Performance Properties for Architectural Fabrics

Before architects and engineers can utilize coated polyester fabrics as a building material, it is necessary to understand the performance properties of Shelter-Rite architectural fabrics. Some of these properties are similar to those of conventional building materials, but many of the properties are unique to the flexible material.

Architectural Fabrics are made up of four components:

1. Base Cloth
2. Adhesive or Primer Coat
3. Exterior Coatings
4. Top Coating Systems

Each of these components contributes to the different performance properties, with some of the components having an affect on several properties. A review of the different critical performance properties listed below will continue to refer to the four different components that make up the coated fabric.

Tensile Strength
The maximum amount of tensile stress that a material can withstand. This is the first and most important performance property that needs to be considered.

Coating Adhesion
The ability of the exterior coating compound to be adhered to the polyester base fabric. Good coating adhesion is required to allow the material to be handled and welded.

Weldability and Seam Strength
Shelter-Rite can be pre-fabricated into large panels and then brought to the job site for final assembly.

Tear Resistance
The ability of a material to resist a tear or tear propogation may be critical to the structural integrity of the building.

Flame Resistance
Flame resistant properties need to be fully understood so that the material can be used safely in a structure.

UV and Weathering Resistance
Any building material 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.

Cleanability and Aesthetics
The general appearance of the structure is a major concern, not only when the structure is new but also as the structure ages.

Fungus and Mildew Resistance
Fungus growth on an architectural fabric cannot only be an aesthetic problem but can lead to structural problems with the material.

Uniaxial and Biaxial Elongation
As a load is applied to the coated polyester fabric, the material will stretch and ultimately break.

Non-Wicking Properties
The ability of a material to resist moisture from wicking into the polyester yarns.

Dimensional Stability
A material changes in size due to change in temperature or humidity, and these changes need to be considered when engineering the building.

Seaman Corporation

1000 VENTURE BLVD. WOOSTER, OHIO 44691 USA, www.architecturalfabrics.com
Phone 330.262.1111, Fax 330.263.6950 U.S. Toll-Free: Phone 800.927.8578, Fax 800.649.2737