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FIREFIGHTERS' PROTECTIVE CLOTHING – WATER CLEANING METHOD VS LIQUID CO₂ METHOD IN ASPECT OF EFFICIENCY

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Abstract

Multilayer material of firefighters' Personal Protective Equipment (PPE) creates obstacles in toxins disposal while washing. This leads to long-term exposure and health risks to firefighters. The University of Leuven conducted experiments that showed the highest concentrations of toxins in the bodies of firefighters who wore the most contaminated clothes. In contrast a non considerable increase of toxins was observed in the group using LCO₂ decontaminated clothes. Another study run in Finland in 2018 analyzed water cleaning of PPE and concluded that it was not efficient in providing safe and clean firefighters' clothing. To check the efficiency of LCO₂ cleaning, a set of laboratory tests on worn-out Polish fire gear was undertaken. The results presented in this paper confirmed that the clothes were clean enough to consider them safe for use.

Keywords: Firefighters' clothing cleaning; Firefighters' clothing decontamination; Firefighters' PPE, Firefighters' protective clothing; Liquid CO₂ firefighters' clothing decontamination.