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STUDY AND ANALYSIS OF THE METHOD OF GLUING IN THE PREPARATION OF LEATHER PRODUCTS

Abstract: *At present, the priority direction of the development of light industry is the development of production of environmentally safe technologies. The importance of adhesives used in shoe-making enterprises in Uzbekistan to increase the quality of the products produced, as well as in the attachment of shoes to occupy its place in the market of Dachan is great, since when the quality index of adhesives used in the attachment of shoes is high, the quality index of the shoes made from it is.*

Key words: *leather, shoes, chemical materials, tanning enterprises, animal skins, shoe shape, adhesive, PVC, sole, polyurethane, Ethylene Vinyl Acetate.*

Language: *English*

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Introduction

The purpose of the work: to determine the types of adhesive used in the attachment of the top and bottom details of shoes in leather shoe manufacturing enterprises. It consists in analyzing the quality indicators of the identified adhesives and recommending the production of high-quality adhesives. To develop a technology that consists of the formulations of hot melt glue compositions that exclude the chemical-chemical processing of the lower part of the shoes from various materials and uniform materials, and that provide durability and moisture resistance of the joint. In order to achieve this goal, the following research objectives are identified: systematize and analyze the adhesive compositions used for the adhesive bonding of the soles of shoes; to study the adhesive properties of ethylene and vinylacetate (EVA) copolymer - the basis of hot melt glue-when included in the composition of nanosized modifier additives; to study the structure and properties of hot melt adhesives; development of methods for sealing the bottom of

shoes from different materials with the help of modified solutions based on “Nairit”; study of the performance indicators of shoes according to the recommended method of connection; optimization of the technology of sealing the bottom of shoes made of different materials using modified solutions based on “Kenda farben” <SAR-306>, using mathematical methods for conducting experiments; evaluation On the floor of this, it will be important to use and correctly apply the types of adhesives that are comfortable in quality in shoe enterprises.

II.Literature review

To examine the types of adhesives and the requirements for them

Nairitov (palikloropren). This type of glue is used to attach rubber soles, socks to the underwear. At the top of the shoes can be both leather and textile. The adhesive composition is water resistant, not afraid of frost, it is durable and does not require long-term marking of the bonded surfaces, and this is its main advantage. But the top and plains of polyurethane are glued together. Polyurethane. This adhesive has a special strength, after its application it hardens, especially since it improves the details of the shoes made of non-woven materials, which increases the volume. It perfectly glues the rubber, polyurethane T-shirt on the fingers of synthetic, textile and leather shoes. It dissolves in gasoline, water, mineral oils. Plasticizers (dibutyl ftalat, etc.) - 1-2%. Low heat resistance, high stain resistance. Special additives-3-7%. It is used to obtain the desired adhesive elasticity, increases the strength of the adhesive in the process of surface cleaning. High degree of adhesion ability meets the requirements of GOST 18992-450 N / m; - storage period - 6 months; - full treatment time - 24 hours; - low consumption-from 100 to 900 g per 1 square meter, depending on the type of work. Features of polyvinylacetate; resistance to freezing heat; fire / explosion safety; non-toxic composition; resistance to moisture / water resistance; minimum weighing and filling presence during drying; Types of PVA glue. House (wallpaper) paper, vinyl, wallpaper on a seamless base. Other products can be placed, but it is desirable to use it only for its intended purpose. Resistant to low temperatures. Universal (PVA-MB) is suitable for gluing a large number of materials (paper, wood, fabric, leather, metal, etc.). Used in the production of fillers, concrete mixtures, primer compositions. Water-based formulations can be plasticized. The Subzero keeps the temperature up to 20 ° C. Stationery (PVA-K) it is mainly used for gluing paper, cardboard and other products. Not prone to low heat, water, moisture. PVA dispersion it is mainly used as the main component for all adhesives. It can be plasticized and unplasticized. It is used in carpentry and furniture production in wood processing plants. Super (PVA-M) low temperature (up to 40 ° C) resistant universal adhesive. Linoleum is used for installation on the basis of felt materials, ceramic tiles and other products. Use as a dry mixture.

III.Analysis

Kenda farben: Glue polyurethane composition for modern kenali Farben shoes. Increases thermal stability and perfectly strengthens various materials, makes bags of PVC, PU, TR, rubber, leather glue. The composition is launched at a temperature of 20° C. Thanks to the added substance, the adhesion of solid fastening materials is significantly improved. The composition of polyurethane adhesives for shoes with glue for PU shoes includes sertlestiric and rubber. This composition is used to tie a leather, rubber, polyurethane tie to a textile or synthetic upper part. The mixture quickly hardens, is ideal for working with rib material, as well as parts with very oily skin, polycloride and polyurethane coating. If you are thinking of making shoes with adhesive adhesive, then you can use polychloroprene or nairitovy glue, which is suitable for rubber heels, soles, soles and push-ups. In this case, the top can be made of leather or leather ishlangan and textiles. The drug is non-toxic, resistant to moisture and chemicals. Rubber compounds are designed to attach to the skin and textile soles, as well as to attach the rubber soles to the top of the dermantin. It was also used to repair open shoes. Glue for good toenails is a combined glue. The composition includes resin, rubber and nylon. Rubber soles and artificial insole tie the top layers. Polyvinyl chloride rubber mixtures are used to cover the layers of tissue and skin in the instruction, as well as to close the lower part and tighten the toes. It is very difficult to get dirty from paint and glue from the surface of textiles and leather. In some cases, this can not be done, but if you move more, it is possible to get rid of the adhesive places.

Table 1. Conducting experiments.
Physico-chemical properties of ethylene-based copolymer URLVIDEO YouTube-to 6-05-1636-97

Name indicators	EVA copolymer classes		
	12306-020	11507-070	11808 -340
Density, g / cm3	0,940 + 0,005	0,945 ±0,005	0,950 ± 0,005
Melt flow rate, g / 10 min, in range: 125oS 190oS	-1,0-3,0	4,5-10 -	28,0-40,0 -
Batch change of solution flow,%	±15	±10	±10

Vinylas-Tata mass fraction,%,	15-20	21-24	26-30
Cutting power, kgf / sm2, not less	128	60	140
Relative zoom out break,%, no	600	650	650

The inconsistency of the hot melting application technology is caused by the lack of demand between sticking to the bottom of the shoe and not sticking to the shoe manufacturing enterprises for this type of goods. Already attempts have been made to produce Optimal adhesive compositions.

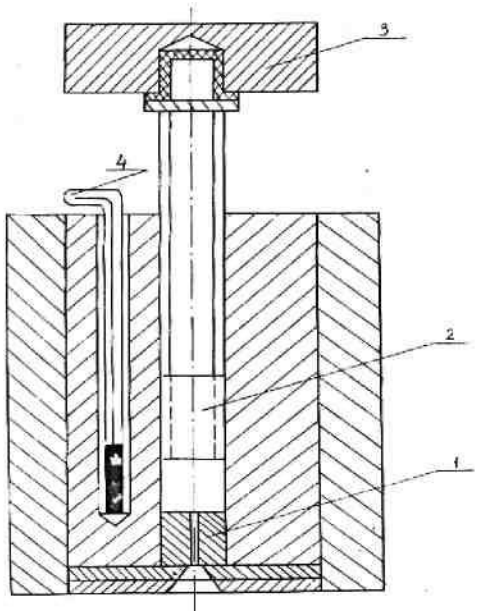
Table 2. Physico-mechanical properties of silicon dioxide Department of indicators. Type of attachment

Features	Nanodispersed silikon dioksid ey'lchovdioksid	Measurements Nanodispersed silikon dioksid Mikrodispersed silikon dioksid	Measurements Nanodispersed silikon dioksid Mikrodispersed silikon dioksid
Appearance		Gray white powder	Gray white powder
Particle size		50 nm 16 microns	50 nm 16 microns
Granular form		global spherical	global spherical
Pureness	%	97 98.3	97 98.3
Crystal structure		amorphous amorphous	amorphous amorphous
Density	g/sm3 ga teng	0,5-0,7	0,6
Mass density	g/l	500-700	600
Melting point	°S	1700	1700
Thermal conductivity	V/m · K	< 1	< 1
Special surface	m2/g	500	380

Experimental methods have a large group of methods for assessing the quality of properties and the educational-cheniya properties of its viscous composition and viscous compounds. These methods are aimed at studying the properties and processes of the volatile-ing product performance [30] for the purpose of evaluation criteria viscous composition and its technology melting hot adhesives and their determination methods. In addition, the physical and chemical properties of the additives used with different particle sizes, including substances that change as substances, as well as the use of methods for assessing their modified viscous composition, given that after the expiration of the retention time (after thermoplastic heating -5 min.). The solution is compressed with a free-falling piston with a load. In our case-2,16 kg. Cut off the extruded copolymer parts of the solution, at a certain time interval, equal to the nearest 0,1 mg. The solution flow index is J, g/ 10 min, determined by the following formula:

$$J = \frac{10m - 60}{\tau}$$

here is the J-solution flow index, g / 10 min.;
m-mass of the sopolimer part, g;
τ-extrusion time of copolymer segment, b.

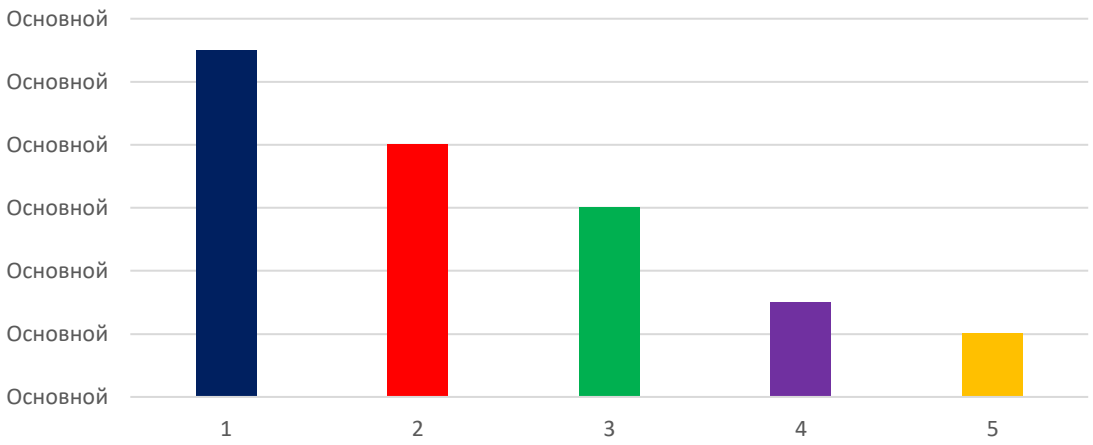


Picture 1. IPRT method for determining the solution index of thermoplastics. 1-Chest, 2-heated cylinder, 3-load in the piston, 4-thermometer

IV.Discussion

Determination of the strength of welding in a liquid. The adhesive is determined by the delamination according to the strength of the shoe materials. The deepening test is more common and consists in reviewing an experimental sample in a review facility. Samples with a length of 120 + 2 mm and a width of 25 + 1 mm are cut from the connected materials. To determine the binding capacity, samples of two-layer jersey fabric and leather skin were taken. Spread the adhesive to 100 + 1 mm along the length of the sample area was carried out. The cap was applied to the front surface of the plastic rubber, after which the adhesive film was faxed and pressed under pressure of 30-5 MPa for 0.3 ± 0.35 C. The glue samples were stored at a temperature of 20 + 3 ° C and tested for 50 hours at a relative humidity of 70-24%. The bond strength was determined by decomposition apparati-URM-2

As a result of the test, the average arithmetic value of at least three parallel solutions is obtained, the allowable differences between them should not exceed 10%. At this time, it is possible to switch to the method of testing the adhesive joints as an additional method, so that they also affect the deformation of the rotation during processing. However, this method has significant inconveniences, that is, since it provides pure cutting without testing, there is a moment of binding with a flexible glue. As a result, in the adhesive zone, not only tangential, but also normal stress is not visible. The role of these or other stresses cannot be determined empirically as an experiment in the elimination of the adhesive compound.



Picture 2.

From this, the requirements for adhesives were studied by experts. According to him, the important requirements for adhesives were determined to include the following: 1. Combination strength, 2. Consistency to hot, cold and humidity, 3. High elasticity, 4. Be yoke, 5. Fire safety

ECONOMIC EFFICIENCY

The share of expenses for raw materials and basic materials in the cost of products of shoe industry enterprises is high. The products of this network are characterized by high raw material consumption. In some enterprises, the consumption of raw materials is about 70-80% compared to the cost of the product. Regular reduction of material costs is also one of the internal opportunities to improve the performance of the enterprise, to reduce the cost of the product being produced. Of great importance is the introduction of new advanced technology, the improvement of production, which allows reducing the percentage of waste when improving the use of material resources.

The improvement of the use of material resources in the enterprise leads to an increase in the volume of production of products, a decrease in the cost, an increase in the profit and profitability of the enterprise, an improvement in the indicators of its work activity, as well as an increase in the competitiveness of the product.

The reduction in the normative value of working capital at the enterprise depends not only on the norm of the reserve of material resources and the volume of unfinished production, but also on the indicator of the expenditure of material resources provided for in the program of production of products. In enterprises that require more raw materials consumption per unit of product under the same conditions, the turnover is lower than in enterprises where less raw materials consumption per unit of product of the same type goes. Therefore, in analyzing the effectiveness of the use of raw materials, it is of great importance not only to reduce the norm of reserves, but also to reduce the consumption of materials in production.

The purpose of this diploma project is to identify the types of adhesives used in the attachment of the top and bottom details of shoes at the enterprises producing leather shoes in Uzbekistan, as well as to analyze the quality indicators of the identified adhesives and to recommend the production of high-quality adhesives.

It is known us; it is possible to increase the competitiveness of the product in 2 different ways:

- by reducing the cost of raw materials by reducing the cost of the product;

- by giving a new texture and properties to the product by increasing its quality.

Due to the fact that quality estimation in the conditions of a competitive market economy is considered one of the main problems, we have set ourselves the goal of studying and analyzing the method of gluing in the preparation of leather items in our diploma project work.

Currently, the adhesives used in the preparation of existing leather products are prepared in different countries and used by enterprises to import them. Since there are a lot of types of these adhesives, even the quality indicators of the products prepared using them are of different types. Us there is an opportunity to increase the competitiveness of the product by identifying high-quality adhesives among these adhesives and recommending them to be developed itching. Therefore, in this diploma project, it was studied by comparing the quality indicators of the 2 different adhesives most commonly used in the attachment of the top and bottom details of the current shoes. As a result, 1-th (“Kenda farben” <SAR-306>) and 2-th (“DESMOCOLL”) were determined by mutual comparison of the options. As a result of the analysis, the quality index of the adhesive in the 2nd variant was higher.

V.Conclusion

After this quality is determined from the indicators. The first and second option was made of shoes using glue. In the course of exploitation, it was noticed that the shoes in Option 2 have a long shelf life.

Since the shoes made of glue, which we recommend, are shoes that can meet the operational requirements, its price varies from 1 – the option shoes to 10000 thousand rubles higher. On account of this, the sapper will wear shoes in which the quality indicator is competitive.

In Option 1, men's shoes will be received by the manufacturer 140 thousand soums in one season two, while in Option 2, men's shoes will be produced by taking one 150 thousand soums in one season with the fact that they are made according to the operational requirements.

This means that men's shoes made of high – quality adhesive will cost 2 thousand rubles more in comparison with one shoe made in Option 1 to 10 thousand rubles in comparison with the other.

At the same time, there is a significant difference in the production of 400 pairs of shoes in one enterprise per day compared to Option II in the other, given that the shoes made for men meet the operational requirements of option III in the second.

We calculate the value of the commodity in the I – and II - variants:

Hence, in Option II, the probability that consumers will buy more products is higher than in option I.

If the cost of one shoe is 120 thousand rubles, the net profit for the enterprise from one shoe remains 30 thousand rubles.

1-the product sold in the option: 120000*150= 18 million. sum

150 pieces – the number of shoes sold in a day;

18 million. sum - selling shoes' real cost;

Net Profit of the enterprise for a day: 150*20000= 3 million rubles. sum

The net profit from which 20 thousand rubles remain from one shoe.

4,5 million sum-the net profit from the sale of 150 pieces of shoes.

2-the p6

roduct that sold men's shoes that meet the requirements of exploitation in the option: 130000*250 = 32,5 million. sum

250 pieces – the number of shoes sold in a day;

130000 sum – the cost of one shoe;

32.5 million. sum - selling shoes' real cost;

Net Profit of the enterprise for a day: 250*20000= 5 million rubles. sum

The net profit from which 20 thousand rubles remain from one shoe.

5 million rubles-the net profit from the sale of 250 pieces of shoes.

The obvious difference from 1 – day economic efficiency in Option 2-by selling custom made shoes in Option 3-is that you find the following:

(Option 2) 5 million. sum – (option 1) 3 million rubles sum = 2 million sum.

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