Fire Tests in a Large Hall, Using Manually Applied High- and Low-Pressure Water Sprays

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著者情報
キーワード: Large-scale extinguishing tests, Fire suppression, Fire fighting, Water, High-pressure, BA team

2001年 21巻 1号 p. 1-17
DOI https://doi.org/10.3210/fst.21.1

抄録
Large-scale fire fighting was investigated, including a comparison between high-pressure and low-pressure manual fire fighting systems and measurements of heat stress on fire fighters. Six tests were performed in a room measuring 14.0 × 7.7 m². The fuel in each test consisted of wooden pallets arranged in 6 stacks with 13 pallets in each stack. Weight loss, gas temperature, heat radiation and room pressure were measured. The nozzle pressures were 7 bar and 25 bar and the flow rates were 1.92, 3.83 and 5.75 kg/s. The tests showed that the ability to reach the burning fuel with water limits the capacity of the fire-fighting attack. The high-pressure system proved more efficient than the low-pressure system. It gave a faster response and required a lower flow to attain the same extinction effect as the low-pressure system.
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編集・発行: 東京理科大学 総合研究機構 火災科学研究センター
制作・登載者: 幸和技研株式会社

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Water Pump (For High Pressure Water). Fire Detectors (Detects Fire in Protected Area). Solenoid Valve (One For Each Protected Area. Water Nozzles (Produces Water Mist). If only one detector is activated in a protected area, it gives a fire alarm as a pre warning. In case both the detectors are activated, the information is transmitted to the main control panel of the water mist fire extinguishing system and it starts the water pump, and opens the solenoid valve to the particular protected area. Manual Operation. In case water mist is to be manually sprayed over any protected area, the 'START' push button on the local or remote control panel for the particular area can be activated, which will start the pump and activate the solenoid valve for the respective area. Requirement and Rules.