Fulling

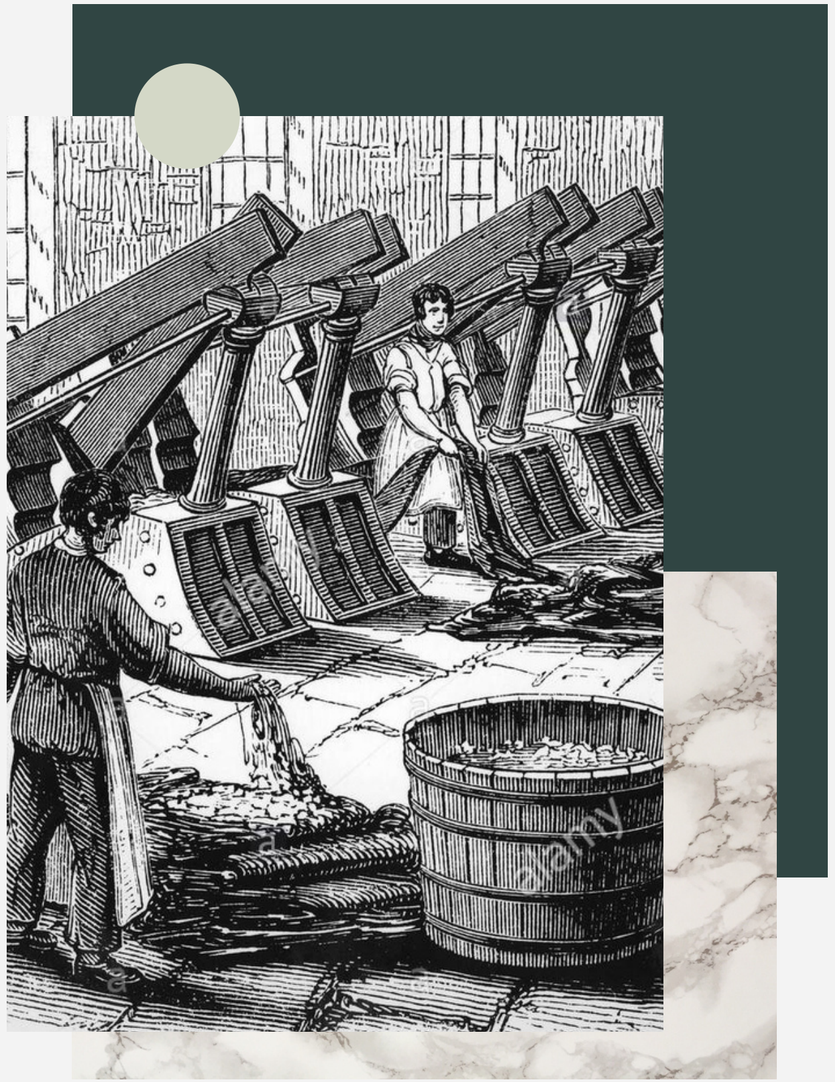
By: Leoni

Fulling is a process that increases the thickness and compactness of wool by subjecting it to moisture, heat, friction, and pressure until shrinkage of 10 to 25 percent is achieved. Shrinkage occurs in both the warp and weft, producing a smooth, tightly finished fabric that may be so compact that it resembles felt.

Process

The fulling process takes advantage of the microstructure of wool fabric. The outer layer of the wool fiber consists of overlocking scales that can be seen under a microscope. The scales on the surface of the fiber point toward the tip and will move only in one direction. In the presence of moisture, heat, and friction, these scales will open up, move, and become interlocked. Once these scales interlock, the change is permanent and the fabric shrinks and thus becomes more compact.

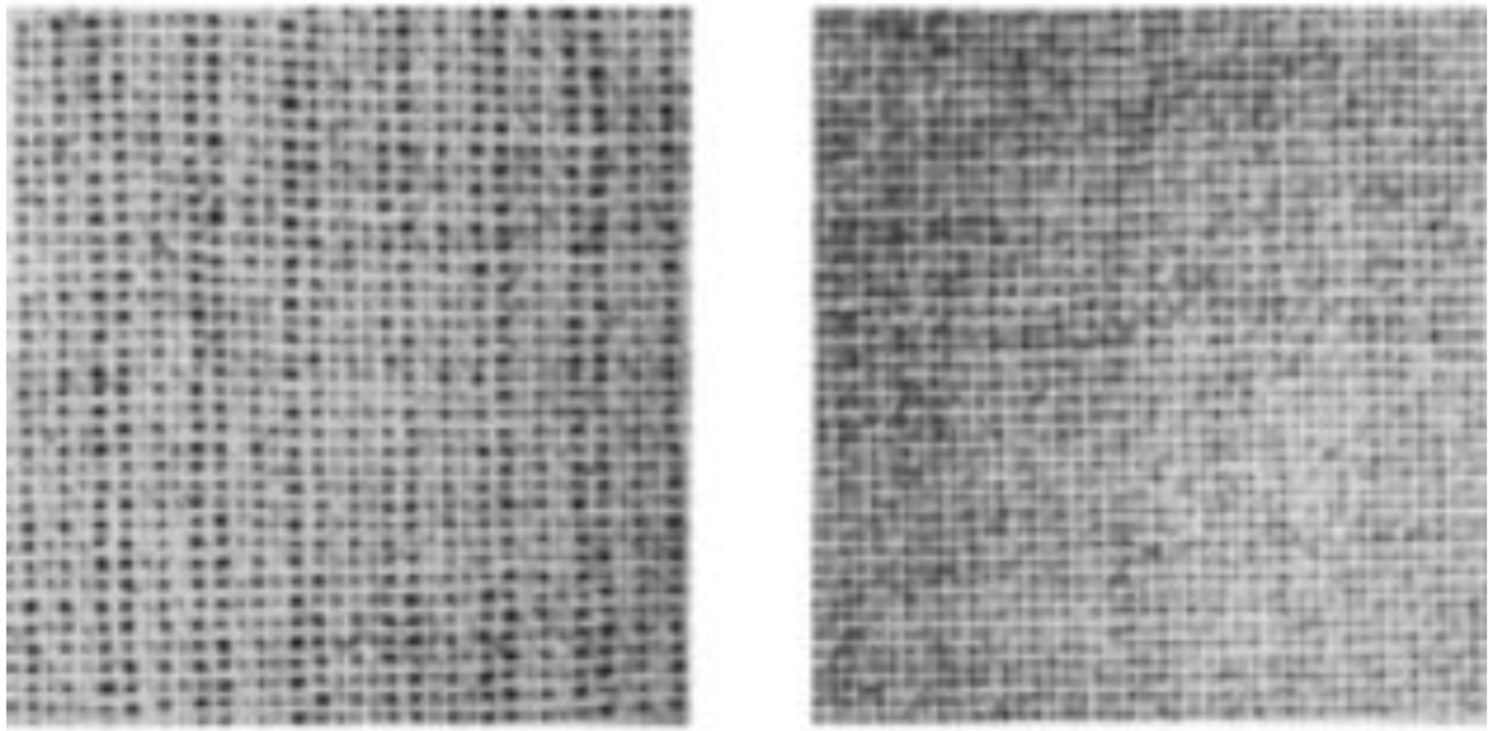
The wool fabric is scoured to remove any processing oils that may be on the fabric. Then the fabric is placed in a rotary fulling or jig machine. The fabric is passed between stainless steel rollers pounded by clappers. Water with a mild alkaline soap and sodium carbonate or a weak acid dampens the fabric. Wool fibers need moisture, mechanical action, and heat for the scales on the fibers to interlock, and the friction from the pounding produces the necessary heat.



Fulling

Finishing

The fabric is carefully dried after the fulling process. To give it additional softness, the fabric may be brushed or napped.



Example of the effect of fulling on woven woolen cloth. Note the loose, irregular weave of the unfulled cloth on the left in contrast to the tight, very uniform weave of the cloth after the fulling process has been completed.


Fulled Wool Weaving for Felting
Watch later
Share
PEASANT ART CRAFT
Watch on YouTube