

تحسين خاصية مقاومة الانفجار لأقمشة تريكو السداء باختلاف تراكيبها البنائية  
**Improve The Bursting Strength Property Of Warp-Knitted Fabrics  
According to its Various Constructions**

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## ABSTRACT

Bursting strength is the force that must be exerted perpendicularly on the fabric surface to break off fabric. It can be expressed in kilograms per square centimeter (kg / cm<sup>2</sup>). The bursting strength property of fabrics is an important property that should be available in the knitting fabrics of different types and areas of use because it gives an indication of the strength of the fabrics to withstand the different stresses during use. The warp-knitted industry has evolved greatly, especially in recent years. It has become a competition for large-scale woven fabrics, In warp knitting, a series of yarns is transferred side by side to a special size and width in warp beam, by overlapping and underlapping these yarns wrapped around the needles according to the required design and structure using the stitching technology. The fabrics that can be produced on warp knitting machines are divided into three sections: fabrics produced using one guide bar- fabrics produced using two guide bars - fabrics produced using multi- guide bars; the fabrics produced using one guide bar are less durable and don not have the suitable natural or mechanical specifications that qualify them to be used in several applications because of its instability structure, therefore there are not used extensively in production. Hence, the problem of this research is to improve the functional properties of the fabrics produced on multi- guide bars warp knitting machines which qualifies them to be used in many fields.

This research aims to design and produce a number of warp knitted fabrics by using more than one guide bar (two guide bars and three two guide bars) on Raschel warp knitting machine to improve the bursting strength property of produced fabrics and increase its durability against different stresses during use, then determination the best standard specification. Number of knitting fabrics were designed and produced with laboratory tests to evaluate the functional properties of the fabrics produced in this study. It was found that, the difference in the number of used guide bars in the warp knitted fabrics has a clear effect on the bursting strength property and increase the durability of the fabrics for different stresses during use.

**Keywords:** Bursting Strength, Guide bars movement, Warp knitted Constructions, Warp knitted machines.