



# BUILDINGS 2020-019 BULLETIN OPERATIONAL

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PURPOSE: This bulletin focuses on natural gas as a power source for outdoor heaters, and describes the process of installing, permitting, and operating such heaters.

SUBJECT(S): Natural gas-fired radiant heater; Outdoor heater, natural gas

## I. Background

In conjunction with DOT's Open Restaurants Program for sidewalk and roadway dining, the Department of Buildings issues the following guidance about who can install outdoor heat equipment and the required permits and inspections that are necessary to operate natural gas heating in a safe and efficient manner.

The installation of electric heaters is allowed on both sidewalks and roadways. Propane heaters and natural gas radiant heaters are allowed on sidewalks only and are prohibited in roadways. Open flame natural gas-fired heaters are not permitted. The use of propane and natural gas for heating requires a permit from FDNY and propane heating requires compliance with FDNY regulations for outdoor use, handling, and secure outdoor tank storage overnight.

All three options above may be considered for outdoor seating areas within private property as well provided they comply with the respective requirements outlined in the bulletins and other guidance documents.

## II. Radiant Heat and Why It's Used

This guidance focuses on infrared (radiant) natural gas as a fuel source for heaters, which heats up objects as opposed to heating the air, as this is an energy-efficient option available to business owners.

When selecting radiant heating equipment for outdoor use, it is important to verify that the equipment is listed for outdoor use. Freestanding natural gas fired radiant heaters and ceiling/wall mounted natural gas fired radiant heaters are two options that can provide comfort heating to outdoor dining spaces. The safety requirements differ based on the type of heater selected. See Table 1 for specific requirements.

**Buildings Bulletin 2020-018** contains information on how to install an electric powered heating system, but your NYC Licensed Master Electrician should be aware of the requirements to ensure a safe and compliant installation.



Figure 1: Freestanding Natural Gas Heater

When selecting natural gas fired radiant heating equipment to be used outdoors, it is important to verify the following:

1. Natural gas fired radiant heaters must be listed in accordance with safety standard ANSI Z83.26 – CSA 2.37 “Gas fired outdoor infrared patio heaters” or ANSI Z83.19 – CSA 2.35 “Gas-Fired High-Intensity Infrared Heaters” and installed in accordance with their listing and the manufacturer’s installation instructions.
2. Where flexible gas hose connectors are used to connect the heater to gas outlets, such connectors must be listed in accordance with ANSI Z21.54 – CSA 8.4-2014 “Gas hose connectors for portable outdoor gas-fired appliances.” See item A6 below. Flexible gas hose connectors should not be laid on a bike lane unless approved by the DOT.
3. Natural gas fired radiant heaters with wireless electric ignition devices can be filed through an expedited process called LAA (Limited Alteration Application). See Item A7 below. Open flame, match start, and electrical hard-wired systems are not permitted through this program.<sup>1</sup>



*Wall-mounted Natural Gas Heater*

### III. Overview of Evaluation of Existing and Modification of Gas Plumbing System

The following is an overview of the steps necessary to prepare your building's gas piping system to power outdoor natural gas heating:

#### A. Design Planning & Permitting

1. *Determine the number of heaters required:* Consult manufacturer’s guidance to determine the number of units necessary based on the distance you need to maintain between the piece of equipment and the area that needs the heat source. The manufacturer’s instructions also provide guidance on how to secure the unit to ensure that it remains safely in place.
2. *Licensed Master Plumber inspects existing gas system:* Licensed Master Plumber will ensure all related components are in good working condition, such as manual shut off valve, low-pressure sensors and alarms, and emergency switches.
3. *Licensed Master Plumber determines system size:* Based on the number of heaters selected, the Licensed Master Plumber will recommend modifications to the existing gas system necessary to power the heaters, such as additional gas piping, shut off valves, outside gas connection points and new tee on existing gas piping. The existing gas meter may be upsized with initial installation to accommodate new appliances.
4. *Licensed Master Plumber provides safe connections:* Tees can be installed on existing piping instead of creating a new gas manifold. One gas shut off valve must be placed at the branch line start point and one on the outside of the restaurant. (See item 5 below) Make sure outside connection points comply with National Gas Outlets standards called ANSI Z-21.90, by having them in lockable receptacles that are made of corrosion resistant metallic material suitable for outdoor use. To prepare for the future, the Licensed Master Plumber should install isolation valves so that the gas piping can be capped and removed back to the riser point, by another LAA filing, when the heaters are removed when outdoor seating is no longer provided in the future.

<sup>1</sup> Open flame, match start and electrical hard-wired systems are not permitted as LAA. Natural gas heaters with these types of ignitions must be filed by a registered design professional.

5. *Other safety requirements:* The Licensed Master Plumber will ensure the gas distribution system has a manual shut off valve for both emergency use and locking out the system when it is not in use. Additionally, an emergency automatic gas shut off valve, activated by either a low-pressure sensor or an emergency switch, is installed on the main gas line, and the low-pressure sensor is connected to an alarm that utilizes a bell or horn with a flashing device. The Licensed Master Plumber will identify the emergency switch by a sign posted in plain sight next to it.
  
6. *Determine whether flexible gas hose connectors are desirable:* Under the Open Restaurants program, flexible gas hose connectors may be used to connect the portable outdoor unit heater to the gas outlets. Flexible gas hose connectors allow the heating units to be disconnected when not in use and provide natural gas to the heating units where traditional rigid gas piping presents challenges. However, flexible gas hose connectors should not be laid on a bike lane unless approved by the DOT. The Licensed Master Plumber can help you select flexible gas hose connectors that are listed by an approved agency in accordance with ANSI Z21.54 – CSA 8.4. Connector length will vary between 10’ to 15’ maximum and as specified in the listing and manufacturers’ recommendations. An audible, visual fire alarm is required for safety in case the unit is dislodged or knocked over. An emergency automatic gas shut off valve, activated by either a low-pressure sensor or an emergency switch, must be installed on the main gas line. The low-pressure sensor is connected to an alarm that utilizes a bell or horn with a flashing device.



*Flexible gas hose connector at portable gas heater (seen without protective cover)*



*Flexible gas hose connector and valve*

7. *Licensed Master Plumber files for necessary permits:* Under the Open Restaurant program, Licensed Master Plumbers can file Natural Gas heaters with the Department through an expedited process called **Limited Alteration Application (LAA)**. Once the scope of work is established, the Licensed Master Plumber can file the LAA without plans online through DOB NOW: *Build* and use the same system to obtain permits for work. To help the DOB to expedite the approval and inspections process, the Licensed Master Plumber should complete the following:
  - a. Identify on the LAA proposed work summary that this work is part of the **Open Restaurants Program**
  - b. After the work is completed and ready for DOB inspection, the Licensed Master Plumber or his designee must request for inspection in **DOB NOW: Inspections**.
  - c. Once the request is made, the Licensed Master Plumber or his designee should send an email (**Subject: Open Restaurants Program**) to the respective borough IR mailbox:
    - Bronx.....[BXPlumbingIR@buildings.nyc.gov](mailto:BXPlumbingIR@buildings.nyc.gov)

- Brooklyn ..... [BKPlumbingIR@buildings.nyc.gov](mailto:BKPlumbingIR@buildings.nyc.gov)
- Manhattan ..... [MNPlumbingIR@buildings.nyc.gov](mailto:MNPlumbingIR@buildings.nyc.gov)
- Queens ..... [QNPlumbingIR@buildings.nyc.gov](mailto:QNPlumbingIR@buildings.nyc.gov)
- Staten Island ..... [SIPlumbingIR@buildings.nyc.gov](mailto:SIPlumbingIR@buildings.nyc.gov)

**No gas work can be performed without an approved LAA filing AND permit, but gas work CAN begin once the required permits are obtained.** In most instances, the permit is issued immediately.

*NOTE: A licensed Master Plumber or a person with gas work qualifications must perform all gas work in New York City. Make sure your plumber has a [license and is in good standing](#).*

8. *Owner or Licensed Master Plumber notifies utility companies:* Owners must notify utility companies prior to the installation of heaters. This helps avoid a situation in which the utility company deactivates the restaurant’s gas service based on unauthorized activity and increased gas usage for non-approved items.

## **B. Installation & Inspection**

1. *Licensed Master Plumber performs proposed work:* A NYC licensed master plumber, or an individual working under the supervision of a licensed master plumber who holds a gas work qualification issued by the Department, must install all gas piping in New York City. Licensed Master Plumbers will perform gas piping system testing as a complete unit, except that lockable valve installation only requires partial testing in accordance to [BB 2017-001](#). During the installation of the heaters, the gas must be turned off and later tested in accordance with [BB 2017-001](#).
2. Make sure clearances are maintained around the heater as required by the heater’s listing and manufacturer recommendations, especially when placed near or under an awning, canopy, umbrella, or similarly combustible covering. Natural gas fired radiant heaters may only be placed within tents or other shelters when heating units are kept at recommended distances from combustible materials (which could include fabric awnings, canopies, decorations, umbrellas, and other materials) in accordance with manufacturer’s instructions and specifications. Do not place the heaters beneath or near combustible materials if the manufacturer does not recommend such placement. Where tents or other shelters are enclosed by more than 50% on the side wall surfaces, seating is limited to 25% capacity (at the time of this bulletin’s publication) and the space must follow all other indoor dining guidelines in accordance NYS Guidance for indoor dining. A portable carbon monoxide (CO) monitor is required in such enclosed tents and shelters.
3. To protect your property, your staff and customers, provide at least one portable fire extinguishing device of a minimum 2-A rating for every 2,500 square feet of outdoor seating area within 10 feet of the entrance to the restaurant. Where flexible gas hose connectors are used, make sure they do not become a tripping hazard or impede access, and protect them from damage with protective covers that comply with accessibility requirements. However, flexible gas hose connectors should not be laid on a bike lane unless approved by the DOT.



*Protective covers for flexible gas hose connectors*

4. *Licensed Master Plumber requests gas rough, test, and finish inspections from DOB.* Under the Open Restaurants program, a Licensed Master Plumber can complete the following:
  - a. When the work is ready for DOB inspection, the Licensed Master Plumber or his designee must request for inspection in **DOB NOW: Inspections**.
  - b. DOB can perform a single inspection covering gas rough, test, and finish inspection.
  - c. Once the request is made, the Licensed Master Plumber or his designee should send an email (**Subject: Open Restaurants Program**) to the respective borough IR mailbox:
    - Bronx.....**BXPlumbingIR@buildings.nyc.gov**
    - Brooklyn .....**BKPlumbingIR@buildings.nyc.gov**
    - Manhattan .....**MNPlumbingIR@buildings.nyc.gov**
    - Queens .....**QNPlumbingIR@buildings.nyc.gov**
    - Staten Island .....**SIPlumbingIR@buildings.nyc.gov**
  - d. This will assist in expediting the inspection by notifying the unit of the inspection request entered in **DOB NOW: Inspections**.
  - e. DOB must physically inspect to verify that the installation satisfies the Department's requirements.
  - f. After a satisfactory field inspection, the Licensed Master Plumber must submit for Gas authorization and signoff through **DOB NOW: Inspections**.

**C. FDNY Requirements**

1. *Requests inspection with FDNY:* The Licensed Master Plumber or owner provides all approved DOB documentation to FDNY and requests FDNY inspection.
2. *Owner obtain Certificate of Fitness with FDNY:* Once the natural gas heating units are ready for operation, the owner or restaurant staff must obtain a *Certificate of Fitness* from FDNY, which permits the owner or restaurant staff to connect or disconnect the outdoor heaters.
3. *Owner notify FDNY of DOB gas authorization and obtain Permit from FDNY:* The restaurant must obtain a Permit from FDNY prior to the operation of the heater. Such heater is subject to annual inspection by FDNY.

**D. Turning On & Operating the Heaters**

1. *Licensed Master Plumber contacts the utility company for restoration of gas service:* After the heater installation is completed and inspected by DOB, the Licensed Master Plumber will contact the utility company for gas authorization and restoration. *Emergency Work Notification (EWN)* may be used to expedite the restoration process with the utility company.
2. *Heating units operated in accordance with the manufacturer's instructions:* Once DOB has signed off on the gas work, restaurant staff can operate the heating units.

**Table 1 – NYC Requirements for Temporary Outdoor Natural Gas Heaters Under the Open Restaurants Program**

	Portable/Freestanding with flexible gas hose connector (pole-mounted unit))	Wall or Ceiling Mounted (suspended unit)
<b>Heater</b>	Listed in accordance with ANSI Z83.19 or ANSI Z83.26 and certified for outdoor use.	Listed in accordance with ANSI Z83.19 or ANSI Z83.26 and certified for outdoor use.
<b>Hose Connections</b>	Listed in accordance with ANSI Z21.54	Listed in accordance with ANSI Z21.54
<b>Hose Length</b>	Between 10 to 15' max, as specified by the hose listing and manufacturer's instructions.	Between 10 to 15' max, as specified by the hose listing and manufacturer's instructions.
<b>Connection Point</b>	Outdoor connection point to comply with ANSI Z-21.90	Outdoor connection point to comply with ANSI Z-21.90
<b>Manual Shut Off Valve for Emergency Use and Locking</b>	YES	YES
<b>Emergency automatic gas shut off valve (activated by either a low-pressure sensor) or Emergency switch</b>	YES	YES
<b>FDNY Certificate of Fitness to Connect or Disconnect the Outdoor Heaters</b>	YES	YES
<b>FDNY Permit Prior to Operation of the Heaters</b>	YES	YES
<b>Wireless Electric Ignition Devices</b>	YES	YES
<b>Alarms</b>	YES, required on portable unit heaters that utilize the flexible gas hose connectors	NO, unless flexible gas hose connector is used for suspended unit