ARKEMA

KYNAR AQUATEC®

THE NEXT GENERATION

IN KYNAR® PVDF

A water-based
fluoropolymer platform

Coatings formulated with Kynar Aquatec® PVDF are an innovative platform of emulsions, which are used by paint formulators to make premium weatherable water-based coatings. Coatings formulated with these emulsions can provide the durability and performance of traditional Kynar 500® PVDF -based coatings. They can easily be applied to a variety of substrates, including metals, plastics, wood, concrete, textiles, and previously painted surfaces.
Now, the extreme weatherability of a Kynar 500® PVDF -based coating is available in a VOC-compliant, field or factory applied, ambient air-dry system. Additional benefits include tremendous resistance to dirt pick-up, outstanding water repellency, and high initial and long-term Total Solar Reflectance and Emissivity.

EXTREME WEATHERABILITY

Outdoor exposure will break down almost all coatings causing them to chalk, fade, and discolor. Kynar 500® PVDF-based coatings are known for excellent performance under severe conditions. Similarly, coatings based on Kynar Aquatec® PVDF emulsions will withstand extended exposure to water, humidity, temperature extremes, ultraviolet rays, oxygen, and atmospheric pollutants. These coatings retain color and gloss like no other conventional water-based coating. **Figure 1** shows how the weathering performance of masstone pigmented coatings based on Kynar Aquatec® PVDF resin is similar to Kynar 500® PVDF coatings with the same pigments after 19 years exposure in south Florida.

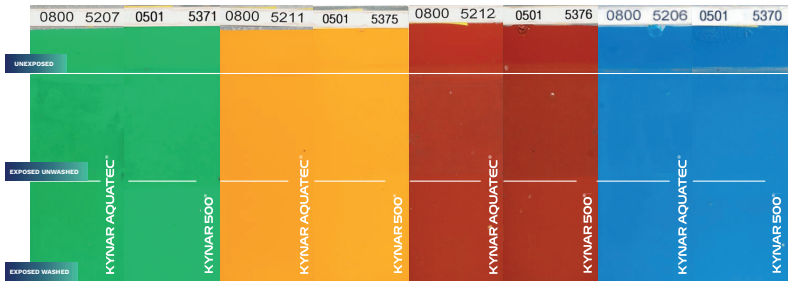
EXCELLENT DIRT SHEDDING

Coatings based on Kynar Aquatec® PVDF emulsions pickup very little dirt, which allows white coatings to stay white. They can achieve Total Solar Reflectance values greater than 0.80 and retain that level for many years. **Figure 2** shows the dirt shedding performance of these coatings compared to an acrylic coating.

SUPERB MILDEW RESISTANCE

Coatings based on this new emulsion fluoropolymer technology have a very low tendency to support biological growth in harsh conditions, such as high-humidity and mildew-prone areas. This has been verified through test panel exposures in south Florida. **Figure 3** shows panels of Kynar Aquatec® PVDF -based coatings vs. acrylic based coatings. The Kynar Aquatec® PVDF coating demonstrates the inherent ability of the PVDF polymer to resist biological growth.

FIGURE 1



Florida exposure of Kynar Aquatec® PVDF based masstone colors

FIGURE 2

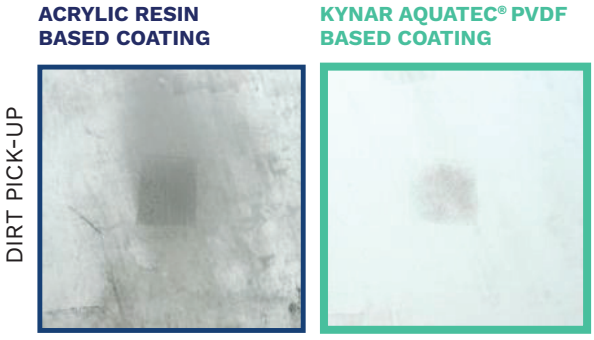


FIGURE 3

OUTSANDING WATER REPELLENCY

Coatings formulated with Kynar Aquatec® PVDF are excellent at preventing water from penetrating the surface. Even after one week of immersion, a coating based on this technology shows minimal water pick-up at 2% by weight versus an acrylic coating that can pick-up more than 13% as shown in Figure 4. The result of low water pick-up is excellent adhesion of the coating to the surface and reduced maintenance cost related to delamination and water damage.

HIGHLY RESISTANT TO FILM EROSION

Figure 5 demonstrates coatings formulated with Kynar Aquatec® PVDF ability to resist film erosion after outdoor exposure. Both formulations shown utilize cobalt blue pigment, which is not affected by ultra-violet light. Therefore, any degradation of the coating from weathering is related to the binder system only. After 7 years of exposure at 45° south in Southern Florida, the metal substrate is showing through the 100% acrylic based coating, while the Kynar Aquatec® PVDF -based coating is still intact, with minimal color fade. In fact, just like Kynar 500® PVDF -based coatings, Kynar Aquatec® PVDF -based coatings routinely pass the requirements of AAMA 2605 standards for film erosion.

COOL ROOFING

More than $40 billion is spent annually in the United States on electricity to cool buildings, which is about a sixth of the total electricity generated. In addition, these energy costs are rising in hot climate regions. White cool roofs have been proven to reflect the sun's energy and reduce the roof surface temperature by up to 100ºF. This reduction in temperature reduces the heat transferred into the building and lowers the electrical demand for cooling.

Coatings formulated with Kynar Aquatec® PVDF have been reported by CRRC (Cool Roof Rating Council) to have initial Total Solar Reflectance and Emissivity values greater than 0.85 each. Furthermore, additional south Florida exposure studies suggest that these coatings are expected to retain values over 0.80 for more than seven years. Conventional elastomeric acrylic based roof coatings drop to 0.55 Total Solar Reflectance in less than two years. These new fluoropolymer coatings will revolutionize the roof coating market by providing long-term energy savings that no conventional coating can achieve.

METAL RESTORATION

Coatings based on Kynar Aquatec® PVDF can now be applied in the field to protect metal surfaces with a weatherable fluoropolymer based finish. This enables metal surfaces to be touched-up, repaired, or restored. A non-cool metal roof can easily be converted to a white cool roof, the color of the roof can be changed to match building decor, and faded colors can be restored. Plus, these coatings have good adhesion to previously coated surfaces including Kynar 500® PVDF -based coatings and acrylic coatings.

FIGURE 4

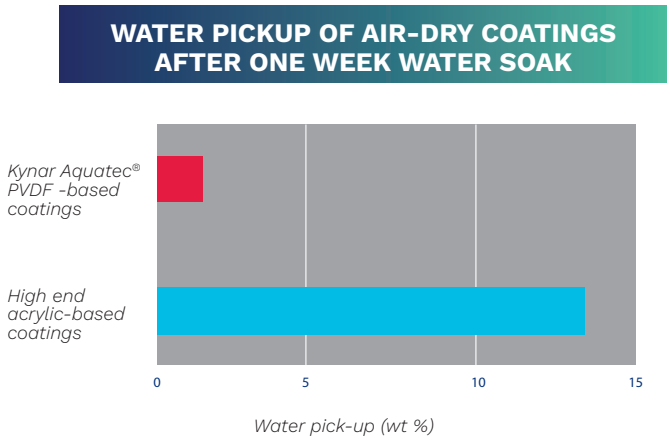
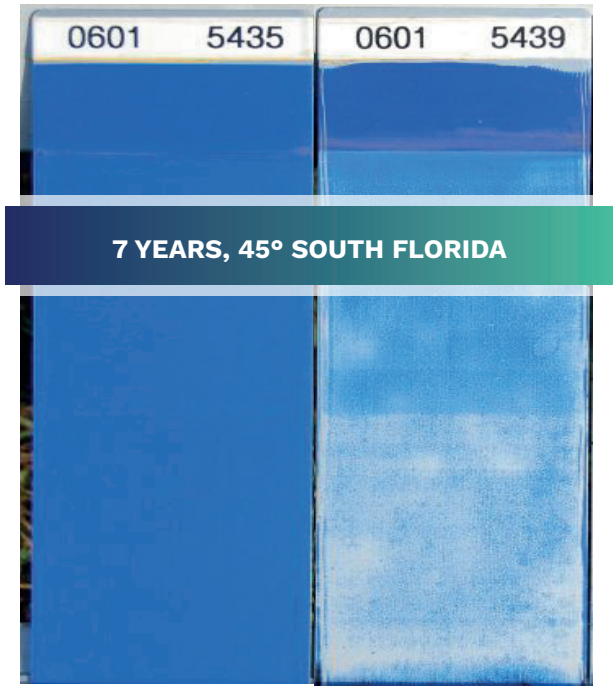


FIGURE 5



Arkema Inc.
900 1st Ave,
King of Prussia,
PA 19406
+1 610-205-7000

Headquaters: Arkema France
420 rue d'Estienne d'Orves
92705 Colombes Cedex
France
T +33 (0)1 49 00 80 80

LEARN MORE
@AECDAILY

ADV#202202-37 - JG

arkema.com