

Rack drenching system



Fire Design Solutions provides integrated Rack Drenching Systems (RDS) to prevent the rapid spread of fire in palletised rack storage systems.

The sheer height of most warehouse racking systems makes them especially dangerous in the event of fire. Within minutes, low level ignitions can escalate through the rack flues to roof level, where it is difficult to extinguish and can spread laterally.

With the immense heat generated, there is a danger of the racking collapsing, putting the lives of both occupants and fire fighters at risk. The ferocity of such fires often results in complete destruction of the building, with considerable damage to neighbouring structures.

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Design Solution

The RDS works by suppressing and containing the fire before it can spread up the rack flues. By creating a horizontal decking system at the lower levels, the heat is trapped within mini compartments, which prevent fire spreading up the flues of the racking.

Each compartment features a heat sensitive device that, when triggered, activates a drencher head. The seat of the fire is then soaked with a liquid from the storage tank, which contains an added cooling agent. Operation of a drencher head automatically sets off the fire alarm.

The Rack Drenching System will slow, if not stop, the fire growth rate within a palletised rack storage warehouse. This gives fire fighters critical, yet safe access to the fire - vastly improving the chances of saving the structure and valuable stock.

By specifically targeting the identified risk areas, it offers an ultra efficient alternative to traditional 'blanket' sprinkler systems. Typically, RDS is also 90% cheaper than such systems, and boasts a liquid storage tank that occupies just 2m².

The system also acts as an early fire detection system, linking directly to the fire alarm system to alert the occupants to evacuate the building. Virtually maintenance free, RDS satisfies requirements of local acts and trade offs for extended travel distances, both under Building Regulations and the Fire Precautions Act.

In addition, RDS offers an acceptable solution to satisfy high risk areas under the Fire Precautions Workplace Regulations as part of a risk based approach.



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