

OSFM INTERPRETATIONS

NUMBER: 02-23

ADOPTION DATE: June 18, 2002

REVISION DATE:

TITLE: LP-Gas Tank (Container) Concealment

RULE or CODE SECTION:

Oregon Uniform Fire Code (1998 Edition), Article 82, Section 8209.

NFPA 58 (2001) and LP-Gas Code Handbook (Sixth Edition), Section 3.2.2.6(b).

NFPA 58 (2001) and LP-Gas Code Handbook (Sixth Edition), Sections 3.2.2.8 & A.3.2.2.8.

NFPA 58 (2001) and LP-Gas Code Handbook (Sixth Edition), Section 3.2.4.5.

CONCERN or ISSUE:

Is it permissible to conceal LP-Gas tanks (containers)? What are the requirements for concealment around LP-Gas tanks (containers)? No clear guidelines in the Oregon Uniform Fire Code or NFPA 58. Industry and the general public are looking for minimum guidelines that would be consistently enforced throughout the state.

BACKGROUND:

In recent years there has been a desire to aesthetically conceal residential propane tanks (containers) and the regulatory codes are not very clear on what is acceptable from an enforcement perspective. This has created an “all over the map” approach to concealment techniques.

In NFPA 58 we find several references that almost pronounce a standard but fall short of a clear position on the issue. The issue of wood fencing around propane tanks has surfaced time and again from both the industry and the general public and they have requested an interpretation be developed by the State Fire Marshal’s Office.

In response to the request for specifics about acceptable designs for wood or other structures, there are combined guidelines found in NFPA 58 that do establish a standard for the industry and the general public. The request was to simply have an interpretation on existing codes and standards that can be consistently enforced by authorities having jurisdiction.

CONCLUSION:

The current codes and standards appear to allow fencing but do not give clear and concise requirements. The primary goal of this interpretation is to provide guidelines on what would be acceptable wood fencing to conceal an LP-Gas tank (containers). This interpretation applies to installations of 2000 gallons (aggregate) or less.

Wood fencing may be permitted under the following guidelines:

- 1) Fencing is constructed to a maximum height of 12 inches above the top of the tank (containers) and height shall not exceed 72 inches above grade.
- 2) Fencing is constructed with a minimum clearance of 6 inches above grade. NOTE: 50% of the enclosure shall maintain this opening for airflow.
- 3) Fencing shall be a minimum distance of 36 inches, measured horizontally, from all sides of the container.
- 4) Gates, if supplied, shall not be locked.
- 5) Storage shall not be allowed within the enclosure.
- 6) Weed and grass shall maintained so they do not create a fire hazard within the fenced enclosure.

NOTE: Check with local building official for permit requirements.

NOTE: Fences constructed of any other material shall be approved by the authority having jurisdiction prior to construction.

Approved by: R. L. Garrison
State Fire Marshal

Date: 06 – 24 – 02

REFERENCE MATERIAL

Oregon Uniform Fire Code (1998 Edition)

8209 Weeds, grass, brush, trash and other combustible materials shall be kept not less than 10 feet (3048 mm) from LP-gas tanks or containers.

NFPA 58 (2001) and LP-Gas Code Handbook (Sixth Edition)

3.2.2.6(b) Loose or piled combustible material and weeds and long dry grass shall be separated from containers by a minimum of 10 ft. (3.0 m).

The 10-ft (3-m) separation helps prevent a possible grass or brush fire from affecting the LP-Gas container. Note that the separation requirement does not apply to live vegetation and to wood fences, which are not piled material.

3.2.2.8 Structures such as fire walls, fences, earth or concrete barriers, and other similar structures shall be avoided around or over installed nonrefrigerated containers.

Exception No. 1: Such structures partially enclosing containers shall be permitted if designed in accordance with a sound fire protection analysis.

Exception No. 2: Structures used to prevent flammable or combustible liquid accumulation or flow shall be permitted in accordance with 3.2.2.6(c).

Exception No. 3: Structures between LP-Gas containers and gaseous hydrogen containers shall be permitted in accordance with 3.2.2.6(f).

Exception No. 4: Fences shall be permitted in accordance with 3.3.6.

A.3.2.2.8 The presence of such structures can create significant hazards, such as the following:

- (1) Pocketing of escaping gas.
- (2) Interference with application of cooling water by fire departments.
- (3) Redirection of flames against containers.
- (4) Impeding the egress of personnel in an emergency.

Paragraph 3.2.2.8 was inspired by a serious BLEVE of an aboveground propane container that had been enclosed in a roof-over enclosure for aesthetic reasons. The enclosure not only contributed to ignition but also made it difficult for the fire department to apply cooling water to the container. The technical committee also was aware of an increasing use of fences to hide LP-Gas containers or to limit the travel of container pieces in the event of a BLEVE. Exception No. 1 to 3.2.2.8 recognizes that the problems associated with such structures can be prevented by design that eliminate the problems cited in A.3.2.2.8.

If a structure is desired to hide an LP-Gas container, it is important to use materials that allow air to circulate freely. Examples of such materials are chain-link fence or materials that have

significant openings on all sides. Wood can be used, but its flammability must be considered. Wood cannot be stacked around an LP-gas container per 3.2.2.6(b), but its use in a structure is not prohibited. A light fence constructed of wood, if ignited, would probably be consumed before generating enough heat to affect an LP-Gas container.

3.2.4.5 ASME containers shall be installed so that all container operating appurtenances are accessible.

Requirement 3.2.4.5 states what to most people is obvious. The requirement prevents containers from being installed with valves, gauges, or controls that are inaccessible. Occasionally a storage container must be evacuated before it is moved or for other reasons. Fittings for container evacuation eliminate the need to roll a container on its side to pump it out. Many other installation situations in which the container appurtenances may not be accessible will occur unless attention is given to the container position before installation.