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**ANALYSIS OF CONSTRUCTIVE AND TECHNOLOGICAL MEANS OF  
SPECIAL EQUIPMENT FOR ENSURING ERGONOMIC COMPATIBILITY  
AND OPERATIONAL CONDITIONS**

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**Abstract.** An analysis of design and technological tools was conducted to ensure ergonomic compatibility of construction special clothing with operating conditions, in addition, knee pads and additional hanging pockets were proposed in a set of special clothing.

The shape of the surface of the clothing parts does not correspond to the size of the human body in dynamics, which leads to the appearance of areas of tension or deformation manifests itself in the change or limitation of movements in the materials of its parts. In this regard, the main task is to choose design tools and parameters for eliminating or minimizing the presence of defects.

Depending on the purpose of the clothing used, a set of parts, additional elements are selected. Special clothing uses parts that are not found in other clothing, structural and technological means to ensure dynamic compatibility, which ensures its comfort, high level of protection, and protection from a number of other harmful influences [1]. Additional protective devices and parts used in special clothing have a significant impact on protection against wind and cold, heat, oil, water, dust particles, mechanical impacts and other factors affecting human health, increasing the level of

protection of the special clothing, increasing the additional possibilities of using the clothing.

Ensuring the dynamic conformity of the clothing design to its operating conditions is one of the pressing tasks in the design of special clothing.

Today, the special clothing produced and used today has a high level of protection, and the appearance is made taking into account the modern requirements of fashion, which testifies to the rapid development of work in this area. The clothing produced fully meets the aesthetic requirements and becomes popular not only during working hours, but also as a household item. From the details used in special clothing, protective devices, labels on it, it is possible to know for what profession the clothing is intended.

Particular attention is paid to the process of making special clothing for construction and installation workers suitable for the hot climate of Uzbekistan, which should have a good internal air exchange process, prevent perspiration, keep the heat released by the human body and the heat that affects the environment evenly. Due to the low hygienic properties of existing blended fabrics, it is advisable to use structural and transformational elements in creating ergonomically comfortable clothing [2].

Currently, transformation elements are widely used in special clothing. Taking into account the hot climate of Uzbekistan, special clothing should provide thermoregulation to protect the human body from high temperature and the harmful effects of solar radiation. In such models of clothing used in the cover of jewelry, it is required not to have unnecessary details. The fittings used should be sufficiently extended around the outside so that the underwear does not stick to the coin and does not disturb the air exchange system. It is advisable to use ventilation holes as an additional means of protection for this type of drainage. These means have the form of holes or rings, are covered by lightning, and perform the function of temperature control [3].

The clothing technology for workers working in an environment with a high level of mechanical influences, general industrial contamination, toxic and non-toxic dust, is unique, with special requirements for materials, equipment used in the sewing process, parts, and fittings. When the clothing is mechanically exposed, there should be no material breaking without damaging the person, or between the holes and the connecting threads left by the needle during the seams, there should be no gaps in the joints of the seams. In order for the harmful toxic dust not to damage the human body, not to penetrate the clothing, it is necessary to use special cuffs, so that in the places where the parts are connected, at the end of the sleeve and sleeve, in the neck part of the clothing, in the lower part of the trousers, there are no free places as much as possible, so that they are attached to the body [4].

When ensuring the required ergonomicity of workwear, it is not advisable to use existing unified basic designs for the design of workwear for workers in all industries, including construction and installation workers, as these designs do not allow for the consideration of the specifics of work actions of construction workers.

Strengthening protection for builders leads to increased self-confidence.

Although the design methods proposed for the production of workwear are ergonomically improved in accordance with working conditions, they cannot adequately protect the worker from possible injuries and accidents. At the same time, it is advisable to use protective equipment in addition to special clothing [5].

In addition, when choosing protective equipment, it is important to determine the type of labor activity, the purpose of the special clothing, and the factors that are dangerous to the employee.

In the following set of special clothing offered to construction and installation workers, color reflector band, knee pads and overalls were chosen (Рис. 3.2). Color-reflective band - This type of decoration has proven its practicality and expediency, as it ensures the safety of the worker in the dark, in dust, or at high altitude, and at the same time makes the outfit more vivid and attractive. The knee pad not only protects the worker from joint tension during falling or kneeling, but also helps prevent

injuries from sharp objects on the ground. Hanging pockets are made separately from clothing, attached to special clothing using a belt, and are used to store equipment.

On the upper side of the front of the trousers, there are cover pockets. A knee bandage is placed in the knee area. Seams were sewn along the edges of the frame for free performance of work.

A light-reflecting ribbon is applied to the upper side of the beam. There is a cover pocket on the left side of the back. On the left side, above the knee-line, there is a two-layered cover pocket with a lid on the side. The bottom cover of the pocket is sewn into the side of the trouser lid and secured with pistons.

The lid of the upper cover pocket is sewn against the upper cover pocket and secured with the help of pistons. The upper part is secured by a belt with six belts. The belt is worn on one arm and button. The belt holders have clamps to hold the removable pocket.

The removable pocket consists of three floors. The upper part of the bottom floor of the pocket is secured by clamps.

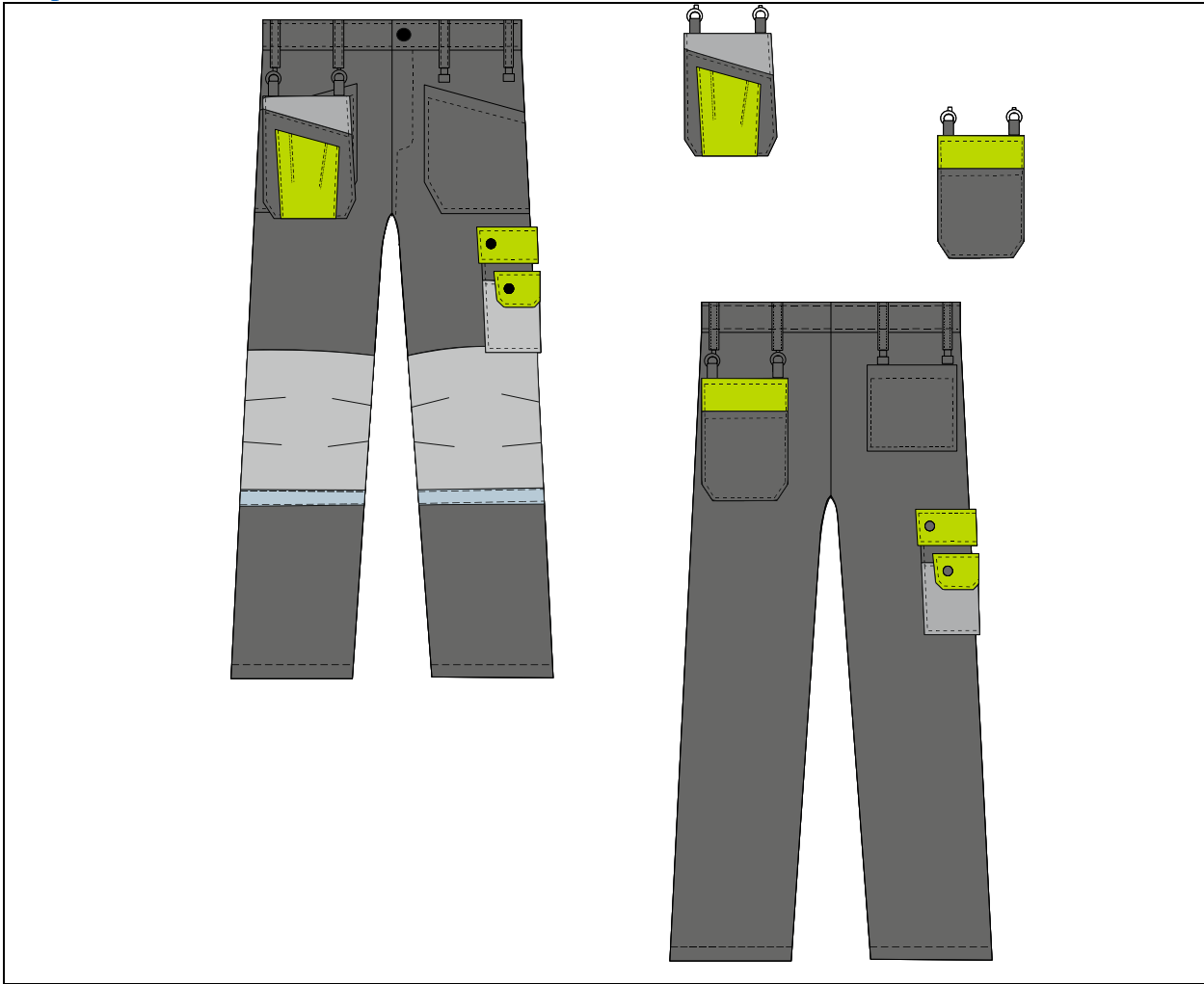


Figure 3.2. Additional safeguards for builders and installers.

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