

### EXPECTED RESULTS:

Research on anti-vibration materials for hand protection and on testing methods for vibration isolation, fit, functional and ergonomic performance.

Design and testing of novel prototypes for gloves, which can provide substantial reductions in vibration and protects against risks in use with knives, metalsheets, and other types of sharp-edged objects, so effectively protects from injuries and diseases.

Design and production of new functional knitted socks/stockings/leggings with optimized and functionalized potential by using some specific technologies for textile processing.

Development of suitable test methods for testing special performances of the developed prototypes, validation and review of the test methods in inter-laboratory tests.

**DURATION:** 03.01.2017 - 03.01.2020

**MORE INFORMATION:** [www.protexsafe.hu/en](http://www.protexsafe.hu/en)



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## PROTEXSAFE

### FUNCTIONAL TEXTILES FOR VIBRATION PROTECTION, SAFETY AND WELL-BEING

#### DESCRIPTION

The project aims to develop novel textile products in order to improve several functional characteristics for different applications in vibration protection, health and well-being. The developed products will be optimized according to specific requirements, to enable the activity to be successfully carried out while maximizing protection and eliminating or minimising the risk.



#### BACKGROUND AND SIGNIFICANCE OF THE RESEARCH

Nowadays, what matters the most when wearing apparel is its functionality, whereas any aesthetic properties fall on the second place. In wearing apparel is today particularly functionality and not aesthetics that plays a large role. Functional technical textiles are the most competitive against the dumping Asiatic goods.

Especially challenging is to fulfil all requirements on the field of personal protective equipment (PPE), where special function should be combined with wearing comfort. PPE reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels.

The current size of the PPE market in the EU is estimated at 10 billion Euro, accounting for around 200 000 jobs. The forecasting experts suggest that EU exports of PPE could grow by about 50% in the next few years. This is a market with high potential that is targeted by the project implementation. There is a big demand for the development and testing of textile products for targeted level of safety, health and well-being.

Currently no adequate test is available for evaluating how does usage influences the level of protection, fit, comfort and ergonomics of the functional or protective textile products.

#### OBJECTIVES

The Hungarian partners concentrate on novel textile structures for new kind of anti-vibration knitted gloves and for functional textiles, suitable for protection against mechanical (sharp objects, blade cut) and occupational diseases risks. Tests will be carried out to compare their performances. The aim is to achieve optimal protection and handling characteristics so that in the foreseeable conditions of use, the user can perform the hazard related activity normally while enjoying appropriate protection at the highest possible level.

The Romanian partners focus on developing knitted products for assuring and maintaining the wearer's health, preventing occupational diseases and on providing protection in case of accidents caused by the particularities of leisure activities and sport. Aim is to develop novel technical solutions of socks/stockings/leggings according to their application using new multi-functional (antibacterial) raw material combinations within the same product.

The developed textile products boast functional performances and a high level of comfort, while having reduced risk for allergic reactions for sensitive users, and with enhanced aesthetic characteristics.