https://doi.org/10.53230/tgm.1310-912X.2025.1003.02

APPLICATION OF 3D TEXTILE IN FIREWORKS CLOTHING

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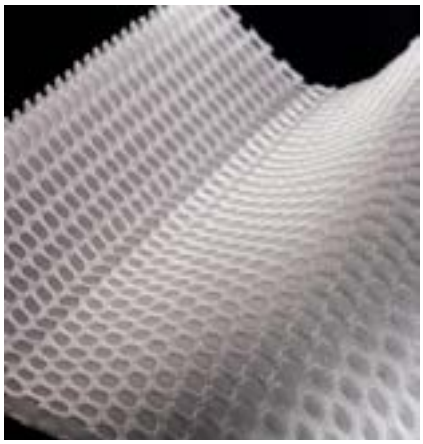

„3D Textiles“ introduces us to the production of the latest fiber structures, their preparation and application. By examining the different types of fabrics, their structures and properties, new knitted and non-woven textile products are created in the textile industry. The presented 3D distance fabrics in firefighting equipment are an emerging class of advanced textile materials designed to improve thermal protection, comfort and breathability in protective clothing. 3D is a three-layer material that is made of:

• Top layer – knitted, woven or non-woven material, providing aesthetics and functionality;

• Bottom layer – provides stability and support;

• Spacer layer - vertical threads or monofilaments that keep the two outer layers separated.

The aim of this work is to develop protective clothing with improves thermal insulation properties.

To achieve the defined goal, the following tasks have been set:

- To introduce new textile materials and technical innovations to improve firefighter clothing;
- To protect different parts of the body;
- To achieve thermal insulation under pressure, movement and equipment.

The results obtained from the research are:

• 3D separation fabrics reduce the rate of thermal transfer compared to conventional non-woven thermal pads;

• Compression stability provides constant thermal insulation under pressure, movement or equipment;

• Facilitates movement.

Keywords: *3D txtile, protective clothing, textile materials, fabrics and knitwear*

References:

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