

Elevators & Lift Pits

SPECIAL HAZARD APPLICATION

Elevators (lifts) play a critical role providing efficient mobility throughout buildings, facilities, and transportation hubs. Protecting these devices introduces a unique set of fire detection challenges that are directly related to their mechanical operation.

The technical infrastructure supporting elevators is often considered a harsh environment. The presence of dust, grease, dirt, trash, faulty wiring, and incomplete repairs can create combustion prone conditions and increase the risk of fire. Further, the lack of proper maintenance and inspections by qualified personnel can contribute to this increased risk.

Fire detection and suppression requirements vary wildly across different federal, state, and local jurisdictions. As elevator shaft and hoist way pit service & safety procedures become more stringent, a common objective is to minimize the time personnel are working within the elevator shaft or hoist way pit. The elevator hoist way pit is a location that is extremely difficult for functional testing of fire detection devices. As a result, NFPA 72 (2019 edition) introduced a requirement that initiating devices installed in the elevator hoist way must be accessible for service, testing, and maintenance from outside the elevator hoist way. Given the harsh environments of these applications as well as the NFPA 72 inspection, testing, and maintenance (ITM) requirements, the use of standard spot-type detectors is not recommended. Protectowire linear heat detectors are an ideal solution for protecting elevator shafts and hoist way pits. Our detectors allow for a safe and compliant test location outside elevator shaft or hoist way pit.

All Protectowire linear heat detectors comply with NFPA 72 (2019) requirements. Detectors inside the shaft/hoist way pit can be easily tested from outside the elevator shaft/hoist way by installing the EOL resistor and appropriately rated zone box in a convenient location, often in the elevator machine room.

With quick and reliable detection, these detectors can minimize operational downtime and cost of repair through early proximity detection. Generally, the Protectowire linear heat detector has a lower initiation temperature rating than an adjacent sprinkler (if sprinklers are installed). The system's design goal is to shut down elevator/escalator power prior to sprinkler discharge.

