

Portable and Outdoor Heating Devices

Due to the ongoing regulations stemming from the Covid-19 pandemic, restaurants and other venues have relied heavily on outdoor gathering arrangements. And to ensure a comfortable experience, many offer pre-made enclosed areas, such as large tent gazebos or transparent igloos or domes, heated with portable patio heaters. While creating new outdoor dining experiences and other activities is helpful to continue operations, the combination of patio heaters near and/or inside enclosed areas can lead to increased hazardous exposures and additional liability. Hopefully this short guide will help you to maintain a safe and enjoyable outdoor experience.

Propane heating

The propane patio heater is probably the most common. It's fueled by LP (liquid petroleum) gas cylinders. These come in a variety of sizes and models and can emit heat via infrared heating, convection, or forced air.

Propane heaters should only be used in accordance with their manufacturer guidelines and operating occupancy. For example, according to NFPA 1, propane heaters cannot be used within five feet of an entrance/exit for assembly occupancies, such as restaurants with 50 or more occupants.

Because propane heaters should be located outside of any enclosure, using a forced air model may be your best option as you can direct the heat inward. Avoid using propane under or inside a tent, igloo, or dome.

Items to consider when choosing a propane heater:

1. Proper location placement

- a. These cannot be used indoors or inside any enclosure. They should be used only in an open-air environment.

2. Clearance and ventilation

- a. Propane heaters should be placed a minimum of five feet away from any material and combustibles.

3. Maintenance procedures

- a. Always refer to the manufacturer guidelines for maintenance and repair of your heating device.

4. Storage

- a. NFPA 1, *Fire Code* (2018) outlines this well. LP gas cylinders must be stored in a secure storage area not inside any building, not on any roof, and must be located a minimum of five feet away from public entry/exit ways with two means of egress. If there's only one means of egress, they should be located at least 10 feet away, and 20 feet away from any fuel service station dispenser.



Electrical heating

Electrical patio heaters are a permanent or portable option. They use electricity to power the heating element. If permanently installed or otherwise used in accordance with their manufacturer guidelines, these can be a safer option than their propane, gas, and woodburning counterparts because they have no emissions. These also come in a variety of sizes and models and can emit heat via infrared heating, convection, or forced air.

Although these can be used more safely under an open tent or inside an enclosure with proper clearance, care should be exercised with cord placement to prevent any trip and fall hazards. A good option for these is the tent flange mounted style. They blow heat directly into the enclosure but are located outside to prevent any trip and fall hazards.

Electrical heaters should be listed by a qualified electrical testing laboratory.

Items to consider when choosing an electrical heater:

1. Proper location placement

- a. These are safer to use indoors or outdoors, under a tent.
- b. Make sure power cords do not obstruct any pathways.

2. Proper clearance

- a. Unless designed otherwise, these should be placed a minimum of five feet from any material or combustibles.

3. Maintenance procedures

- a. Always refer to the manufacturer guidelines for maintenance and repair of your heating device.

4. Wiring and installation

- a. Permanent
 - i. Multi-plug adapters or extension cords should never be used in place of permanent wiring. Cords cannot be attached to any structures or extended through walls or under doors, and should always be shielded from environmental damage.
- b. Temporary
 - i. Extension cords should be grounded when paired with a grounded portable device.
 - ii. Electrical heaters should only be plugged into approved receptacles.
 - iii. Extension cords should be in good condition, free from any splicing or other defects, and should carry adequate current capacity.
 - iv. Cords should never be daisy chained (connecting multiple extension cords together) to increase length.



Natural gas heating

These are a permanent option that require special plumbing and professional installation because they're powered by natural gas line infrastructure. These units may also require an electrical supply and can plug into standard outlets. Because they require special plumbing and ignition control, they're the most difficult to install and operate. Enclosed areas should not be constructed around permanent gas installations. Attempts to use as a temporary or portable solution with flexible or unapproved piping should also be avoided.

Items to consider when choosing a natural gas heater:

1. Proper location and placement

- a. These cannot be used indoors or inside any enclosure. They should be in an open-air environment.
- b. Avoid temporary use or extension through flexible or unapproved lines.

2. Proper clearance and ventilation

- a. These should be placed a minimum of five feet away from any material or combustibles.

3. Requires professional installation.

- a. Wiring
 - i. Multi-plug adapters or extension cords should never be used in place of permanent wiring. Cords cannot be attached to any structures or extended through walls or under doors, and should always be shielded from environmental damage.

4. Maintenance procedures

- a. Always refer to the manufacturer guidelines for maintenance and repair of your heating device.

5. Gas Leaks

- a. If you suspect a gas leak, turn off the device and immediately evacuate the area. When you're finished with the heater, always turn off the control knob and secure the device.



All portable heating devices should be UL (Underwriters Laboratories) listed and safety certified for their intended use according to the manufacturer's specifications. If applicable, make sure your device has these safety features:

- ✓ **No open flames:** Most portable heaters are equipped with a barrier or emitter for protection.
- ✓ **Anti-tilting features:** Usually in the form of a wider base to prevent tipping. There are more expensive options that include a switch that stops the flame if it senses any tipping.
- ✓ **A thermocouple:** This prevents gas leaking if the flame is extinguished due to high winds or other problems.

This information was designed to provide you with a brief overview for outdoor heating best practices. Businesses should always check with the proper authorities that have jurisdiction for state-specific requirements and approval.

