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THE CANADIAN TEXTILE DIRECTORY

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SIZING WOOLEN AND WORSTED WARPS.

It is often necessary to size woolen, worsted and cotton yarns before weaving them, no matter whether they are coarse or fine in quality. Woolen yarn, especially, has a number of ends bristling out all around, as may be plainly seen by using a microscope. The composition of woolen thread is such that these irregularities in the surface of woolen yarn are much more frequent than is the case either in worsted or cotton yarn. They are, indeed, the characteristic of woolen yarn, and are the most important promoters of the felting process peculiar to that kind of yarn. As compared with cotton and worsted yarns, the number of the loose, projecting fibres is not in proportion to the quality of the thread, no matter how well spun. The lower grade yarns are invariably rougher and more irregular than the finer grades.

It will thus be readily seen that the roughness alluded to must cause some difficulty in weaving, by the constant friction of the ends of the fibres in the harness and reed—a friction which is still further increased by the shedding and passage of the shuttle. Three objections may be urged against the weaving of woolen, worsted or cotton yarn in an unsized condition. First, the ends break constantly, and the frequent knotting required to remedy this causes a great loss of time, and besides results in a number of knots in the fabric. Secondly, in consequence of this friction, gritty yarn is produced, and these fibre bunches must necessarily be removed before the yarn can be woven. Occasionally, these knots become so numerous and the warp becomes so entangled that it is better after all to take it out of the loom and have it sized. Thirdly, yarn exposed to this mutual rubbing will never make a good cloth, for its surface assumes an unsightly appearance, and this defect can only be partly corrected in the finishing.

There are many kinds of yarn which can be woven in an unsized state without danger, but they are principally the lower grades, and are drawn in fairly open. The ground weave is often of a simple character, with a certain ease in the shedding, and for this reason there is less rubbing of the warp. These two points: the opening in the shed, and the character of the weave, are actually the most important factors in deciding the question whether the use of glue will become necessary or not. For instance, a yarn which can be used very well without size in a three-harness twill would require a strong size when used for a linen binding, even if the number of ends per reed and per inch in the filling had remained the same. Exact details can only be given after practical experiments have been made, but if the sizing is not too expensive, it is always better to make use of it, if there is the least doubt that the yarn will not work satisfactorily. The glue imparts strength, firmness, and greater resisting power to the yarn, and makes the projecting fibres stick to the surface of the yarn, thereby increasing its capacity to resist friction and a greater tension. Another virtue of the size is that the ends saturated with it can be drawn in closer than ends not so prepared; and the consequence is that the sized yarn is not interfered with so much in its free motions by the adjoining ends.