

DESCRIPTION, COMPOSITION, AND PROPERTIES OF COSTUME-GRADE WOOL FIBRE MATERIALS

Mahsudov Shohrukhmirzo Abdulhamid ogli

Doctor of Philosophy in Technical Sciences, Associate Professor, Scientific Director,
Namangan Institute of Engineering Technology, Namangan, Uzbekistan

E-mail: shohruxmahsudov@gmail.com

Abdurakhimova Manzura Sodiqovna

Doctoral Student, Fergana Polytechnic Institute, Fergana, Uzbekistan

E-mail: manzuraabduraximova5@gmail.com

Abstract

This article provides an in-depth exploration of the description, composition, and properties of wool fibre materials utilized in the production of high-quality suit fabrics. It examines the structural characteristics and functional attributes of wool and its blends, highlighting the key requirements these materials must meet to ensure optimal performance and aesthetic appeal. Through a comprehensive analysis, the study delves into the definitions and classifications of wool and mixed fibre materials, outlining their respective advantages and disadvantages. The findings underscore the critical role of fibre composition in determining durability, comfort, and versatility, offering valuable insights into the development of innovative textiles for the apparel industry. Additionally, the article presents the impact of combining wool with synthetic and natural fibres on the final product's mechanical, thermal, and tactile properties. The analysis aims to guide manufacturers and researchers in optimizing fibre combinations to achieve superior performance and sustainability in suit production.

Keywords: Wool fibre, composition, properties, requirements, wrinkle resistance, deformation resistance, abrasion resistance, pilling resistance, shape retention, aesthetic appearance, stable colour.

Introduction

Suit materials should retain heat in winter and be comfortable in summer. The materials used in making summer suits should be breathable, and the materials of winter clothes should retain heat. A suit is usually bought to be worn for several years, and how long the product retains its original appearance depends on the quality of the material [1].

The composition of the suit material can be different. The material can be made from natural or man-made fibres or contain synthetic fibres.

Costume material- this is a raw material used in a group of special materials for the production of men's, women's and children's suits. Materials with different compositions are suitable for sewing this type of clothes. Men's suits are usually made of wool and semi-wool, and women's suits are made of soft cashmere, memory, and boules [2].

The raw material used in the wool processing industry is one of the main textile fibres. The main part of wool used in industry is sheep-constitute wool; as well as goats, camels, rabbits,



goats, horses, cows, deer, dogs, etc. Animal wool is also used. The quality of wool fibre is its spinning properties, thinness, length, fineness, colour, stretchability, humidity swallowing and b. determined by its properties. In terms of chemical structure, it belongs to protein compounds [3].

The Main Part

To improve the quality of wool fibre, various textile materials are produced together with mixed fibres.

Contents and features:

Regardless of the composition of wool fibre materials, they must have certain properties and meet the requirements for this type of clothing:

- Resistance to wrinkling and deformation;
- Resistance to decay;
- Resistance to pilling;
- Keeping in shape;
- Aesthetic appearance;
- Stable color [4].

Suit materials should retain heat in winter and be comfortable in summer. The materials used in making summer suits should be air-permeable, and the materials of winter clothes should retain heat. Usually, a suit is bought to be worn for several years, and how long the product will retain its original appearance depends on the quality of the material.

The composition of the suit material can be different. The material can be made from natural or man-made fibres or contain synthetic fibres [5].

Types and properties of wool fibre materials

Modern types of costume pop materials are becoming more and more diverse. Special preference is given to the following materials when sewing suits.

Wool. Natural wool fibre is hollow, so woollen fabrics are well permeable and retain heat. Woollen material is slightly wrinkled, resistant to decay, and has elasticity, and hygroscopicity. Manufacturers produce very thin woollen fabrics for summer models, as well as thicker and warmer fabrics for winter suits. Some types of materials are treated with a special Send Wash soak that gives the fabric a "shiny" effect.

Half wool. In semi-wool materials, synthetic polyester fibres are added to the wool. This allows you to make the material more durable and significantly reduce the cost of the product, although the thermal insulation quality of such a substance is lower than wool [6].

Wool with elastane. In addition to wool, the suit material, which contains synthetic fibres of elastane, saves you from ironing the product every day and pulling the pants to the knees. Synthetic additives improve the basic quality of the wool, allowing the garment not to lose its



shape, which ensures maximum comfort and perfect fit. Usually, the suit material contains 5-7% elastane.

Kashmir. Cashmere suit material is distinguished by its softness, lightness, delicacy and strength. Products made of this material protect from cold in winter and heat in summer, so they can be worn both in winter and hot season.

Gabardine. This material is characterized by small diagonal lines on the fabric surface. Gabardine is soft and elastic, resistant to deformation. Gabardine suits are made from a mixture of viscose and wool. In addition, fully synthetic gabardine, a material that is cheap and easy to care for, is used to create special uniforms or work clothes. From this material, suits for medical workers, enterprises and public institutions are sewn [7].

The results of the analysis of the names, definitions, advantages and disadvantages of several different materials belonging to the group of wool fibre materials are shown in Table 1 [8].

Table 1. Types of wool fibre materials.

Group	Name	Description	Advantage	Disadvantage
Wool fibre materials	Kashmir	It is obtained from the wool and hair of Indian and Nepalese goats	It has a high heat-saving feature. It has a pleasant effect on soft, anti-allergic skin. The material drapes well.	There may be a problem with cleaning. In most cases, even dry cleaning cannot deal with old stains.
	Gabardine	Densely woven wool fabric with diagonal stripes. Contains viscose and cotton blends.	Warm, so suitable for off-season and winter. Dense, but not heavy. Holds the shape perfectly.	Handling is inconvenient: the edges are very sharp. Whimsical in ironing, requires the mandatory use of gauze. Otherwise, you can irreparably damage the fabric.
	Tweed	It is slightly hairy and has a unique pattern - arched. It is used for sewing classic suits.	Durable, hard-to-wipe material. Wrinkles rarely appear. It has a nice touch.	Because tweed is full of pure wool yarn, moths love it. Also, high-quality fabric has a high price.
	Diagonal (Road-road)	The name of the fabric indicates its characteristic - small diagonal lines.	The serrated weave provides strength and elasticity of the material, but it stretches well. Keeps its shape while wearing, and does not fade with age.	The diagonal is almost flawless. There is only one complaint - the light colour. But you don't need many colours for suits.
	Tricot	It is characterized by a different fibrous texture: a thin line is felt on the surface.	Does not restrict movements, and guarantees freedom of movement. The material is represented by several types of colours: melange, colourful, smooth painted.	It comes in a little during washing.
	Cover coat	The natural colour scheme is muted cream to dark brown. But there are also options painted in other colours.	It has good breathability and high water repellency. Such clothes are not afraid of small rain. It does not wrinkle, which makes it easy to care for the material.	It is characterized by a large weight. The material is very heavy.
	Crepe	May contain wool material with a grainy texture	Fits well, and does not bend or deform.	Over time, colours may lose their saturation. Some types are shortened.
	Alpaka	Alpaca and Lama wool material.	Soft, heat resistant. Good thermoregulator.	Has a high rating
	Mohair	Material with a fluffy surface.	Soft, dirt-resistant.	It collects dust quickly.
	Cheviot	Dense wool material with diagonal weave.	Durable, shape resistant.	Heavy, drapes poorly.



Suit materials are different materials, each of which has its characteristics and purpose. Some of them have been discussed in detail above.



Fig. 1. Wool fibre clothing materials.

Suit materials are not only the material for clothing, but also the art of creating comfort and style. In recent years, due to the development of technology and the creativity of designers, the range of costume materials has expanded significantly. They became popular not only among fashion experts but also among lovers of high-quality and beautiful clothes[9].



Fig. 2. Men made of wool fibre materials suit complete models.

Summary

In the article, the results of the analysis of the variety of clothing materials, the description, composition, requirements, and properties of the wool fibre materials used in production, as well as the name, definition, advantages and disadvantages of the wool and mixed fibre materials, were covered in the form of a table.



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