Membrane Selection

The membrane is a principle structural component of a tensioned fabric structure. The Success of the entire project largely depends on the performance and serviceability of the selected fabric.

The materials in general use are composites consisting of woven substrate fabric protected with applied coatings. In these composites the substrate provides the basic tensile strength of the material and its resistance to tear. The protective coating seals the fabric against weather, provides resistance to ultraviolet light and functions as the medium for joining the fabric panels.

Architectural fabrics are exposed to an incredible amount of abuse including smog, UV light, abrasive dirt, wind, and snow. Without protection, appearance and performance characteristics can degrade rapidly. UV light and heat from the sun stimulates the migration of plasticizers out of the fabric resulting in a loss of flexibility and strength. Dirt and chemical exposure affect appearance by causing staining and discoloration.

Signature chooses to use Poly Vinyl Chroride (PVC) as a standard product line, as it is a fire retardant/ self-extinguishing and self-cleaning fabric that is the industry standard for quality structures. It passes NFPA701 and ASTM E84 Fire Codes.

Pre-constraint technology gives the fabric high tensile strength and gives it the capability to maintain tension in extreme climates. UV inhibitors and other high quality top coats prolong membrane life such as the Acrylic/PVDF and TiO2 top coat. The Acrylic/PVDF coating has the highest bonding ratio to PVC, eliminating the delaminating effects that results from lower quality top coats.

PVC is available in a variety of colors or in a white translucent to allow for evenly distributed, natural light.

The weight and type of membrane depends on the design requirements for the project. Signature's in-the-field projects are using a variety of of membranes from the most recognized suppliers such as **Ferrari, Seaman, Naizil, Mehler and Tenara**.