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TECHNICAL CHARACTERISTICS AND DESIGN FEATURES OF DISPOSABLE HANDCAFFS

A comparative analysis of disposable handcuffs in service with law enforcement agencies around the world has been conducted. The technical characteristics of disposable handcuffs are analyzed and the criteria by which they can be classified are proposed, namely, the number of created loops, the material of manufacture, and the way of wearing them.

The article deals with historical aspects of handcuffs. The analysis of technical characteristics and design features of handcuffs of disposable use of foreign production is carried out, taking into account which criteria of classification of

disposable handcuffs are offered. The key criteria by which they can be evaluated are defined: the number of created cycles – single cycles, double cycles; manufacturing material – textiles, plastic, metal; method of transportation – compactly folded into a case, not composed and not adapted to the elements of clothing or equipment.

The main advantages and disadvantages of metal and disposable plastic and textile handcuffs are highlighted. Considerable attention is paid to the choice of material for the manufacture of plastic handcuffs for disposable use, for which different types of polymeric composite materials on their physical and mechanical properties are analyzed.

According to the results of this analysis, it was concluded that the properties of composite materials are mainly determined by the technological and operational characteristics of polymeric matrices. Attention is focused on the advanced positions of polyethylene among other polymeric materials due to the successful combination of physical and mechanical properties, ease of processing and relatively low cost. Besides, this polymeric material is processed by all known methods of processing. Depending on the polymerization method, the properties of polyethylene vary considerably, and therefore polyethylene is of different types: high pressure and low density polyethylene, low pressure and high density polyethylene, medium pressure polyethylene, linear polyethylene.

Based on the results of the study, it was suggested that disposable plastic handcuffs should be used by law enforcement officials to restrict the mobility of detained offenders under current legislation. The technical characteristics of the most functional, according to the authors, disposable plastic handcuffs are also proposed.

Keywords: disposable handcuffs, active defense means, physical and mechanical properties, plastic handcuffs, tensile strength.

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