Quality Standards for Sewing Protective Isolation Clothing produced from Nylon Taffeta SBL Fabrics

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Abstract:

The research aimed to reach the best quality standards of Sewing protective Isolation clothes produced from Nylon Taffeta SBL fabrics through studying the effect of some Sewing variables represented in the type of Sewing stitch (Sewing stitch class 300 under No. 301, called lock stitch - cover stitch Class 500 under No. 514, called a - 4 thread overlock stitch), needle number (14,12), stitch density (12,10,8 stitches / inch), and the tension level on sewing thread (Tension 1, Tension 2, Tension 3), and that is on the properties of the Sewing Seams represented in (tensile strength of sewing, elongation, percentage of Sewing performance efficiency, Sewing Stiffness, Seam pucker), in order to identifying the best Sewing variables that give the best quality factor of the Sewing Seam properties. To achieve this goal, the most widely used Nylon Taffeta SBL fabrics in the local and international markets were selected, and the natural and mechanical properties were identified which are represented in (weight per square meter, thickness, tensile strength, percentage elongation, Stiffness), laboratory tests for Nylon Taffeta SBL fabrics and their Sewing Seams were performed in the chemical laboratory for examination and tests at Misr Helwan Company for Spinning and Textile, where 32 experiments were done.

The research reached the following results:

* An existence of an effect of the Sewing variables relating to the study on the Sewing Seam properties of Nylon Taffeta SBL fabrics, and a correlation relationship was found between each of the Sewing variables and the Sewing Seam properties, which were represented by graphs and radar shapes.

* The Lock stitch "301" recorded the highest values of the measured Sewing properties, followed by the 4 thread overlock stitch "514" with most of the sewing variables in the current study for the simple Seam S.Sa-1.

* Nylon Taffeta SBL fabrics achieved the best results in the Sewing properties of the simple Seam S.Sa-1 with the Lock stitch "301" using needle number (12), stitch density (10 stitches / inch), and tension level (2) as the sample No. (5) Exceeded all research samples with a quality factor of (97.7%).

* Nylon Taffeta SBL fabrics achieved the best results in the Sewing properties of the simple Seam S.Sa-1 with a 4-thread overlock stitch "514", using a needle number (12), stitch density (12 stitches / inch), and tension level (2), as the sample No. (26) Exceeded all research samples with a quality factor of (96.7%).

The most important research recommendations:

1- The necessity of linking all the fields of scientific research, the clothes and textile industry, and social problems, through research applications to reach the best performance for clothes made of Nylon Taffeta SBL fabrics, and keeping on their consumer age.

2- To benefit from the results of the current research in the manufacture of protective Isolation clothes produced from Nylon Taffeta SBL fabrics to raise their quality level and to qualify them to compete locally and internationally.

3- Paying attention to prepare a guidebook for the quality standards of sewing different fabrics in line with the nature of the final products.

References:

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