

TEXTILE MATERIALS USED IN MILITARY PROTECTIVE CLOTHES DESIGN

Sanja Risteski¹, Silvana Zhezhova¹, and Vineta Srebrenkoska¹
¹Faculty of Technology, University Goce Delchev – Shtip, R.Macedonia, Krste Misirkov 10-A, Shtip, sanja.spasova@ugd.edu.mk

Abstract

Protective clothing is used to achieve safety for people in professional and other surroundings. In the past people wore protective clothes with one purpose - to protect their body from attacks, but today the advanced soldier needs protective clothes with featuring design and higher level of protection. The process of designing advanced protective clothes is a lengthy process that is based on researching the currently existing models of the protective vests, and searching the needs of the soldiers for new model with contemporary design. Knowing the history of protective clothes, the new materials and featuring trends, is a step forward in the process of designing advanced model of protective military clothes which can fulfill all the requirements of the advanced soldiers.

The main aim of this work was to present the design of currently used protective vests in R. Macedonia with the main characteristics of the fabric covering material, and the need for a new design of protective clothes. The right selection of vest design means better protection and higher satisfaction of both, the wearer and the technologist.

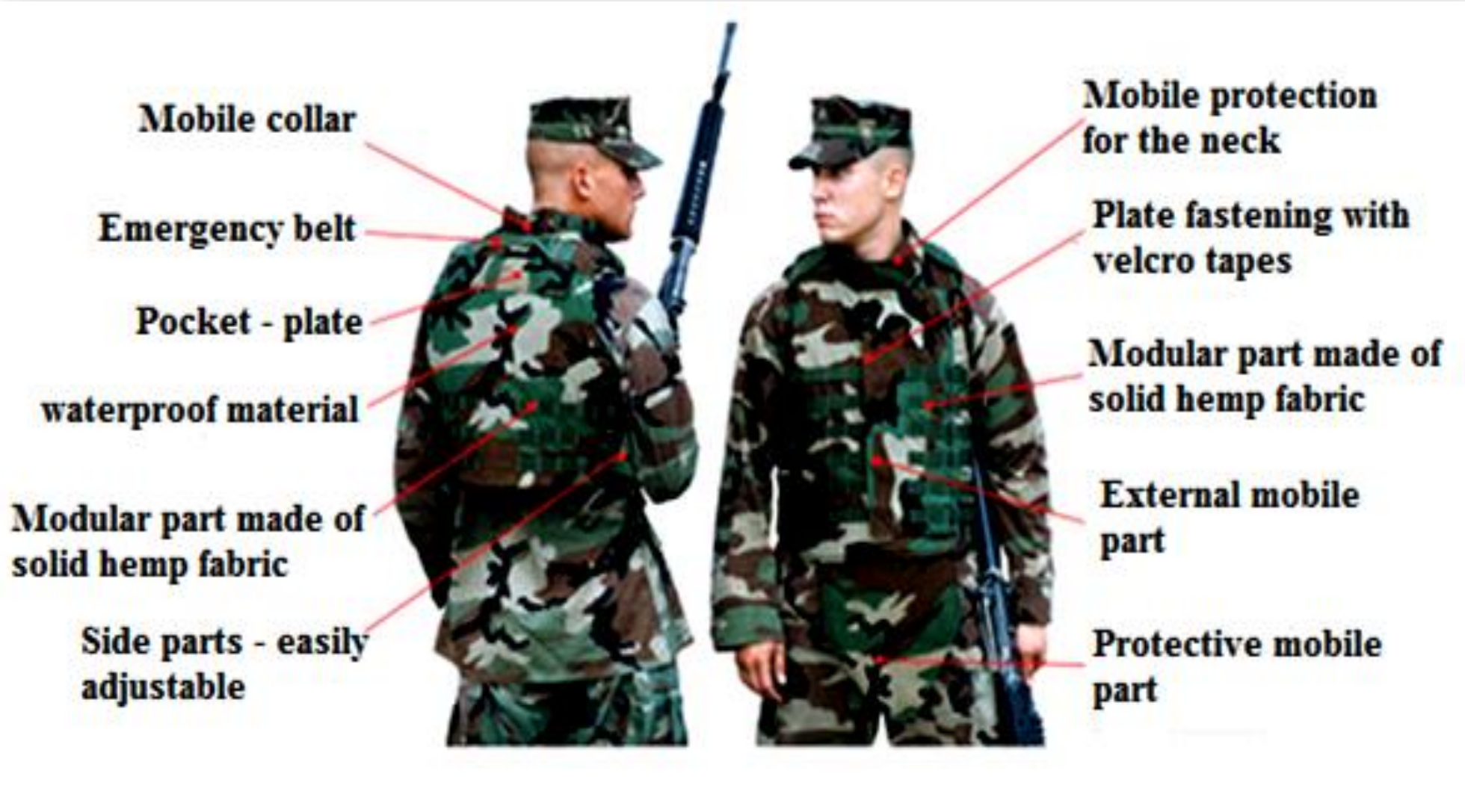
Experimental



Primary design demands in protective clothes



Appearance of protective clothing (vests) in R. Macedonia

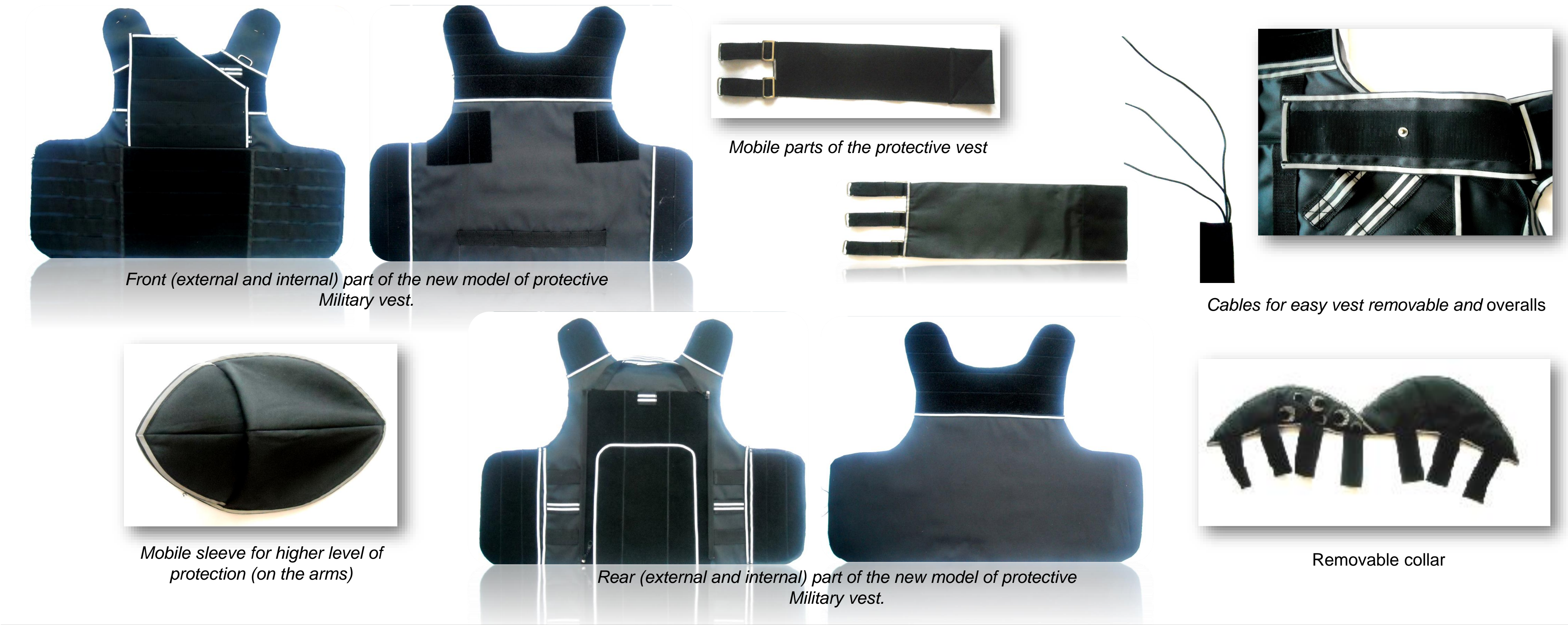


Protective clothes design demands

Fabric characteristic	Nylon, cotton	Kevlar®, Nomex® P-140	Cotton, Kevlar®, Nylon P-140
Flame resistance	No	Yes	Yes
Liquid chemical agent resistance	Yes	No	Yes
Electrostatic resistance	No	Yes	Yes
Day/night camouflage	Yes	Yes	Yes
Durability	Yes	Yes	Yes
Weight (g/m ²)	237	186	220

Fabric characteristics of mostly used fibers for military clothes design

Result and discussion



Conclusion

The new design of protective vest is a step forward in the process of designing advanced model of protective military clothes. This model of protective vest can fulfill all the requirements of the advanced soldiers. Design solution has the following advantages of protective clothing:

- More layers of the covering light wear materials.
- The vest is comfortable and easy to carry.
- Modular parts sewed with Velcro tape.
- Mobile collar and increased number of pockets for functional purposes.
- Cables for instantly removing from the body and hidden internal pockets for soft and hard ballistic protection.
- Made of advanced materials and futuristic look in line with functionality and high quality.