

Re: Outdoor Receptacle Safety

An ESA investigation into a residential fire reminds us that outdoor receptacle safety depends on proper installation. Water entered the space between an outdoor receptacle cover and the outlet box, causing the receptacle to fail and resulting in a smouldering fire inside the wall that filled the home with smoke.



Moisture intrusion damaged the branch circuit conductors inside the receptacle box



Although the GFCI tripped, the branch circuit conductors remained energized

Due to these type of incidents, the Ontario Electrical Safety Code (OESC) **Rule 12-3016** requires outlet boxes using wet-location cover plates to be installed in a manner that ensures the intended seal between the outlet box and cover. Some installers use GFCI dead-front receptacles or circuit breakers indoors, upstream of the receptacle, for protection and maintenance. The following reminders help ensure outdoor receptacles are installed safely and to Code.

Install Ground Fault Circuit Interrupter Protection

Ground fault circuit interrupter (GFCI) protection is an important safeguard for outdoor receptacles.

- Class A GFCI protection is designed to trip when leakage current reaches approximately 6 mA

Select the Right Cover

Using the correct cover helps protect the receptacle from the elements.

- **Rule 26-708** requires outdoor receptacle covers to be suitable for wet locations
- Some outdoor receptacles require a “while-in-use” cover suitable for wet locations while a cord remains plugged in

Ensure a Proper Seal

Preventing water ingress is critical to a safe outdoor receptacle installation.

- Confirm the outlet box is rated for the installation location and building finish
- Add sealing where needed so rain, snow or moisture cannot enter behind the cover or into the box
- Ensure the intended seal between the outlet box and the cover is maintained (**Rule 12-3016**)

Verify the Installation

Before completing the installation:

- Verify the GFCI is operating correctly and confirm the cover is suitable for the installation location
- Ensure the cover seals properly to the finished surface to prevent moisture from entering the outlet box

Remember: Outdoor receptacle safety depends on the *complete* installation. GFCI protection, the right cover and a properly sealed outlet box all work together to help protect people and property.