

Waterproofing

Facts and General Knowledge

What you did not know about the additives Styrene and Vinyl

Thanks to NASACOAT® Nano Acryl water based 100% acrylic resin, we are capable to manufacture on industrial scale very affordable true waterproofing coatings.

Currently there exist many types of “waterproofing” products formulated with acrylic-based resins. This document will focus on these waterproofing products and the use of styrene and vinyl additives. Waterproofing really means the capability **to stop the ingress of water into a surface or material**.

Water-resistant in fact really means the capability to **retard or minimize the ingress of water into a surface or material**.

Many different types of water-resistant products available on the market claim to be 100% waterproofing.

A 100% acrylic waterproof product has a molecular structure with gaps between the nano-beads. These gaps are smaller than a molecule cluster of water. This property prevents the ingress of water as its molecule clusters are simply too large to pass through the barrier. Additionally, these same gaps allow the much smaller vapor molecules to escape. These combined properties allow for a truly waterproof and breathable surface coating.

Styrene and vinyl are the most commonly used additives present in acrylic resins. The purpose of these additives is to dilute the acrylic resin in order to make the final product affordable. But, this dilution also results in lowering the quality of the product as the structure of these additives have much larger gaps between the nano-beads than a 100% acrylic coating. These gaps are larger than a molecule cluster of water and, due to this physical property, allows for the ingress of water. This means acrylic coatings with additives like styrene and vinyl are merely water resistant and will not offer truly waterproof protection.

Being only water resistant and not 100% waterproof, dramatically increases the deterioration of the material under the product's coating. In fact, acrylic resins have been traditionally reserved for high cost luxury applications such as packaging, decorative products for bathrooms, cosmetics, etc.

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