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THEORETICAL METHODS OF EVALUATING THE QUALITY OF FABRICS

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Annotation
In the article, the evaluation of the quality of various folding fabrics after their attachment to the aura fabric was determined experimentally.

Keywords: stiff fabric, tearing, elongation, accumulation, deformation.

Introduction

The properties of the body and back yarns, in turn, depend on the natural properties of the fibers, their length, the technological properties given during the spinning process [1].Considering the above-mentioned and many other properties of the fabric (for example, resistance to sunlight and moisture, etc.), there are considerable difficulties in the selection of aura and corrugated fabrics with mutually compatible properties [2].One of the main characteristics of some natural fiber yarns is that they are spun from short fibers.In some studies, a method has been developed to assess the effect of the methods of twisting yarns on the law of deformation of the material of fibrous yarns and the theory of dynamic wave propagation in such yarns [3].
Based on the above analysis, a theoretical method of assessing the bending strength of the material of the yarn (warp and weft yarns) of the fabric was determined.
Typically, the suit material will mainly need to be able to withstand elongation and bending deformations. Therefore, the material is further processed in order to increase the elongation and flexural strength of the suit fabric and the ability to maintain the geometric shape of the suit for a long time.

Processing is carried out using chemical solutions. The main reason for the appearance of various irregularities on the surface of the suit is the plastic deformation of the materials of the suit's aura and stiffeners according to different laws and in different amounts.

Based on the sources analyzed above and based on the theory of composite materials The "reinforcement" of the glued suit embroidered fabric material can be considered as a composite material consisting of the body and back yarns of the embroidered fabric.

The mechanical properties of such a composite material are evaluated by the properties of the matrix and all the "fittings" in it and the laws (geometry) of their placement in the matrix.

In the industry, the fabric and aura materials of the suit are selected by testing their bending strength using a portable device and comparing the results with the normative indicators.

The results of research to improve the existing device in such an industry are presented in the works.

Four test samples were selected and experiments were conducted. In this case, the 1st test sample is woven in a cloth weave.

The breaking strength of the test specimens, the quality of the elongation at break were tested at the Namangan UzTest accredited testing laboratory on HD-B617 equipment manufactured in the Republic of China.

The identified quality indicators of the test samples are shown in Table 1.

The results of the experiment were carried out in accordance with the standard requirements for room humidity, temperature and humidity of samples.

Table 1. Quality indicators of test samples.

Sequence number of the test sample	Quality indicators and units of measurement						
	F-Interruption force, N		L-Elongation at break, sm		At 10 sm number of threads, pcs		Friction resistance circle/sec
	warp	weft	warp	weft	warp	weft	
1	548,3	209,8	1,965	2,7	190	90	5000
	627,9	229,3	1,738	3,08			
	560,3	225,4	1,425	2,99			
	645,9	221,3	1,797	3,127			
	524,3	224,6	1,613	3,06			
2	507	359,02	2,145	3,506			5200
	472,5	413,6	2,07	3,511			
	433,1	393,2	1,809	2,869			
	488,3	424,6	1,88	3,074			
	493,3	455,1	2,215	5,686			

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3	459,4	669,4	2,477	7,802	140	140	5700
	489,9	610,3	2,429	8,842			
	546,5	523,7	2,952	7,980			
	516,9	666,1	2,679	7,772			
	386,2	625,7	2,071	8,097			
4	440,4	572,4	4,231	4,506			4200
	381,6	506,3	3,810	3,863			
	399,3	485,3	4,256	3,779			
	442,2	442,4	4,147	3,602			
	472,9	444,5	4,212	2,858			

Two different fabric weave fabrics were selected for the experiment. The fabric of the dowel was attached to it, and its properties such as tensile strength, elongation at break and abrasion resistance were determined.

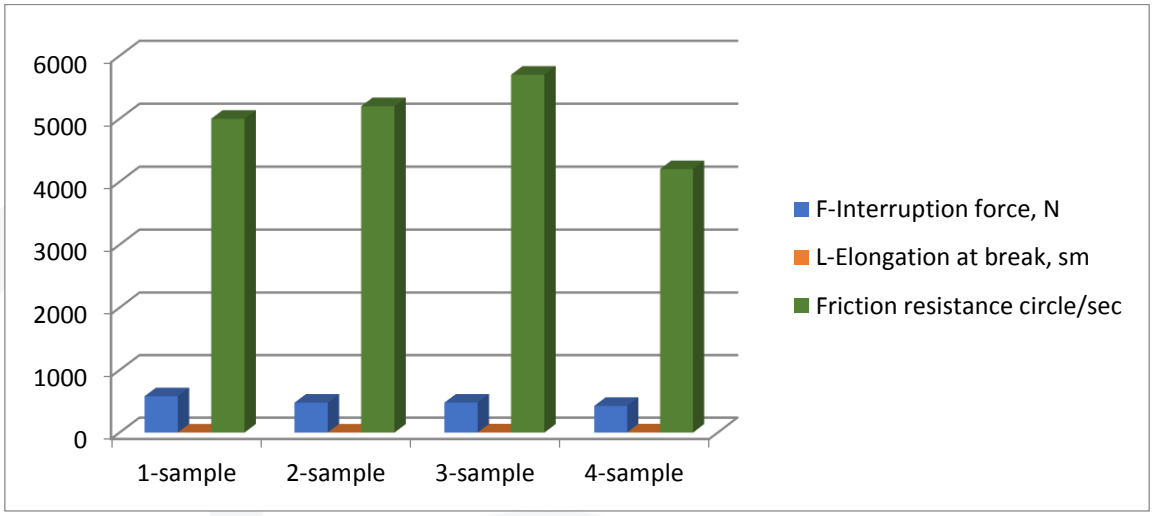

Figure 1. Table of change of warp line production of the conducted test sample

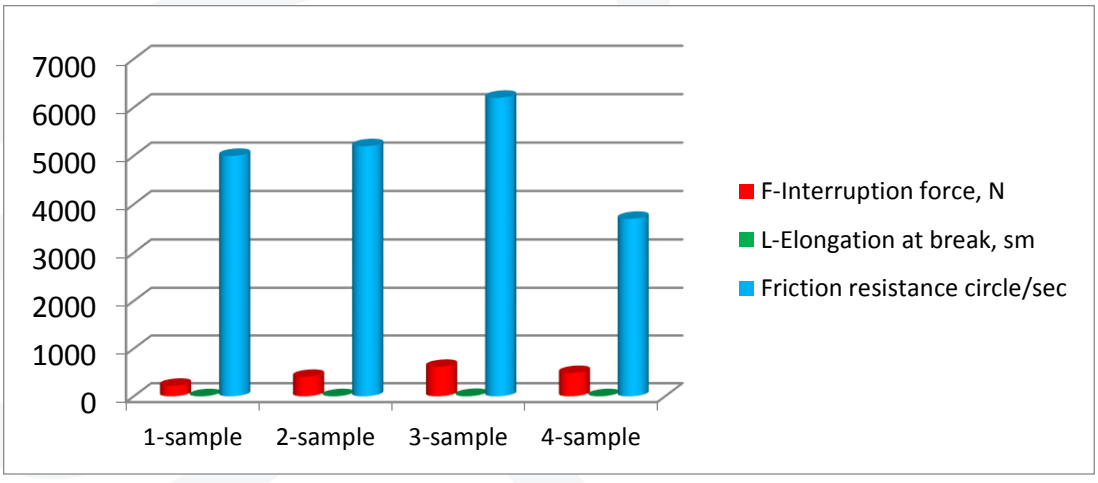

Figure 2. Weft yarn change diagram of the test sample

According to the test samples, Figure 1 shows the highest result in friction resistance of 4 samples, and the highest result was achieved in sampl 3, that is, a result of 5700 rpm was detected. This is due to the high density of this tissue. In addition, the critical

twist of the yarn is in the correct selection and correct placement of the winding phases. Also, a positive result in terms of tensile strength shown in this figure was found in Example 4, which was due to the high strength of the yarns.

According to the test samples, the highest result was obtained in the 3rd sample in terms of friction resistance from 4 samples in the direction of the body and back strip in Figures 1 and 2. This is because the density of this tissue is high. Also, a positive result in terms of tensile strength shown in this figure was found in Example 4, which was due to the high strength of the yarns. From these fabrics it is possible to produce a product with the specified requirements for the production of suits.

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