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### SELECTION AND RESEARCH OF THE MATERIAL PACKAGE OF THE OUTER PRODUCT

*The article discusses the properties and types of textile materials, discusses their impact on the human body layer. Methods of designing the properties of complex materials and packages of materials based on the assessment of characteristics that meet consumer requirements, using information technology, studying the requirements for a package of materials for the upper product are also considered. New problems of the influence of the number of layers of outerwear on the maintenance of the microclimate in the underground space, affecting well-being and health preservation, are considered.*

*Key words:* Thickness gauge, microclimate, polyester fiber materials, innovative materials.

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### ВЫБОР И ИССЛЕДОВАНИЕ ПАКЕТА МАТЕРИАЛА ДЛЯ ВЕРХНЕЙ ОДЕЖДЫ

*В статье рассматриваются методы проектирования свойств сложных материалов и пакетов материалов на основе оценки характеристик, отвечающих потребительским требованиям, с использованием информационных технологий, изучение требований к пакету материалов для верхнего изделия. определение физико-механических свойств пакета материалов. Рассмотрены новые проблемы влияния количества слоев верхней одежды на поддержание микроклимата в подземном пространстве, влияющего на самочувствие и сохранение здоровья.*

*Ключевые слова:* Толщи номер, микроклимат, материалы из полиэфирного волокна, инновационные материалы.

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## КИЙИМ МАТЕРИАЛДЫК ПАКЕТИН ТАНДОО ЖАНА ИЗИЛДӨӨ

*Макалада текстиль материалдарынын касиеттери жана түрлөрү талкууланат, алардын адамдын дене катмарына тийгизген таасири талкууланат. Ошондой эле, керектөөчүлөрдүн талаптарына жооп берген мүнөздөмөлөрдү баалоонун негизинде татаал материалдардын жана материалдардын топтомдорунун касиеттерин долбоорлоо ыкмалары, маалыматтык технологияларды колдонуу, жогорку продукт үчүн материалдардын топтомуна болгон талаптарды изилдөө каралат. Жер астындагы мейкиндиктеги микроклиматты сактоого, жыргалчылыкка жана ден-соолукту сактоого таасир этүүчү сырткы кийимдердин катмарларынын санынын таасиринин жаңы көйгөйлөрү каралат.*

*Ачкыч сөздөр: Калыңдыгын өлчөөчү, микроклимат, полиэстер була материалдары, инновациялык материалдар.*

When choosing textile materials according to clothing, it is necessary not only to indicate the characteristics of their individual qualities, but also, if possible, to support a comprehensive price, which allows you to clearly determine the direction of materials in operation, so all its features are taken into account when modeling, assembling, manufacturing technology for sewing clothes.

When choosing a material for clothing, the designer first of all takes into account the features of the knitted or knitted image of the print, the properties of the material that allow you to ensure the silhouette of the clothing chosen by the artist, the fashionable color gamut.

In order to meet the presented requirements related to the properties of clothing textiles, it is necessary to know what effects the material is subject to in the operation condition and what properties it needs to be characterized by.

The general requirement that is presented to any clothing material is good compliance with The Shape of clothing during the dressing process. To meet this requirement, the material needs to describe a complete series of properties. The main ones are the presence of residual deformation during one-time and multiple-time stretching, wrinkling and non-wrinkling of the material, resistance to abrasion and wear, no matter how it bends in the plane [1].

In addition to the main one, the material depends on its specific purpose, which must be characterized by additional properties: materials for outerwear - thermal conductivity, air permeability (these properties for outerwear can be adjusted using the corresponding heating insoles, insoles with a well-known air - absorbing insoles), water - repellent and slight wetting, suit materials - air-absorbing, air-and steam-absorbing (depending on their seasonal use), which provides a clear ventilation of the inner layer; materials for products-with high suction properties, non-sitting and resistance to wet processing; materials for underwear-with high air permeability and warm underwear-with good heat-retaining properties [2].

The number of necessary properties of these clothing materials cannot be sufficient. The condition for the use of clothing in each case imposes its own requirements for the property necessary to describe textile materials. To do this, when choosing a material for a specific product, it is necessary to conduct a thorough examination of the material, which can be tested in the process of operation, and determine whether the material is characterized by properties capable of ensuring a clearly equipped condition of clothing and its actual wearing Time. In addition, when creating a new outfit, attention is necessarily paid to the properties of the material, which allows you to ensure a given silhouette of the outfit, and clarify how these

properties are manifested in the process of Sewing Production. In this case, the use of certain material properties, such as elasticity, rigidity or the ability to give the material a certain property in the process of sewing (wet-heat treatment, the use of additional base and sewn insoles), should be taken into account. In the process of Sewing Production, it is taken into account that the properties of materials change at will, as well as at will (reduced strength during uncontrolled wet-heat treatment, damage to the material with a sewing needle, falling of the thread from the cut of the fabric, shrinkage of knitwear). The last group of properties is taken into account when creating a product assembly and in the technological process of sewing [3].

Depending on the type of material, its construction and properties, it is necessary to take into account the features of Assembly and technology . A series of properties must be included and calculated in the design of the product, and a series - in the processing technology. Changing the properties of clothing with the use of additional materials, processing methods that ensure the production of clothing parts with the desired properties is considered. Thanks to the high technology of the last decade, the material and clothing have acquired new and significantly improved traditional properties and have been expanded in the areas of application of Textiles. Innovative materials are widely used in traditional industries with increased potential, such as costume and information functions technologies with new aesthetic effects, textile materials with protective and controlled properties.

The new potential in the development trend of the textile industry it is increasing the technical level of production of new modern materials of high quality, the emergence of promising information technologies in all production of textile products [2].

Therefore, on this basis, new solutions appear in the production of clothing and its adaptation to the human body, for example, the regulation of the microclimate of the space under clothing [3].

Clothing performs various functions: barrier, protective, creating a special microclimate between the body and the environment (Figure 1), as well as clothing should meet aesthetic needs, while being comfortable.



Figure 1. Clothing in the " man – clothing – environment» system

Depending on climatic conditions and temperature conditions, the degree of protection against the cold will be different. This can be achieved in different ways, both by choosing outerwear and by a competent combination of layers on the packaging of clothes.

Depending on the season, there are summer, winter, demi-season and all-season clothes. The seasonality of clothing reflects not only the period of the year intended for wear, but also the degree of protection from the cold [2].

Thus, winter and demi-season clothing is aimed at keeping warm, protecting from wind and precipitation. Depending on climatic conditions and temperature conditions, the degree of

protection from cold will vary. This can be achieved in various ways, both by selecting outerwear and by a competent combination of layers in a clothing package.

However, information about the temperature at which the product should be operated is not available on the labels of children's clothing, which could significantly affect the choice when buying. The task of summer clothing is to provide ventilation that does not allow overheating, remove excess moisture and, if possible, cool it. Summer clothing has higher requirements due to skin contact. However, maintaining comfort in winter and demi-season clothing is no less important aspect, which, unfortunately, is not reflected in the regulatory and technical documentation.

According to their functional purpose, clothes are divided into the first, second and third layers. The first layer is "products in direct contact with the user's skin": linen – underwear and bedding, hosiery, corsets and bath products, hats (summer), shawls and shawls, etc.

The clothes on the second floor are "wearer's skin - restricted items" such as dresses, blouses, chemists, trousers, skirts, suits, sweaters, jumpers, as well as non-lining items and products with less than 40 percent lining. The area of the upper part of the product (suits, trousers, skirts, jackets, jackets, vests, sundresses, semi-overalls, overalls and other similar products" [4].

The clothes of the third floor are usually worn over the products of the second floor. These are Coats, short coats, jackets, coats, suits (lining) and other similar products.

The safety requirements for the third layer of clothing are the least stringent, so the use of new materials in products related to the third layer has become widespread.

Among the modern presented range of outerwear are women's stores often having products made of synthetic materials (100% polyester fiber). In addition, the lining material is also often made of polyester fibers. In the textile industry, polyester fibers are widely used. They are produced in the form of textured threads, monofilaments, volumetric format threads, etc.

Due to their properties, polyester fiber materials are used to make outerwear, shoe insulation, winter jackets (for example, synthetic winterize), toys. Despite the strength, wear resistance of such materials, they are easy to care for, they after washing, they do not stretch, dry quickly, and at the same time they have increased rigidity, poor breathability and high electrification. Therefore, to compensate for the negative aspects of polyester fiber, it is combined with other fibers such as cotton or viscose, which have good hygroscopicity. The fabric from this combination is suitable for sewing everyday clothes, clothing for recreation and home use [5].

In modern times, thanks to the development of industry and new technologies, the range of materials for sewing clothes is very wide. However, all of them are suitable for the production of women's clothing, depending on the requirements of regulatory and technical documentation.

At the present stage of development, the innovative materials market industry is undergoing significant changes. In the modern market, at the request of consumers, various types of materials with updated properties of fabrics with a new fiber composition are being produced. One of the main directions of the innovation process in the textile industry is the functionality of textile materials. Consumers require different properties from manufactured clothing, including functional requirements. Clothing for prestige and every day wear should have the following qualities: durability, aesthetic and ergonomic qualities [4].

In the fashion industry, an assortment of materials for clothing is widely produced. Therefore, in the production of the assortment of the material, it takes into account the color of the model, fashion trends and functionality of the product, design. Such textile materials must meet hygienic, operational and aesthetic requirements. Therefore, the product made of hygienic clothing allows you to protect against adverse environmental factors, high and low

temperatures, wind, and excess solar radiation. Observing these criteria, we can say an attempt to contribute to the creation of favorable conditions for human existence.

Currently, clothing is considered an industrial product and the result of scientific and technological progress. In this regard, the features of the modern stage of development of the production of textile products constitute a significant tightening of the entire complex of conditions for the product: operational, consumption, aesthetic and industrial aspects, therefore, justified by the growth of the standard of living in the world, as well as the growth of one of the competition when selling products on the market. Consumers in most cases are made of prestigious, convenient, functional products, aesthetic and high-quality selects the product.

In order to increase competitiveness, the products of the garment industry of Kazakhstan are currently increasing the quality of the number of manufactured products. The range of textile materials has successfully expanded, consumer properties have improved, and textile products have improved. Due to the inconsistency of technologies in the field of design, contradictions arise in the field of decoration of clothing and materials, which affects the quality of textile products. An important component in improving production efficiency and quality is textile and Information Technologies, since they contribute to the development of industry in the direction of reducing the duration of the production cycle and the number of operations, increasing knowledge - intensive, saving labor and energy, as well as automation, mechanization and robotization of technological processes [5].

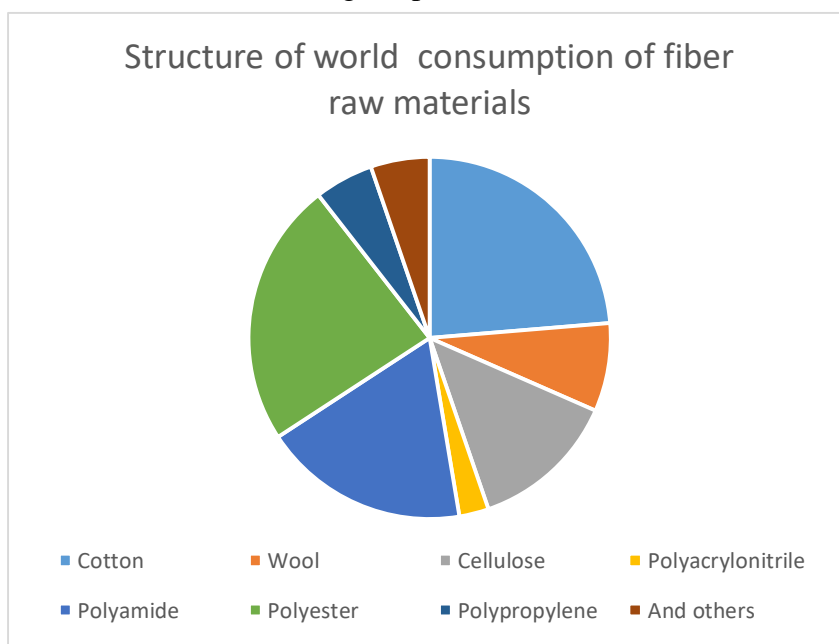


Figure 2. Structure of world consumption of fiber raw materials.

Geometric property of the material. The thickness of the textile material does not have a constant volume and in its production is associated with the peculiarities of processing and finishing the material, the demonstration of the relaxation process in clothing, as well as the pressure when the thickness is measured. When measuring the pressure of the textile material, it is assumed to give the test material a pressure of 10Gs/cm<sup>2</sup>. This allows you to compare different materials in terms of thickness indicators. It should be borne in mind that the individual areas of textile materials have different thicknesses. In terms of this thickness, non-uniform materials were distinguished, which is explained by the disadvantage in the formation of fiber. The thickness of the material determines its preparation according to clothing: that is, thinning materials are used in underwear and dress products, medium - suit, and thicker - in coats and other outerwear [5].

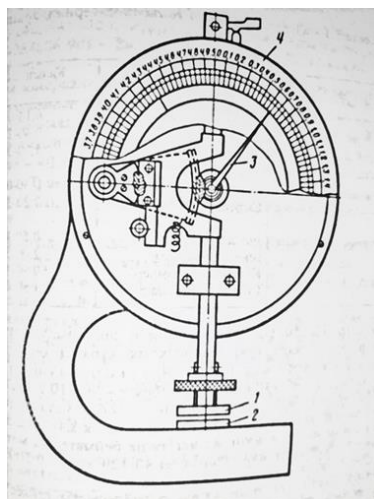


Figure 3. Thickness gauge

The thickness of textile materials depends on their achiness, hardness, air permeability, wear resistance, thermal impermeability, as well as other properties associated with the choice of materials for the product and its operational quality. In addition, the thickness of textile materials affects a number of technological parameters for the manufacture of clothing: from it, the amount of additional when assembling depends, as well as the seam Assembly and width.

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### ИССЛЕДОВАНИЕ НАДЕЖНОСТИ И ДОЛГОВЕЧНОСТИ АВТОМОБИЛЕЙ В ВЫСОКОГОРНЫХ УСЛОВИЯХ ЭКСПЛУАТАЦИИ