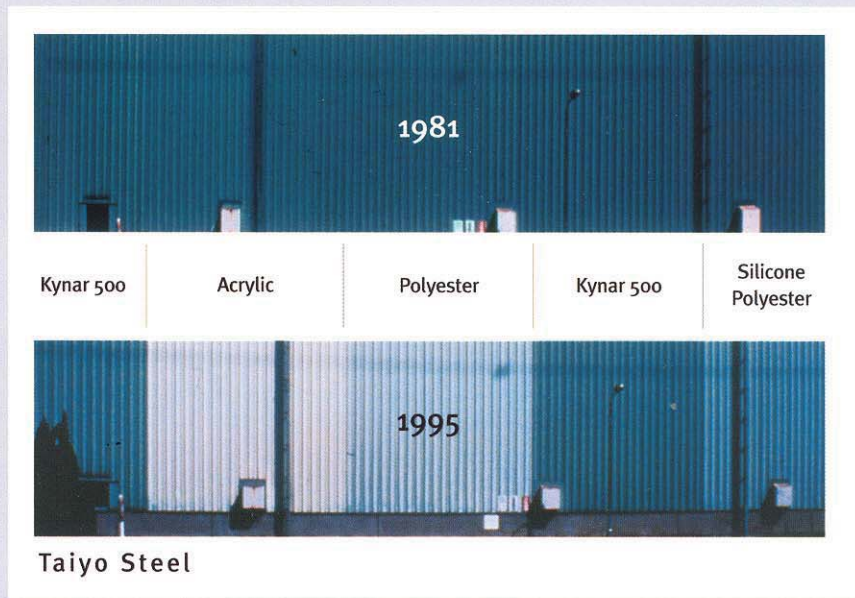
**Super Durable
Polyester Blue**

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 pre-coated metal products. Ten meter high steel panels were coated with acrylic, polyester, silicone polyester and Kynar 500 resin-based coatings.

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

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



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SPECIFICATIONS



The final coating for aluminum, galvanized steel or aluminized steel shall be a factory-applied, oven-baked finish based on Kynar 500® polyvinylidene fluoride resin.

This finish shall be a dispersion coating based on Kynar 500 resin as formulated by an Arkema Kynar 500 licensee. This finish shall be in strict accordance with the formulator's specification and applied by an applicator approved by the formulator. This finish, based on Kynar 500 resin, shall meet the performance criteria of AAMA 2605 specification and be certified by the formulator as containing Kynar 500 resin manufactured by Arkema.



Components to be Finished
Spandrel Panels, Wall Panels, Curtain Walls, Roofing Systems, Store Fronts, Column Covers, Entranceways, Louvers, Mullions, Fascia, Highway Signs
Performance Requirements
Best Durability, Longest Color Life, Best Corrosion Resistance, Flexibility, Sand Abrasion, Chemical Resistance
Specification
AAMA 2605

Components to be Finished
Replacement Windows for Retrofit Projects, High-Rise Apartments, Condominiums, Office Buildings
Performance Requirements
Better Chalk and Fade Resistance, Longer Life, Low Maintenance
Specification
AAMA 2605

Components to be Finished
Primary Windows, Doors and Handrails for Institutions, Condominiums, Commercial Buildings, Other High-Exposure Areas
Performance Requirements
Corrosion Resistance, Better Chalk and Fade Resistance
Specification
AAMA 2605

Components to be Finished
Van, Bus and Truck Windows, Tubular Furniture, Post-Formed Extruded Parts
Performance Requirements
Color Retention and Chalk Resistance, Excellent Flexibility
Specification
AAMA 2605