

## Characteristics of Leather Used in the Different Assortment of the Furniture Industry

*Allayarov Tuyli Buriyevich*

*Assistant, Tashkent Institute of Textile and Light Industry (Uzbekistan)*

*Atanafasov Muhiddin Rahmonovich*

*Doctor of philosophy (PhD), Tashkent Institute of Textile and Light Industry (Uzbekistan)*

*Akhmedov Bakhadir Buriyevich*

*Asst. professor, Tashkent Institute of Textile and Light Industry (Uzbekistan)*

*Ochilov Tulkin Ashurovich*

*Doctor of technical sciences, professor, Tashkent Institute of Textile and Light Industry (Uzbekistan)*

**Abstract:** in this article, 3 different types of leather fabrics were brought from the leather production center "HAMKOR NUR" and their physical and mechanical parameters were determined at the joint venture "Uzbek-Turkish Test Center" LLC

**Keywords:** design, price, brand, mass fraction of chromium oxide, mass fraction of substances extracted with organic solvents, mass fraction of ash, thickness of leather, range of tensile breaking strength of leather, elongation at break, breaking strength.

### I. INTRODUCTION

Currently, the furniture industry uses many different types of materials, sometimes it is difficult to determine which one is best when ordering furniture. Leather is a natural product that allows you to be comfortable at any time of the year, it breathes and adapts to temperature changes. Moreover, its quality improves over time. An important indicator for artificial and natural sweats is their properties such as resistance to deformation, resistance to tearing.

Many foreign economists have researched the furniture market and the factors involved in the decision-making process for the purchase of its products by consumers. In their research, they covered one or the other side of the problem. For example, Hungarian economist I.Hoffmann [1], K.J.Pakinilar [2] studied the behavior and purchase decision-making process of Hungarian furniture consumers in their scientific works and developed a decision-making process model. Later, K. J. Pakini and E. Bednarik [3] improved this model and highlighted the opinion of family members as an important factor influencing the purchase decision process of furniture consumers. Also, American economists C. Yon Yun and J. Yong Cholar proposed to study the behavior of consumers of furniture products and the process of making a purchase decision with the help of a computer program [4]. Russian economist Yu. Grebnikov made scientific and practical proposals and recommendations on the segmentation of the Russian furniture market in his research work [5].

Not only quality, but also design, price, brand, and after-sales services are not taken into account in the decision-making process of furniture products, it leads to a one-sided approach to the segmentation process. Based on the above, it is necessary to carry out research on the segmentation of the furniture market of our country, on the modeling of this process, taking into account the specific characteristics of the behavior of consumers of network products and the purchase decision-making process.

Published under an exclusive license by open access journals under Volume: 2 Issue: 10 in Oct-2022

Copyright (c) 2022 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY). To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

## II. METHODOLOGY

Currently, the leather used for furniture products in Uzbekistan is almost always imported from foreign countries, which has led to an increase in the price of leather. Therefore, 3 different types of leather fabrics were brought from the leather production center "HAMKOR NUR" and their physical and mechanical parameters were determined at the joint venture "Uzbek-Turkish Test Center" LLC.

The conditions of the experimental work were carried out in accordance with the GOST ISO 18454-2011 standard [6].

Quality indicators of leather intended for furniture products GOST 938.1-67 [7], GOST 938.2-67 [8], GOST 938.3-77 [9], GOST 938.5-68 [10], GOST 938.15-70 [11], GOST 938.11-69 was determined according to the standards of [12].

The results of the conducted research are presented in Table 1.

Table 1. Characteristics of leathers used in the furniture industry of various assortments

т/р	Indicators	Parameter indicators of different samples		
		1	2	3
1.	Mass fraction of moisture,%	10,2	9,1	13,2
2.	Mass fraction of chromium oxide,%	4,2	4,2	3,6
3.	Mass fraction of substances extracted with organic solvents,%	6,9	5,6	6,2
4.	Mass fraction of ash,%	7,5	6,8	7,2
5.	Leather thickness,mm	1,56	1,53	1,22
6.	Range of Tensile Tensile Strength of Leather, 10 MPa	1,9	1,8	1,6
7.	Elongation in tension, 10 MPa	43,7	29,4	39,3
8.	Breaking strength, N	297,7	281,1	198,1

Based on the results of the conducted research, graphs of changes in the properties of leather used in the furniture industry of various assortments are presented in Figures 1-4.

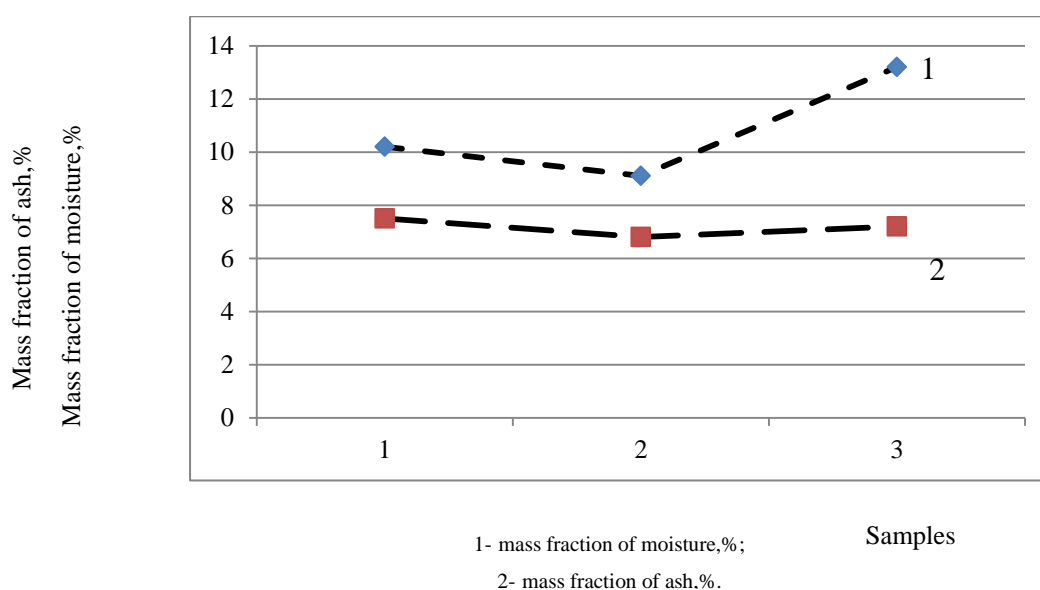
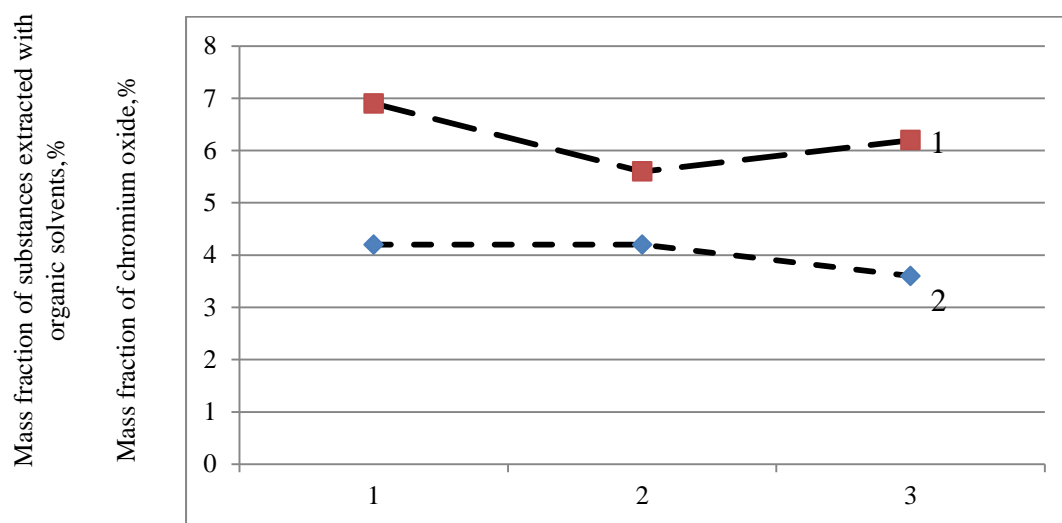


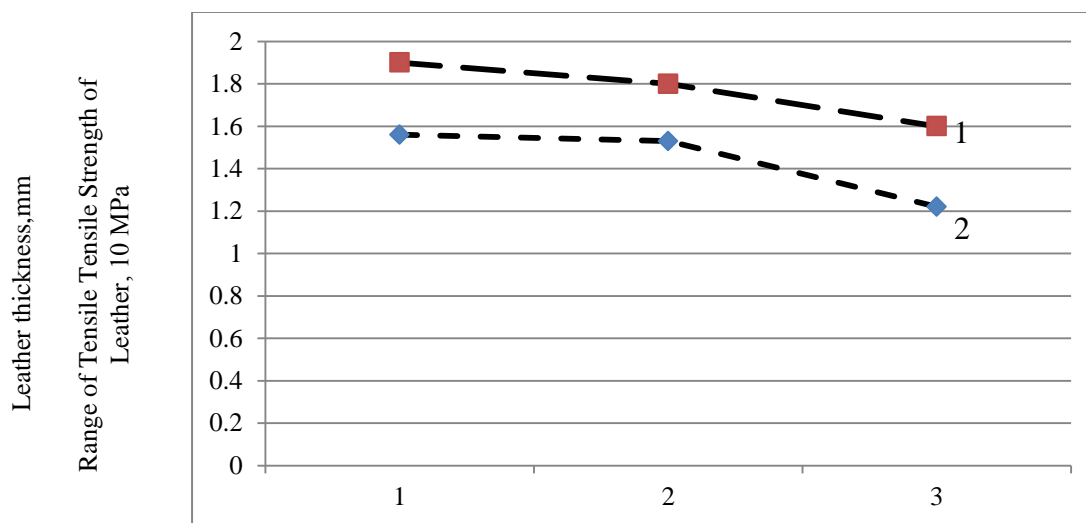
Figure 1. Changes in the mass fraction of moisture and ash content of leathers used in the furniture industry of different assortments.



1- mass fraction of chromium oxide, %; Samples

2- mass fraction of substances extracted with organic solvents, %.

Figure 2. Changes in the mass percentage of chromium oxide and organic solvent-extractable leathers used in the furniture industry of different assortments.



Samples

1- the thickness of the leather, mm;

2- range of tensile breaking strength of leather, 10 MPa.

Figure 3. Variation in thickness and tensile strength range of leathers used in the furniture industry for different ranges.

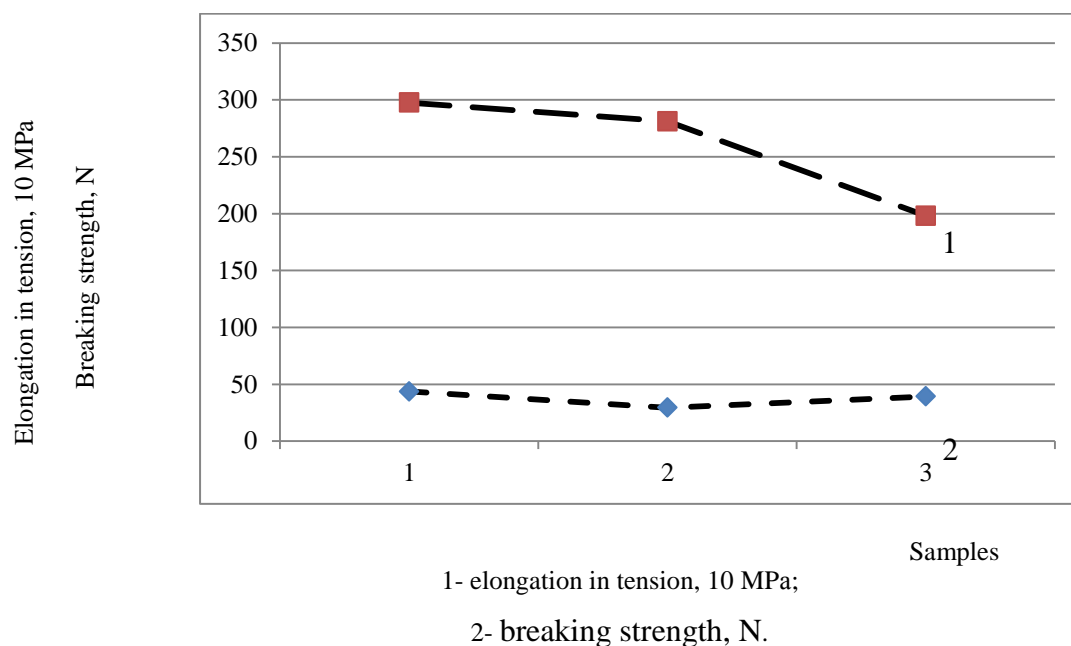


Figure 4. Variation of the range of tensile elongation and tensile strength of leathers used in the furniture industry of different assortments.

### III. RESULTS AND DISCUSSION

When we compare the results of the conducted research with the indicators of sample 1, the mass fraction of moisture in sample 2 decreased by 10.8%, the mass fraction of chromium oxide did not change, the mass fraction of substances extracted with organic solvents by 18.8%, and the mass fraction of ash by 9.3% , the thickness of the leather decreased by 1.9%, the range of the tensile breaking strength of the leather decreased by 5.3%, the elongation in tension decreased by 32.8%, the tensile strength decreased by 5.6%, and the mass fraction of moisture in sample 3 increased by 22.7% , the mass fraction of chromium oxide is 14.3%, the mass fraction of substances extracted with organic solvents is 10.1%, the mass fraction of ash is 4.0%, the thickness of the leather is 21.8%, the range of the tensile strength of the leather is 15.8 % , the tensile elongation decreased by 10.1% and the tensile strength decreased by 33.5%.

### IV. CONCLUSION

In summary, compared to the indicators of sample 1, the mass fraction of chromium oxide of the remaining samples is 14.3%, the mass fraction of substances extracted with organic solvents is from 10.1% to 18.8%, the mass fraction of ash is from 4.0% to 9, up to 3%, the thickness of the leather is from 1.9% to 21.8%, the range of the tensile breaking strength of the leather is from 5.3% to 15.8%, the elongation in tension is from 10.1% to 32.8%, the breaking strength is 5, It was found that it decreased from 6% to 33.5%.

### REFERENCES

1. Hoffmann I.-The model of Hungarian households. KJK, Budapest, 1977.
2. Pakainé Kováts, J. Consumer behaviour in the furniture industry branch. Dissertation, Sopron. Vol. 210, 1997.

3. Bednarik E, Kovats J.P. Consumer Behaviour Model on the Furniture Market. Department of Entrepreneurship and Marketing, Faculty of Wood Sciences, University of West Hungary, Sopron, Hungary. *Acta Silv. Lign. Hung.*, Vol. 6 ,75– 88, 2010.
4. Yoon So-Yeon, Young Ji. Understanding Furniture Decision Making Process and Design Preference using Web-Based VR Technology, University of Missouri, *Columbia International Journal of Human-Computer Interaction*, 24(3), 2008.
5. Ю.Гребников. Совершенствование управления мебельным предприятием на основе развития службы маркетинга диссертация к.э.н. . –Москва, 2000. - 166 стр.
6. ГОСТ ISO 18454-2011. Обувь. Стандартные атмосферные условия для проведения кондиционирования и испытаний обуви и деталей обуви.
7. ГОСТ 938.1-67. Кожа. Метод определения содержания влаги.
8. ГОСТ 938.2-67. Кожа. Метод определения содержания золы.
9. ГОСТ 938.3-77. Кожа. Метод определения содержания окиси хрома.
10. ГОСТ 938.5-68. Кожа. Метод определения содержания веществ, экстрагируемых органическими растворителями.
11. ГОСТ 938.15-70. Кожа. Метод определения толщины образцов и толщины кож в стандартной точке.
12. ГОСТ 938.11-69. Кожа. Метод испытания на растяжение.