

Safeguarding escape routes within high-rise buildings

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BIO: David Sherrington is a product designer with a mechanical engineering education from the University of Glasgow and Cambridge University, followed by several years designing lifesaving equipment for the offshore and maritime sectors. David has worked at Ultra Fog since 2012, with a focus on the design of water mist systems for the maritime sector. To support the growth of Ultra Fog, and in response to the recent introduction of British Standards for watermist systems, David is moving to focus on the design and development of systems for residential, commercial, and industrial applications within the UK.

Abstract

[Background] Driven by recent real-world events in which failures of compartmentation has led to loss of multiple lives in a range of high-rise buildings, this presentation identifies the manner by which fire stopping has been compromised in existing buildings; and why economic factors continue to place a heavy reliance upon buildings' passive fire protection, in the absence of active fire protection. [Objectives] This presentation explores the potential for watermist to safeguard escape routes within high rise buildings, is in the event of failure of compartmentation; and considers the challenges of retrofitting watermist within existing, residential high-rise buildings; and proposes flux densities necessary for escape. [General description of the methods] The study extrapolates data from existing fire tests and anonymised type approvals, to model the cooling effects of various water mist densities with respect to fire loads within corridors. [Results] The study is ongoing, and the results will be used to evaluate the practical implications of the retro-fit installation of water mist within the common spaces and escape routes of existing high-rise residential buildings. [Conclusions and recommendations] The presentation will conclude with a summary of the key considerations with respect to the technical, economic, and human factors posed by the use of watermist within escape routes, and a suggestion of the suitability of this technology with respect to high-rise buildings.

KEYWORDS: high-rise, residential, compartmentation, means of escape