CHANGE OF PHYSICO-MECHANICAL PROPERTIES OF T-SHIRT FINISHING WITH DIFFERENT FIBER CONTENT

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ИЗМЕНЕНИЕ ФИЗИКО-МЕХАНИЧЕСКИХ СВОЙСТВ ПЛАТЕЛЬНЫХ ТКАНЕЙ С РАЗЛИЧНЫМ СОДЕРЖАНИЕМ ВОЛОКОН

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ABSTRACT

In this article, threads are taken from a mixture of different fibers, namely 68,4% cotton+31,6% a mixture of lavsan fibers, 42% cotton+58% a mixture of lavsan fibers, 6% wool+17% lavsan+67% a mixture of cotton fibers, 100% viscose fiber and 8,5% wool+4% lavsan+87,5% a mixture of cotton fibers. In the laboratory of the Department of "Technology of textile fabrics" in the modern weaving workshop, shirt-top fabrics were obtained and their physico-mechanical properties were determined.

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АННОТАЦИЯ

В данной статье нити были взяты из смеси различных волокон, а именно 68,4% хлопка+31,6% лавсановых волокон, 42% хлопка+58% лавсановых волокон, 6% шерсти+17% лавсана+67% хлопковых волокон, 100% вискозного волокна и 8,5% шерсти+4% лавсана+87,5% смеси хлопковых волокон, и в лаборатории кафедры "технология текстильных тканей" были получены ткани для одежды и определены их физические и физико-механические свойства.

Keywords: air permeability and abrasion resistance, T-shirt gaskets lightweight, air permeability high, durable, density on body and back.

Ключевые слова: воздухопроницаемость и стойкость к истиранию, лёгкие прокладки для платья, высокая воздухопроницаемость, долговечность, плотность по основу и утоку.

In a market economy based on free competition, one of the main tasks of textile enterprises is the production of quality, competitive and popular shirts. In order for the fabric to be produced to be competitive and in demand, its quality indicators must meet the requirements of the world market for these products, that is, the requirements of world standards. At the same time, the cost of production should be low, the enterprise should introduce advanced equipment and technologies, and high labor productivity should be achieved.

By solving these problems, it is possible to increase labor productivity in textile factories, reduce labor costs, mechanize manual labor, make full use of internal resources, and automatically control technology through computer systems [1-4].

Decree of the President of the Republic of Uzbekistan "On measures to accelerate the development of the textile and clothing industry" PF-5285 dated December 14, 2017 "On measures to further deepen the reform of the textile and clothing industry and expand its exports." potential "2019 This dissertation research to a certain extent contributes to the implementation of the tasks set by Resolution No. PQ-4186 dated February 12, 2012 and other regulations related to this activity.

One of the main conditions for the development of the country's economy is a systematic improvement in product quality. Improving product quality, expanding the range and meeting consumer demand is one of the important tasks of a modern market economy. To ensure the level of product quality, it is necessary to carry out systematic control work in accordance with the regulatory requirements of standards and technical conditions [5-8].

At the same time, in order to improve product quality, it is necessary to raise the scientific and technical level of standards, regularly update standards and specifications, guarantee product quality and a high technical level. In addition, new management conditions in a market economy place new demands on product quality. More importantly, textiles must meet the ever-growing demands and needs of the population. Each line, each industrial enterprise must have a clear path of production renewal. Raising the quality of the product to the level of world standards will ensure the entry of the product into world markets [9].

Assessing the quality of the desired product - textile materials - means justifying regulatory requirements for important material properties in determining rational processing and application possibilities [10].

The results of assessing product quality depend not only on the level of general properties and the accuracy of sufficient measurements, but also on the level of demand for these properties.

It is also the selection of reasonably justified indicators of the quality of the products used or processed for a specific purpose.

The fabrics currently produced in the textile industry are diverse. They differ in structure, purpose, fiber composition and properties.

One of the main characteristics of a shirt fabric is breathability, tear strength, abrasion resistance, color tear strength and so on.

For example, the jacket has the ability to conduct air, water, gas, steam, dust, smoke liquids, radioactive pomegranates from the gaskets themselves. Air permeability is the ability to conduct air from the sample itself, which is assessed by the air permeability coefficient. The air permeability coefficient indicates the amount of air volume passing through the surface of 1 square meter in one second under the conditions of a known difference in air pressure on both sides of the sample.

The higher the density of the jacket gaskets on the body and in the direction of the arc, the lower the air permeability coefficient. Therefore, any shirt is produced by paying attention to the season in the production of suede fabrics.

In addition to it, the crumpling of the T-shirt fabrics is one of their negative properties. It spoils the appearance of the piece. Easily crumpled finishes quickly break off, because they are much more friction in Bent and twisted places.

It is understood that the T-shirt fabrics do not wrinkle-they have a resistance to wrinkle and come to their original condition after the wrinkle.

Alternatively, one of the main indicators of the shirt-top drape is its resistance to friction.

The friction resistance of the gaskets depends on the fiber content, density, thin or creamy of the threads, thickness and other indicators. For example, the more friction the gaskets, the more the structure of the gaskets is broken, the threads in the composition are cut off, the power of the break is reduced.

The absorption of T-shirt fabrics is mainly due to the friction effect. The friction resistance of the gaskets depends on their fiber content, the structure of the surface. The ends of the fiber, which first come out on the surface of the gaskets, are under the influence of friction.

T-shirt begins to absorb the fibers that go out to

the bent places of the threads in the gauze. Some areas of the fiber surface are damaged and the fibers are cut off. Due to the fact that some fibers or parts of the fiber come out of the structure of the thread, the threads are also cut off.

The bent areas of the threads coming out on the surface of the gaskets are the first to be absorbed in the friction effect. These places are considered the base surface of the gaskets, that is, the larger the base surface of the gaskets, the better its resistance to absorption. By tilting the base surface of the gaskets, it is possible to increase its resistance to absorption. To do this, long-coated plaques (satin, satin), friction-resistant fibers (Kapron, lavsan) or finishing processes (appretization) are used in the fiber composition.

The absorption in the friction of T-shirt fabrics with thick fibers and especially synthetic fibers in the composition usually begins with the appearance of pilling.

In the most frictionless areas of the workpiece, rain balls are formed from loose fibers-Pillar. First, the ends of the fibers come out on the surface of the gauze. Then, they get confused. When spinning, some fibers break out of the structure of the gauze. Then in the oven, the fibers in the batteries break off from the surface of the gaskets. As a result, the thickness of the gaskets decreases and it is easily absorbed.

Research work was carried out to determine the physico-mechanical properties of the gaskets.

The results obtained by the test are presented in table 1.

Table 1.

The effect of different fiber content on the physical properties and non-wrinkle performance of T-shirt fabrics

t / r	Fiber content of the finishing	Air permeability, dm^3/sm^2 sek	Water permeability, mm.water.top	Non-wrinkle, %	
				According on the weft	According on the back
1.	68.4% cotton+31.6% lavsan fiber	83,3	160	62,2	60,5
2.	42% cotton+58% lavsan fiber	92,1	145	67,1	65,8
3.	6% wool+17% lavsan+67% cotton	53,2	150	59,1	60,7
4.	100% viscose	79,9	240	50,0	52,2
5.	8.5% wool+4% lavsan+87.5% cotton fiber	50,4	142	68,1	65,8

Based on the results from the table, the graph of the variation in air permeability, non-wrinkle, friction resistance of shirt-top gaskets obtained from a mixture of fibers of different composition was drawn in Figure1-2.

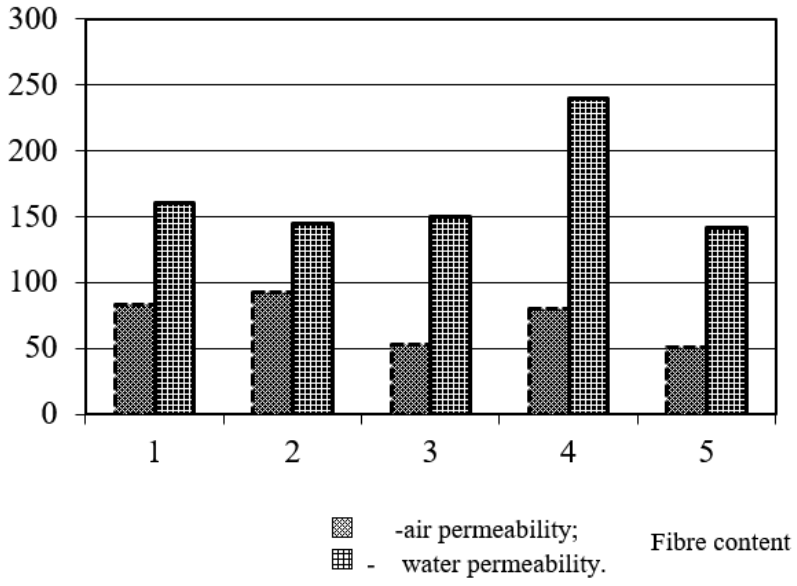

Figure 1. A change in the air and water permeability of T-shirt fabrics, the fiber content of which is different

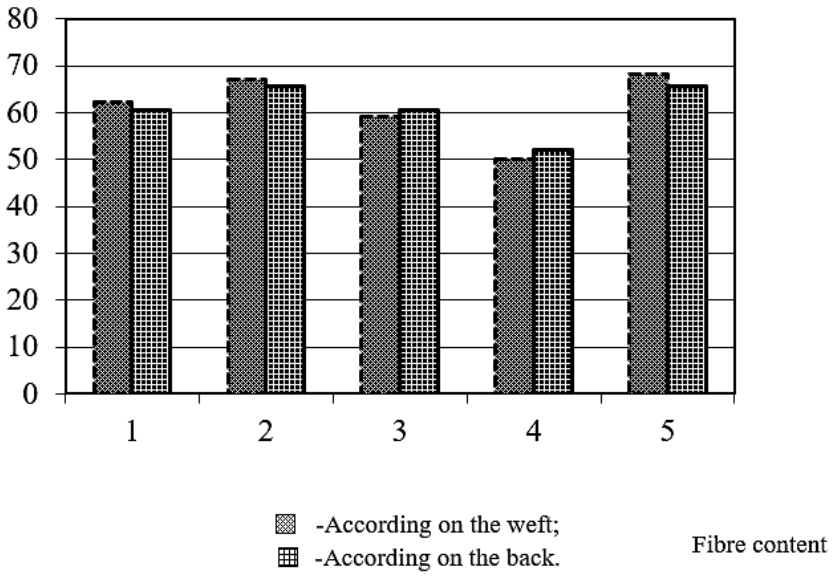

Figure 2. The difference in the composition of the fiber is that the T-shirt fabrics of different types do not wrinkle

If we analyze the results of the tests carried out, then 68,4% cotton+31,6% shirt derived from a mixture of lavsan fibers compared to the quality indicators of the gauze, 42% cotton+58% shirt derived from a mixture of lavsan fibers air permeability of the gauze increased by 9,6%, water permeability decreased by 9,4%, non-wrinkle the air permeability of the jacket gaskets from the mixture to 36,2%, water permeability to 6,2% , the air permeability of 100% viscose fiber T-shirts decreased by 4,1%, the water permeability increased by 33,3%, the air permeability of the T-shirts increased by 19,6%, the air permeability of the T-shirts decreased by 13,7%, the air permeability of 8,5% wool+4% lavender+87,5%, the air permeability of the T-shirts obtained from the water permeability decreased by 39,5%, water permeability by 11,2%, non-wrinkle on the direction of the body increased by 8,7%, non-wrinkle on the back increased by 8,1%. As can be seen from the results of the research, 42% cotton+58% shirt from a mixture of lavsan fibers, the air permeability of the gauze, the non-wrinkle in the direction of the body and back were higher in comparison with other fiber-containing fabrics.

From the results of the analysis, it was determined that the air permeability of the T-shirt gas obtained from a mixture of 42% cotton+58% lavsan fibers increased by 9,6%, water permeability decreased by 9,4%, non-wrinkle in the direction of the body increased by 7,3%, non-wrinkle in the direction of the back by 8,1% compared to the

When washing, soaking, soaking, soaking the gauze, its dimensions change when stored in air with a large relative humidity. Such a change in dimensions is the introduction of gases, in the process of which, most often, the dimensions of the gases are smaller. Entry in this case is called positive entry. The dimensions of some gaskets increase. Such an introduction is called a negative introduction.

In weaving, the material is moistened-when heated, its dimensions either decrease (the process of ironing with the introduction) or increase (the process of ironing with the sink). When heated by soaking, the introduction is called mandatory-introduction.

With the help of forced entry, weaving items are given a certain desired shape. With the help of forced entry, weaving items are given a certain desired shape. Other inputs from forced input are negative indicators of gaskets. As a result of the ingress of the gaskets, it is possible that the pieces and pieces sewn from them become smaller and the shape is distorted.

The penetration and change in paint strength of the different types of fibers with different finishes was investigated, and the results of the test obtained were presented in table 2.

Table 2.

The penetration of T-shirt fabrics and the durability of the paint fiber content change

t / r	Fiber content of the finishing	The paint in soap processing is durable, ball	Toobey, %		Paintdurability, points	
			According on the weft	According on the back	dry	wet
1.	68.4% cotton+31.6% lavsan fiber	5/5/5	-2,5	-1,0	4	3
2.	42% cotton+58% lavsan fiber	5/4,5/4	-1,5	-1,0	4	4
3.	6% wool+17% lavsan+67% cotton	5/5/5	-2,0	-1,5	3	2
4.	100% viscose	5/5/5	-3,5	-1,5	4	2
5.	8.5% wool+4% lavsan+ 87.5% cotton fiber	4,5/4/4,5	-2,5	-1,5	3	3

Based on the results of the study, graphs of the change in the strength of the paint in dry and wet friction were constructed on the input of shirt-top gaskets in the direction of the body and back, depending on the fiber content in Figure 3 and 4.

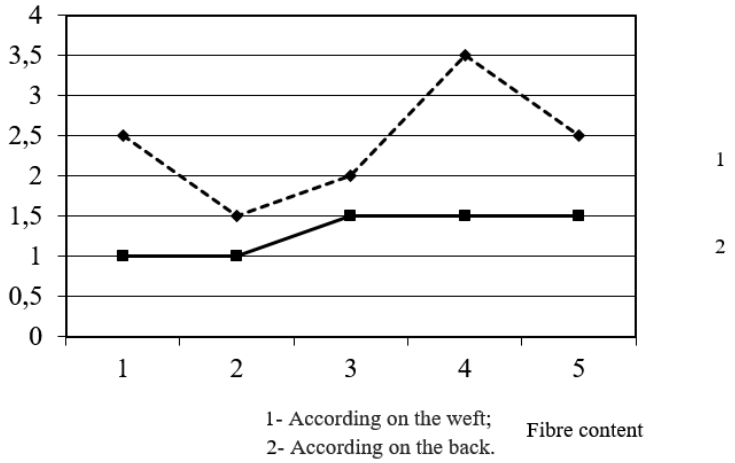

Figure 3. The change in the penetration of T-shirt fabrics with different fiber content on the body and back directions

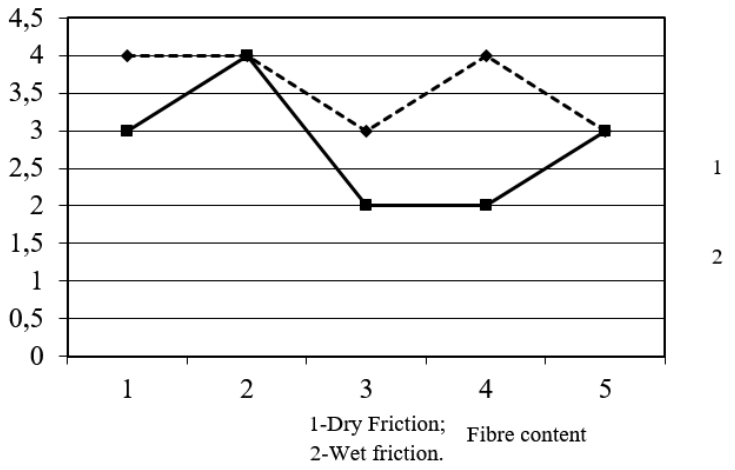

Figure 4. A change in the consistency of the paint on dry and fine friction of the T-shirt fabrics, the fiber content of which is different

If we analyze the results of the test, 68,4% cotton+31,6% dye strength obtained from a mixture of lavsan fibers 5/5/5 points, penetration on the weft -2,5 points, penetration on the back -1,0 points, dye strength in Dry Friction 4 points, dye strength in fine friction 3 points, 42% cotton+58% dye strength obtained from a mixture of lavsan ball point,entry on the weft -1,5 ni, entry on the back -1,0 ni, paint consistency on dry friction 4 NI, dyeing strength in wool friction 4 ni, 6% wool+17% lavsan+67% T-shirt finishing obtained from a mixture of cotton fibers paint strength in soap processing 5/5/5 points, entry -2,0 on the weft, entry -1,5 on the back, paint strength in Dry Friction 3 ni, paint strength in wool friction 2 ni, 100% viscose fiber T-shirt finishing ballni, entry -3,5 on the weft, entry -1,5 on the back, paint consistency in dry friction 4 on the back, paint consistency in wet friction 2 on, 8,5% wool+4% lavsan+87,5% T-shirt from a mixture of cotton fibers, the consistency of the paint in the treatment of gauze with soap 4,5/4/4,5 ballni, the entrance on the weft -2,5 ni, the entrance on the back -1,5 ni, the durability of the paint in Dry Friction 3 ni, the durability of the paint in wet friction 3 ni.

As can be seen from the results of the research, it was found that the paint strength in dry and mild friction was higher than in other constituent Gaskets, with a T-shirt coating obtained from a mixture of 42% cotton+58% lavsan fibers, with a paint consistency obtained from a mixture of 68,4% cotton+31,6% lavsan fibers and it was found that the jacket obtained from a mixture of 6% wool+17% lavsan+67% cotton fibers is higher in the gassing than other gasses.

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