Protection of ordinary hazard compartments with sidewall water mist nozzles

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Abstract:

Fire test protocols are well established for the protection of ordinary hazard risks and pendent water mist nozzles. Residential occupancies, including hotels, fall within the category of ordinary hazards, which often require the use of sidewall nozzles to accommodate the construction of a building or to fit with the hotel's interior design and aesthetics.

Unfortunately, current fire test protocols for pendent nozzles, do not allow for configuration in a sidewall position and there are few consistent guidelines established by approval agencies, with regards to fire test protocols, specifically for sidewall nozzles. Therefore, it is virtually impossible to design a nozzle to pass all agency fire protocol permutations. This can cause confusion in the market and as a result, qualified fire engineers may find it challenging to make an informed decision as to the correct application for the protection of ordinary hazards with sidewall water mist nozzles.

Recently the VdS approval scheme has changed. Historically, VdS required system approvals, which meant that all components of a water mist system should be VdS tested. Nozzles should be subject to both fire and component tests, while other components like pipes, valves and pumps needed to be component tested.

VdS has changed their approach for testing Low Pressure Water Mist Systems, which are systems designed at 16 bars or less, including our low pressure (ULF) nozzles. Due to this change, it became necessary for us to carry out numerous fire tests at our R&D facility in Cranston RI. Recently, we succeeded in successfully passing all the required VdS fire tests and as such Johnson Controls has become the first Company to achieve VdS approval for a sidewall water mist nozzle.

Our presentation will provide an overview of the fire tests that were carried out, according to VdS protocol, during which significant test results and photographs will be presented.

KEYWORDS: sidewall, water mist systems, fire test protocol, ordinary hazard, low pressure