Effect of Fibrillation Control and Processing Order on the Hand of Cellulase Treated Tencel Fabrics

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Tencel fabrics were crosslinked with DMDHEU, dyed with reactive dyes, and dyed/crosslinked for fibrillation control before and after cellulase treatment to ascertain the effect of fibrillation control and processing order on the hand of fabrics. Fibrillation and processing order affected mechanical properties and hand of Tencel fabrics mainly due to difference in surface fibrils and microstructure. The fabrics treated with cellulase after crosslinking showed softer and bulkier than other samples. The fabrics crosslinked after cellulase treatment were less smooth due to surface deposition of DMDHEU. Dyed/crosslinked/cellulase treated fabrics were the least bulky due to less fuzz on the fabric surface. Crosslinked/cellulase treated fabrics gave the highest total hand value. Cellulase treated/dyed fabrics showed similar total hand value to dyed/cellulase treated fabrics. Cellulase treated/crosslinked and dyed /crosslinked/cellulase treated fabrics produced inferior hand compared to other fabrics.

Generally cellulae treatment after fibrillation control gave better total hand than cellulase treatment before fibrillation. Irrespective of processing order, fibrillation contributes to improve total hand.