

за счет сбавок и прибавок игл, и за счет использования для изнанки более дешевой пряжи.

Таким образом, разработана структура и способ выработки двухслойного платированно-уточного плюшевого трикотажа на плоскофанговой машине. Вяzyвание уточной нити в ряды ластичного переплетения повышает прочность закрепления уточной нити в грунте трикотажа и уточная нить не выступает на поверхности полотна, то есть не ухудшает внешний вид трикотажа.

Наличие в структуре трикотажа уточной нити уменьшает его растяжимость и повышает формоустойчивость.

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COMPRESSION KNITTING PRODUCTS FOR MEDICINE

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Abstract. In this article, five variants of high elastic knitted hosiery with different rapports of fleecy structures were investigated in order to determine the physical and mechanical properties of the samples. The variants differ in the rapports of the structure and feeding of the fleecy yarn.

Keywords: knitwear, products, structure, rapport, physical and mechanical properties, breaking strength, elongation.

Updating the assortment of knitting products and increasing quality parameters is one of the most important and actual tasks of the knitting industry.

The following quality parameters of knitting product are taken as factors describing its mechanical properties: stiffness, elongation at break, elongation at tension less than breaking strength, resistance to single and repeated forces, resistance to wrinkling and friction, penetration in wet-heat treatment and etc. [1].

Air permeability, water absorption, hygroscopicity, heat retention, electrification, etc. of knitting products. defining parameters are used as factors describing physical properties.

The number and number of defects per unit of length or surface is a descriptive parameter of the appearance of the knitting product.

The decrease or increase of the indicated parameter values directly depends on the kind and nature of the raw materials used in the products, and the method of obtaining knitting products. Most of the properties mentioned above are not accepted as factors characterizing the quality of all kinds of knitting products.

The quality parameters of knitting products are selected and determined depending on the purpose for which the knitting product is used, operating conditions, product structure, parameters describing physical-mechanical properties, as well as the kind and function of the knitting machine used in the production of knitting product.

The main parameters of the physical-mechanical properties of the knitting product determine the environment of its use. The offered knitting product samples are designed for compression fleecy knitting products. Therefore, the main characteristics of these knitting products are air permeability, stretchability and the ability to quickly return to the initial state, that is, elastic deformation.

Physical-mechanical properties of two-layer knitting product samples of the new structure were determined in the CentexUz test laboratory at TTESI according to the standard method [2–4].

Tensile strength is standardized for all knitting products [5] and is one of the main mechanical properties of knitting defined by national standards. The hardness and elongation at break of knitting product depends on the structure of the product, the kind of weaving, the density of the knitting, the kind of raw materials, and the processing method. The tenacity of the knitting product depends on the number of yarns, the tensile stress in each row or column, and the tenacity of the yarn.

The tensile strength of the knitting product samples of the compression fleecy with a new structure was determined by the dynamometer measuloop the tensile strength and elongation at break according to the standard style "AG-1".

The tensile strength of compression fleecy knitting product samples varied from 268 N to 355 N in length, and from 320 N to 394 N in width (Fig.1).

Among the compression fleecy knitting products, the highest values of breaking strength in both length and width were observed in variant I (base) and the lowest values in both length and width were observed in variant III. As a result of the analysis, it can be concluded that as the amount of spandex yarns in the product increases, the tensile strength of the compression fleecy knitting product also increases. At the same time, in the composition of the compression fleecy knitting product, the displacement of the fleecy yarns from the next loop row to one and two loop widths leads to a decrease in the width of the fleecy knitting product breaking strength.

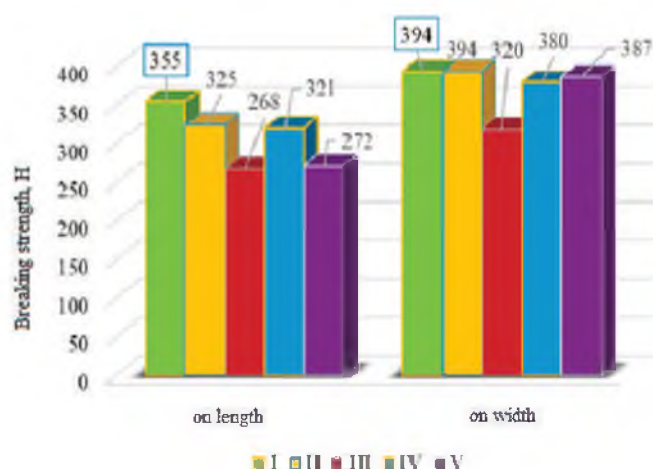


Figure 1 – Histogram of changes in breaking strength of compression fleecy knitting product

In the presented compression fleecy knitting product samples, it was found that the elongation at break in the length ranged from 150 to 262 %, and the elongation at break in the width ranged from 106 to 357 % (Fig. 2).

From the figure 2, it can be seen that the breaking elongation parameter in the product sample of variant II is the highest in length – 262 %, and the lowest in width – 106 %. In the product sample of variant III, the opposite is observed, that is, the minimum length is 150 % and the maximum width is 357 %. Due to the use of two layers of cotton yarn in variant II of these product samples with the same texture structure, the elongation at break is 75 % higher in length and 70 % lower in width than in variant III.

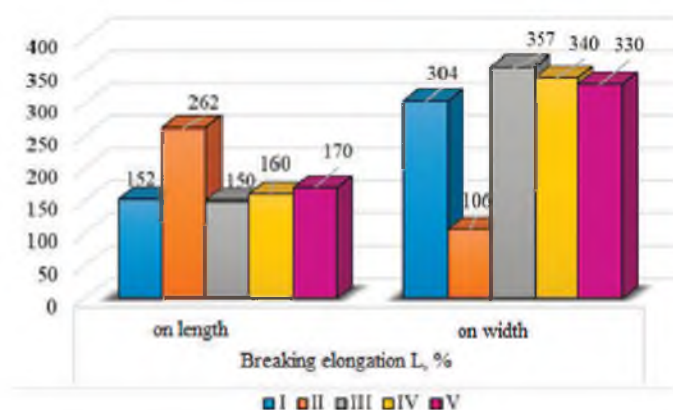


Figure 2 – Histogram of breaking elongation changing of compression fleecy knitting product

A decrease in the number of shifts (from 2 to 0) in the compression fleecy knitting product caused the fleecy product elongation at break to increase uniformly from 10 % in length and to decrease from 17 % to 10 % in width.

The extensibility parameter (in percent) of the compression fleecy knitting product is characterized by its elongation under the influence of a tensile constant tension of 600gs (6N). The size of the seam allowance is set according to the elasticity parameters, the product laying mode is determined during the cutting process, the machines are selected in order to prevent the deformation and stretching of the seams that

occur during sewing and wet-heating processing.

According to the experimental results, it was clear that the product has the least elasticity in both length and width when two layers of spun cotton yarn are used in the composition of the compression fleecy knitting product, and when a force of 6N is applied.

Stretchability is characteristic of knitting products, and the amount of elastic deformation is understood, that is, the stretchability of knitting products ensures the comfort of knitting products, and the percentage of elastic deformation indicates that knitting products have the property of returning to their initial state during use.

Compression fleecy knitting products are subjected to a load for a short period of time during knitting, inspection of defects, heat-moisture treatment, shealoo, as well as use of products obtained from them, during the wealoo process, and then rest. As a result, bending, stretching, etc. in compression fleecy knitting products. deformations appear. The deformation of the compression fleecy knitting changes with changes in the yarn thickness, singleness, and number of loops.

As conclusion, fleecy knitted fabric is recommended as widely using fabric for the production of special purpose, for example, medical textile products as compression stockings, because the placement of fleecy yarns into the base fabric makes the fabric strong and increases deformation possibilities and more form stability.

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