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CURRENT TENDENCIES OF CREATING GLASSES FOR POLICE AND MILITARY SERVICES

Research article is devoted to the issue of creation of the protection of organ of vision of servicemen, police officers and other employees of the central executive bodies, whose activities are directed and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Internal Affairs, in particular tactical and ballistic glasses and masks.

Tactical-technical and qualitative characteristics of modern samples of tactical and ballistic safety glasses and masks, physical-mechanical and technical characteristics of the materials which are used and can be used for the manufacture of lenses of glasses and masks, as well as the structural features of their frames, are analyzed.

For this purpose, in particular, a comparative assessment of the main characteristics of such polymer composite materials as: polymethyl methacrylate, polyacrylate, polyethyl methacrylate, copolymer of methyl methacrylate with acrylonitrile, polycarbonate, polydiethylene glycol-bis- (allyl carbonate) was carried out.

On the basis of the complex of physical-mechanical and operational characteristics for the manufacture of lenses of protective tactical and ballistic glasses and masks, it is expedient, according to the authors, to use a polycarbonate composition. Attention is drawn to the fact that this polymer composition has high levels of protection against shock loads. At the same time, the refractive index, the reflection and absorption of light, the dispersion, the scattering of light in the polycarbonate composition will provide the required level of visibility, which is an important indicator of the operation of the finished product.

In turn, it is advisable to use a thermal rubber or opaque polycarbonate composition to make the frames of these protective means.

It is concluded that the key criteria by which the functional qualities of these protective devices can be evaluated are the material from which the lenses and eyeglass frames and their manufacturing technologies are made, resistance to shock loads; structural and ergonomic features, ability to offset the effect of laser radiation in the required wavelength range; availability of a sufficient set of lenses for various purposes, in particular for use in terrain with different light levels; DX coating for protection against fogging, scratches, static electricity and chemical attack, high ergonomic performance and more.

Keywords: tactical and ballistic protective glasses and masks, lenses, polycarbonate, optical indexes, lazer radiation.

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