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EXTINGUISHING SYSTEMS

Here Comes the Rain Again

New Fire Protection Guidelines for Sprinkler Systems

Sprinklers Protect Warehouses

Fire is the leading cause of commercial property damage. To protect its client companies, FM Global, one of the world's largest commercial and industrial property insurers, has a team of scientists, engineers and technicians that continuously develops fire prevention systems in its "Research Campus." Over the past three years the team worked on a new in-rack sprinkler design option for warehouses.

Companies that have developed a good fire prevention system have the opportunity to increase their market share, while those leaving themselves exposed to the danger of fire will often close for long periods of time – or will never re-open after a major fire outbreak. But the risk of possible insolvency from fire can be reduced because it has been proven that devastating fire loss is preventable with the proper fire protection in place. As any fire-fighter can tell, sprinklers are the number one tool for fire protection when properly installed, consistently maintained and draws from an adequate water supply. The factors are important: If any of these elements are missing, the sprinklers have a strong chance of not functioning properly.

Misunderstandings About Sprinklers

Protecting companies from fire does not seem complicated but there are still owners who don't want to install sprinklers. Why? Because of some misunderstandings. Everyone can recall a movie scene in which all the sprinklers in a building operate at once, soaking everything and everyone inside. If this was reality, the financial damage for the owner would be huge. In fact, about half of all fires are controlled by three sprinklers or less. Another myth is the cost. Typically, a savings of about 40 percent is achieved when sprinklers are incorporated into a new building's design and installed during its construction, as opposed to being retrofitted in an existing facility. At this early point, a sprinkler system can be installed for as low as one to two percent of a new building's cost.

To become more resilient to fire risks, a team of scientists, engineers and technicians continuously develops fire prevention systems in the FM Global "Research Campus" in West Glocester, Rhode Island (USA). The campus is the center for property loss prevention, scientific research and product testing. The research results always help clients re-

duce property risk and help establish new industry methods and standards. This 6.5 square kilometer complex has the world's largest fire hall: The Fire Technology Laboratory (10,000 m²) can replicate warehouse fires up to 18 m high. Responding to the growing tendency of businesses using ever larger warehouses, the ceiling in the facility can be moved to emulate these growing spaces. The lab's scale enables the researchers to understand what causes structural failure, how fast fire spreads and what sprinkler protection is needed.

Alternative Solution Reduces Costs

While the Fire Technology Laboratory is the centerpiece of the Research Campus, a company's warehouse is its treasure house. Here, for example, are stored: raw materials, goods ready for dispatch and spare parts for production machines. A fire in this building without a sprinkler system can mean a huge financial damage for the company concerned. For better protection the researchers worked on a new in-rack sprinkler design option for warehouses. The development follows nearly three years of comprehensive research by



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FM Global consisting of extensive and advanced open-source computer fire modeling, water flow tests and large-scale fire tests.

The alterve solution enables facility owners to use fewer sprinklers. This has the advantage that the racks in the high-rack warehouses can be used more efficiently. Furthermore, the new in-rack sprinkler design option for warehouses can minimize the clients' cost. For example, in a 500,000-square foot (46,450-square meter) warehouse with an 80-foot (24-meter) ceiling height, the cost of installing sprinklers, pumps and water tanks could fall from approximately US\$4.3 million to as little as US\$2.6 million. In addition to cost savings, the alternative design also is more environmentally friendly. It would allow companies to protect their highest-hazard commodities, such as expanded plastic, using less than half the water volume previously needed. Furthermore, in the event of a fire, warehouse owners would likely sustain less water and smoke damage, because the fire would be controlled or suppressed more quickly.

As mentioned before: Fire is the leading cause of commercial property damage but there are ef-

fective fire protection systems that are being constantly improved. The results: Entrepreneurs need fewer sprinklers while the costs, required water volume, smoke and water damage are reduced. There is no reason for not using a fire prevention system for protecting the company.



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