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Wool Serge Tech Note

The purpose of this tech note is to better understand wool serge and its properties.

Wool serge is often considered the best fabric to use for stage blacks because it absorbs an amazing amount of light. This feature usually makes it very expensive and highly coveted as well. This tech note examines how wool serge is made and why it has the properties it does.

Wool

The wool is sorted as to fineness, crimp, length of fiber, and felting qualities. Dirt, suint (dried perspiration), and lanolin are removed by a soap-alkali scouring; by the expensive naphtha solvent method, which retains the full strength and softness of the fiber; or by freezing and shaking. Wool may be carbonized to remove vegetable matter. It is bleached and dyed as raw stock, yarn, or in the piece; it is oiled to withstand processing and is often blended. Woolen goods are woven from carded short-staple fibers into soft yarns adapted to fulling and napping. Worsted fabrics such as whipcord, gabardine, and serge have a hard, smooth texture.

Wool Serge

Diagonal worsted cloth, dyed in piece and may be made in mixture or fancy effect. It is possible to stock-dye and yarn-dye the material, but piece-dyeing is preferred. The name is derived from the Latin serica. This would imply that the cloth was originally made of silk. The weight of serge runs from 10 ounces upwards and it is one of the most staple of cloths. Made of wool, worsted, cotton-worsted and in other combinations. Clear finish is given the material although unfinished and semi-finished serge is on the market. The quality and price range is from the lowest to the highest because of the call for all types of serges. It is a formal, dressy type of cloth and is conventional at all times. Serge holds the crease very well but will shine with wear. This shine cannot be removed permanently. It is a good cloth in tailoring as it drapes and clings well.

Worsted Cloth

Worsted is the name of a yarn and cloth usually made from wool. The name derives from the village of Worstead in Norfolk, England. The village became, along with North Walsham and Aylsham, a centre for the manufacture of yarn and cloth, after weavers from Flanders arrived in Norfolk in the 12th century.

Originally made only from long-staple fibers, worsted yarn is now spun also from medium or short fibers. The fibers are carded, the resulting sliver gilled to straighten the fibers and double them for uniformity; subjected to successive combings to remove neps (short ends) and lay the fibers parallel; then drawn into roving and spun, usually by the rapid, continuous ring method, and twisted. Although the twill weave is usual for worsteds, the same weaves may be used as for woolens without the pattern being obscured by the napping, fulling, and shearing processes commonly employed in finishing woolens.

Twill Weave

Twill weaves are characterized by a diagonal pattern formed by the weaving. Such fabrics are extremely durable and strong, are more compact and heavier. The process of a twill weave results from each warp fiber passing over filling fibers and then under one filling fiber. The exact number which are passed over denotes the particular type of twill weave. A 2-up and 2-down right-hand twill is used in constructing wool serge, 45-degree angle.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

This ribbon version of the twill weave shows the diagonal formed by the offset of the
pattern.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

This 100% woolen is a tweed woven with a Twill weave.

Sources:

Grayson, Martin, Ed. Encyclopedia of Textiles, Fibers, and Nonwoven Fabrics. New
York, Wiley, 1984.

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