

Electrical Vehicle Chargers & Fire Safety



Although electric vehicles (EVs) currently make up a small share of passenger vehicles in the country, Canada is aiming for all new light-duty cars and passenger trucks sold by 2035 to be zero-emission. To accomplish this, 20% of vehicles sold by 2026 and 60% by 2030, will need to be electric.

Using electricity, rather than gas and diesel has numerous social and environmental advantages. However, the powerful voltages needed to charge and operate these vehicles present a different set of hazards that must be managed to avoid loss, damage, and injury to their users.

Fire risks are the primary concern with regards to EV chargers, more so in the case of multiple vehicles charging at once.

The key concern is around the risk of fire developing because of charging issues and then spreading to nearby buildings.

Best practices:

- All electrical wiring should meet the EV charging requirements and should be compatible with each of the equipment's technical specifications.
- Confirm that the electrical supply for the charging station is adequate. The charging station should have a dedicated circuit, and not be used for other purposes.
 - To prevent overloading, an assessment of the electrical capacity and demand should be completed to determine the number and type of chargers that can be installed.
- Locate charging stations externally instead of inside the building.
 - For dealerships without an external lot, chargers should be installed only on the roof / top deck, if possible.
 - Careful consideration should be given to appropriate fire protection provisions at the planning stage, where charging stations are located inside the building or in an underground garage (a minimum fire rating of 120 minutes should apply to all structural elements in these areas including any ceilings or intermediate floors).
 - ***The aim should be to ensure a fire at a charger or vehicle cannot and does not spread towards or within any exposed assets.***
- Charging should not occur within 15 metres (50 feet) of any combustible materials (i.e. waste, parts storage, combustible elements of the structure, etc.).
- Charging should not occur within 15 metres (50 feet) of hazardous installations (i.e. transformers, flammable liquid storage, waste oil tanks, etc.).
- Conventional charging stations and rapid charging stations should be clearly marked and easily identifiable.

- All employees should be trained regarding the safe use of chargers.
- All charging stations should be included as part of a regular fixed wiring inspection. Annual thermographic testing is recommended.
- Access to chargers, cables and charging infrastructure should be secured against unintended use and malicious damage.

As always, please contact your broker or Marsh Advisory at capriskcontrol@marsh.com if you have any questions and concerns.

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