

## PROPERTIES DEPENDING ON STRUCTURE OF KNITTING FABRICS

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*Ушбу мақолада тўртта турдаги пресс трикотаёж тўқималари тадқиқ қилинган бўлиб, уларда тўқима тузилишининг технологик кўрсаткичлар ва физик-механик хусусиятларга таъсири ўрганилган. Трикотаёж тўқимаси вариантлари раппорти ва орнаменти билан фарқланади.*

*В данной статье исследовано четыре варианта прессового трикотажа с различными видами рисунка геометрического орнамента, чтобы определить технологические параметры и физико-механические свойства образцов. Варианты различаются раппортом рисунка и видом орнамента.*

*In this article four variants of interlooping with supplementary patterning items of knitwear were developed to determine technological parameters and physical-mechanical properties in knitwear, which differ from each other by laying the yarn on the needle in the rapport of the interlooping to form patterns.*

In modern conditions the quality of knitted fabrics plays a special role because of their influence on efficiency and human health. In the research according to the results, knitted fabric, containing 4.5% nylon textured yarns, has good elasticity and meets technical and economic requirements. A small content of polyamide textured yarns in a knitted cloth of cotton yarn is beneficial to the elasticity and formability of the products does not worsen their hygienic properties, facilitates care of them.

Among the technological parameters, the thickness of the knitwear plays an important role in the consumption of raw materials and the improvement of quality indicators. The increase of the layer allows to increase the thickness of the knitwear. The presence of additional elements of patterning knitted fabrics in knitting lead to improved strength characteristics and thickness.

Also the studies considered cardigan interlooping knitwear for the production of garments, having high heat-shielding properties, and to enhance patterning effects on traditional knitwear due to the volumetric relief images.

These types of interloopings are often used in patterning the knitted fabrics, which is one of the important and interesting directions for today. A number of works devoted to the development of structures and manufacturing techniques of knitted fabrics with different elements to create the pattern and extend the scope of their application in technology and everyday life.

Using the classification of knitted interlacings and on the basis of the device key-systems interlacing machines, the interlooping, the development of

which is possible on machines of this type. For this purpose, based on the structure of knitwear, all necessary external signs characterizing different types of interloopings and, given the looping process on the machine, identified the opportunity for their generation.

Double rib knitwear, with a number of valuable properties of the eraser and its derivatives, is used for manufacturing high-quality range of products. Initially, machines were mainly used in the production of linen products, high performance which are duly appreciated by the consumer. Such a unilateral use of delisting paintings led to the fact that the question about the possibility of obtaining patterns on machines has not been, until recently, current and not subjected to a comprehensive study. The issue in the production of cloth for the upwear products plays an extremely important role and is of considerable interest. Unlike other double cloths due to its structure preserves the appearance of the pattern when stretched in the transverse and longitudinal directions because the wrong hinges are not visible on the invoice. This is one of its strengths, because in the modern jerseys ornamentation occupies an important place.

In this research work developed and produced in manufacturing environments 4 variants interloopings in interlacing double cardigan sturctureflat knitting machine of "YONGXING", class machine - 7". On this machine there are two positions of the needles that differ in the arrangement of heels. To obtain patterning of looping of knitted fabric on the basis of cardigan interlooping is installed on machine.

To determine technological parameters and physical-mechanical properties in knitwear, were developed 4 variants of this type of interlooping with supplementary patterning items of knitwear, which differ from each other by quantity of cardigan index in the rapport of the interlooping to form patterns. Analysis of the results of studies conducted by many researchers showed that the decrease of the surface density of the knitted fabric within a certain range reduces the consumption of raw materials and less dangerous for its strength properties, because the absolute value of the strength of knitted fabrics is high, and in operation are subjected to loads not exceeding 20% of the explosive.

According to the results of the analysis determined that technological parameters such as the volume density (Fig.1) varies to 190-241mg/cm<sup>3</sup> (20%). It should be note that the lowest volume density in cases 4. In these embodiments, the maximum thickness and surface density. Since knitwear is a three-dimensional structure characterized by a length, a width and a thickness, and lightweight of this structure must define not a two-dimensional criteria (surface density), and three-dimensional (volumetric density). The volume density of knitted fabric shows the content of textile fibers in a unit volume. In the category of paintings with a reduced consumption of materials include fabrics with a loose structure having a substantial thickness compared to the baseline. Paintings by reduced consumption of materials called canvas, volume

density lower than the baseline, optimal module identical loop of yarn.

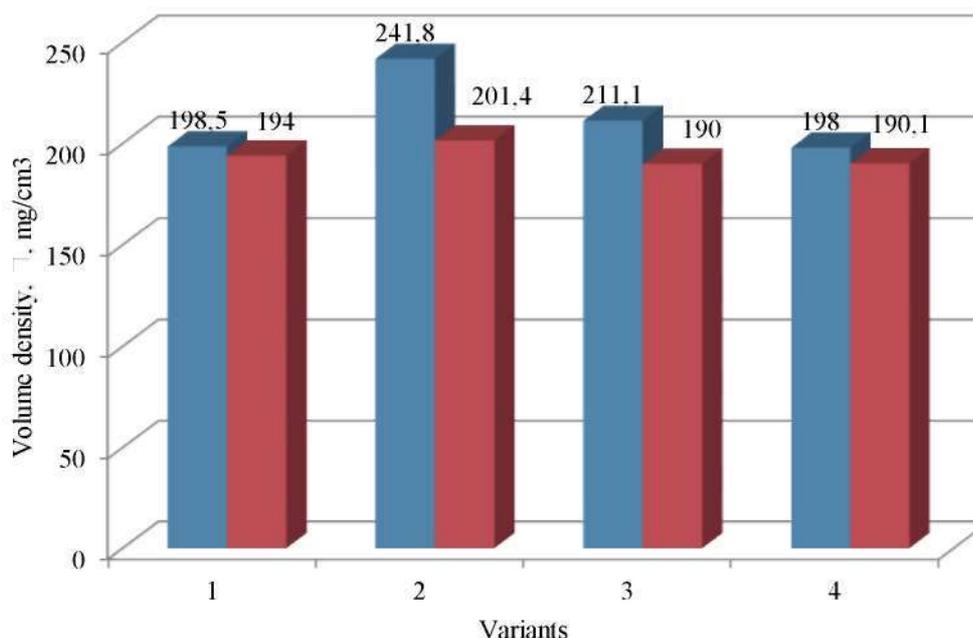


Fig.1. Histogram changes the volume density according to quantity of indexes of cardigan structure on variants

So options 4 should be recommended as models of interloopings with the lowest consumption of raw materials according to the analysis of the volume density of the developed options. It provides an opportunity to develop lightweight knitting structure low material consumption without loss of properties. To achieve such a result allows the structure of the interlooping, as it introduced additional elements of patterned knitwear. The location of additional drafts and broaches affect the thickness of the knitwear.

#### Reference:

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