

Overheat and Fire Detection in Escalators

SPECIAL HAZARD APPLICATION

Overheat and fire protection for escalators is an important aspect of infrastructure safety. Although escalators are often manufactured with many fire-resistant materials, continuous operation combined with extended maintenance schedules challenges the operation of these critical devices. Given their often-continuous motion, escalators can become very hazardous in the event of a fire.

All escalator installations must comply with relevant international, state, and local regulations. These regulations will often dictate specific requirements for fire protection measures in escalator design and installation. Fire protection for escalators involves a combination of preventive measures, a detection system, and a suppression system to minimize the risk to occupants and property in the event of a fire.

Linear heat detection is an ideal choice for escalator fire protection. Typically, linear heat detection is applied to technical areas to provide early detection of overheat or fire along the length of the escalator. The detector should be installed along the length of the escalator to assure comprehensive proximity detection coverage. The linear heat detection cable should be installed close to potential fire sources, such as debris collection trays, bearings, rollers, and drive motors often located underneath the escalator steps.

The linear heat detector is often integrated into the building or facility fire protection system. The detector is typically supervised by a Protectowire interface module, an addressable module, or a conventional IDC. Emergency procedures, such as an emergency stop, are often controlled by the facility fire protection system.

By applying linear heat detection systems to escalators, building owners and operators can enhance fire safety with early detection of fire events. This facilitates prompt emergency response actions to mitigate potential risks to occupants and property.

