

COMPLEX EVALUATION OF QUALITY INDICATORS OF TWO-LAYER KNITTED FABRICS IN NEW STRUCTURE

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Maqolada zamonaviy ikki yassi ignadonli trikotaj to'quv mashinalarining texnologik imkoniyatlaridan foydalanib, ignalari lastik tartibda joylashtirib ishlab chiqarilgan yangi tuzilishli ikki qatlamli trikotaj to'qimalarining sifat ko'rsatkichlarini kompleks baholash natijalari keltirilgan.

Kalit so'zlar: lastik, igna, ikki qatlamli, trikotaj, sifat, ko'rsatkich, kompleks baholash.

В статье показано результате комплексная оценка качественных показателей двухслойных трикотажных полотен новой структуры, вырабатываемых игл в ластичном расположении, с использованием технологических возможностей современных двухфонтурных вязальных машин.

Ключевые слова: ластик, игла, двухслойный, трикотаж, качество, показатель, комплексная оценка.

The article presents comprehensive assessment of the quality indicators of double-layer knitted fabrics of a new structure, produced by needles in rib arrangement, using the technological capabilities of modern double bed knitting machines.

Key words: ribana, needle, double-layer, knitting, quality, indicator, comprehensive assessment.

The fact that each independent layer of two-layer knitted fabric is a basic, derived, patterned or mixed single-layer fabric is considered common for all fabric structures [1].

It is known that obtaining mixed fabrics in the repetition of fabric rows or individual elements in a certain order is one of the most promising directions for creating a new assortment of knitted fabrics. One of them is dubrilinization of single-layer fabrics in the weaving method. In two-layer knitted fabrics, these fabrics are connected to each other by loop elements during the knitting process.



In order to expand the range of knitted fabrics, reduce the consumption of raw materials and improve quality indicators, 6 variants of two-layer knitted fabric samples of a new structure were woven on a 14-class flat double-needle knitting machine manufactured by Long Xing LXA 252 SC. The effect of knitting fabric production method and fabric structure on the quality parameters of knitting was studied by means of a comprehensive evaluation method.

Accordingly, two-layer knitted fabrics of a new structure were woven using polyacrylonitrile (PAN) yarn with a linear density of 30 tex x 2. The new two-layer knitted fabric samples differ from each other in the production method and the change in fabric structure.

There are several methods of evaluating the quality of textile materials, including experimental, organoleptic, expert, sociological, calculated, differential, complex and mixed.

The method of complex assessment of quality - joint assessment of the material according to individual indicators of quality sometimes leads to the need for a general assessment of several complex main properties of the material in one indicator [12].

Taking into account the above points, and for processing the obtained test results, the method of complex assessment of quality indicators was used in order to determine the best samples from the two-layer knitted fabrics of the new structure.

When distributing the number of indicators and physical mechanical properties of the obtained knitted fabric, the function of the fabric, compliance of the indicators with the established norms and given requirements are taken into account. Therefore, for example, the air permeability of knitted fabrics intended for underwear has a high value, while in knitted fabrics for outerwear and it should be less. The function of the product is also important when considering the durability characteristics of a knitted fabric.

In this diagram, the quality indicators of the two-layer knitted fabric samples of the new structure of six options are performed on the basis of comparative analysis. Figure 1 shows a comprehensive evaluation diagram of the quality indicators of the produced two-layer knitted fabric samples.

During the research, the most desirable properties needed for outerwear products were collected. For example, the surface and volume density, thickness and air permeability, which describe the heat storage properties of the knitted fabric, abrasion resistance and breaking strength, which describe the toughness, elongation at break, which describe the shape retention properties,



return deformation and penetration indicators are among these. Below is a comprehensive assessment diagram (Figure 2).

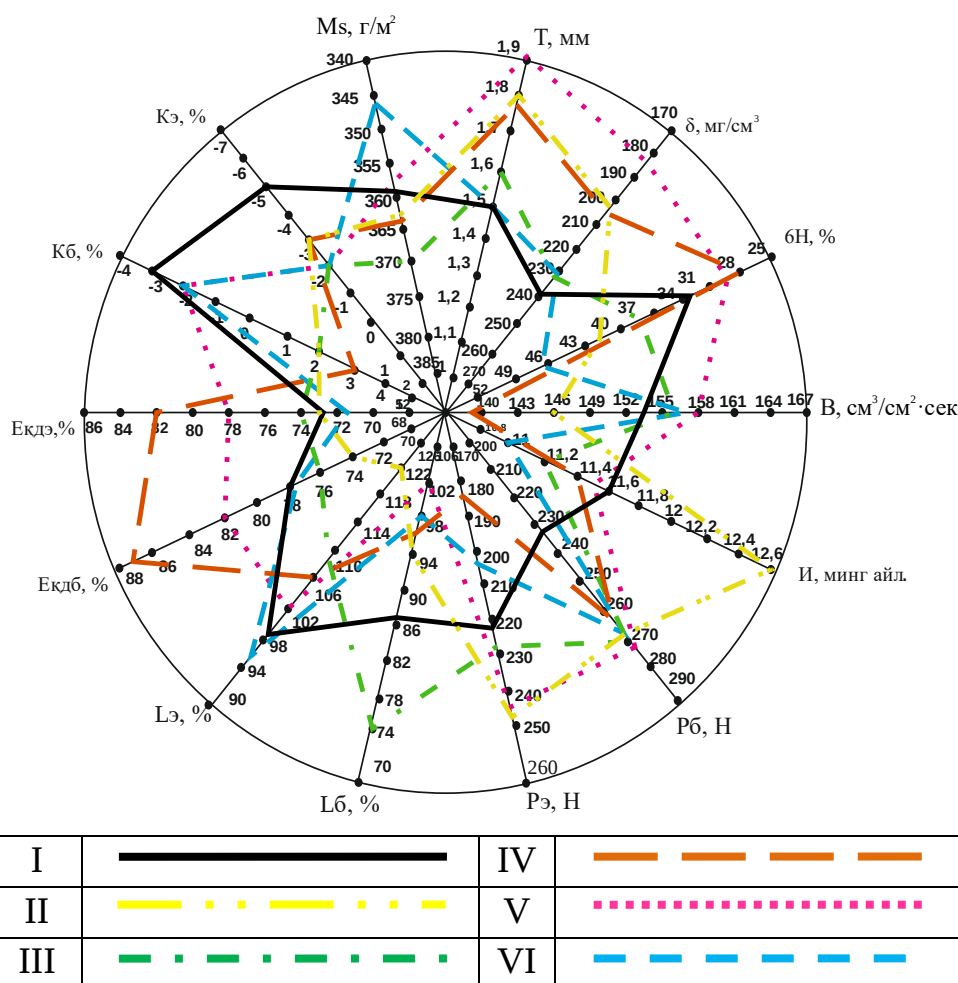


Figure 2. A comprehensive evaluation diagram of the quality indicators of the double-layer knitted fabric of the new structure

After developing a comprehensive evaluation diagram of the quality indicators of the two-layer knitted fabrics of the new structure, the surface of the boundary created by combining with the appropriate lines belonging to each option is calculated using the formulas related to finding the surface of the triangle. The value of the angle between the lines where each quality indicator is located also plays an important role in the calculations.

The values obtained from the comprehensive assessment chart are represented by a comparative histogram.

The samples of this option were considered to be two-layer knitted fabrics of a new structure, whose quality indicators were at the level of standard requirements, and whose needles were arranged in a rubbery arrangement with shape-keeping



properties and low consumption of raw materials. Double-layer knitted fabrics can be widely used in knitting enterprises and thereby achieve an expansion of the range of products.

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