Kynar Aquatec®
A water-based PVDF-acrylic resin aptly suited to “cool roofing” coatings or reflective roofs

THE CHALLENGE

Used for the coating of metal components in tall buildings and industrial structures for over 45 years, Kynar® PVDF is renowned for its remarkable resistance to UVs (lasting more than 25 years) and to grime, and for its reflective properties. These coatings are applied off site by thermo-lacquering.

Working on a coating that could be applied directly on site and offer the outstanding durability of PVDF based coatings, Arkema has developed Kynar Aquatec®, an acrylic waterborne emulsion PVDF resin for the formulation of paint that offers an innovative alternative to traditional acrylic paint.

ARKEMA’S INNOVATION

Arkema’s researchers have achieved a real technological feat by successfully developing an acrylic aqueous (hence solvent-free) emulsion of a PVDF copolymer. Kynar Aquatec® PVDF resin-acrylic based paint can be formulated as easily as traditional acrylic paint, and equally applied without difficulty on any type of roof (synthetic membrane, cement, asphalt sheeting) with conventional tools (spray gun, brush), but above all it features the same outstanding resistance to weathering and grime as the renowned Kynar® PVDF architectural coatings.

Kynar Aquatec®: for long-lasting “cool-roofing” coatings

Kynar Aquatec® based paints are aptly suited to “cool roofing”, a concept of white-painted roofs reflecting UV rays that is common in southern Europe and in high sunlight regions. It helps prevent buildings from heating up and reduce the need for artificial air-conditioning, and so contributes to improving the energy balance of buildings.

The durability of Kynar Aquatec® paint compared with traditional acrylic paint has no match.

The white colour and the quality of the film remain near intact for some 25 years. The reason: the perfectly smooth surface of Kynar Aquatec® coatings enables rainwater to naturally wash off pollution and other micro-organisms that would normally adhere to conventional acrylic paint.

Such ageing resistance affords lower maintenance costs for the roof, and its enduring white colour ensures excellent reflectivity of sunlight for years.

The future looks bright for this paint in sunny regions. Studies conducted in the United States have showed that “cool-roofing” in many public and commercial buildings and warehouses exposed to sunlight provides much enhanced living comfort and significantly reduces their energy costs related to air-conditioning over 20 years.

BEFORE

Asphalt roofing, before and after application of Kynar Aquatec® based paint

AFTER

Pointers

• Tests conducted in real situation have shown that the TSR (Total Solar Reflectance) of Kynar Aquatec® paint was still 90% after 10 years, compared with 55% with conventional acrylic paint.

• The overall energy cost of a building with a roof coated with Kynar Aquatec® paint can be reduced by almost 15% over 20 years.

• Growth of the order of 30% is expected in the coming years for Kynar Aquatec®.

• Arkema is the world leader in the PVDF market with a market share of more than 40%.