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For The Production of Embroidered Fabrics Based on the Production of Head and Intricate Textures

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Abstract: *The article addresses the issue of the production of embroidered fabrics by mixing prime knitting with complex embroidery. Such weaving rapport is analyzed. Experimental samples were developed and the effect of the type of corrosion resistance on the strength and resistance of the friction.*

Keywords: weaving, texture, textile assortment, embroidery pattern, tissue, fabric, warp, weft, rapport, relief, embroidery, rope, width, size, density, yarn, strength.

Introduction

The effective operation of modern weaving plants depends not only on their economic and technical performance, but also on their access to the range of machines and equipment.

The market economy requires the presence of different texture stocks in addition to the types of textures manufactured.

The textile assortment has a special place in the production of embroidered fabrics. The literature [1, 2] presents the embroidery layout programs created by mixing head and formation twists. [3] An embroidery pattern printing program is presented at the expense of complex (1.5-layer) tissue fabrication. As a result of research in this area, a program for the production of transverse patterns was created by mixing additional head and one-and-a-half layers of textile tissue.

Materials and methods

It is well-known that the surface of embossed texture consists of two or more parts, one of which is a thin (thin) part and the other is a bubble (tissue) on the surface of the tissue.

Suggested embroidery texture is formed by the smooth part of the fabric, the bubble part is formed by the complex textile fabric. Figure 1 shows the cross-sectional texture patterns of the fabric and two system warp strands.

Figure 1 a (a) shows that when forming the fabric, 1.2 and 6.7 bumps are formed from the smooth part of the fabric, and when the 3,4,5 wefts are thrown, the relief is formed. Warpbuilding rapport $R_T = 2$ is the same as for the weft $R_A = 10$.

Each wrapping rack consists of two smooth parts and two relief parts. When the first relief road in the Rapport is formed, the odd number of threads is upward, while the second relief line forms a number of threads upwards.

In this way, the texture of the tissue is smooth and the border of the abdomen is clearer.

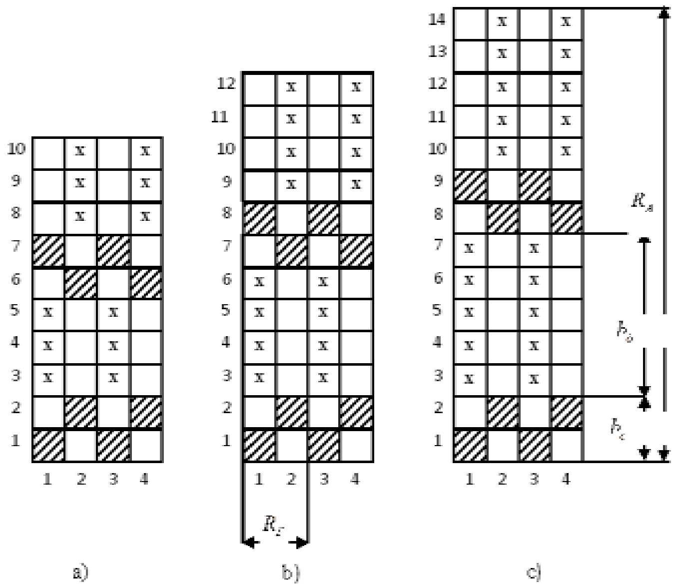

Figure 1. Cross-lined relief embroidery.

a), b), c) The joints differ from each other by the number of rope threads in the bubble of the tissue. R_T - Rapport of Warp, R_A -Rapport of weft, $b_б$ -the width of the bubble part, b_c -the width of the smooth part.
From the analysis of the shape images of the form 1, the texture of the embossed patterned tissue is equal to the warp size of the smooth part of the reversal $R_T = R_T^C$. The smooth part of the rope depends on the size of the ribs and the ribbon-forming strands, as follows:

$$R_A = R_A^C \cdot 2 + n_б \cdot 2 = 2 \cdot (R_A^C + n_б)$$

where: R_T^C - warp-size repositioning of the smooth part
R_A^C - warp repositioning of the smooth part
$n_б$ - The number of rope threads in the rust
That is, the warp rapport $R_T = 2$, the weft rapport in Figure 1 a) $R_A = 10$,b) $R_A = 12$,c) $R_A = 14$
The texture of all strip patterns may be different in striped textures. The width of the tracks in the recommended braided tissues depends on the density of the fabric on the ridge (P_A), the number of loose threads $(n_б)$, and on the smooth part, as well as the density of the fabric on the weft (P_A), and the length of the weft.
In order to study some of the properties of such tissues, experimental samples were developed on automatic knitting machines set up in the training and production laboratory of TITLI. In the production of experimental samples, cotton yarn with a linear density of 20 texts per trunk and 25x2 texts per weft yarn was used. Density of the weft is $P_A = 24 rope/sm$, density of the warp is $P_T = 26 rope/sm$. Experimental samples were produced in 3 different variants (Figure 1 a, b, c). The effect of this indicator on tissue friction resistance, durability and elongation was examined and presented in Table 1. The results of the table are expressed as a histogram (Figure 2, Figure 3).
When the experimental samples were tested for durability, it was observed that the disruption strength in both the warp and the weft direction was reduced. The strength of the experimental samples decreased as the contact between the warp and the weft thread weakened with the increase in the number of weft threads in the textured bubble.

Table 1

Some qualitative characteristics of the experimental samples

Variants	By the warp		By the weft		Friction Resilience, cycle
	Cutting force, kg / force	Elongation at break, %	Cutting force, kg / force	Elongation at break, %	
I.	33,3	16,3	88,2	16,3	17875
II.	32,5	15,1	86,9	14,9	19575
III.	30,5	13,09	81,8	13,7	22215

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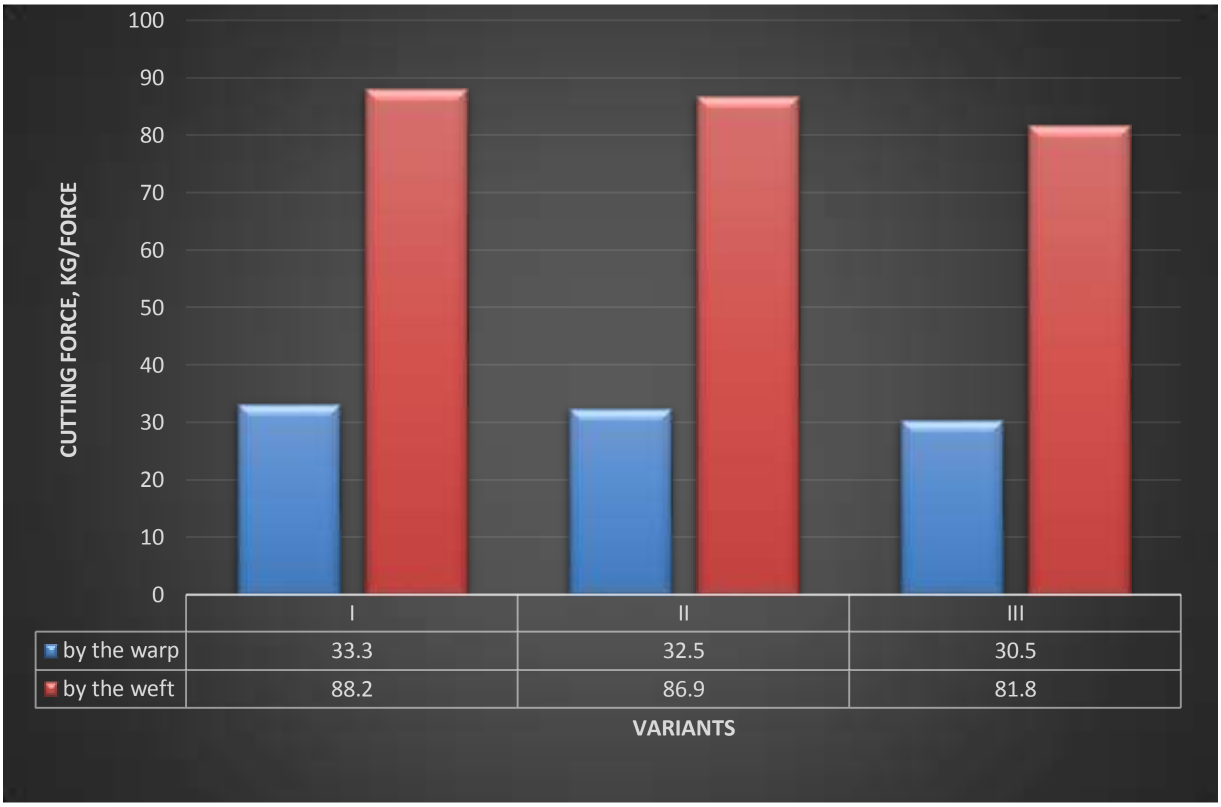

Figure 2. The histogram of the effect on strength of the type of formation on the warp and the weft of the tissue.

From the histogram analysis, it was observed that the tensile strength of the warp in Option I was 33.3 kg / force, in Option II it decreased by 4%, and that in Type III the warp stiffness decreased by 9.2%. Examination of the variability of the variants on the weft, it was found that the tensile strength of variant I was 88.2 kg / force, in Option II it was reduced by 1.5% and 7.8%.

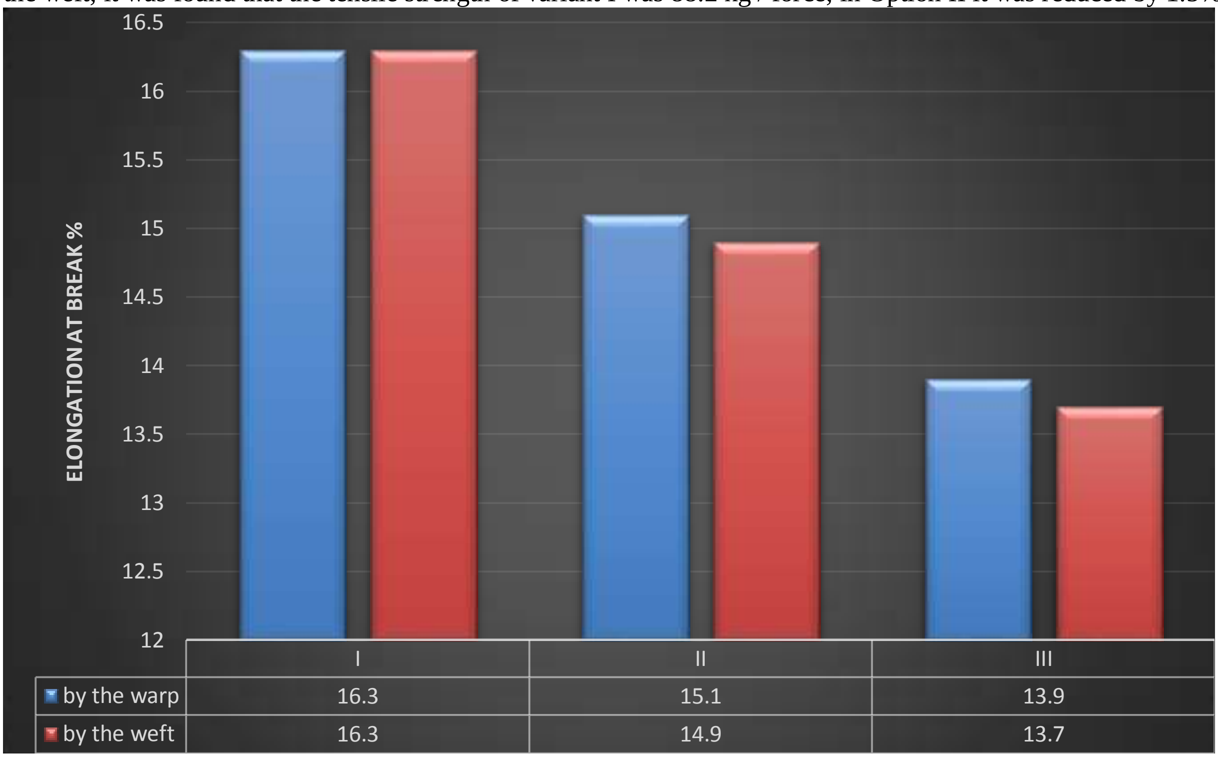

Figure 3. The type of formation on the warp of the tissue and in the weft

The histogram of the effect of elongation on disruption

The same can be observed in the elongation of the experimental samples. The variance in warp disruption in Option I was 16.3%, which was 7.3% higher than Option II, and 19.6% higher than Option III. When we compare the elongation of the spike in variants by options, we see a decrease of 9.3% of variant III and 19% of variant III.

Tissue resistance is one of the most important indicators, and the experiment showed that the sample cycle of the experimental sample was 17,875. In Option II, it increased by 9.5%, and in Option III, by 24%.

In order to study the width and degree of embroidery in the experimental samples, "Centex Uz" the center of certification and testing was centrifuged 15 times on a digital microscope and photocopied and reproduced in Figure 4.

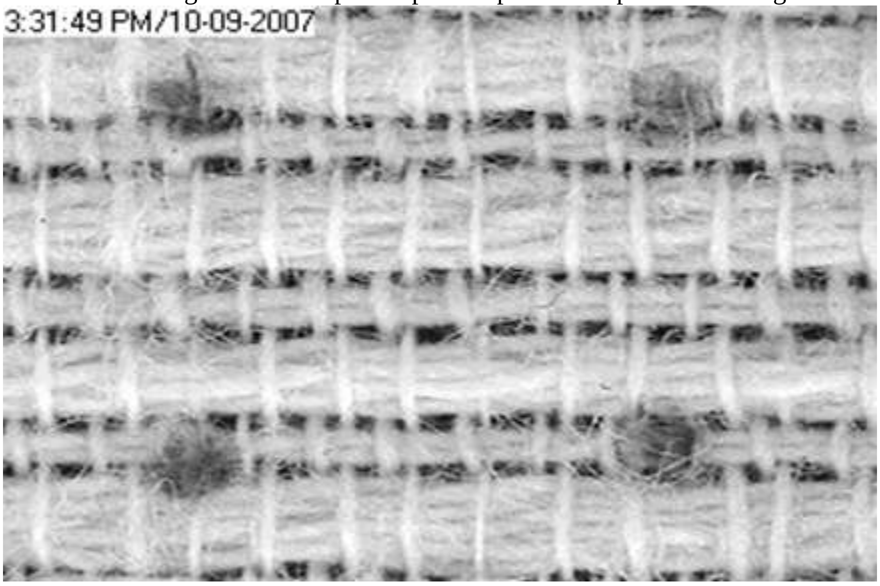

Figure 4. Photo copy of the experimental sample (option I)

As a result of the research, a program was developed to produce cross-sectional patterns by mixing additional warp and one-layer strata with basic knitting. On the basis of the program experimental samples were developed and their parameters of strength and friction resistance were studied.

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