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## DESIGN OF MODERN WOMEN'S CLOTHES WITH EMBROIDERY IN THE SCANDINAVIAN STYLE TAKING INTO ACCOUNT CONSUMER PROPERTIES

**Purpose.** Development of options for the design of women's clothing with embroidery in the Scandinavian style and determine their impact on the durability and comfort of clothing.

**Keywords:** embroidery, Scandinavian style, overalls.

**Objectives.** Ethnic style has recently gained special popularity, and organically combined with ecological fashion. It is fashionable to now return to the origins, to the past, to know and understand one's history and origins. Ethnic clothing has absorbed the heritage of our forefathers. It can tell a lot, and if necessary, to protect, if you understand its language and signs. In some periods, the traditions of certain regions and countries of the world become more topical. Embroidery is a traditional type of ethnic clothing decoration. Applying embroidery, hand or machine, changes the consumer properties of the product as a whole, as it is associated with the mechanical destruction of the structure of the material, its thickening, and others. Understanding these changes will allow you to rationally use embroidered items in clothing. On the other hand, given the rich information base of embroidered ornaments, the study of energy and information impact of hand and machine embroidery for the consumer is so interesting.

**Methodology.** The paper combines theoretical, analytical and experimental research methods.

**Research results.** First of all, the modern Scandinavian style in clothing is represented by jacquard knitwear with traditional patterns like Christmas trees, snowflakes and deers. A deeper study of the history of the development of Scandinavian ornament points to its ancient origins, associated with the runic script, dating back to the first century of AD. In the course of the work, the main symbols that fill the traditional Scandinavian ornament were identified, and their interpretation was established. Variants of color combination were learned. The transformation of traditional elements in modern ornament was traced. On the basis of the conducted researches was developed the ornament for trimming the women's semi-overalls which was further put on a linen cloth by machine and the manual embroidery for definition of the consumer properties.

Based on the analysis of operating conditions, the indicators of consumer properties of embroidered clothing were selected: resistance to friction in the plane (F, cycles); breaking load, (B, H); elongation at the time of rupture (E, mm); resistance to wet treatments [1]. As we can see from the results of research, the application of embroidery significantly reduces the resistance to friction, especially on the reverse side. The amount of breaking load also decreases, especially in the case of machine embroidery. The elongation at the time of rupture varies within the confidence interval.

**Table 1 – Characteristics of consumer properties of embroidered clothing**

Sample	Consumer properties indexes		
	F, cycles	B, H	E, mm
Home-woven flax	6000	468	44
Home-woven linen with machine embroidery	800	430	46
Home-woven linen with hand embroidery	1200	456	42

A comparison of the results of studies of the body's response to linen and embroidery allows us to state that the maximum number of positive changes in the body's energy efficiency was observed during contact with a sample of home-woven linen with hand embroidery.

**Conclusion.** Studies have shown that, despite the complexity of realization, hand embroidery provides better consumer testimonials and comfort. Based on the obtained data, a women's jumpsuit with a rational arrangement of hand-embroidered decorations in the Scandinavian style was designed.

### References

1. ГОСТ 15968-2014 Pure linen, linen and semi-linen fabrics for clothes. General specifications / Date of introduction 2016-01-01. [Electronic resource] - Access mode to the resource: <https://docs.cntd.ru/document/1200118284>