

# STUDY ON THE EFFECT OF DIFFERENT MATERIAL COMPOSITION ON PHYSICAL AND MECHANICAL PROPERTIES OF WOVEN FABRICS

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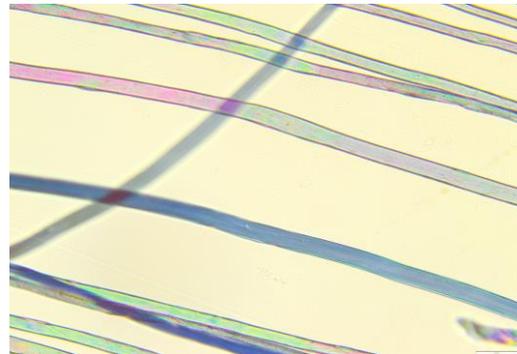
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**Abstract:** The protection and wearer satisfaction of protective garments can be improved by selecting the appropriate materials. In this study, a comparative study was made on military garment samples consisting properties of 100% Cotton, 100% Polyester, 33% Viscose 67% Polyester, 65% Cotton 35% Polyester, 50% Cotton 50% Polyester, 54% Nylon 46% Cotton and 22% Nylon 78% Cotton fabrics. Mass per unit area, construction, breaking load, tearing strength, abrasion resistance and shrinkage were among the characteristics that served as the basis for this comparison. The results show that these fabrics have special qualities that come from the kind of fiber that is utilized. They also have a distinct personality that can be enhanced for a desired application. These fabrics are valuable because of their durability, strength, and protective qualities. This study shows that the geometrical arrangement of fiber in yarns and fabric, in addition to intrinsic fiber qualities and percentage of its composition will determine the performance of the textile material.

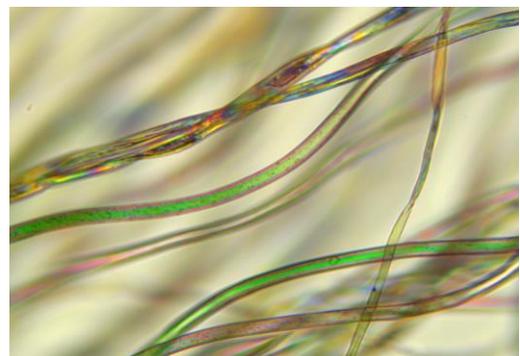
**Keywords:** woven fabric, physical properties, mechanical properties, material composition,

**Table 1** Classification of fabric, composition and current usage

Sample	Material Composition	Current Usage
Cotton	100%	Inner Garment
Polyester	100%	Ceremonial
Mixture of Polyester and Viscose	33% Viscose, 67% Polyester	Office Uniform
Mixture of Polyester and Cotton	65% Cotton, 35% Polyester	Operational Uniform
Mixture of Polyester and Cotton	50% Cotton, 50% Polyester	Operational Uniform
Mixture of Nylon and Cotton	46% Cotton, 54% Nylon	Operational Uniform
Mixture of Nylon and Cotton	78% Cotton, 22% Nylon	Operational Uniform



**Figure 1** Mixture of polyester and viscose fiber



**Figure 2** Mixture of polyester and cotton fiber

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