

Composite Performance of Fusible Interlinings on Apparel Fabrics

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This research identified the relationships existing among the performance properties of a selected group of men's suiting fabrics, interlining materials and fused composite systems to show how the mechanical properties of single layer components translate to predict the hand of fused ensembles. This research also investigated changes that occur in the physical properties and in subjective hand evaluation of the individual component layers and the fused fabric systems as a result of treatments that simulate garment wear and dry-cleaning process.

The Kawabata Evaluation System was used to measure the mechanical properties of the test materials and a quantitative analysis methodology was applied to assess the subjective measure of the hand and the durability properties of the test materials.

Hardness, heaviness, crispness, and firmness are the primary hand properties determined by subjective evaluation to be the most important for the front panel of men's suiting materials. Results of the KES testing of mechanical properties revealed that tensile linearity (LT), compressional resilience (RC), and shear properties (G,2HG) are the measurements that best correlate with these primary hand qualities. More desirable hand qualities were obtained for suiting materials with fusible interlinings and the polyester rich nonwoven interlining provided the best overall hand properties.

Results also showed that fusible interlinings in garments contributed to the retention of mechanical properties and hand qualities of fused composites after simulated wearing actions and dry-cleaning processes. They showed that polyester rich nonwoven interlinings were superior to any other interlining from the standpoint of the shape retention property.