



Proper Distance from Building Openings, External Ignition Sources, Direct-vent Appliances, and Air Intakes

PROPANE CONTAINERS SEPARATION DISTANCES

Maintaining Separation Distance Codes - Does It Matter?

Of course it does! Unfortunately as we drive around, many propane containers can be seen located too close to buildings, combustibles, other LPG containers, and lines of adjoining property that can be built upon. NFPA 58, the Liquefied Petroleum Gas Code and/or specific state codes set forth safe minimum distances that should be followed.

When does it matter? In many cases, these situations are not identified until it is too late and there has been an accident. With any accident involving injury, death or significant property damage there will be a thorough investigation of the entire installation. This will include examining the container and determining if it has met the proper minimum distance standards.

Many reasons have been given and excuses made for why propane containers are not set within code. But, in reality, there is no excuse. Container distance standards have been noted in codes for many years. All too often we hear, "If I don't fill it someone else will." Try telling that excuse to a jury with a horribly burned victim on the stand. We have heard, "the customer told me that is where they want the container." The customer may assist in choosing placement of a container, but the final placement still must meet distance standards. The propane marketer has the duty to explain the codes to the customer.

The Code and other safety regulations are minimum requirements and they should never be compromised for the sake of convenience or a customer request.

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LPG Container Separations Reminders:

- Educate all personnel of the proper distance codes for all propane containers.
- Install and verify existing LPG containers are installed per code.
- Move containers when distance codes are not met.
- Document the installation of container.

The Purpose of Distance Requirements (NFPA 58 Handbook 2017)

The separation distances are intended to reflect the container's relative exposure hazard for propane containers from buildings, ignition sources, building lines of adjoining property that can be built upon, other LP containers, other combustible fuels, and many other prohibited locations. Distances are determined by a combination of the following factors: potential hazard of LP Gas, size and type of container used to contain it, possibility of leaks (which can ignite), and the need for fuel in buildings. Separation distances are not meant as a worst case scenario; but, as a minimum safe distance for radiant heat exposure to and from the containers.

Table 6.4.1.1 (NFPA 58 2017)

501 - 2,000 Gallons Water Capacity
Minimum Distances = 25'
Separation Distances between Containers, Important Buildings, and Line of Adjoining Property That Can Be Built Upon

Exception

6.4.1.3 The 25 ft (7.6 m) minimum distance from aboveground ASME containers of 501 gal through 2000 gal (1.9 m³ through 7.6 m³) water capacity to buildings, a group of buildings, or the line of adjoining property that can be built upon shall be reduced to 10 ft (3 m) for a single ASME container of 1200 gal (4.5 m³) or less water capacity where such container is at least 25 ft (7.6 m) from any other LP-Gas container of more than 125 gal (0.5 m³) water capacity.



1000 Aboveground Gallon Propane Container

Why comply with distance requirements? Actual Accident Scenario

- 1 500 gallon tank located 5 feet from building
- 2 Fire in home impinges propane container causing it to rupture striking and killing an individual.

Who is at fault for the death of the injured party?

Although the propane marketer did not directly cause the fire, the mere fact that the container was located within the minimum distance requirement from the building, the plaintiff is going to argue that the propane marketer was negligent and partially, if not completely liable, for the individual's death in this accident. The tank may have still



Container ruptured (BLEVED) from fire

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BLEVED if it was at the required minimum distance of 10 feet, but at least the marketer could be defended that the installation met code.

Conclusion

Not all accidents can be prevented. However, a propane gas marketer is in a more defensible position if they can demonstrate they adhered to the minimum required safety standards. This shows the crucial importance of following codes within the jurisdictions you operate in. If followed, the LPG marketer is in a much better position to defend their actions. **Please review propane container distance requirements for all jurisdictions and make sure you are in compliance.**

Don't Ignore the Issue

"Tank placement code violations tend to occur when marketers deliver to customer-owned tanks. Unless the code violation is obvious, it is often ignored."

John V. McCoy
McCoy Leavitt Laskey LLC

John McCoy is an attorney with the law firm of McCoy Leavitt Laskey LLC. He and his firm represent propane industry members nationwide. In an article he wrote for the December 2016 edition of LP Gas magazine, Mr. McCoy conveys some details on what is often seen in courtrooms. Click on the following link to read the entire article: <https://www.cfins.com/wp-content/uploads/2016/03/lp-gas-legal.pdf>

The tables below are taken from Chapter 6 and Annex I of the NFPA 58 2017 edition. Encourage your propane delivery personnel to evaluate tank separation distances before making a delivery. Drivers should be instructed to immediately report any deficiency of the system they see, which includes container distances.

Table 6.4.1.1 Separation Distances Between Containers, Important Buildings, and Line of Adjoining Property That Can Be Built Upon

Water Capacity per Container		Minimum Distances					
		Mounded or Underground Containers ^a		Aboveground Containers		Between Containers ^b	
		ft	m	ft	m	ft	m
gal	m ³						
<125 ^c	<0.5 ^c	10	3	0 ^d	0 ^d	0	0
125–250	0.5–1.0	10	3	10	3	0	0
251–500	>1.0–1.9	10	3	10	3	3	1
501–2,000	>1.9–7.6	10	3	25 ^e	7.6	3	1
2,001–30,000	>7.6–114	50	15	50	15	5	1.5
30,001–70,000	>114–265	50	15	75	23		
70,001–90,000	>265–341	50	15	100	30		
90,001–120,000	>341–454	50	15	125	38		
120,001–200,000	>454–757	50	15	200	61		
200,001–1,000,000	>757–3,785	50	15	300	91		
>1,000,000	>3,785	50	15	400	122		

^aSee 6.4.2.1.

^bSee 6.4.4.5.

^cSee 6.4.4.4.

^dSee 6.4.4.1, 6.4.4.2, 6.4.4.3, and 6.4.4.4.

^eSee 6.4.1.3.

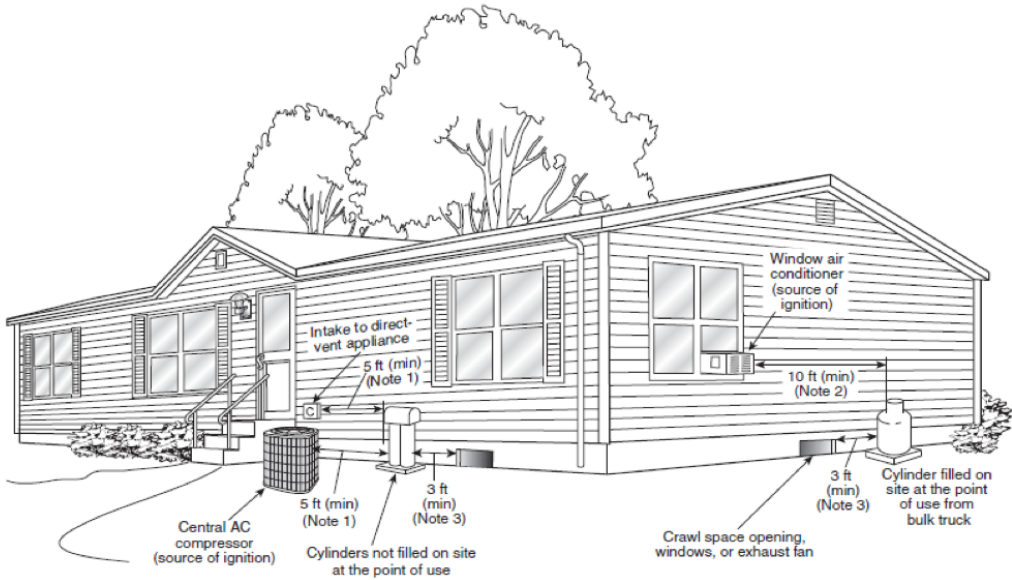


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Table 6.4.4.3 Separation Distance Between Container Pressure Relief Valve and Building Openings

Container Type	Exchange or Filled on Site at Point of Use	Distance Horizontally from Relief Valve Discharge to Opening Below Discharge		Discharge from Relief Valve, Vent Discharge, and Filling Connection to Exterior Source of Ignition, Openings into Direct-Vent Appliances, and Mechanical Ventilation Air Intakes	
		ft	m	ft	m
Cylinder	Exchange	3	0.9	5	1.5
Cylinder	Filled on site at the point of use	3	0.9	10	3.0
ASME	Filled on site at the point of use	5	1.5	10	3.0



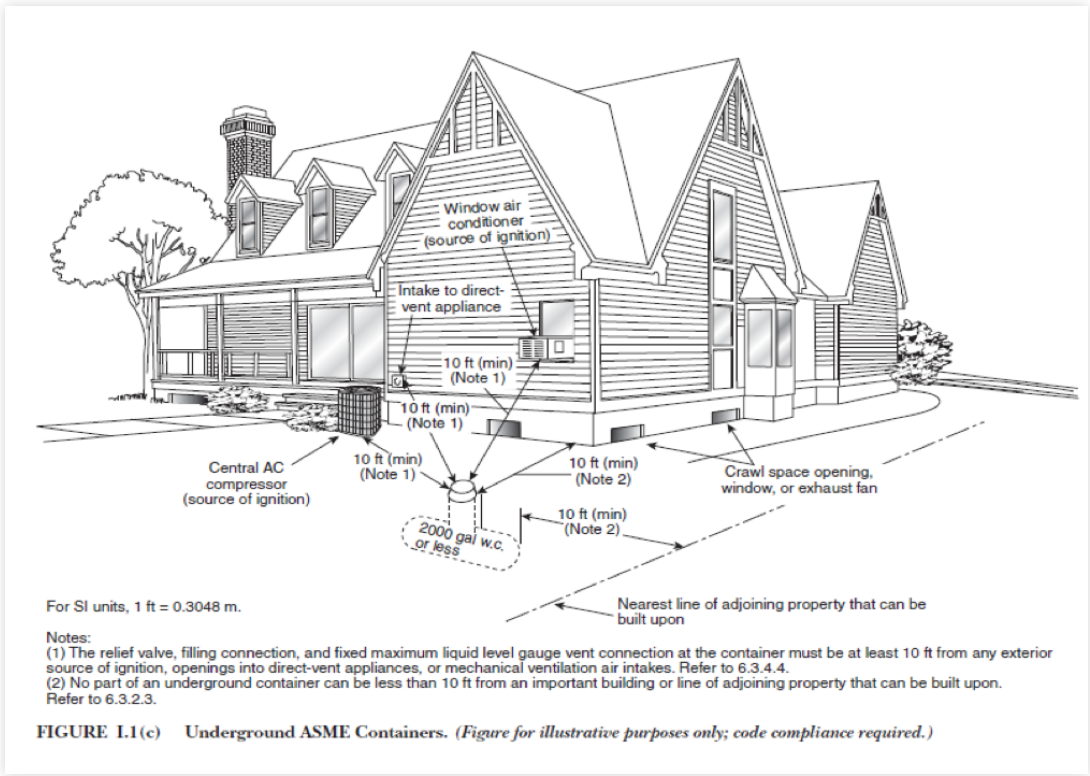
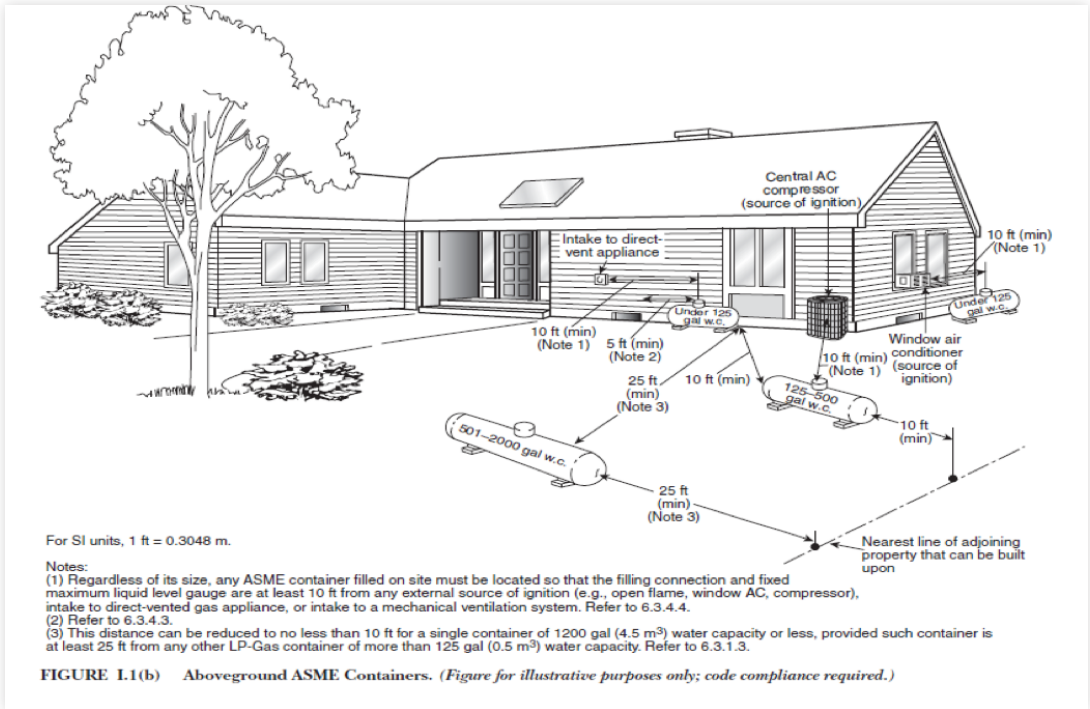
For SI units, 1 ft = 0.3048 m.

- Notes:
- (1) 5 ft minimum from relief valve in any direction away from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to Table 6.3.4.3.
 - (2) If the cylinder is filled on site at the point of use from a cargo tank motor vehicle, the filling connection and vent valve must be at least 10 ft from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 6.3.4.4.
 - (3) Refer to 6.3.4.3.

FIGURE I.1(a) Cylinders. (Figure for illustrative purposes only; code compliance required.)

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