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Analysis of Materials Influencing the Form, Properties of Sewing Ware

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ABSTRACT: This article discusses the preparation and specific properties of binders used in the textile and clothing industry to maintain their shape, and provide recommendations for taking into account special physical and mechanical properties when applied in production. Analytical data on bindings, spunbands, which are formed from bound bindings, bindings, polyethylene fibers.

KEY WORDS: stitching, collar, sleeve, skirt, pocket, linen, fabric, density, seam, equipment, bookbinding material, viscose, yarn, adhesive thread, polyethylene, spunbond.

I. INTRODUCTION

Demand for clothes is growing day by day. In this case, the appearance of clothing, resistance to external influences, hygienic and aesthetic properties, compliance with modern fashion trends play an important role. At the same time, special attention is paid to shape-preserving materials, taking into account the shape-preserving properties of outerwear.

II. LITERATURE REVIEW

Ensuring high and stable growth rates in the textile and clothing industry of the republic is achieved through the implementation of strategically important modernization projects, technical and technological modernization of enterprises, attracting foreign direct investment, production and export of competitive products, systematic work to further deepen structural adjustment aimed at creating new high-tech jobs, introducing an advanced "cluster model". At the same time, a comprehensive analysis of the development of the textile and clothing industry, the changing state of the world market in the face of growing competition, government support for the industry, as well as the development and implementation of more stable and dynamic development mechanisms [1] is being carried out.

In the garment industry, adhesive materials are used for sewing clothes, details of collars, cuffs, sleeves, bending skirts, embroidery, covers for pockets, collars. etc. Glue P-54, P-548, P-12 (6/66) is glued on one side to the material (raw groundhog or non-woven material) used for injection. High-pressure polyethylene is used for fasteners of linen (jackets for men and women, blouses). In addition, glue thread, a web-type adhesive material is used. Adhesive materials are delivered to the sewing enterprises in rolls. The adhesive lining fabric is made by applying P-54 or P-12 (6/66) glue with an adhesive size of 0.16-0.5 mm on one side of the white surfactant fabric of products 300, 301, 302. 25-30 g of glue is consumed on 1 m² of fabric. The adhesive resistance to peeling is 8 N / cm.

The lining material is cut to a width of 6-14 mm, and the front part is placed along the edges of the board, the neck of the pocket and other places so that the parts do not stretch. Bonding materials coated with glue are formed by applying glue P-54, P-12 (6/66) with a size of 0.4-0.8 mm on one side of linen fabric. It consumes 25-30 g of adhesive powder per 1 m² of fabric. The tear-off resistance of the glued surface is at least 5 N / cm. These materials are used as fasteners for collars, boards, sleeves and other parts of outer clothing. P-548 or P-12 (6/66) fabrics with adhesive powder coating in the form of dots in the size of 0.4-0.5 mm are used to stabilize the shape of parts of clothing from wool and light wool fabrics. On 1 m² of these materials, 15-25 g of adhesive powder is used. Resistance to separation of the glued area should be at least 2.5 N / cm. It is recommended to use a fabric with a polyethylene coating or a cloth impregnated with 548 polyamide resin, in the form of dots on the collars and cuffs of women's and men's shirts. To stabilize the details of clothes, to improve their appearance and quality, they are glued [2], (Fig. 1).



Figure 1. Gasket material, (non-woven)

Non-woven fabrics (glued non-woven materials) are made of cotton, staple viscose fiber, linen or a mixture of synthetic staple fibers from cotton or viscose staple fiber [3]. These materials have high viscosity, toughness and density depending on the composition. The mass is small - 60-200 g per 1 m². The mass ratio per unit area N is a criterion for determining the type of lining: the larger the value of N, the higher the density of the lining. N180 - for thin fabrics, N 200 - for suits and shirts, N 405 and N 410 - for trousers, jackets and coats. N 510 is reinforced with additional stabilizing threads along the length of the interlining.

Stabilization of clothing processing is a new area of engineering and technology called the direct stabilization method. In this method, a polymer mixture in the liquid phase is sprayed onto the back of the garment parts. The adhesive mixture hardens under the influence of heat within a few seconds. The use of direct stabilization technology eliminates the need for additional bonding operations in the clothing industry, saves up to 0.5 m of fabric for each garment.

The adhesive thread is a single thread 0.3-0.5 mm thick and is made of polyamide resin P-548, P-12 (6/66). The adhesive thread used for washing clothes is made of high pressure polyethylene. The resistance to tearing off the adhesive thread from scale is at least 30 N / cm. By stabilizing it by stretching, the same thickness is everywhere achieved (Fig. 2).

Glue thread is used to make the edges of the collar, the edges of the pocket cover, the hem of the garment invisible. To do this, before gluing the parts, wrap the glue on the seam allowance side or on the fold side of the skirt on the seam of a simple sewing machine. Then, when ironing (pressing or ironing) after gluing the part or the bend board, the adhesive thread sticks to the main part. P-548, P-12 (6/66) is a non-woven material formed by irregular weaving of fibers obtained from a solution of polyamide slim or polyethylene fibers obtained under high pressure (Fig. 2).



Figure 2. Polyethylene fibers are a binder formed by improper blocking

Adhesion parameters
Table 1

No	Adhesive	Clamping force, MPa	Temperature °C	Buration, s
1	P-548, P-54:			
	Light tissue	0.1÷0.5	150÷160	20÷40
	Medium, thick fabrics	0.3÷0.5	150÷160	20÷40
2	P-12 A. KR:			
	Light tissue	0.1÷0.2	130÷140	15÷30
	Medium, thick fabrics	0.3÷0.5	130÷140	15÷30

The width of the material is 0.6-0.9 m, the weight of 1 meter is 25-60 g, the thickness of the fibers is 25-45-10 ~ 6 microns. This adhesive is used to bend skirts and sleeves. The adhesive material is first attached to the part on a universal machine, then bent and pressed into the part. Glues P-548, P 54 and P-12 (6/66) are resistant to various chemical influences and have very low water resistance, especially when boiling. Therefore, high-pressure polyethylene adhesives are used for washing and especially for washing clothes. The most promising adhesive material of the web type obtained from a solution of polyamide resin P-548, PA-6 // 66/610, formed by aerodynamic methods, used to fasten slots and protrusions of a part (boards, collars, cuts and other parts and assemblies) is a chemical material. As a result of the use of this material, the efficiency of work on fixing parts increases, the quality of the product improves. No special equipment is required to use this adhesive material. The adhesive strength of the adhesive joint is high, the tear resistance is much lower. For example, when gluing fabric with a 0.3 mm thick adhesive thread made on the basis of P-548 adhesive resin, the shear strength is 15 N / cm, and when using a 0.5 mm thick adhesive thread, shear strength is 81 N / cm, in which the stiffness of the glued seam is not inferior to the stiffness of the seam sewn with a thread (the stiffness of the seam sewn with a silk thread is 76-88 N / cm). If the glued fabric is coated with dot adhesive powder, the stiffness of the joint is equal to the stiffness of the part attached to the thread. The adhesive film is a material of thermoplastic polyethylene adhesive. This material is cut to a width of 3-6 mm on a special machine, then glued to the edge of the connecting parts on a special machine MPP-1 or PPT-2. Then the adhesive film is collected on a semi-automatic device such as a jacket collar or coat, sleeve tip, pocket cover, and so on. Currently, the semi-automatic presses GPKS-Ru, GPKSp, GPKSlare used for gluing the ends of the sleeves of men's coats and back sections.

IV.METHODOLOGY

These presses automatically transfer glue from the roll to the workpiece and adhesive thread from the spool. If all the parts are processed at the same time only on a semi-automatic machine, bonding of the parts will be effective. The garment to be attached must be flexible, not rigid. This is achieved through multithreading. The hardness of the parts attached with glue depends on the quality of the glue, the thickness of the coating, the thickness of the adhesive material, the structure of the applied glue (nail or dot attached).

If the glue is glued to the cardboard (in the form of a film) during the bonding operation, the fastening of the part will be 5 times stiffer than with the thread. The gluing method allows you to mechanize the seam and automate parts and clothing in general [4]. In the current era of advanced technology, various fasteners are manufactured (Figure 3).



Figure 3. Film fasteners

A number of methods for the production of nonwoven materials were invented, for example, by researcher G. M. Belikov “Nonwoven materials and methods for their production” [5].

Another type of Spanbond binder is the name of the technology for the production of nonwoven materials from polymer alloys by the die method. Often in a professional environment, the term “spanbond” also refers to material produced using the technology of “spanbond” [6], [7] (Fig. 4).

III. WORKING OPERATIONS

The essence of the die method is as follows: the polymer solution is released through the die in the form of thin continuous filaments, which are then stretched in the air stream removed from the moving conveyor, forming a textile network.



Figure 4. Spunbond nonwoven fabric

V. RESULTS OF RESEARCH

The yarn on the resulting fabric is then bonded. Threads can be attached to it in several ways:

- needle piercing;
- chemical impregnation of threads;
- thermal connections in the calender;
- connection with a stream of water;



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hotairconnection.

The most common bonding methods are thermal bonding in the holes of the calender and the needle. The method of fastening the threads in it determines the properties of the material obtained and, therefore, the scope. Spunbond is currently widely used in many industries, such as medicine, agriculture and clothing. The flow of liquid polypropylene passes through the thread, which rotates the thread from the place where the thread or fiber is removed (from thin holes - spinnerets). They immediately adhere to the conveyor to form the product. The product can be formed in various ways - by perforation with a needle, chemical absorption or thermal compound (hot air) on a machine with two rotating shafts through which the fibers are transmitted. In addition, the material is impregnated with special compounds (optional).

Available in rolls of various widths and thicknesses (the higher the density, the thicker). It can be prepared in different colors (dyes are added to the polymer solution), and the pattern can also be applied to the finished product. The properties and size of a spunbond mainly depend on an indicator such as density. Depending on the purpose of use, materials can have different thickness and density - from 15 to 600 g / m². Dense types (more than 150 g / m²) are usually punctured with a needle, the density of thermally bonded tissue, as a rule, does not exceed 150 g / m². In particular, in the manufacture of tailoring it is used for the manufacture of special packaging for clothing. It is treated with special glue, and can also be used as a fixing material [8].

VI.FINDINGS

Summarizing the above analysis, we can divide the fasteners used in the textile and clothing industry, especially in sewing, into the following groups: gaskets, which are formed as a result of irregular adhesion of polyethylene fibers, adhesive threads, non-woven fabrics, spunbond,

REFERENCES

1. On measures to accelerate the development of the textile and clothing industry. Decree of the President of the Republic of Uzbekistan dated December 14, PF-5285, 2017.
2. Maltseva Yu.P. Sewing materials science. Tashkent. "Teacher", p.232, 1986.
3. The range of materials for the production of clothing. Annotation. Khakass State University N. F. Katanova. Abakan. 2008.
4. Ochilov T.A. Materials Science. Tashkent. National Encyclopedia of Uzbekistan, p.176, 2014.
5. Belikov G.M. RF patent No. 2217533. Non-woven material and method for its manufacture. 2003.
6. texmart.uz
7. tetiletrend.ru
8. google.com