

## Effect of Spandex Ratio on the Shrinkage of Woven Fabrics Made of polyester yarns

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### □ Abstract:

The aim of this research is to study the effect of the spandex ratio on shrinkage in the direction of warp and weft for woven fabrics made of polyesters, and to determine the effectiveness of each element of the structure of the spandex yarns (spandex ratio – multi Filament in the cross section – yarn counts) For the best shrinkage rates of fabrics, The test samples were spun with two spandex yarns (75 denier - 150 denier) for warp and weft Laboratory tests for shrinkage were performed, The laboratory test results were analyzed for the tested properties by the analysis of variance, In addition the calculation of Step Wise between each of the independent variables (spandex ratio – multi Filament in the cross section – yarn counts) and between the shrinkage property as a dependent variable. In addition to determining the contribution of each of the independent variables by testing participation rates for overlapping verbs of independent variables, The results of the study showed that the properties of shrinkage depend on the content of spandex fibers to increase the ratio spandex in the shrinkage of the fabrics in the direction weft, It also showed that the yarn count 150 denier had the greatest effect on the reduction of shrinkage in the direction of warp for woven fabrics, The results of the statistical analysis showed a positive correlation between the spandex ratio and the deflation in the direction of warp and weft. The results also showed the importance of determining the effect of the independent variables on the shrinkage in the direction of warp and weft, where the shrinkage rate of the cloth can be controlled in the direction of warp and weft according to the operating requirements as well as the specification used for the final product.

**Key words:** polyester spandex, spandex ratio, Shrinkage, Shrinkage properties