



COATINGS TECH NOTE 8

Advantages and Limitations of Acrylic Roof Coatings Considerations for Building Owners

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Acrylic roof coatings refer to a liquid-applied monolithic (seamless), fully adhered, elastomeric membrane that's formed in situ on the roof. These coatings are applied between 5 to 10 times thicker than regular house paint. Typically, the thickness of an exterior house paint is 3 mils or 0.003 inches (0.076 mm) compared to acrylic roof coating applications, which are 15 mils (0.38 mm) to 30 mils (0.76 mm). By comparison, a standard sheet of paper is approximately 3 mils (0.076 mm) thick. An acrylic coating is applied as a liquid and as it dries, it forms a tough monolithic membrane - no seams. Moreover, it is also fully adhered to the substrate is applied over top.

Acrylic roof coatings have emerged as a popular choice for building owners looking to improve the durability and performance of their roofing systems. They are cost-effective and ease to install. These coatings are advantageous because they help improve the longevity of the roof and help enhance the energy efficiency of a commercial roofs building. They are low in volatile organic content (VOC) and clean up easy with soap and water. However, like any material, they come with their own set of cautions that must be carefully followed before application.

Not a paint

An acrylic roof coating looks like paint in a can but is slightly thicker in viscosity, yet has adequate flow properties to still be brushed, sprayed, or rolled like house paint. However, typically a paint does not have as high a resistance to water, reflectivity properties, flexibility at low temperature, ability to expand and contract or resistance to foot traffic. But an acrylic roof coating does require these properties. Your roof is going to sit on a relatively horizontal (low-slope) surface, tolerating many external stresses and water contact for extended time.

Cost-Effective

Acrylic coatings are generally less expensive compared to other types of roof coatings (e.g., polyurethane or silicone), providing a budget-friendly solution with good quality. They are durable which helps reduce your carbon footprint while helping reduce energy consumption and maintenance costs over time.

Ease of Application

Since they are waterborne and single component, acrylic roof coatings do not require two component mixing and are easy to apply. They can be applied like a house paint using spray, roller or brush. Clean-up is straightforward using water. They can be applied quickly, ensuring minimal disruption to daily operations. As expected, how fast they will dry varies with the weather. If the humidity is low as in Phoenix, AZ, the coating dries in under 2 hours. If the humidity exceeds 85% then it will take much longer.



UV Protection

Acrylic roof coatings are usually white in color but available in other colors. The high reflectivity of white acrylic roof coatings makes them excellent at resisting UV rays. This white color also reflects at much as 85% or more of the heat portion of the sunlight, minimizing the impact of the sun on the roof surface and reducing the heat transfer into the building. This can lead to substantial cooling cost savings during warmer months and along with proper maintenance, helps extend the life of the roof system.

Limitations of Acrylic Roof Coatings

There are limitations to these waterborne acrylic roof coatings. They can provide some restoration to an aged roof. However, if the roof is too badly deteriorated, wet internally or the deck is rotted or badly corroded, the coating will not perform as intended and should not be applied.

Ponding Water

All roof systems require proper drainage and for acrylic roof coatings this is critical. Since they are water-based, ponding water could accelerate their degradation and negatively impact the longevity of the acrylic coating. If you foresee water ponding as an issue for your roof system, then you may want to consider alternative coatings. However, with adequate drainage there is no issue.

Temperature Sensitivity

These coatings should not be applied when it is extremely cold. Water freezes, so there are limitations as to the time of year when you can apply the coating. Your contractor needs to be aware of the overnight temperature. It might be 66°F (19°C) expected high for the day. But if the coating is applied late afternoon, and the temperature is going to drop to 25 °F (-4 °C) then there may be a serious problem with freezing. Once the coatings have properly cured, they will perform well in these colder temperatures.

Environmental Factors

Similar to all materials, acrylic roof coatings degrade over time due to weathering (UV, rain and temperature). This may lead to loss of thickness over time. Proper maintenance and roof inspection should mitigate the impact of weathering.

In conclusion, acrylic roof coatings present a viable option for building owners seeking a balance between performance and cost. Their reflective properties and ease of application make them an attractive choice for many commercial roofing projects. However, it is imperative to consider the potential drawbacks, such as issues with ponding water and temperature sensitivity, to ensure the longevity and effectiveness of the coating. Consulting with a roofing specialist can provide valuable insights and help determine if acrylic coatings are the right fit for a specific roofing structure.

For more detailed information on the features and cautions of acrylic roof coatings and other coatings, building owners may contact the RCMA or manufacturers of various coatings.

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