



Modern Vehicle Parking and EV Charging Areas: Protection Controls

As modern vehicles and EV charging stations become more common, it becomes increasingly important to align protective measures in parking structures and EV charging areas with the latest standards and best practices to effectively maintain safety.

Site Selection

- Placing EV charging stations near entrance areas of parking structures, in locations with open, well-ventilated areas away from critical infrastructure and buildings, reduces fire risks and the need for advanced fire protection controls. This strategy utilizes space as a preventive buffer to limit fire spread and improve emergency services access.

Automatic Sprinkler Protection

- Designs should now consider the heightened hazard levels and align with the latest fire protection standards.

Ventilation

- The design and implementation of these systems must consider the specific needs of EV charging areas, ensuring the dilution and safe removal of hazardous gases from these spaces in the event of an uncontrolled incident.

Power Disconnects

- EV charging stations should be equipped with easily accessible power disconnects for quickly deactivating power in emergencies, reducing the risk of electrical hazards.

Bollards

- Bollards should be placed around charging stations to protect against accidental vehicle impacts, safeguarding both the charging infrastructure and vehicle occupants.

Safety and Emergency Measures

- Safety protocols should be updated to address the unique challenges presented by lithium-ion batteries and potential high fire hazard conditions due to damage issues of batteries, potential thermal runaway, cascading ignition/fire, and extinguishment of an inaccessible fire due to extreme temperatures and concealed batteries. EV charging in an enclosed space/structure significantly increases fire-life safety hazards to building occupants, structure, adjacent vehicles, and first responders.