

Ultraviolet Light and Weathering Resistance Of Architectural Fabrics

Today's architectural structures require a great deal of design and engineering and unique fabrication processes, representing a significant investment. Snow Shield Cover owners expect to amortize this investment over a long life for the cover. The technology for designing and manufacturing architectural fabrics will provide quality performance properties for a period of 15 to over 20 years, depending on the chosen fabric and top finish.

A critical performance factor in assuring a long lasting Snow Shield Cover is the ultraviolet (UV) light and weathering resistance of the synthetic resin coated polyester fabric. Any fabric exposed to the sunlight, wind, rain, snow and air-borne pollutants will exhibit some form of degradation over time. The most harmful effects are those caused by the UV light present in sunlight.

The principle in extending the life of a cover is to maintain the tensile strength of the base fabric. To do this, proprietary coatings protect the base fabric from UV light and other factors. It is the top exterior coating compound that provides protection from UV light. Kynar® and Tedlar® is formulated to either reflect UV light or absorb the light, so that the UV light cannot affect the base fabric or the compound itself. This is normally accomplished with the proper selection of pigments and the use of UV absorbers, or a combination of both. Further, based on years of experience in exterior coatings different color structures or light transmission into the structures can be made.

Ultraviolet light testing can be performed by either ASTM D 2565 Xenon-Arc testing or ASTM G-154 Fluorescent UV testing. These accelerated weathering machines combine high concentrations of UV light with water spray and high temperatures. These machines can simulate years of outdoor exposure in a matter of months, and have a very good correlation to actual field exposure. Kynar® and Tedlar® fabrics have performed in applications for over 25 years and have an equivalent of 20 years+ weathering in weathering machines.

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