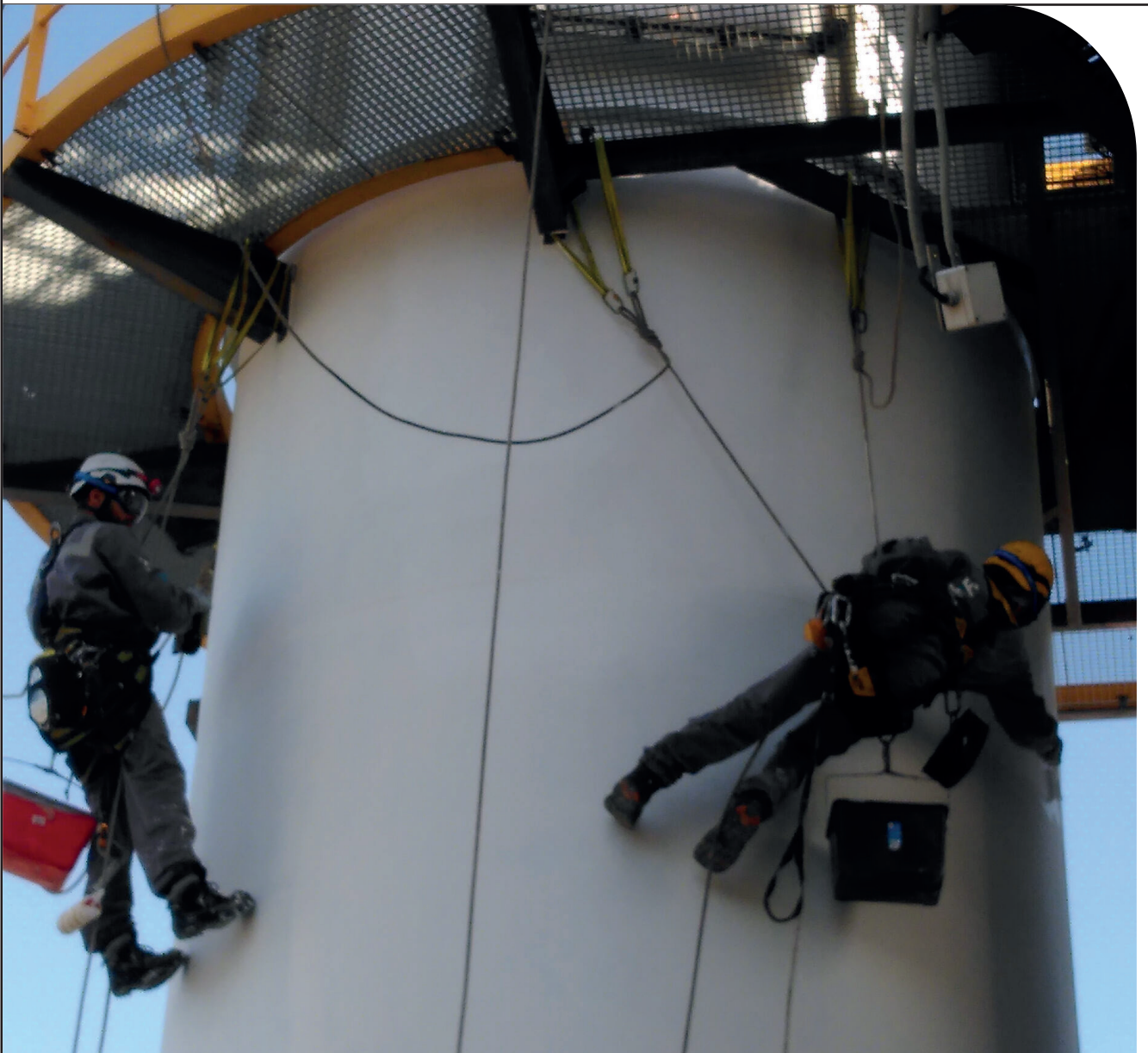


KYNAR AQUATEC[®] PVDF

Kynar Aquatec[®] PVDF emulsion-based resin for **storage tank coating**.



SUMMARY

EXTERIOR COATINGS SOLUTION PROVIDE:

- Excellent weatherability and UV stability
- Excellent chalk and fade resistance
- Excellent dirt pick-up and mildew resistance
- Significantly reduce surface temperatures
- Reduced Maintenance Costs

PARTNER

Cool Roof France



INDUSTRY

Building and Construction

APPLICATION

Exterior vertical protective coating

PRODUCTION PROCESS

Roller-applied in field

MATERIAL

Primer layer + Base coat

Top coat: waterbased topcoat with **Kynar Aquatec® FMA-12 resin**

CASE STUDY

INTRODUCTION

This industrial site located in the South of France, experiences periods of intense heat. As a result, the raw material stored in tanks tends to form clumps and blocks, requiring hours of maintenance to clean.

The raw material is stored in silos, these are vertical stainless steel silos exposed to the sun. In summer, the silo walls heat up significantly.

The objective of applying the Cool Roof France white paint formulated with **Kynar Aquatec® FMA-12** is to reduce the temperature inside the silo by 5 to 10 degrees in order to prevent the product from sweating and water from condensing.

The chosen solution was a waterbased coating system from **Cool Roof France** to :

- Reduce significantly the tank's surface temperature and the internal temperature.
- Protect the tank from UV radiation.

The coating system keeps storage tanks cool and UV-protected, even under extreme heat.

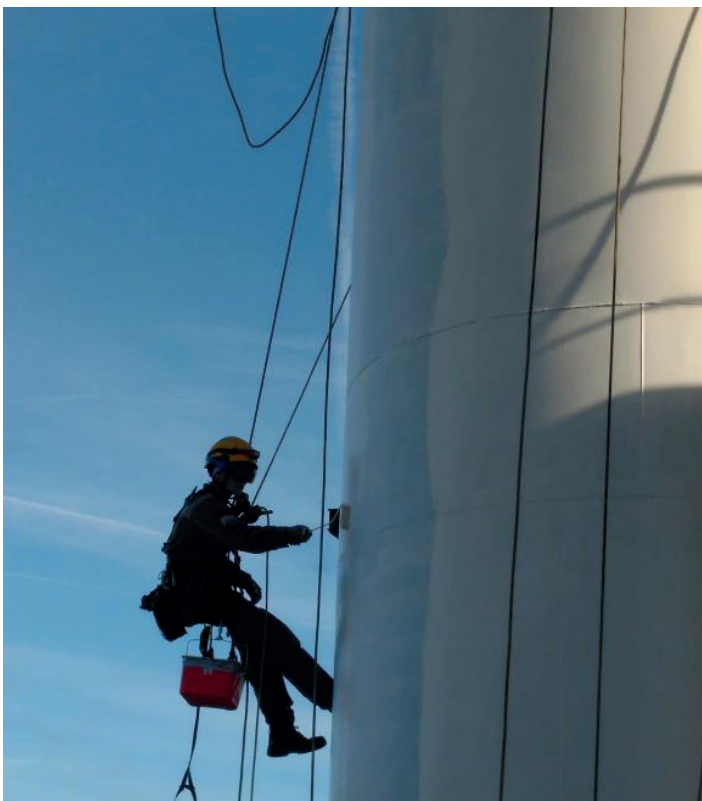


KYNAR AQUATEC® PVDF

Tailored Kynar Aquatec® PVDF Coatings for Long-Term Durability

The topcoat developed by **Cool Roof France** is formulated with **Kynar Aquatec®** polyvinylidene fluoride (PVDF) resin. This water-based resin technology, developed by Arkema, producers of **Kynar 500® PVDF**, gives coatings superior protection and durability performance, thanks to its strong carbon-fluorine bonds. Panels coated with **Kynar 500® PVDF** paint and exposed in Florida can last for more than 40 years. The bonds in **Kynar Aquatec® PVDF** provide excellent resistance to chemical and environmental damage, including intense UV light, aggressive salt air, sea spray, humidity, and abrasion.

Kynar Aquatec® PVDF offers the same weatherability and color retention as **Kynar 500® PVDF** for coatings. Side-by-side southern Florida weathering testing of **Kynar 500® PVDF** and **Kynar Aquatec® PVDF**-based coatings over 25 years shows similarly superlative performance with respect to color fade and chalking. While **Kynar 500® PVDF**-based coatings are applied to metal building components in the factory, **Kynar Aquatec® PVDF**-based coatings are water-based, field-applied, and cure at ambient temperature. The technology is particularly beneficial for projects like roof coatings, where on-site application is often necessary.



Reflective coating solutions for storage tank

In September 2023, our partner **Cool Roof France** applied a three layers system:

- Primer Layer: Ancorprim'o (waterbased primer from Comus)
- Base Coat: Ostreal (waterbased from Cool Roof France)
- Top Coat: waterbased topcoat from Cool Roof France made of **Kynar Aquatec® FMA-12**

The storage tanks were coated in field by rollers. The application took between 4 to 5 hours for each layer.

To evaluate the performance of the coating system, regular monitoring of the paint's appearance and reflectivity will be conducted.

Key performance indicators related to the coating:

- Gain in reflectivity : Total Solar Reflectance (TSR), a method for measuring a surface coating's reflective capability
- Superior protection and long-lasting performance

The results after one year:

The metal tank substrate (without any coating) had an initial **Total Solar Reflectance (TSR) of 33%**.

After application of the reflective coating, the TSR of the tank's surface reached **83,3%** and 2 years later the TSR is maintained at **79,2%**, despite regular exposure to UVs and sunlight.

By reducing the heat of the storage tanks, the stored raw material remains more **stable** due to the coating based on **Kynar Aquatec® FMA-12**.

The plant no longer experiences clumping or block formation, resulting in fewer maintenance operations.

This coating system with **Kynar Aquatec® FMA-12** provides a reflectivity gain of more than 50 percentage points and helps reduce industrial constraints.



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