



THE GOALS OF CREATING AN ELECTRICALLY CONDUCTIVE FABRIC AND STUDYING ITS PROPERTIES

Sheralieva Risolat Islom qizi

doctoral student

Namangan Engineering and Technology Institute

tel:+998 93 101 55 37

Akbarov Chingiz Adhamjonovich

Namangan Engineering Construction Institute

chingizakbarov90@gmail.com

R.Uz., Namangan region, Namangan city

Abstract: This article describes the results of laboratory research work on the creation of an electrically conductive fabric, reveals the need and purpose of creating this kind of fabric

Key words: Safety, electromagnetic field, radiation, electrically conductive threads, electrically conductive fabrics, special clothing, protective functions of protective clothing, laboratory tests, test results

The creation of new types of high-quality and competitive clothing, including the creation of special clothing that meets hygienic, ergonomic, operational and aesthetic requirements, the creation of a rational design while ensuring its reliability, the development of optimal technological parameters, the increase in the types of special clothing and the improvement of quality indicators are relevant scientific activities. - is one of the practical issues.

In fact, electrically conductive fabrics were used for sewing covers for equipment, to reflect electromagnetic radiation with this fabric, that is, it is a screen that reflects electromagnetic rays.

But after all, such technology can become an excellent protection for a person when working in an electromagnetic environment. To understand the full scale of the importance of protecting a person from the effects of electromagnetic waves, consider its impact on the human body.

Electromagnetic radiation occurs due to the radiation of energy from any sources of electric currents (industrial high- frequency generators, generators of television and radar stations, X-ray installations and other sources).

Electromagnetic waves lead to adverse changes in the body, accompanied by:

- depression of the central nervous system (slow reaction, memory impairment, depression of varying severity, irritability, irritability, sleep disturbances, insomnia, mood swings, dizziness, weakness)
- in the cardiovascular system (decrease in heart rate, changes in the ECG, blood pressure),

▪ violation of the morphological composition of the blood (decrease in the number of leukocytes, reticulocytes, acidophilic granulocytes), which is accompanied by violations of the functional state of the endocrine system, metabolic processes, degenerative processes in the tissues of the brain, liver, spleen, testicles.

From the above list of the effects of electromagnetic waves on the human body, it can be seen that people working in the electrical field not only need, but need to protect themselves from their effects.

Therefore, this is one of the most urgent problems of the textile industry, the creation of protective clothing for workers in the electrical and energy sectors.

The fabric obtained on the basis of theoretical and practical research has the form in Figure 1.

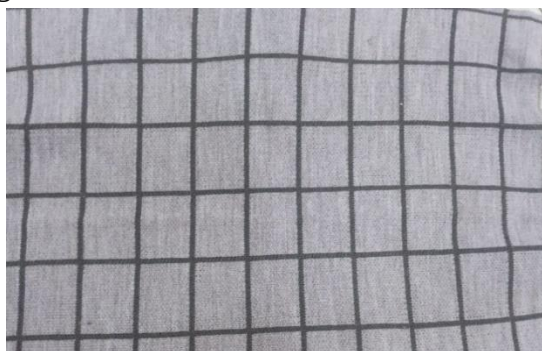


fig.1. Developed prototype of electrically conductive fabric

In this fabric, the effectiveness of electromagnetic shielding arises due to the fact that the fabric is a grid of metal-containing (conductive) threads, and the metal mesh, as you know, is effective in shielding electromagnetic radiation (Electrodynamics of mesh structures. M.I. Kontorovich, M.I. Astrakhan, V.P. Akimov and others / Under the editorship of M.I. Kontorovich ... - M.: Radio and communication, 1987).

The technical problem to be solved by the claimed invention is to expand the range of possibilities by developing fabrics that reduce the intensity of external electromagnetic radiation while maintaining sewing and consumer properties.

The technical result is to improve the sewing and consumer properties of the conductive shielding fabric.

The early developed conductive fabrics for sewing covers for devices and devices were very inconvenient for high-quality tailoring, because they were not intended for sewing clothes at all, so we had another task to create high-quality fabric designed specifically for sewing clothes, so several types were developed fabrics.

These prototypes differ from each other in that the pattern of this fabric is created from the interweaving of ordinary threads and threads with conductive metal. That is, the light part of the fabric consists of an ordinary knitted thread, and the dark threads are the very conductive threads that contain metal.

It was assumed that a fabric with a large electric grid gap has a lower conductive function, while a fabric with a small gap, i.e. The fine mesh pattern has a large conductive function.

**Conclusion:**

The developed fabric makes it possible to reduce the radiation exposure of the electromagnetic field, thereby protecting a person from its effects. All laboratory studies and tests were carried out in the laboratory of the Namangan Institute of Engineering and Technology and the results obtained during the test are substantiated and recorded in the table.

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