



Analysis of modern materials used in special clothes

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ABSTRACT

This article analyzes the activities of national equestrian games. Changes in work activity and the dynamics of riders' movements in many types of equestrian sports are studied. It includes an analysis of the requirements and characteristics of materials for special riders' clothing. The article also develops general requirements and requirements for materials for the production of special national equestrian clothing.

Keywords:

equestrian sport, rider, horse, textile industry, clothing, electrical conductivity, friction, aesthetic indicators, hygienic, operational indicators, chemical fibers, special clothing, GOST.

In recent years, the range of fabrics with new properties for the production of special clothes has expanded significantly. It is known that work clothes made of fabrics with high protective and physico-mechanical properties are produced to preserve the work ability and health of users. All fabrics of the textile industry are divided into three types according to their fiber composition: natural, chemical and mixed. In the preparation of the product, special substances are used for finishing, and this, in turn, allows to increase the physical and mechanical properties of the fabric. At the same time, many special clothes combining protective, hygienic, operational and aesthetic properties are being produced at the present time. These include abrasion resistance and tear resistance, low permeability to water, protection against pollution and aggressive environments, moisture release and air permeability. These indicators of fabrics are important in sewing and production of special clothes for each profession or specialty.

Fabrics used for modern special clothes must meet the requirements of state standards

GOST 11209-2014 and the requirements of working conditions, and on this basis must provide the human body with the necessary safety, hygiene and comfort. Since special clothes are worn for a long time and are mainly in constant contact with the human body, the fabrics used in sewing special clothes are required to provide air exchange in the human body.

It is impossible to create special clothes without analyzing the composition of textile materials. When choosing materials for special clothes, their fiber composition, air permeability, strength, permeability, hygroscopicity, and friction are studied. Clothing serves not only as a means of wearing, but also with the durability of the fabrics selected for clothing and the protection of the human body from the effects of the external environment.

Special clothing for many equestrian sport riders should be comfortable, yet not restrict movement and, most importantly, meet safety goals, because it is essentially work clothing for the rider. Aesthetic beauty is also a partial

indicator of the rider's clothing, but, unfortunately, the clothes currently used in equestrian sports do not meet the requirements.

Analyzing the working conditions of equestrian riders, the characteristics of the thermal state of the human body in cold climates, and the types of special clothing worn by riders today, as well as studying the opinions of consumers, allows us to formulate requirements for the special clothing produced.

General requirements:

- special clothing should be in the form of a set consisting of a jacket and trousers, made of antistatic fabrics with high hygienic properties;

- special clothing should not restrict human body movement, should provide sufficient protection from the effects of safety and high air temperature;

- special clothing must be fully compatible with working conditions, provide freedom of physical movement of a person, and be comfortable to use;

- the construction of special clothing should provide the necessary air exchange and at the same time be resistant to friction, limit the penetration of dust into the human body, and also facilitate the timely release of appropriate moisture (sweat);

- special clothing must provide trouble-free service for 12 months under these conditions;

- special clothing should be modern, meet the requirements of the fashion trend, match the composition and function of the model, be clear and sufficiently expressive;

- special clothing should be light: the total weight of the set should not exceed 2-3 kg;

- special clothing should be cost-effective, that is, it should be made of cheap materials with minimum production costs, and its high quality should be ensured.

Requirements for materials:

- materials should be resistant to friction and should not restrict body movement;

- the air permeability of the materials should be at least 30 dm³ / m² s;

- hygroscopicity of materials should be at least 5-14%;

- resistance of materials to breaking forces is not less than 800-600 H;

- the abrasion resistance of the fabric should not be less than 2000 cycles, that is, the wear period should not be less than 12 months;

- after washing, the water content of the fabric should not exceed 4% of the tan threads, and 2% of the cotton threads;

Based on the results of the analysis, it is appropriate to attach importance to the design of the special clothes of equestrian riders taking into account the physiological, hygienic and operational indicators. For this purpose, the tasks of researching the main quality indicators and protective properties of the fabrics used in the production of special clothes were determined.

In order to protect equestrian riders from high and very low temperatures and injuries, it is recommended to use materials with a smooth surface, high air permeability and low electrical conductivity, resistant to friction, and high density. The obtained analyzes showed that there are quality materials with aesthetic, physiological-hygienic, operational and protective properties, and these materials create conditions for improving the assortment of special clothes.

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