

Estimation of Twist Loss in the Weft Yarn during Air-Jet Weft Insertion

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Abstract : Fabric is a flexible woven material consisting of a network of natural or artificial fibers often referred to as thread or yarn. Today fabrics are produced by weaving, braiding, knitting, tufting and non-woven. Weaving is a method of fabric production in which warp and weft yarns are interlaced perpendicular to each other. There is infinite number of ways for the interlacing of warp and weft yarn. Each way produces a different fabric structure. The yarns parallel to the machine direction are called warp yarns and the yarns perpendicular to the machine direction are called weft or filling yarns. Air jet weaving is the modern method of weft insertion and considered as high speed loom. The twist loss in air jet during weft insertion affects the strength. The aim of this study was to investigate the effect of twist change in weft yarn during air-jet weft insertion. A total number of 8 samples were produced using 1/1 plain and 3/1 twill weave design with two fabric widths having same loom settings. Two different types of yarns like cotton and PC blend were used. The effect of material type, weave design and fabric width on twist change of weft yarn was measured and discussed. Twist change in the different types of weft yarn and weave design was measured and compared the twist change in the weft yarn with the yarn before weft yarn insertion and twist loss is measured. Wider fabric leads to higher twist loss in the yarn.

Keywords : air jet loom, twist per inch, twist loss, weft yarn

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