



Standard Operating Procedures

Fire Prevention Services
Office of Campus Safety

The University of Texas at Austin

304 E. 24th Street, SER Suite 202, Austin, TX 78713

Issue Date: February 24, 2009

FPS-SOP- 58-02

Revision Date: February 25, 2019

SCOPING & APPLICATION

**PROCEDURES FOR THE USE, STORAGE AND TRANSPORTATION OF
PROPANE GRILLS, PATIO HEATERS AND CYLINDERS**

The following outlines the procedures for the use, storage and transportation of propane grills, patio heaters and cylinders as prescribed by the National Fire Protection Agency (NFPA) in NFPA 58 the Liquefied Petroleum Gas Code at the University of Texas at Austin campus.

USE

Requirements for the use of propane grills, patio heaters and cylinders:

1. Propane grills and patio heaters shall only be used in well ventilated outdoor spaces.
2. Propane grills and patio heaters shall be located away from any combustible materials.
3. Care shall be taken when using propane grills or patio heaters on lawns or grassy areas to prevent ignition grass or other vegetation.
4. Propane grills and patio heaters shall be listed and used in accordance with their listing and manufacturer's instructions.
5. Propane grills and patio heaters shall not obstruct ingress or egress from any building or structure.

STORAGE

Requirements for the storage of propane grills, patio heaters and cylinders:

1. Propane cylinders shall be removed from grills and patio heaters prior to storage of the grills or heaters.
2. Grills and patio heaters shall be fully cooled and stored in a lockable space.
3. Propane cylinders shall be stored and meet the following criteria:

- a. Cylinders shall be stored in a “lockable, ventilated metal locker or rack that prevents tampering with the valves and pilferage of the cylinders.”
- b. Storage of cylinders awaiting use shall be located a minimum of five (5) feet from any doorway or opening in a building frequented by the public where occupants have at least two means of egress.
- c. Racks shall be locked at all times.

TRANSPORTATION

Requirements for vehicular transportation of portable cylinders containing Liquid Propane Gas.

1. Screw-on type protective caps or collars shall be secured in place for cylinders to be transported or stored.
2. The cargo space of the vehicle transporting the cylinder(s) shall be isolated from the driver’s compartment, the engine and its exhaust system (i.e. in the trunk of a car).
3. Open bodied vehicles shall be considered to be in compliance with this provision (i.e. in the back of a pickup truck).
4. Closed bodied vehicles such as passenger cars, vans and station wagons may be used for transporting cylinders as long as the total capacity of the cylinders is less than one hundred eight (108) pounds. (Typical cylinder capacity is twenty (20) pounds.)
5. Cylinders shall be checked and determined to be leak-free prior to being loaded into vehicles.
6. Cylinders shall be loaded into vehicles with flat floors or those equipped with racks for holding the cylinders.
7. Cylinders shall be secured in position to minimize the possibility of movement, tipping and/or physical damage (i.e. tied or otherwise secured to prevent the cylinders from falling over).
8. Cylinders being transported via vehicle shall be positioned in the upright or vertical position.

USE OF CYLINDERS IN BUILDINGS UNDER CONSTRUCTION OR UNDERGOING MAJOR RENOVATION

1. Cylinders shall be permitted to be used and transported in buildings or structures under construction or that are undergoing major renovation where such buildings are not occupied by the general public.
2. Cylinders shall be permitted to be used and transported in the unoccupied portions of the buildings or structures under construction or undergoing major renovation that are partially occupied by the general public.
3. Cylinders, equipment, piping and appliances shall comply with the requirements of NFPA 58 (2017 Edition), Section 6.22.

4. Heaters used for temporary heating shall be located a minimum of six (6) feet from any cylinder.
5. Integral heater-cylinder units specifically designed for the attachment of the heater to the cylinder, or to a supporting standard attached to the cylinder, and designed and installed to prevent direct or radiant heat application to the cylinder shall be exempt from the spacing requirement indicated above.
6. Blower-type and radiant-type units shall not be directed toward any cylinder within twenty (20) feet.
7. Where two or more heater-cylinder units of either the integral or non-integral type are located in an un-partitioned area on the same floor, the cylinder(s) of each such unit shall be separated from the cylinder(s) of any other such unit by at least twenty (20) feet.
8. Where cylinders are manifolded together for connection to a heater or heaters on another floor, the following shall apply:
 - a. Heaters shall not be installed on the same floors with manifolded cylinders.
 - b. The total water capacity of the cylinders connected to any one manifold in buildings or structures under construction or undergoing major renovation where such buildings are not occupied by the public shall not be greater than *1225 lb. (555.5 kg) water capacity [nominal 500 lb. (227 kg) propane capacity]*.
 - c. The total water capacity of the cylinders connected to any one manifold in buildings or structures under construction or undergoing major renovation that are partially occupied by the public shall not be greater than *490 lb. (222 kg) water capacity [nominal 200 lb. (90 kg) propane capacity]*.
 - d. Manifolds of more than *490 lb. (222 kg) water capacity [nominal 200 lb. (90 kg) propane capacity]*, if located in the same un-partitioned area, shall be separated from each other by at least 50 ft. (15 m).

USE OF CYLINDERS IN BUILDINGS UNDERGOING MINOR RENOVATION WHEN FREQUENTED BY THE PUBLIC

1. Cylinders used and transported for repair or minor renovation in buildings frequented by the public during the hours the public normally occupies the building shall comply with the following:
 - a. The maximum water capacity of individual cylinders shall be *50 lb. (23 kg) water capacity [nominal 20 lb. (9.1 kg) propane capacity]*, and the number of cylinders in the building shall not exceed the number of workers assigned to the use of the LP-Gas.
 - b. Cylinders having a water capacity greater than *2.7 lb. (1.2 kg)* shall not be left unattended.

2. During the hours the building is not open to the public, cylinders used and transported within the building for repair or minor renovation and with a water capacity greater than *2.7 lb. (1.2 kg)* shall not be left unattended.

USE OF CYLINDERS IN BUILDINGS HOUSING INDUSTRIAL OCCUPANCIES

1. Cylinders used in buildings housing industrial occupancies for processing, research, or experimental purposes shall comply with the following:
 - a. If cylinders are manifolded together, the total water capacity of the connected cylinders shall not be greater than *490 lb. (222 kg) water capacity [nominal 200 lb. (90 kg) propane capacity]*.
 - b. If there is more than one such manifold in a room, it shall be separated from any other by at least 20 ft. (6.1 m).
 - c. The amount of LP-Gas in cylinders used for research and experimental use in the building shall be limited to the smallest practical quantity.
 - d. The use of cylinders to supply fuel for temporary heating in buildings housing industrial occupancies with essentially non-combustible contents shall comply with the requirements in this SOP under the section above listed as **USE OF CYLINDERS IN BUILDINGS UNDER CONSTRUCTION**.
 - e. The use of fuel cylinders for temporary heating shall be permitted only where portable equipment for space heating is essential and a permanent heating installation is not practical.

USE OF CYLINDERS FOR TEMPORARY HEATING AND FOOD SERVICE APPLIANCES IN BUILDINGS IN EMERGENCIES

1. Cylinders shall not be used in buildings for temporary emergency heating purposes except when ALL of the following conditions are met:
 - a. The permanent heating system is temporarily out of service.
 - b. Heating is essential to prevent damage to the building or contents.
 - c. The cylinders and heaters comply with and are used and transported in accordance with the requirements of NFPA 58 (2017 edition), Sections 6.22.3 and 6.22.4.
 - d. The temporary heating equipment shall not be left unattended.
2. The portable appliances use shall be discontinued and the appliances removed from the building at the time the permanently installed appliances are placed back in operation.

USE OF CYLINDERS IN BUILDINGS FOR DEMONSTRATION OR TRAINING AND USE OF SMALL CYLINDERS FOR SELF-CONTAINED TORCH ASSEMBLIES AND FOOD SERVICE APPLIANCES

1. Cylinders used temporarily inside buildings for public exhibitions or demonstrations, including use in classroom demonstrations, shall comply with the following:

- a. The maximum water capacity of a cylinder shall be *12 lb. (5.4 kg) [nominal 5 lb. (2 kg) propane capacity]*.
- b. Where more than one cylinder is located in a room, the cylinders shall be separated by a minimum of 20 ft. (6.1 m).
2. Cylinders used temporarily in buildings for training purposes related to the installation and use of LP-Gas systems shall be in accordance with the following:
 - a. The maximum water capacity of individual cylinders shall be *50 lb. (23 kg)* and no more than *[nominal 20 lb. (9.1 kg) propane capacity]* shall be placed in a single cylinder.
 - b. Where more than one cylinder is located in the same room, the cylinders shall be separated by a minimum of 20 ft. (6.1 m).
 - c. The training location shall be *approved* by the authority having jurisdiction.
 - d. Cylinders shall be promptly removed from the building when the training class has terminated.
3. Cylinders used in buildings as part of approved self-contained torch assemblies or similar appliances shall comply with the following:
 - a. Cylinders used in buildings shall comply with UL 147A, Standard for Non-refillable (Disposable) Type Fuel Gas Cylinder Assemblies.
 - b. Cylinders shall have a maximum water capacity of *2.7 lb. (1.2 kg)*.
4. Cylinders used with commercial food service appliances shall be used inside restaurants and in attended commercial food catering operations and shall comply with the following:
 - a. Cylinders and appliances shall be listed.
 - b. Commercial food service appliances shall not have more than two (2), ten (10) oz. (296 ml) non-refillable butane gas cylinders each, having a maximum capacity of *1.8 lb. (0.490 kg)*.
 - c. Cylinders shall comply with UL 147B, Standard for Non-refillable (Disposable) Type Metal Container Assemblies for Butane.
 - d. Cylinders shall be connected directly to the appliance and shall not be manifolded.
 - e. Cylinders shall be an integral part of the listed, approved, commercial food service device and shall be connected without the use of a rubber hose.
 - f. Storage of cylinders shall be in accordance with Section 8.3.1 of the 2017 Edition of NFPA 58.

USE OF CYLINDERS IN BUILDINGS FOR FLAME EFFECTS BEFORE A PROXIMATE AUDIENCE

1. Where cylinders are used temporarily in buildings for flame effects before a proximate audience, the flame effect shall be in accordance with NFPA 160, Use of Flame Effects Before an Audience.

2. The maximum water capacity of individual cylinders shall be *48 lb. (22 kg) [nominal 20 lb. (9.1 kg) propane capacity]*.
3. If more than one (1) cylinder is located in the same room, the cylinders shall be separated by a minimum distance of twenty (20) ft. (6.1 m).
4. Where separation of twenty (20) ft. (6.1 m) is not practical, reduction of distances shall be permitted with the approval of the authority having jurisdiction.
5. Cylinders shall not be connected or disconnected during the flame effect or performance.

USE OF CYLINDERS ON ROOFS OR EXTERIOR BALCONIES

1. Where cylinders are installed permanently on roofs or balconies, the buildings shall be of fire-resistant construction or non-combustible construction having essentially non-combustible contents, or of other construction or contents that are protected with automatic sprinklers.
 - a. The total water capacity of cylinders connected to any one manifold shall not be greater than *490 lb. (222.5 kg) [nominal 200 lb. (90.5 kg) propane capacity]*. If more than one manifold is located on the roof, it shall be separated from any other by a minimum distance of fifty (50) ft. (15 m).
 - b. Cylinders shall be located in areas where there is free air circulation, at least ten (10) ft. (3 m) from building openings (such as windows and doors), and at least twenty (20) ft. (6.1 m) from air intakes of air-conditioning and ventilating systems.
 - c. Cylinders shall not be located on roofs that are entirely enclosed by parapets more than eighteen (18) in. (460 mm) high unless the parapets are breached with low-level ventilation openings no more than twenty (20) ft. (6.1 m) apart, or all openings communicating with the interior of the building are at or above the top of the parapets.
 - d. Piping shall be in accordance with NFPA 58 (2017 edition), Section 5.11.
 - e. Hose shall not be used for connection to cylinders.
 - f. The fire department shall be advised of each such installation.
2. Cylinders having water capacities greater than *2.7 lb. (1 kg) [nominal 1 lb. (0.5 kg) LP-Gas capacity]* shall not be located on decks or balconies of dwellings.