

# ***Kynar 500***<sup>®</sup>

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<sup>®</sup> 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.

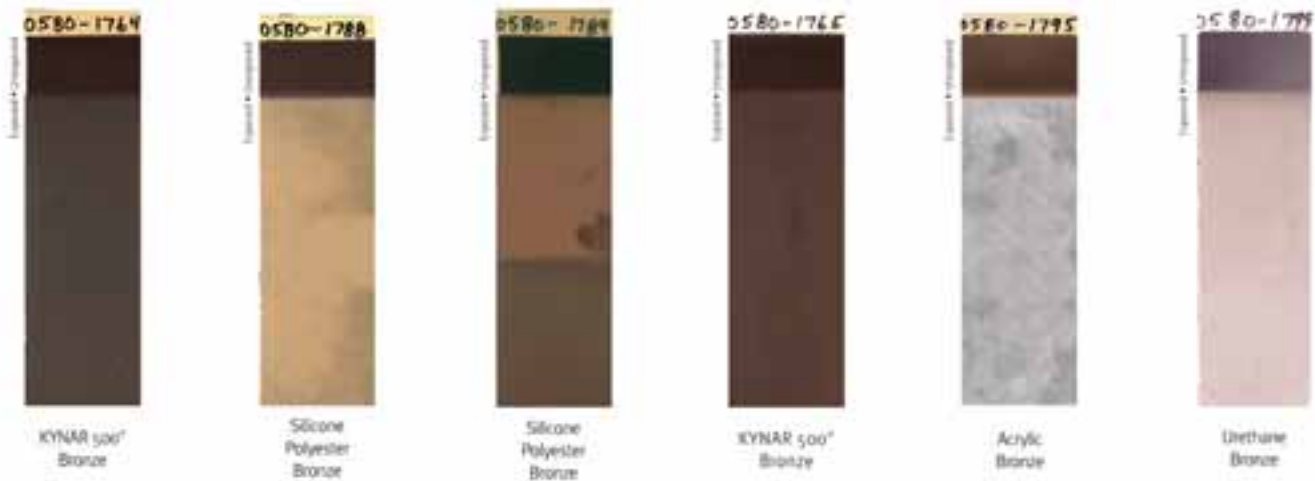
### CONCLUSION

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

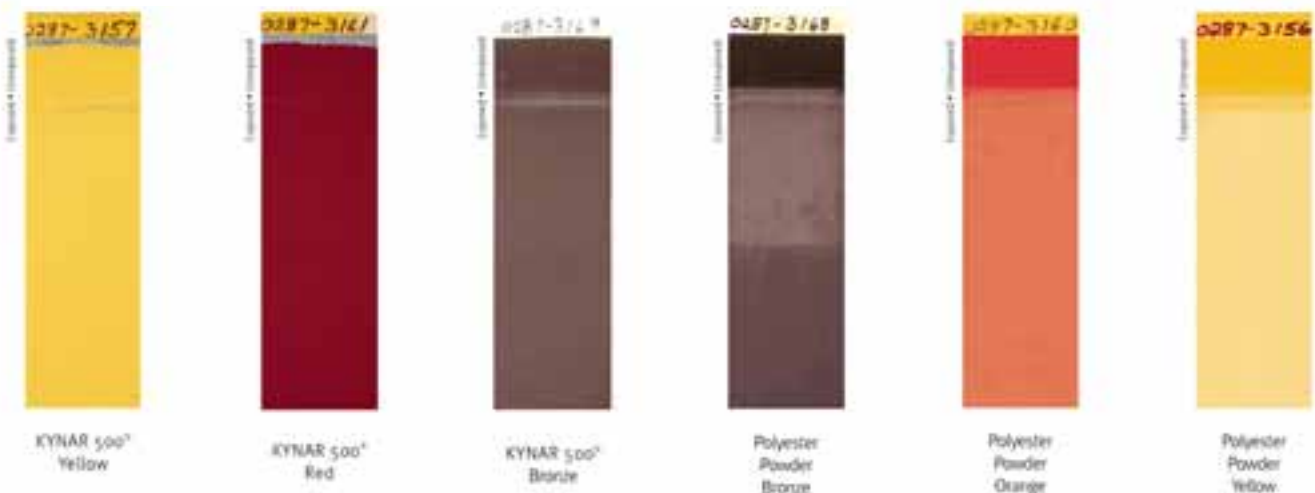
The proof is in the pictures of the coated panels. Just compare the unexposed portion (top panels) with the exposed portion (bottom panels).

Performance as promised. Time after time. KYNAR 500 resin-based coatings.

## Florida Exposure 45° South. 17 Years Exposure.



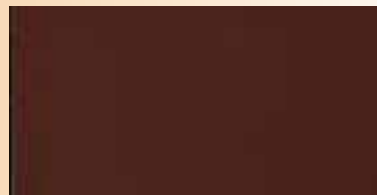
## Florida Exposure 45° South. 10 Years Exposure.



PANEL NO.	DESCRIPTION	EXPOSURE TIME	ORIGINAL GLOSS 60°	FINAL GLOSS 60°	COLOR CHANGE Δ	CHALK (EXPOSED) 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.

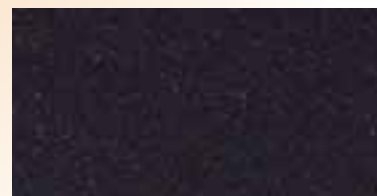
In color-matched accelerated weathering tests, shown at right, Kynar 500-based coating panels clearly outperformed the latest “super durable polyester” powder technology. Contact us at [www.kynar500.com](http://www.kynar500.com) for more information on Kynar 500-based coatings.



**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.



## Contact us around the world.

Arkema Inc.  
2000 Market Street  
Philadelphia, PA 19103-3222  
800-KYNAR-500

Arkema  
4-8 Cours Michelet  
La Defense 10  
F-92091 Paris La Defense Cedex  
33-1-49008154

Arkema- India Branch  
Office  
Pharma Search House, 4th floor  
Near Cama Cola Factory  
BG Kher Marg  
Worli, Mumbai-400 018  
0091-22-2490-1743

Arkema Shanghai  
Unit 2801-06, Hong Kong Plaza  
283 Huai Hai Road (M)  
Shanghai 200021, P.R. China  
86-21-6386-3028

Arkema K.K.  
Fukoku Seimei Bldg 15F  
2-2-2 Uchisaiwaicho  
Chiyoda-Ku  
Tokyo 100-011, Japan  
81-3-5251-9665

Arkema Korea Ltd.  
11F, Oriental Chemical Building  
50, Sogong-dong  
Jung-gu, Seoul, 110-718, Korea  
82-2-3703-6822

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, Arkema Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement.

See MSDS for Health & Safety Considerations  
© 2005 Arkema Inc. All rights reserved.



Arkema Inc.  
2000 Market Street  
Philadelphia, PA 19103-3222  
Tel.: 215-419-7000  
www.arkemagroup.com

[www.kynar500.com](http://www.kynar500.com)