

## Temporary Propane Heat for Construction Sites

This pamphlet provides an introduction to base requirements for temporary propane heat for construction sites. Construction site safety managers will want to review these requirements with on-site crews and contractors. Meeting base requirements for temporary propane heat for construction sites ensures the safety of workers and the general public.

These requirements are identified under:

- The Natural Gas and Propane Installation Code (CAN/CSA-B149.1-10) and;
- The Propane Storage and Handling Code (CAN/CSA-B1492.10)

Occupational Health & Safety (OHS), the Workers' Compensation Board (WCB) – Alberta, and your insurance company may have additional requirements concerning the use of construction heaters and propane.

When you rent a propane heater for a construction job site, you are responsible for making sure all equipment is approved and certified.



You are also responsible for seeing that it is set up, maintained and used properly and in compliance with all requirements.

Permits are required to install, alter or add to a gas system, including:

- Installation of construction heaters; piping and tubing, hose and fittings from the gas supply; and
- Propane containers with a capacity of greater than 454 litres; or when containers are manifolded together, creating a combined capacity of over 454 litres.

## Construction Heaters, Cylinders, Tanks and Hoses

Construction heaters must be set up on a solid, level, non-combustible base or suspended according to the manufacturer's instructions. Heaters must not be stored or used in inhabited sections of buildings. Combustible materials such as canvas, wood, and debris must be cleared away from the heater to the distance stated on the heater's instruction plate.

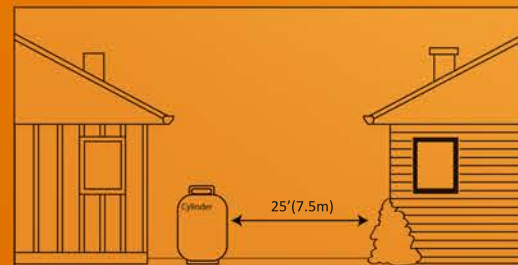
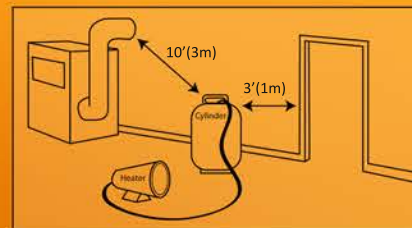
Do not accept or use a cylinder that has signs of damage or deterioration (e.g. dented, rusted, etc) and do not fill a cylinder that is past its re-examination date. All cylinders must have collars to protect the cylinder valve. All unconnected propane cylinders, even if empty, must be stored in a secured, upright position in a well-ventilated area outdoors.

Cylinders must be protected from vehicles and moving equipment by an approved barrier.

When in use, cylinders must be placed on a firm, level base. Concrete sidewalk blocks and steel checker plates make good bases. Be sure to clear away snow and debris before placing the base. Cylinders used inside buildings on construction sites may not be placed near exits, stairs or evacuation passages.

Cylinder Clearances\* - Cylinders in outside storage must be at least:

- 3' (1 m) from any building opening below the level of the relief valve;
- 10' (3 m) from the air intake of any appliance; and
- 25' (7.5 m) from inhabited buildings and property lines.



Indoors, the total capacity of cylinders manifolded together must not be more than 300 lb (135 kg), and manifolds located in the same floor area shall be at least 50' (15 m) apart.

Any source of ignition must be at least 10' (3 m) from the point of connection to a cylinder.

\*If it is not possible to adhere to all clearances on a site, apply for a variance from the authority having jurisdiction.

Tanks with signs of damage or deterioration can compromise safety; do not use a tank if it is damaged or worn. Propane tanks must be stored outside and protected from traffic.

Before using a hose, ensure that it is certified and in good condition. Hoses must be between 15' (4.5 m) and 75' (22.5 m) long. If the distance to cover is more than 75' (22.5 m), you must set up temporary piping. Hoses and pipes must be protected from traffic and other sources of physical damage.

If equipment or vehicle traffic will run over the hose, it can be protected by:

- Bridging the hose with lumber;
- Running the hose through a pipe that is covered by sand or gravel; or
- Running the hose through a pipe that is staked down.



Best practice is to remove from the building any hoses that are no longer connected to a heater.

## Tank Clearances

Total Aggregate Water Capacity USWG (L)	Between Tank and: - Property Line - Source Ignition - Adjacent concrete or masonry wall with no openings within the clearance	Between tank and building wall not of concrete or masonry construction	Between tank and building opening	Between tank and adjacent tank
Up to 125 (475)	None 10' (3m) from any source of ignition	None	3' (1m)	None
Over 125 (475)	10' (3m)	10' (3m)	10' (3m)	3' (1m)
Over 1000 (3800)	10' (3m)	25' (7.5m)	25' (7.5m)	3' (1m)
Over 2000 (7800)	15' (5m)	25' (7.5m)	25' (7.5m)	3' (1m)
Over 5000 (19,000)	25' (7.5m)	25' (7.5m)	25' (7.5m)	3' (1m)
Over 10,000	At the discretion of AHJ	At the discretion of AHJ	At the discretion of AHJ	At the discretion of AHJ

If you cannot meet property line clearances on your site, apply to the authority having jurisdiction (AHJ) for a variance.

## Connections

New connections must be done by a licensed gas fitter. Connections must be made in a well-ventilated area at least 10' (3 m) from any source of ignition. Every new connection must be leak tested with an approved leak test solution or a handheld leak tester before it is used. Checking for the odour of leaking propane or using an unapproved soap solution are not acceptable leak tests.

All unused outlets must be capped by a licensed gas fitter. Turning off the tank/cylinder is not sufficient, as tank/cylinder valves can leak or be tampered with.



**Propane torches must never be left unattended while in operation.** Torches must be used with a pressure regulator, attached to the cylinder valve. The regulator setting must not exceed the design pressure of the torch.



**Direct-fired vaporizers must not be stored or used in buildings.** They are considered a source of ignition, and must be located the required distances from cylinders, tanks, and their points of connection. Current best practice is to place vaporizers in a cage, giving them protection and a stable base. They require vehicle protection similar to tanks if located near traffic areas.



**Never throw or drop a propane container. Propane containers must remain upright at all times during a move to keep the relief valve in contact with vapour, rather than liquid propane.** Collars are not designed for lifting tanks/cylinders and should never be used to hoist containers. Cylinders should be lifted by securing them upright in a cage and hoisting the cage.



**Tank lugs are designed to lift tanks with no more than five per cent fill.** Never use the lugs to lift a tank that is more than five per cent full. To lift a tank, sling it with strapping, not chains. Also, make sure that the equipment doing the lifting is capable of handling the full weight of the tank and propane.



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Scan the code to view our Safety Installation Videos, or visit [www.safetycodes.ab.ca](http://www.safetycodes.ab.ca).

## More Information

For more information about propane fueled construction heaters, contact the Propane Training Institute ([www.propane.ca/en/training](http://www.propane.ca/en/training)), your local propane supplier, the local authority having jurisdiction, or Alberta Municipal Affairs ([www.municipalaffairs.alberta.ca](http://www.municipalaffairs.alberta.ca)).

## Thank you

This project was funded by Alberta Municipal Affairs and supported by the Safety Codes Council.

*Alberta* Municipal Affairs



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