



FACTORS AFFECTING THE HYGIENIC PROPERTIES OF SPECIAL CLOTHING

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Annotation. *This article is devoted to the production of special fabrics with competitive, quality indicators that meet the requirements of international standards through the effective use of local raw materials, fully compatible with the climatic conditions of Uzbekistan and with high performance characteristics. At present the textile industry of the republic mainly produces a limited range of household textiles from raw cotton. To date, the production of special fabrics has not been widely spread in our republic. In particular, types of special fabrics widely used in various branches of economy and volumes of their production do not meet the needs. Special fabrics of mixed composition were brought to our country from abroad. At present the demand for these fabrics is satisfied mainly at the expense of private enterprises. The fabrics produced by them do not meet the specified requirements both in volume and especially in quality. Without the creation of new types of products, it is impossible to produce products competitive in the world market, to increase their assortment, to increase the export potential of the industry, to carry out at a high-level product and trade activities. A large amount of scientific material has been accumulated, methods and criteria for the physiological and hygienic assessment of special clothing have been developed, the relationship between the technical parameters of materials and protective clothing as a whole has been established, the basic methodological principles of its design and industrial manufacturing technology have been formulated in accordance with the requirements determined by the specific operating conditions of special clothing.*

Key words. *Special fabrics, mixed composition fabric, abrasion resistance, breathability, tensile strength, penetration.*

Introduction. In our republic, comprehensive measures are being implemented to improve the quality and competitiveness of textile and light industry products using innovative technologies, and certain results are being achieved. Development of affordable and high-exploitation special fabric in order to improve the labor activity of workers and increase productivity. of the President of the Republic of Uzbekistan dated February 7, 2017 "On the strategy of actions for the further development of the Republic of Uzbekistan" PF-4947, dated December 14, 2017 "Textile and sewing-knitting on measures for the rapid development of the textile industry" PF-5285, February 12, 2019 "On measures to deepen the reform of the textile and sewing-knitting industry and expand its export potential" and this serves to a certain extent for the implementation of the tasks specified in other regulatory legal documents



related to the field[1]. The optimal solution by developing the methods of ensuring the required operational properties of clothes is a priority. The problem of improving the assortment and quality of special clothes in accordance with the requirements is important.

The creation of a special clothing package for workers is complicated by the fact that it must be carried out taking into account the factors influencing the environmental climate. The development of special clothing with high hygienic properties is an urgent issue in order to improve the work performance of workers and increase productivity. Analysis of the existing personal protective equipment for workers in the automotive industry, special clothing, shows that they do not meet the requirements of the climatic conditions of Uzbekistan. The urgency of creating special clothing that meets the established hygienic requirements is associated with the expansion of the human work environment, working conditions, areas of production activities in different climatic conditions. The expansion of the range of fabrics used for garments with a new set of hygienic properties is significantly changing the traditional approach to the design process.

At the same time, in addition to performing a protective function, special clothing should not interfere with the work of physiological functions of the body (disorders of cardiovascular function, difficulty in heat exchange with the environment, etc.). Today, special attention is paid to the ergonomic aspects that provide a combination of safety and comfort to the worker wearing special clothing [2].

The problem of improving the assortment and quality of special clothes according to the requirements is important. In the complex of measures to ensure the safety of employees and prevent occupational diseases, which is one of the necessary conditions for reducing the impact of harmful and harmful production factors on a person and ensuring his high performance, the importance of special clothing occupies a special place. The state policy in the field of labor protection is based on the principles of the priority of the life and health of the employee in relation to the results of the production activity of the enterprise. In order to create favorable conditions, it is one of the important principles to provide workers with special clothes and shoes that protect them from harmful production and climatic factors, as well as personal protective equipment. With this in mind, we have studied the special clothing for builders available in the market [5].

Materials and methods. Hygienic requirements are requirements aimed at maintaining human health. The main hygienic indicators of clothing are air permeability, hygroscopicity, heat protection properties, comfort, waterproofing, etc. [4]. Hygienic requirements depend on what the clothing is intended for. Underwear and summer clothes should have good air permeability and hygroscopicity, be easy to wash. Winter clothes should be warm, coats should be waterproof, etc.

Special clothing can be used indoors or outdoors year-round. In this case, harmful production factors can affect all or some parts of the skin of the human body (in the



first case, if the clothing consists of a jacket and pants). The above factors will be the basis for the development of special clothing by assortment types. Interstate Standard 17-935-82 specifies the types of special clothing, the season of their operation and each type of special clothing to protect the surface of the human body.

The study of the reasons for changing clothes of builders gave the following information: the main reason is that they lose their properties after being washed many times, that is, the lack of friction cycle. This situation is 47%. External random factors, tears 23%, sun discoloration 17% and other reasons. The survey gave the information that more than half of the builders update their clothes once a year.

When we studied the opinions of consumers, 37% of builders preferred special clothes made of mixed fabrics of cotton and chemical threads. 23% preferred clothes made only from natural fabric. The rest did not recognize that the composition of raw materials is not important when choosing clothes. According to the survey, long-term durability, stitching, air permeability, and low price are the most important factors for builders when choosing clothes. As a result of the analysis of the requirements of the consumers regarding the quality of the fabric, it was found that they unanimously recognize the importance of the following quality indicators. air permeability; friction resistance; appearance; color consistency; good ironing ability; easy to wash.

The production of special cotton fabrics in Uzbekistan is of great value. At the same time, the demand for fabrics with a chemical yarn mixture is increasing. Because by adding chemical threads to the fabric, the required physical and mechanical properties can be improved. According to many authors, the most suitable for hot, dry climates are clothes made of cotton fiber fabrics. Studies have shown that cotton fiber fabrics have a lower under-temperature temperature than garments made from other fabrics.

Results and conclusion. Standard methods of experimental research in the conditions of the certification laboratory "SENTEX.UZ" at the Tashkent Institute of Textile and Light Industry were used in the research.

Table 1
Structural properties of special clothing fabric

Fabric code	Fabric name	Indicators name						Types of weaving
		Fiber content, %		The number of threads in 10 cm		TEKS		
		warp	weft	P _t	P _a	T _t	T _a	
1	Special fabric	100-C	50-C 50-V	250	90	50x2	20x3	plain
2		100-C	50-C 50-PE	250	90	50x2	20x3	plain
3		100-C	50-C 50-M	250	90	50x2	20x3	plain



4		100-C	100-PE	250	80	50x2	60	plain
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Table 2

Physical and mechanical properties of fabrics available for special clothing

Ko'rsatkichlar	Options				Standart 11209- 2014
	1	2	3	4	
Abrasion resistance, cycle (20x20)	6800	6900	6900	7800	>4500
Shrinkage, %(30x30) warp weft	4,0 2,5	4,5 1,5	4,5 2,0	5,0 1	≥-3,5 ≥-2,0
Tensile strength, N N(5x30) warp weft	1368 708	1024 721	1227 716	1194 770	>900 >700
Air permeability coefficient dm ³ /m ² *s. (20x20)	19,1	19,9	19,1	31,4	>20

In the work, it was possible to reduce the consumption of raw materials by introducing cotton yarn obtained from waste fibers into the composition of the special fabric, and by using yarn of a mixed composition for cotton yarn, the penetrating properties of the fabric were reduced, shape retention and performance properties were increased. It turned out that the air permeability and tensile strength of the second sample meet the requirements specified in Interstate Standard. Based on the results of the experiment, it turned out that the fabric samples we received are superior to special fabrics produced and exported in our Republic, due to their low cost, low permeability and high abrasion resistance.

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