



Session 1D:

Alternative Fire Protection Toward Reducing Water Demand

With water resources available for fire protection becoming scarce around the world, there is an increasing demand for new technologies that can protect property with reduced water demand. FM Global undertook a research study to evaluate emerging technologies - SMART sprinklers and automatic water cannon (AWC), alternatives to traditional sprinklers. The objective is to explore reducing water demand for low-piled storage and rack-storage of plastics. SMART sprinklers use detectors (smoke, heat and/or optical) to detect a fire, identify its location and open sprinklers simultaneously to surround and control it. Automatic water cannons generally utilize imaging-based detection to locate a fire source and direct a water stream to control a fire. Large-scale tests demonstrated that SMART sprinklers can reduce the water demand by a significant quantity (>50%) for both high rack storage and low-pile storage, while the AWC showed even further reduction on top of that for the SMART sprinkler. SMART sprinklers were also evaluated for open top combustible containers, which revealed potential to protecting this very challenging fire hazard.



Stephanie Thomas

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Stephanie joined FM Global in 2014 as an Advanced Research Scientist in the large-scale fire test team within the Fire Hazards and Protection Research Group. In this role, Stephanie designed and led large-scale fire test programs to determine protection and to develop fire test standards to support FM Approvals. Stephanie is now a Staff Engineering Specialist in the Chief Engineer’s Group at FM Global where she is responsible for Data Sheets covering pulp and paper storage, conveyor belts, sprinkler system maintenance and corrosion as well as human factors including pre-incident planning and emergency response.

Prior to joining FM Global, Stephanie spent eight years at a commercial firefighting equipment manufacturer working in multiple engineering roles. Her responsibilities focused on the development and design of special hazards fire protection systems, which included clean agents, carbon dioxide, inert gases, water mist and firefighting foam. She holds a patent for a firefighting foam composition as a result of her work in that area.

Stephanie holds a B.S. in Chemical Engineering, B.S. in Chemistry and an M.S. in Fire Protection Engineering from Worcester Polytechnic Institute in Worcester, MA, USA. She is a member of the National Fire Protection Association (NFPA), Society of Fire Protection Engineers (SFPE), and the Society of Women Engineers (SWE).

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