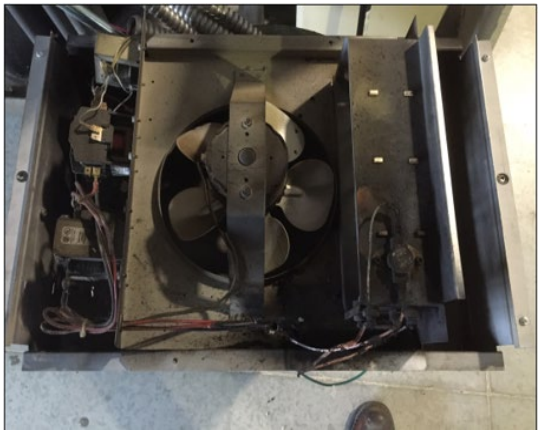
Re: Heater Installation

As colder weather arrives, customers may be looking to add or replace electric heating in their homes. Incidents reviewed by ESA show, however, that overlooking mounting orientation, voltage and protective controls can lead to overheating, fire and even death.

When installation errors lead to overheating

In one ESA-reviewed incident, an electric heater installed upside down in a sunroom overheated and ignited the adjacent wooden structure. During extreme cold weather, the thermostat continuously called for heat. With the heater upside down, the high-limit switch was positioned below the heater and did not operate.

In another incident, an in-floor heating system was installed without the proper floor sensor and connected to the incorrect voltage. The floor reached an excessively high temperature, contributing to a fatality.



Burnt-out heater removed from the ceiling of a school

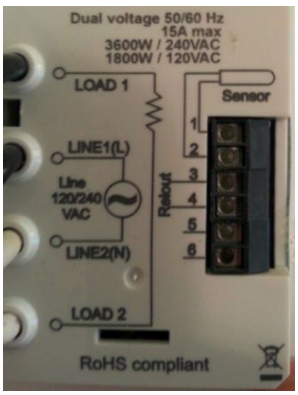
Temporary and permanent heater installations

Before installing or connecting a heater:

- **Confirm certification**: Check that the heater is certified for use in Ontario and suitable for the intended location. Visit ESAsafe.com/ApprovalMarks for a full list of recognized marks.
- **Follow the manufacturer's instructions**: Verify the correct mounting orientation, GFCI requirements and clearances from combustible and other materials.
- **Check circuit loading**: Confirm conductor size and fuse or circuit-breaker size are appropriate for the heater load.

Additional checks for in-floor heating

- **Verify spacing and sensor placement**: Ensure heating cables and floor sensors are installed according to the manufacturer's instructions.
- **Check nameplate information**: Verify system voltage and cable resistance before connection.
- **Arrange the rough-in inspection**: Request the required inspection before flooring material is installed over the heating system.



Many thermostats are dual-voltage; it is important use the label of the floor heating cable to determine circuit voltage

What to discuss with customers

Review the heater's required clearances so customers can account for them when placing furniture, curtains and other materials, including any changes to the room after installation.

Key takeaway

Before installing temporary or permanent heaters or in-floor heating systems, review the manufacturer's specifications, the existing electrical system and Section 62 of the Ontario Electrical Safety Code.

Learn more

For additional guidance on voltage, floor sensors and inspection requirements, review ESA's Flash Notice 25-08-FL: Electric In-Floor Heating System Installations.