



VANCOUVER FIRE DEPARTMENT

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FIRE MARSHAL'S OFFICE

521 SE Chkalov Drive

Vancouver, WA 98683

vanfmo@cityofvancouver.us

SUBJECT: Heating of Tents and Membrane Structures

PURPOSE: Heating devices inside of tents can introduce significant fire, burn injury and carbon monoxide poisoning hazards. This document provides guidance on regulations applicable to heating inside of tents & canopies

SCOPE: Commercial and public locations within the Vancouver City Limits

Fire Code Requirements:

3104.7 Open or Exposed Flame. Open flame or other devices emitting flame, fire or heat or any flammable or combustible liquids, gas, charcoal or other cooking device or any other unapproved devices shall not be permitted inside or located within 20 feet (6096 mm) of the tent or membrane structures while open to the public unless approved by the fire code official.

3104.15.1 Installation. Heating or cooking equipment, tanks, piping, hoses, fittings, valves, tubing and other related components shall be installed as specified in the International Mechanical Code and the International Fuel Gas Code and shall be approved by the fire code official.

3104.16.2 Location of Containers. LP-gas containers and tanks shall be located outside. Safety release valves shall be pointed away from the tent or membrane structure.

3104.16.3 Protection and security. Portable LP-gas containers, piping, valves and fittings that are located outside and are being used to fuel equipment inside a tent or membrane structure shall be adequately protected to prevent tampering, damage by vehicles or other hazards and shall be located in an approved location. Portable LP-gas containers shall be securely fastened in place to prevent unauthorized movement.

603.4.2.1.1 Prohibited Locations. The storage or use of portable outdoor gas-fired heating appliances is prohibited in any of the following locations:

- Inside of tents, canopies and membrane structures.

603.4.2.1.3 Clearance to Combustible Materials. Portable outdoor gas-fired heating appliances shall not be located beneath, or closer than 5 feet (1524 mm) to combustible decorations and combustible overhangs, awnings, sunshades or similar combustible attachments to buildings.

603.4.2.1.4 Proximity to Exits. Portable outdoor gas-fired heating appliances shall not be located within 5 feet (1524 mm) of exits or exit discharges.

3104.15.7 Electrical Heating and Cooking Equipment. Electrical cooking and heating equipment shall comply with NFPA 70.

604.10.4 Prohibited Areas. Portable, electric space heaters shall not be operated within 3 feet (914 mm) of any combustible materials. Portable, electric space heaters shall be operated only in locations for which they are listed.

Installation Guidelines:

Based on the above code requirements, there are four categories of acceptable heating for a tent, canopy or temporary membrane structure:

1. **Ducted Tent Heaters.** Electric, propane or natural gas direct or indirect ducted tent heaters specifically designed for heating tents and other enclosed spaces are allowed where installed in accordance with manufacturer instructions. Heaters must have UL or other NRTL listing



Ducted Tent Heater Examples

2. **Portable Electric Space Heaters.** Portable electric space heaters are allowed inside of a tent. Portable heaters shall have UL or other NRTL listing, over-temperature protection, ground heaters must have a tip-over switch, suspended heaters must be securely installed, and all heaters shall have clearances as required by manufacturer, but in no case less than 3 feet from any persons or combustible material including the tent or sidewall fabric. The power supply shall utilize a single listed outdoor extension cord rated for the amperage and provided with GFCI protection or be provided with temporary power supply approved by the building official.



Portable or Suspended Electric Heater Examples

3. **Catalytic Propane Heaters.** Propane or natural gas fueled catalytic heaters which heat by chemical reaction and have no combustion are allowed within a tent or canopy. Catalytic heaters must have UL or other NRTL listing, tip-over switch and maintain clearances as required by the manufacturer, but in no case less than 3 feet from any persons or combustible material including the tent or sidewall fabric. The propane source cylinder is not allowed within the tent.



Catalytic Heater Examples

4. **Heating and HVAC Systems installed under an approved Building Permit.** HVAC systems that are reviewed, inspected and approved by the applicable Building Department under a building, mechanical or electrical permit are allowed.

Prohibited Heaters

Only the above listed approved heater types are allowed. For information purposes, the following are examples of common heating devices that are not allowed within a tent, canopy or temporary membrane structure:



Salamander Type Heaters using propane, natural gas, kerosene or other flammable fuels



Patio Type Propane Heaters



Infrared Propane Heaters