

ANALYSIS OF THE PACKAGE OF MATERIAL PROPERTIES AND DESIGN FEATURES IN THE DESIGN OF MEN'S RAINCOAT

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Abstract

Considered a package of materials and design solutions for a man's raincoat for outdoor activities

Keywords: men's raincoat, materials, functions, requirements.

Raincoat- sewing shoulder clothing of the coat assortment, including for protection from precipitation, with sleeves, with a clasp from top to bottom [1]. Usually raincoats are made of three types: raincoat, elongated raincoat, shortened raincoat. The products can be made with a lining, with or without a warming pad [2], it all depends on the weather conditions in which the product will be operated. In the modern world, a raincoat should perform not only a protective, ergonomic, hygienic function, but also an aesthetic one. For further work, a men's demi-season raincoat for outdoor activities was chosen.

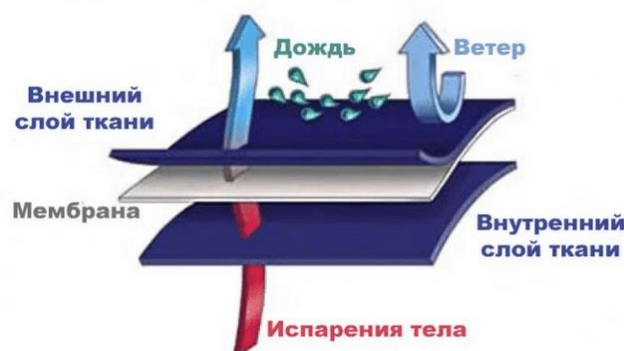
The protective function of raincoats is provided by some indicators of the properties of materials, such as: surface density, thermal resistance, water resistance, air permeability and others [3]. These indicators depend on the operating conditions, as well as the type of human activity. The raincoat is intended for use in the autumn-spring period. The average minimum air temperature in Russia during this period is -5°C, the average maximum temperature is kept at +17 °C. In accordance with the utilitarian requirements, which include protective functions, a man's raincoat should protect a person from adverse atmospheric influences (wind, rain, cold), as well as provide optimal temperature conditions. A raincoat for a certain period becomes an integral part of the wardrobe, which will be used every day, so it should provide comfort in wear and durability in static and dynamics. The air temperature in question is quite comfortable, so the raincoat should have a small insulation in the form of a lining, and be sufficiently voluminous to use it with other layers of clothing. Clothing is a multi-layered system, each layer of which fulfills certain requirements for the materials included in the package of the designed men's raincoat. These requirements are established on the basis of characteristics, both model-design and technological, as well as on the basis of requirements for a certain group of products.

Based on scientific research and life experience, it can be concluded that the upper fabric should have the following important characteristics:

- Wear resistance, strength, resistance to mechanical damage;
- Water-repellent ability;
- High degree of form stability, indelibility, as well as the absence of shrinkage;
- High resistance of the dye after exposure to moisture and precipitation.

Most often, the top materials are treated with a special impregnation, which provides a water-repellent, windproof and dirt-repellent effect. Next, the fabric of the top with impregnation was chosen - the membrane is an improved material that is capable of removing moisture without

passing rain, wind, snow inside. A conditional diagram of the membrane is shown in the figure (Picture 1). The membrane cloth consists of several layers, one of which protects the membrane from all kinds of external damage, then the layer of the membrane itself, which retains human heat in the under-bed space, and then there is an inner layer that passes water vapor through itself.



Picture 1- Diagram of the membrane tissue device

Lining fabrics are designed for a beautiful design of the product on the reverse side, as well as for comfortable conditions of use of clothing and protection from abrasion and dirt. Lining fabrics, as well as upper fabrics, have certain requirements that they must meet. The most basic of them are: lining fabrics should match the fabric of the top, that is, they should be suitable in terms of fiber composition, color, as well as the thickness of the surface density. For a comfortable stay of a man in this demi-season raincoat, the lining fabric should be light, but despite this, keep warm and have a sufficiently high coefficient of strength and friction. An important requirement is the resistance of the lining color to sweat and chemical washing. Next, a lining material such as fleece was chosen—a synthetic knitted fabric made of polyester for the manufacture of warm clothes [4]. Indicators of hygroscopicity and breathability of the material create a cozy atmosphere and a comfortable temperature at which a person does not overheat and does not freeze, therefore it is most relevant for sewing clothes for outdoor activities in the autumn-spring period.

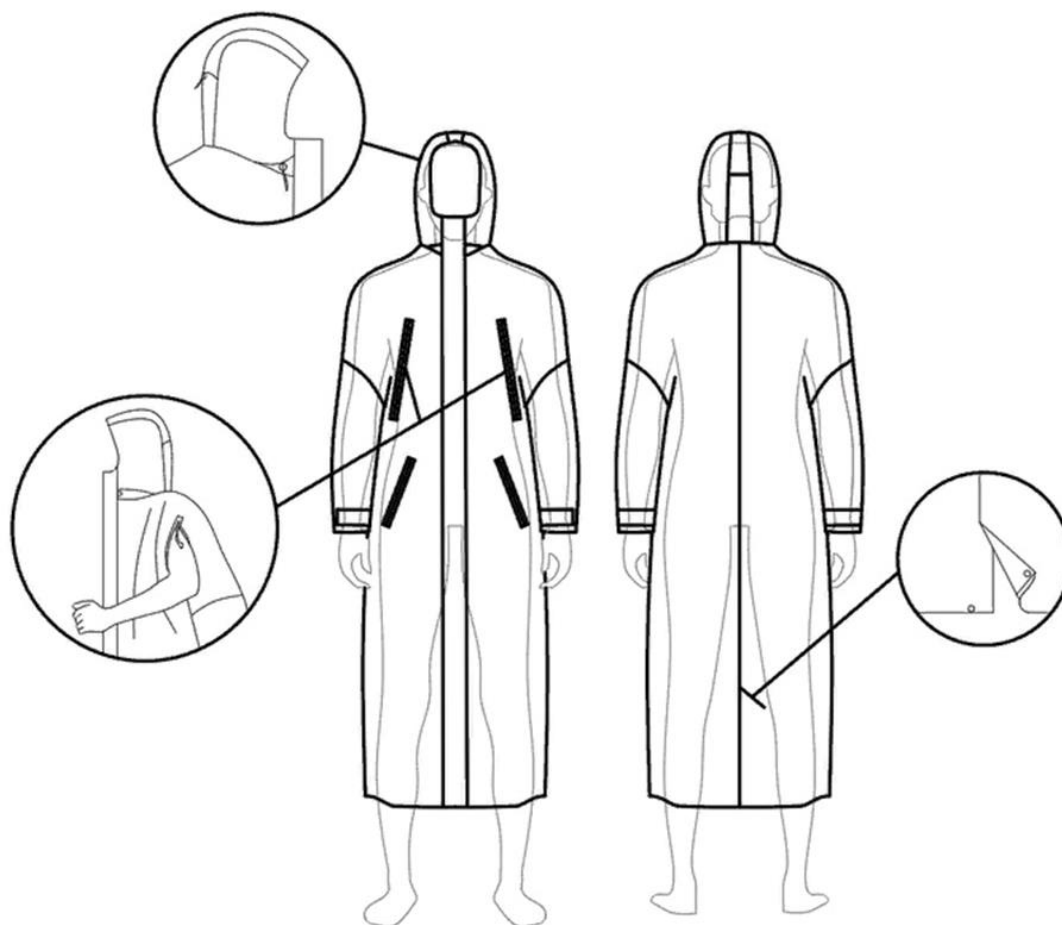
Design, technological and operational requirements are established for the cushioning materials. They should keep the shape of the upper material well, as well as protect sections and some areas of the shoulder girdle from stretching. The main indicators that should be taken into account when choosing adhesive materials are a sufficiently high level of heat resistance, resistance to chemical cleaning, and, accordingly, detergents, also meet hygienic indicators.

When designing outerwear for outdoor activities, special attention is paid to the shoulder belt. Outerwear should be designed with a free volume for a comfortable feeling of a person in dynamics. Pockets are a mandatory and indispensable attribute of clothing for outdoor activities. They can be very diverse, massive or less voluminous, as well as most often the entrance to them is equipped with a protective strap or zipper or velcro fasteners in order to protect against atmospheric moisture and falling objects [5]. An important detail is also the hood, which will be more convenient and practical if it is adjusted in volume and fixed on the mill of the product with a braid, cord or high rack.

Also, a man's raincoat should perform aesthetic functions, i.e. ensure the ability of the product to meet the social needs of a person, compliance with the generally recognized ideal, tastes and preferences of consumers. Moreover, it should include information expressiveness, rationality of forms, integrity of the compositional center, symmetry or asymmetry of individual parts, which will eventually look like a holistic image. A high level of processing and finishing will serve as a

wonderful view of the product not only from the outside, but also inside, and will also allow you to preserve all the advantages of the selected materials.

Thus, in the modern world, where fashion is moving towards a healthy and active lifestyle, the comfort and protection of men in such clothes as a raincoat will be provided by a properly selected package of materials, design solutions of the model, as well as processing methods. The design of the developed men's coat model will include a hood with a high stand and a sufficient fit to the head, sleeves with a lowered shoulder and a recessed armhole, close to a one-piece sleeve, two entrances to the "pocket" at the level of the chest line, which ensure the passage of hands through them, two framed pockets at hip level, a slot in the the back seam of the backrest. These design solutions provide convenience in operation. The selected package of materials provides comfort and coziness in any weather. The developed model of the men's raincoat is shown in picture 2.



Picture 2- The developed model of a man's raincoat

Referances

1. GOST GOST R 54393-2011 Sewing and knitting products. Terms and definitions. - M.: Standartinform, 2014- 6s.
2. GOST R 55303-2012 Upper clothing made of raincoat and duplicated materials, artificial leather and suede. General technical conditions - Moscow: Standartinform, 2014 - 3с.
3. GOST 28486-90 Raincoat and jacket fabrics made of synthetic yarns. General technical conditions-M:Standartinform, 1990- 3s.
4. Internet resource: <https://ru.wikipedia.org/wiki/Флис>
5. L.M. Tukhbatullina, L.A. Safina Features of designing clothes made of polymer materials for sports and outdoor activities – p. 161