A Study on the structure of lace fabrics produced on warp knitting Raschel Machines

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Abstract:
The tremendous progress and development in textile technology and machinery has led to the development of the warp knitting fabric industry to provide new things and distinctive to the consumer. Types of fabrics that are used in the production of clothes are widely used in various fields of fashion and that cover parts of the human body such as hats, gloves, underwear and outerwear, warp knitting is the most flexible and versatile textile production system, It can be produced with elastic or inflexible structures, It can be produced with open or closed structures, It can also be produced in the form of flat, tubular or multi-layered. Also, warp knitting fabrics can be produced with widths more than (6) six meters. The warp knitting machines divided into tricot machines and raschel machines, from the types of fabrics that produced on the raschel machines are lace fabrics, Lace is a type of warp knitted fabric that is thin with a mesh shape, that textile producers can manufactured it using a wide range of techniques, It is commonly used to decorate clothes, furnishings and household items. Lace usually consists of silk or linen threads, Some textile craftsmen made this fabric using gold or silver threads, Some manufacturers use synthetic fibers such as polyester or rayon to make lace, the most prevalent designs in lace are flowers, plants, and geometric shapes. Lace has been associated with elegance and beauty for centuries because of its elegance and complexity, so this fabric remains a common component of women's clothing. The study analyzed the structure of (4) samples and these samples have different designs, and after studying the statistical results of the tests, the percentages of square meter weight, thickness, tensile strength and elongation are different, according to the different design and structure.

Statement of the problem: Most of the workers in this field rely on practical experiences, due to the lack of Arab references to the process of analyzing and setting specifications for lace fabrics, as well as in woven fabrics, which called for an attempt to lay scientific foundations on the analysis processes of lace samples with the development of their own implementation specifications. Objective: - Laying scientific foundations for the analysis of lace fabrics samples. - Benefiting from modern Raschel warp knitting machines techniques to produce lace fabrics. Connecting between the design and the final use of lace fabrics. Significance: Availability of scientific methods for analyzing and setting specifications for lace fabrics. Methodology: Analytical Experimental. Results: According to the structure of the lace fabrics with the difference of design, the number of threads that used and the number of guide bars, the thickness of the cloth varies so that the distances formed by the directions of stitch formation affect on the thickness of the cloth, depending on the movement of each bar, because each guide bar moves differently and the structural composition intertwines with another structures, The construction of the other bars increases the thickness of the resulting fabric.

Keywords:
Knitted fabrics, Warp knitted fabrics, Raschel machines.

References: