TECHNICAL BULLETIN

Painting Fiberglass Doors

Fiberglass doors have been available in the market for several decades. The commercial production and use of fiberglass as a construction material began in the 1940s. However, it was not until the 1980s and 1990s that fiberglass doors gained popularity and became more widely used in residential and commercial applications.

Fiberglass doors have become more popular for several reasons including durability, versatility, energy efficiency, low

Fiberglass Doors

maintenance, security, environmental benefits, and cost-effectiveness. Another benefit of fiberglass doors is safety, as these doors can be manufactured with ingredients to meet specific fire safety standards.

To meet various UL ratings for fire safety standards, companies use ingredients such as retardant and intumescent additives in the manufacturing of fiberglass doors. While fire retardant additives improve the fire safety properties of fiberglass, the amount and type of ingredients used will cause outgassing – the release of volatile organic compounds (VOCs) from the fiberglass. The amount of outgassing can vary depending on several factors including the type and amount of additives used, the manufacturing process, and the environmental conditions where the door is installed. *Also, outgassing continuously occurs over time.*

An unintended effect of outgassing is a possible loss of adhesion of a primer and paint applied to fiberglass. As a fiberglass door is primed and painted the surface is essentially encapsulated. As the fiberglass material outgasses, the VOCs become trapped and ultimately build pressure on the backside of a coatings system. This pressure can eventually cause the coating system to lose adhesion, blister, and peel from the surface.

To minimize adhesion problems, some best practices are to shade the door before application **to keep direct, or even diffused, sunlight away** from the surface. The radiant energy

Adhesion problems

from the sun will heat the door which causes outgassing to increase. **Using fans for air circulation will assist**

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with drying and curing. Also, it is recommended to prime fiberglass doors with a **bonding primer to** achieve the best possible adhesion. The primer should ideally be allowed to dry 24 hours to ensure topcoat adhesion.

Another approach to allow outgassing to escape is to drill small 3/8” holes to 3/4” depth in the top and bottom of the door. Preferably, three holes are drilled along the stiles; left, middle, and right. Fiberglass doors with windows are generally not an issue because the plastic trim pieces usually allow a means for outgassing to escape. Before considering this approach, check with the door manufacturer for recommendations.

Once primer is applied, do not over sand sharp edges as this can expose the fiberglass surface. After sanding clean and wash the surface to remove any loose debris of contaminants, such as hand oils, before painting. A variety of different paints can be applied to the primer, such as 100% acrylic or urethane-alkyd coatings, to achieve a long-lasting finish. Higher sheen paints are recommended for added durability.