**Weave Patterns**

There are several weave patterns that can be woven. The most common weaves are Plain Weaves, Twill Weaves, and Satin Weaves. Within each weave pattern there will be variance based on the thread counts and the style of the weaves.

**Plain Weave**

In a plain weave, the warp and fill yarns cross over and under one another. The frequent over/under weaving of the threads reduces the overall strength of fabric, but still produces a fabric that is suited for all but the highest performance applications. Plain woven fabrics are generally the least pliable, and do not unravel easily. Plain weave fabrics are ideally suited for flat applications where drape and conformability are not required.

**Satin Weave**

Satin weave produces a more flexible fabric than a plain weave. The fill yarn “floats” over several warp yarns before interlacing under one. Common satin weaves are 4-Harness Satin, 5-Harness Satin and 8-Harness Satin.

- 4-Harness Satin Weave (4HS) - In the 4HS, also called Crowfoot Satin, the fill yarn passes over three warp yarns and under one. It is more pliable than a plain weave and forms easily around curves.
- 5-Harness Satin Weave (5HS) - In the 5-Harness Satin weave the fill yarn floats over four warp yarns and under one. It is more pliable than the plain weave and easily conforms to curved surfaces.
- 8-Harness Satin Weave (8HS) - The 8-Harness Satin weave (8HS) is the fill yarn floats over seven warp yarns and under one. It is the most pliable satin weave and forms well around compound curves.

**Twill Weave**

Twill weave is similar to satin weaves in that the fill yarns float over several intersections. Twill weaves have a characteristic diagonal rib formed by the interlace points in the fabric. The rib is called the “twill” or “twill line”. The 2x2 Twill weave is the most popular weave for cosmetic or decorative applications.

- 2x2 Twill Weave - The 2x2 Twill weave pattern is characterized by a two-by-two weave where two warp yarns float over two fill yarns, creating a diagonal appearance. The twill weave is more pliable than the plain weave and has better drapability while maintaining more fabric stability than a harness satin weave. It is recommended for use on parts that have compound curves.