eISSN: 2229-3213 pISSN: 2229-3205
The Journal of Applied Science and Social Science
Volume 16,Issue 02 February, 2026

INITIAL REQUIREMENTS FOR THE QUALITY OF SPECIAL CLOTHING FOR WOMEN MILITARY PERSONNEL

Tomilin D. V.
Tashkent Institute of Textile and Light Industry
Lecturer, Department of Fashion and Design
Abdurakhmanova N. D.
Tashkent Institute of Textile and Light Industry
Senior Lecturer, Department of Fashion and Design

Annotation

This article analyzes the initial requirements for the quality of special clothing intended for women military personnel. Particular attention is paid to the formation of quality indicators based on the functional, hygienic, aesthetic, and ergonomic characteristics of the clothing. In addition, the service conditions, physical activity, and climatic factors of women military personnel are considered as important factors influencing clothing quality. The research results have practical significance for the design and production stages of military clothing.

Keywords

women military personnel, clothing, special clothing, quality requirements, ergonomics, functionality, hygiene, design.

HARBIY XIZMATCHI AYOLLARNING MAXSUS KIYIM SIFATIGA QO‘YILADIGAN DASTLABKI TALABLAR

Annotatsiya

Ushbu maqolada harbiy xizmatchi ayollar uchun mo‘ljallangan maxsus kiyimlarning sifatiga qo‘yiladigan dastlabki talablar tahlil qilinadi. Maqolada kiyimning funksional, gigiyenik, estetik va ergonomik xususiyatlari asosida sifat ko‘rsatkichlarini shakllantirishga e’tibor qaratilgan. Shuningdek, ayol harbiy xizmatchilarning xizmat sharoitlari, harakat faoliyati va iqlim omillari kiyim sifatiga ta’sir etuvchi muhim omillar sifatida ko‘rib chiqiladi. Tadqiqot natijalari harbiy kiyim dizayni va ishlab chiqarish bosqichlarida amaliy ahamiyat kasb etadi.

Kalit so‘zlar

harbiy xizmatchi ayollar, kiyim-kechak, maxsus kiyim, sifat talablari, ergonomika, funksionallik, gigiyena, dizayn.

ПЕРВОНАЧАЛЬНЫЕ ТРЕБОВАНИЯ К КАЧЕСТВУ СПЕЦИАЛЬНОЙ ОДЕЖДЫ ЖЕНЩИН-ВОЕННОСЛУЖАЩИХ

Аннотация

В данной статье анализируются первоначальные требования, предъявляемые к качеству специальной одежды, предназначенной для женщин-военнослужащих. Основное внимание уделяется формированию показателей качества одежды на основе её функциональных, гигиенических, эстетических и эргономических характеристик. Также рассматриваются условия службы, двигательная активность и климатические факторы женщин-военнослужащих как важные факторы, влияющие на качество одежды. Результаты исследования имеют практическое значение на этапах проектирования и производства военной одежды.

Ключевые слова

женщины-военнослужащие, одежда, специальная одежда, требования к качеству, эргономика, функциональность, гигиена, дизайн.

The modern development of military clothing is impossible without clearly defining the initial requirements for its quality. This is particularly important in the context of creating national uniform models that take into account the specific social, climatic, and demographic characteristics of the state. In the Republic of Uzbekistan, where the modernization of the army and the active increase in the number of women in the Armed Forces are underway, this issue is of particular significance.

Women military personnel often experience discomfort when wearing standard unisex uniforms that do not take into account the specific anthropometric and physiological characteristics of the female body. This leads to a reduction in the functional performance of clothing, deterioration of physical condition, increased fatigue, and an overall decline in motivation for service.

Historically, military uniforms were primarily designed for men, and women involved in military structures used adapted models of men's clothing that did not provide an adequate level of comfort or freedom of movement. Modern conditions require not merely minor adjustments to existing solutions, but the scientifically grounded development of special standards for women military personnel's clothing based on ergonomic analysis, experimental data, and regulatory requirements. The main evaluation criteria include hygienic, ergonomic, aesthetic, and operational reliability characteristics, which must be considered in an integrated manner to ensure the durability, comfort, and functionality of uniforms during long-term and intensive use under various climatic and operational conditions.

In the regulatory framework of Uzbekistan (UzDSt, GOST), the main quality indicators are defined, including tensile strength, abrasion resistance, air permeability, hygroscopicity, and heat resistance. However, these standards do not include differentiation by gender, which limits their applicability in the design of women's clothing. In this regard, there is a need to уточнить (refine) the standards while taking into account the specific characteristics of the female body shape, as well as the sharply continental climatic conditions of the republic [1].

The hygienic properties of clothing for women military personnel are of primary importance under the contrasting climatic conditions of the Republic of Uzbekistan. The female body has specific physiological characteristics, including increased perspiration and greater sensitivity to temperature changes. This, in turn, requires the use of special fabrics capable of maintaining a stable microclimate. From this perspective, parameters such as air permeability, hygroscopicity, thermoregulation capacity, and antibacterial protection are of particular importance.

Air permeability allows the body to breathe and prevents overheating during physical activity. This property is especially important at high temperatures typical of the southern and desert regions of Uzbekistan. According to N. K. Khamrayeva, fabrics with high air permeability help maintain thermal comfort and reduce physiological strain that occurs under intensive physical loads [2].

Hygroscopicity ensures effective absorption and release of moisture from the body, preventing chilling and the development of fungal skin diseases. When air temperature decreases, damp clothing—especially during prolonged outdoor exposure—can become a risk factor for colds. Therefore, the hygienic properties of fabrics are directly related to maintaining the health of military personnel.

Thermoregulation is a set of clothing properties that ensure the maintenance of optimal body temperature under various climatic conditions. For women's uniforms, it is particularly important to take into account not only seasonal temperature variations but also daily fluctuations, as well as the level of physical activity. Effective thermoregulation helps prevent

both overheating and hypothermia, which directly affects the performance and psychological well-being of military personnel [3].

Finally, modern fabrics with advanced hygienic requirements include antibacterial and antifungal treatments. These measures are especially relevant when uniforms are worn for extended periods without the possibility of frequent replacement or laundering, such as during long-term field operations. The use of special finishes and fibers (for example, silver ions) helps maintain hygienic safety, which is of strategic importance in military conditions.

The ergonomics of military clothing implies its conformity to the female body structure, freedom of movement, and the reduction of physical discomfort. This is especially important during long marches, drill training, physical exercises, and combat training conditions. The female silhouette differs from the male silhouette not only in proportions but also in movement dynamics, which must be taken into account in garment construction.

A key element of ergonomics is the proper fit of the garment to the human body. To reflect the female body shape, the design requires bust darts, waist shaping, and increased ease in the hip circumference area. The absence of such elements leads to the formation of excess folds, skin friction, and restricted movement. According to E. V. Bakhtina, proper garment construction not only enhances comfort but also reduces fatigue during prolonged wear [4].

In addition to structural features, fabric selection also plays an important role. Fabrics should be not only lightweight and durable but also possess a certain degree of elasticity, allowing free movement without deformation. Modern materials, such as textiles blended with spandex, provide dense yet non-restrictive comfort by adapting to various body positions.

The system of adjustments and the possibility of adapting the garment to individual parameters are also an important component of ergonomic requirements. For example, the presence of drawstrings, fasteners, elastic waistbands, and adjustable straps makes it possible to tailor the garment to the specific body characteristics of a particular servicewoman. This is especially relevant under conditions of abrupt changes, such as the transition from the summer season to the winter season with the use of insulating layers.

In addition to physical comfort, the ergonomics of a uniform also affects psychological perception. When a woman feels free and confident, her level of activity, confidence in movement, and discipline increases. Studies by Ye. Ya. Surzhenko confirm that ergonomically validated garment construction reduces stress load and improves the accuracy and efficiency of movements when performing various tasks [5].

The aesthetic parameters of military clothing are no less important than functional ones. The uniform performs a symbolic and representational function, indicating affiliation with the army, branch of service, and national identity. The appearance of the uniform must comply with standards of discipline, neatness, and state symbolism.

For women, the aesthetics of the uniform has even deeper significance, as it affects self-perception, self-confidence, and psychological well-being. A tailored military uniform that emphasizes the advantages of the figure and conceals possible imperfections helps form a positive image of both the servicewoman and the armed forces as a whole. This is especially important in contexts of public visibility, women's participation in parades and public events, and interaction with civilians.

Proportional harmony and precision of tailoring are also part of military discipline. Inaccurate sizing, excessive looseness, uneven construction, and the use of unnecessary decorative elements are unacceptable. Military aesthetics are based primarily on strictness, order, and compliance with regulations, while allowing certain options for women's adaptation that do not violate uniformity.

According to N. K. Khamrayeva, the visual characteristics of clothing can have a positive impact on the combat morale and moral-psychological stability of military personnel. An outwardly attractive and modern uniform contributes to the growth of professional self-esteem,

increases the level of identification with the military structure, and reduces the feeling of alienation experienced by women in a predominantly male environment [1].

Hygroscopicity ensures effective absorption and release of moisture from the body, preventing excessive cooling and the development of fungal skin diseases. When air temperature decreases, damp clothing—especially during prolonged outdoor exposure—can become a risk factor for colds. Therefore, the hygienic properties of fabrics are directly related to maintaining the health of military personnel.

The ergonomics of military uniforms ensures that they conform to the female body structure, allow freedom of movement, and reduce physical discomfort. This is especially important during long marches, field exercises, physical training, and combat readiness activities. The female silhouette differs from the male silhouette not only in proportions but also in movement dynamics, which must be taken into account in uniform design.

A key element of ergonomics is the proper fit of the garment. The female figure requires bust shaping, waist tapering, and hip expansion. The absence of such elements can lead to excess folds, skin irritation, and restricted movement. According to E. V. Bakhitova, proper tailoring not only enhances comfort but also reduces fatigue during prolonged wear [26].

In addition to the constructive features of the uniform, fabric selection plays an important role. Fabrics should not only be lightweight and durable but also possess a certain elasticity that allows free movement without deformation. Modern materials, such as textiles blended with spandex, provide a form-fitting coverage that adapts to body movements without restricting them, ensuring both comfort and functional flexibility.

The adjustment system and the ability to tailor the garment according to individual parameters are an important component of ergonomic requirements. For example, the presence of Velcro straps, elastic waistbands, and adjustable fasteners allows the uniform to be adapted to the silhouette of a particular servicewoman. This is especially relevant under conditions of abrupt changes, such as transitioning from summer to winter uniforms and ensuring adequate thermal insulation.

Beyond physical comfort, the ergonomics of the uniform also affects psychological perception. Women who feel free and confident in their uniforms demonstrate higher engagement, confidence in their movements, and discipline. Research conducted by E. Ya. Surzhenko shows that an ergonomically well-designed cut reduces stress load and improves the accuracy and efficiency of movements when performing various tasks [5].

In military uniforms, aesthetic parameters are as important as functional ones. The uniform performs a symbolic and representative function, indicating affiliation with the army, branch of service, and national identity. Its appearance must comply with standards of discipline, order, and state symbolism.

For women, the aesthetics of the uniform has even greater significance, as it influences self-perception, self-confidence, and psychological well-being. A tailored uniform that emphasizes the advantages of the female figure and conceals potential imperfections helps shape a positive image not only of the servicewoman herself but also of the armed forces as a whole. This is especially important in contexts of public visibility, such as women's participation in parades, open events, and interaction with civilians.

REFERENCES

1. GOST and UzDSt – National Standardization System of Uzbekistan. URL: https://en.wikipedia.org/wiki/GOST

2. Khamrayeva N. K. *Development of a Method for Assessing the Hygienic Properties of Summer Clothing Materials for Hot Climate Conditions.* Ph.D. thesis in Technical Sciences: 05.19.01 / N. K. Khamrayeva – Tashkent, 1985. – 158 p.

3. Gafurova N. T. *Development and Study of Fabric Structure Parameters for Special-Purpose Clothing.* Ph.D. thesis in Technical Sciences: 05.19.01 / N. T. Gafurova – Tashkent, 1999. – 150 p.

4. Bakhtina E. Yu. *Development of Insulated Clothing with Improved Ergonomic Parameters for Women Military Personnel.* Ph.D. thesis in Technical Sciences: 05.19.04 / E. Yu. Bakhtina – St. Petersburg, 2000. – 155 p.: ill.

5. Surzhenko E. Ya. *Theoretical Foundations and Methodological Support for Ergonomic Design of Special Clothing.* Doctoral thesis in Technical Sciences: 05.19.04 / E. Ya. Surzhenko – St. Petersburg, 2001. – 416 p.