Woven Carpet Constructions

There are three basic types of carpet looms in the industry. Bloomsburg Carpet Industries Inc., is the only American manufacturer of all three types.

Complex patterns can be woven on a velvet loom, but typically these looms are used to weave solid colored carpets in an all loop, cut and loop, or all cut construction. Velvets are known for their extremely high density.

A Single Heddle loom generally is used for making solid-colored carpets, while a Double Heddle loom allows for more color and pattern versatility. The pile, or face yarn is fed into the loom from one (Single Heddle) or two beams (Double Heddle). Each holds as many yarn ends (1152), as there are tufts across the width of the carpet. As the yarn passes along the loom, the yarn loops over pile wires which are mechanically inserted back and forth across the width or weft of the loom. The height of the wire determines the height of the loop. Utilizing different wire heights and sequences of cut and round wires, creates the pattern design and texture in the carpet.
Wilton carpets are pile carpets whereby the pile is formed by inserting wires in the pile warps of the carpet. After the extraction of the wires, the pile is looped (in case straight wires have been used) or cut (in case cutting wires are used). Because the yarn is buried on the back and only lifted when a specific color is needed, it gives the Wilton product more body, resilience, and great quality.

The ability to weave complex patterns is a strength of the Wilton loom. However, because of massive yarn creels needed to service 216 and 252 pitch looms, the number of unique colors that can be used in a pattern are limited by the number of frames used to introduce colors. A 216 pitch loom usually weaves up to 3 unique colors. A 252 pitch loom can weave up to 5 unique colors. However, both can add additional colors through the “planting” design process that can increase the number of unique colors in a particular pattern. Depending on the pattern, as many as 11 colors have been used in a design.
Gripper-Jacquard Axminster looms provide the most variety of color (8 to 12 colors), giving the Axminster greater versatility in pattern design and color placement than any other carpet manufacturing process in the industry.

As the loom is operated, the yarn is trimmed and clamped into brackets (gripper). Each tuft is then lowered and inserted into the carpet face. The tufts are placed between the warp threads and bound tightly by multiple weft yarns. Because this weaving process individually cuts and places the yarn into the backing components, a cut pile texture is its only construction limitation.

The precision of the weaving process, along with the intricate construction of an Axminster carpet, ensures the carpets strength and dimensional stability to support the design intent in severe traffic areas.