

**ORDINANCE FOR ADOPTION OF  
THE INTERNATIONAL FIRE CODE  
ORDINANCE NO. 2011-6**

An ordinance of OTSEGO COUNTY, MICHIGAN adopting the International Fire Code, regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises in OTSEGO COUNTY; providing for the issuance of permits and collection of fees therefore;

The BOARD OF COMMISSIONERS of OTSEGO COUNTY, MICHIGAN does ordain as follows:

Section 1. That a certain document, One (1) copy of which are on file in the office of the OTSEGO COUNTY CLERK of OTSEGO COUNTY, MICHIGAN, being marked and designated as the International Fire Code, including Appendix Chapters, B, C, D, E, F AND G as published by the International Code Council, be and is hereby adopted as the Fire Code of OTSEGO COUNTY, in the State of MICHIGAN regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises as herein provided; providing for the issuance of permits and collection of fees therefore; and each and all of the regulations, provisions, penalties, conditions and terms of said Fire Code on file in the office of the OTSEGO COUNTY CLERK are hereby referred to, adopted, and made a part hereof, as if fully set out in this ordinance, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance.

Section 2. That the following sections are hereby revised:

Section 101.1 Insert: OTSEGO COUNTY, MICHIGAN

Section 109.3. Insert: CIVIL INFRACTION, \$500.00 AND \$0.00

Section 111.4. Insert: \$50.00 AND \$500.00

Section 3. That the geographic limits referred to in certain sections of the International Fire Code are hereby established as follows:

Section 3204.3.1.1 Not permitted in R1, R2, R3, RR, FR, B1 or B2 zoning districts.

Section 3404.2.9.5.1 Not permitted in R1, R2, R3, RR, FR, B1 or B2 zoning districts.

Section 3406.2.4.4 Not permitted in R1, R2, R3, RR, FR, B1 or B2 zoning districts.

Section 3804.2 Not permitted in any zoning district without a special use permit approved by the Otsego County Planning Commission.

Section 4. That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The OTSEGO COUNTY, BOARD OF COMMISSIONERS hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that anyone or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 5. That nothing in this ordinance or in the Fire Code hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance or legal right or remedy of any character be lost, impaired or affected by this ordinance.

Section 6. That the OTSEGO COUNTY CLERK is hereby ordered and directed to cause this ordinance to be published.

Section 7. This ordinance duly adopted on 4/26/11 at a regular meeting of the OTSEGO COUNTY BOARD OF COMMISSIONERS and will become effective 6/14/11.

Signed:

BY: Paul Beachnu

Paul Beachnu, County Board Chairman

BY: Susan I. DeFeyter

Susan I. DeFeyter, County Clerk

# CHAPTER 1

## ADMINISTRATION

### SECTION 101 GENERAL

**101.1 Title.** These regulations shall be known as the *Fire Code* of [NAME OF JURISDICTION], hereinafter referred to as "this code."

**101.2 Scope.** This code establishes regulations affecting or relating to structures, processes, premises and safeguards regarding:

1. The hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices;
2. Conditions hazardous to life, property or public welfare in the occupancy of structures or premises;
3. Fire hazards in the structure or on the premises from occupancy or operation;
4. Matters related to the construction, extension, repair, alteration or removal of fire suppression or alarm systems.

**101.2.1 Appendices.** Provisions in the appendices shall not apply unless specifically adopted.

**101.3 Intent.** The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises and to provide safety to fire fighters and emergency responders during emergency operations.

**101.4 Severability.** If a section, subsection, sentence, clause or phrase of this code is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

**101.5 Validity.** In the event any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions hereof, which are determined to be legal; and it shall be presumed that this code would have been adopted without such illegal or invalid parts or provisions.

### SECTION 102 APPLICABILITY

**102.1 Construction and design provisions.** The construction and design provisions of this code shall apply to:

1. Structures, facilities and conditions arising after the adoption of this code.
2. Existing structures, facilities and conditions not legally in existence at the time of adoption of this code.
3. Existing structures, facilities and conditions when identified in specific sections of this code.

4. Existing structures, facilities and conditions which, in the opinion of the fire code official, constitute a distinct hazard to life or property.

**102.2 Administrative, operational and maintenance provisions.** The administrative, operational and maintenance provisions of this code shall apply to:

1. Conditions and operations arising after the adoption of this code.
2. Existing conditions and operations.

**102.3 Change of use or occupancy.** No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the *International Building Code*. Subject to the approval of the fire code official, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code and the *International Building Code* for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

**102.4 Application of building code.** The design and construction of new structures shall comply with the *International Building Code*, and any alterations, additions, changes in use or changes in structures required by this code, which are within the scope of the *International Building Code*, shall be made in accordance therewith.

**102.5 Historic buildings.** The provisions of this code relating to the construction, alteration, repair, enlargement, restoration, relocation or moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local jurisdiction as historic buildings when such buildings or structures do not constitute a distinct hazard to life or property. Fire protection in designated historic buildings and structures shall be provided in accordance with an approved fire protection plan.

**102.6 Referenced codes and standards.** The codes and standards referenced in this code shall be those that are listed in Chapter 45 and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply.

**102.7 Subjects not regulated by this code.** Where no applicable standards or requirements are set forth in this code, or are contained within other laws, codes, regulations, ordinances or bylaws adopted by the jurisdiction, compliance with applicable standards of the National Fire Protection Association or other nationally recognized fire safety standards, as approved, shall be deemed as prima facie evidence of compliance with the intent of this code. Nothing herein shall derogate from the authority of the fire code official to determine compliance with

## SECTION 109 VIOLATIONS

**109.1 Unlawful acts.** It shall be unlawful for a person, firm or corporation to erect, construct, alter, repair, remove, demolish or utilize a building, occupancy, premises or system regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

**109.2 Notice of violation.** When the fire code official finds a building, premises, vehicle, storage facility or outdoor area that is in violation of this code, the fire code official is authorized to prepare a written notice of violation describing the conditions deemed unsafe and, when compliance is not immediate, specifying a time for reinspection.

**109.2.1 Service.** A notice of violation issued pursuant to this code shall be served upon the owner, operator, occupant, or other person responsible for the condition or violation, either by personal service, mail, or by delivering the same to, and leaving it with, some person of responsibility upon the premises. For unattended or abandoned locations, a copy of such notice of violation shall be posted on the premises in a conspicuous place at or near the entrance to such premises and the notice of violation shall be mailed by certified mail with return receipt requested or a certificate of mailing, to the last known address of the owner, occupant or both.

**109.2.2 Compliance with orders and notices.** A notice of violation issued or served as provided by this code shall be complied with by the owner, operator, occupant or other person responsible for the condition or violation to which the notice of violation pertains.

**109.2.3 Prosecution of violations.** If the notice of violation is not complied with promptly, the fire code official is authorized to request the legal counsel of the jurisdiction to institute the appropriate legal proceedings at law or in equity to restrain, correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant hereto.

**109.2.4 Unauthorized tampering.** Signs, tags or seals posted or affixed by the fire code official shall not be mutilated, destroyed or tampered with or removed without authorization from the fire code official.

**109.3 Violation penalties.** Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a [SPECIFY OFFENSE], punishable by a fine of not more than [AMOUNT] dollars or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

**109.3.1 Abatement of violation.** In addition to the imposition of the penalties herein described, the fire code official is authorized to institute appropriate action to prevent unlawful construction or to restrain, correct or abate a violation; or

to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.

## SECTION 110 UNSAFE BUILDINGS

**110.1 General.** If during the inspection of a premises, a building or structure or any building system, in whole or in part, constitutes a clear and imminent threat to human life, safety or health, the fire code official shall issue such notice or orders to remove or remedy the conditions as shall be deemed necessary in accordance with this section and shall refer the building to the building department for any repairs, alterations, remodeling, removing or demolition required.

**110.1.1 Unsafe conditions.** Structures or existing equipment that are or hereafter become unsafe or deficient because of inadequate means of egress or which constitute a fire hazard, or are otherwise dangerous to human life or the public welfare, or which involve illegal or improper occupancy or inadequate maintenance, shall be deemed an unsafe condition. A vacant structure which is not secured against unauthorized entry as required by Section 311 shall be deemed unsafe.

**110.1.2 Structural hazards.** When an apparent structural hazard is caused by the faulty installation, operation or malfunction of any of the items or devices governed by this code, the fire code official shall immediately notify the building code official in accordance with Section 110.1.

**110.2 Evacuation.** The fire code official or the fire department official in charge of an incident shall be authorized to order the immediate evacuation of any occupied building deemed unsafe when such building has hazardous conditions that present imminent danger to building occupants. Persons so notified shall immediately leave the structure or premises and shall not enter or re-enter until authorized to do so by the fire code official or the fire department official in charge of the incident.

**110.3 Summary abatement.** Where conditions exist that are deemed hazardous to life and property, the fire code official or fire department official in charge of the incident is authorized to abate summarily such hazardous conditions that are in violation of this code.

**110.4 Abatement.** The owner, operator, or occupant of a building or premises deemed unsafe by the fire code official shall abate or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation, demolition or other approved corrective action.

## SECTION 111 STOP WORK ORDER

**111.1 Order.** Whenever the fire code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the fire code official is authorized to issue a stop work order.

**111.2 Issuance.** A stop work order shall be in writing and shall be given to the owner of the property, or to the owner's agent, or

## ADMINISTRATION

to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work is authorized to resume.

**111.3 Emergencies.** Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work.

**111.4 Failure to comply.** Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.

**3204.2.1.3 Ventilation.** Storage areas for stationary containers shall be ventilated in accordance with the *International Mechanical Code*.

**3204.2.2 Portable containers.** Indoor storage of portable containers shall comply with the provisions applicable to the type of fluid stored and Sections 3204.2.2.1 through 3204.2.2.3.

**3204.2.2.1 Containers.** Portable containers shall comply with Section 3203.1.

**3204.2.2.2 Construction of indoor areas.** Cryogenic fluids in portable containers stored indoors shall be stored in buildings, rooms or areas constructed in accordance with the *International Building Code*.

**3204.2.2.3 Ventilation.** Storage areas shall be ventilated in accordance with the *International Mechanical Code*.

**3204.3 Outdoor storage.** Outdoor storage of containers shall be in accordance with Sections 3204.3.1 through 3204.3.2.2.

**3204.3.1 Stationary containers.** The outdoor storage of stationary containers shall comply with Section 3203 and this section.

**3204.3.1.1 Location.** Stationary containers shall be located in accordance with Section 3203.6. Containers of cryogenic fluids shall not be located within diked areas containing other hazardous materials.

Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).

**3204.3.1.2 Areas subject to flooding.** Stationary containers located in areas subject to flooding shall be securely anchored or elevated to prevent the containers from separating from foundations or supports.

**3204.3.1.3 Drainage.** The area surrounding stationary containers shall be provided with a means to prevent accidental discharge of fluids from endangering personnel, containers, equipment and adjacent structures or to enter enclosed spaces. The stationary container shall not be placed where spilled or discharged fluids will be retained around the container.

**Exception:** These provisions shall not apply when it is determined by the fire code official that the container does not constitute a hazard, after consideration of special features such as crushed rock utilized as a heat sink, topographical conditions, nature of occupancy, proximity to structures on the same or adjacent property, and the capacity and construction of containers and character of fluids to be stored.

**3204.3.2 Portable containers.** Outdoor storage of portable containers shall comply with Section 3203 and this section.

**3204.3.2.1 Location.** Portable containers shall be located in accordance with Section 3203.6.

**3204.3.2.2 Drainage.** The area surrounding portable containers shall be provided with a means to prevent accidental discharge of fluids from endangering adjacent containers, buildings, equipment or adjoining property.

**Exception:** These provisions shall not apply when it is determined by the fire code official that the container does not constitute a hazard.

**3204.4 Underground tanks.** Underground tanks for the storage of liquid hydrogen shall be in accordance with Sections 3204.4.1 through 3204.5.3.

**3204.4.1 Construction.** Storage tanks for liquid hydrogen shall be designed and constructed in accordance with *ASME Boiler and Pressure Vessel Code* (Section VIII, Division 1) and shall be vacuum jacketed in accordance with Section 3204.5.

**3204.4.2 Location.** Storage tanks shall be located outside in accordance with the following:

1. Tanks and associated equipment shall be located with respect to foundations and supports of other structures such that the loads carried by the latter cannot be transmitted to the tank.
2. The distance from any part of the tank to the nearest wall of a basement, pit, cellar or lot line shall not be less than 3 feet (914 mm).
3. A minimum distance of 1 foot (1525 mm), shell to shell, shall be maintained between underground tanks.

**3204.4.3 Depth, cover and fill.** The tank shall be buried such that the top of the vacuum jacket is covered with a minimum of 1 foot (305 mm) of earth and with concrete a minimum of 4 inches (102 mm) thick placed over the earthen cover. The concrete shall extend a minimum of 1 foot (305 mm) horizontally beyond the footprint of the tank in all directions. Underground tanks shall be set on firm foundations constructed in accordance with the *International Building Code* and surrounded with at least 6 inches (152 mm) of noncorrosive inert material, such as sand.

**Exception:** The vertical extension of the vacuum jacket as required for service connections.

**3204.4.4 Anchorage and security.** Tanks and systems shall be secured against accidental dislodgement in accordance with this chapter.

**3204.4.5 Venting of underground tanks.** Vent pipes for underground storage tanks shall be in accordance with Sections 2209.5.4 and 3203.3.

**3204.4.6 Underground liquid hydrogen piping.** Underground liquid hydrogen piping shall be vacuum jacketed or protected by approved means and designed in accordance with this chapter.

**3204.4.7 Overfill protection and prevention systems.** An approved means or method shall be provided to prevent the overfill of all storage tanks.

**3204.5 Vacuum jacket construction.** The vacuum jacket shall be designed and constructed in accordance with Section VIII of *ASME Boiler and Pressure Vessel Code* and shall be designed

**3404.2.9.5.1 Locations where above-ground tanks are prohibited.** Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).

**3404.2.9.5.1.1 Location of tanks with pressures 2.5 psig or less.** Above-ground tanks operating at pressures not exceeding 2.5 psig (17.2 kPa) for storage of Class I, II or IIIA liquids, which are designed with a floating roof, a weak roof-to-shell seam or equipped with emergency venting devices limiting pressure to 2.5 psig (17.2 kPa), shall be located in accordance with Table 4.3.2.1.1(a) of NFPA 30.

**Exceptions:**

1. Vertical tanks having a weak roof-to-shell seam and storing Class IIIA liquids are allowed to be located at one-half the distances specified in Table 4.3.2.1.1(a) of NFPA 30, provided the tanks are not within a diked area or drainage path for a tank storing Class I or II liquids.
2. Liquids with boilover characteristics and unstable liquids in accordance with Sections 3404.2.9.5.1.3 and 3404.2.9.5.1.4.
3. For protected above-ground tanks in accordance with Section 3404.2.9.6 and tanks in at-grade or above-grade vaults in accordance with Section 3404.2.8, the distances in Table 4.3.2.1.1(b) of NFPA 30 shall apply and shall be reduced by one-half, but not to less than 5 feet (1524 mm).

**3404.2.9.5.1.2 Location of tanks with pressures exceeding 2.5 psig.** Above-ground tanks for the storage of Class I, II or IIIA liquids operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa) shall be located in accordance with Table 4.3.2.1.2 of NFPA 30.

**Exception:** Liquids with boilover characteristics and unstable liquids in accordance with Sections 3404.2.9.5.1.4 and 3404.2.9.5.1.5.

**3404.2.9.5.1.3 Location of tanks for boilover liquids.** Above-ground tanks for storage of liquids with boilover characteristics shall be located in accordance with Table 4.3.2.1.3 of NFPA 30.

**3404.2.9.5.1.4 Location of tanks for unstable liquids.** Above-ground tanks for the storage of unstable liquids shall be located in accordance with Table 4.3.2.1.4 of NFPA 30.

**3404.2.9.5.1.5 Location of tanks for Class IIIB liquids.** Above-ground tanks for the storage of Class IIIB liquids, excluding unstable liquids, shall be located in accordance with Table 4.3.2.1.5

of NFPA 30, except when located within a diked area or drainage path for a tank or tanks storing Class I or II liquids. Where a Class IIIB liquid storage tank is within the diked area or drainage path for a Class I or II liquid, distances required by Section 3404.2.9.5.1.1 shall apply.

**3404.2.9.5.1.6 Reduction of separation distances to adjacent property.** Where two tank properties of diverse ownership have a common boundary, the fire code official is authorized to, with the written consent of the owners of the two properties, apply the distances in Sections 3404.2.9.5.1.2 through 3404.2.9.5.1.5 assuming a single property.

**3404.2.9.5.2 Separation between adjacent stable or unstable liquid tanks.** The separation between tanks containing stable liquids shall be in accordance with Table 4.3.2.2.1 of NFPA 30. Where tanks are in a diked area containing Class I or II liquids, or in the drainage path of Class I or II liquids, and are compacted in three or more rows or in an irregular pattern, the fire code official is authorized to require greater separation than specified in Table 4.3.2.2.1 of NFPA 30 or other means to make tanks in the interior of the pattern accessible for fire-fighting purposes.

**Exception:** Tanks used for storing Class IIIB liquids are allowed to be spaced 3 feet (914 mm) apart unless within a diked area or drainage path for a tank storing Class I or II liquids.

The separation between tanks containing unstable liquids shall not be less than one-half the sum of their diameters.

**3404.2.9.5.3 Separation between adjacent tanks containing flammable or combustible liquids and LP-gas.** The minimum horizontal separation between an LP-gas container and a Class I, II or IIIA liquid storage tank shall be 20 feet (6096 mm) except in the case of Class I, II or IIIA liquid tanks operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa), in which case the provisions of Section 3404.2.9.5.2 shall apply.

An approved means shall be provided to prevent the accumulation of Class I, II or IIIA liquids under adjacent LP-gas containers such as by dikes, diversion curbs or grading. When flammable or combustible liquid storage tanks are within a diked area, the LP-gas containers shall be outside the diked area and at least 10 feet (3048 mm) away from the centerline of the wall of the diked area.

**Exceptions:**

1. Liquefied petroleum gas containers of 125 gallons (473 L) or less in capacity installed adjacent to fuel-oil supply tanks of 660 gallons (2498 L) or less in capacity.
2. Horizontal separation is not required between above-ground LP-gas containers

2. Well drilling and operating.
3. Bulk plants or terminals.
4. Bulk transfer and process transfer operations utilizing tank vehicles and tank cars.
5. Tank vehicles and tank vehicle operation.
6. Refineries.
7. Vapor recovery and vapor-processing systems.

**3406.2 Storage and dispensing of flammable and combustible liquids on farms and construction sites.** Permanent and temporary storage and dispensing of Class I and II liquids for private use on farms and rural areas and at construction sites, earth-moving projects, gravel pits or borrow pits shall be in accordance with Sections 3406.2.1 through 3406.2.8.1.

**Exception:** Storage and use of fuel oil and containers connected with oil-burning equipment regulated by Section 603 and the *International Mechanical Code*.

**3406.2.1 Combustibles and open flames near tanks.** Storage areas shall be kept free from weeds and extraneous combustible material. Open flames and smoking are prohibited in flammable or combustible liquid storage areas.

**3406.2.2 Marking of tanks and containers.** Tanks and containers for the storage of liquids above ground shall be conspicuously marked with the name of the product which they contain and the words: FLAMMABLE—KEEP FIRE AND FLAME AWAY. Tanks shall bear the additional marking: KEEP 50 FEET FROM BUILDINGS.

**3406.2.3 Containers for storage and use.** Metal containers used for storage of Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design.

Discharge devices shall be of a type that do not develop an internal pressure on the container. Pumping devices or approved self-closing faucets used for dispensing liquids shall not leak and shall be well-maintained. Individual containers shall not be interconnected and shall be kept closed when not in use.

Containers stored outside of buildings shall be in accordance with Section 3404 and the *International Building Code*.

**3406.2.4 Permanent and temporary tanks.** The capacity of permanent above-ground tanks containing Class I or II liquids shall not exceed 1,100 gallons (4164 L). The capacity of temporary above-ground tanks containing Class I or II liquids shall not exceed 10,000 gallons (37 854 L). Tanks shall be of the single-compartment design.

**Exception:** Permanent above-ground tanks of greater capacity which meet the requirements of Section 3404.2.

**3406.2.4.1 Fill-opening security.** Fill openings shall be equipped with a locking closure device. Fill openings shall be separate from vent openings.

**3406.2.4.2 Vents.** Tanks shall be provided with a method of normal and emergency venting. Normal vents shall also be in accordance with Section 3404.2.7.3.

Emergency vents shall be in accordance with Section 3404.2.7.4. Emergency vents shall be arranged to discharge in a manner which prevents localized overheating or flame impingement on any part of the tank in the event that vapors from such vents are ignited.

**3406.2.4.3 Location.** Tanks containing Class I or II liquids shall be kept outside and at least 50 feet (15 240 mm) from buildings and combustible storage. Additional distance shall be provided when necessary to ensure that vehicles, equipment and containers being filled directly from such tanks will not be less than 50 feet (15 240 mm) from structures, haystacks or other combustible storage.

**3406.2.4.4 Locations where above-ground tanks are prohibited.** The storage of Class I and II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).

**3406.2.5 Type of tank.** Tanks shall be provided with top openings only or shall be elevated for gravity discharge.

**3406.2.5.1 Tanks with top openings only.** Tanks with top openings shall be mounted as follows:

1. On well-constructed metal legs connected to shoes or runners designed so that the tank is stabilized and the entire tank and its supports can be moved as a unit; or
2. For stationary tanks, on a stable base of timbers or blocks approximately 6 inches (152 mm) in height which prevents the tank from contacting the ground.

**3406.2.5.1.1 Pumps and fittings.** Tanks with top openings only shall be equipped with a tightly and permanently attached, approved pumping device having an approved hose of sufficient length for filling vehicles, equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective antisiphoning device shall be included in the pump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge devices shall not be used.

**3406.2.5.2 Tanks for gravity discharge.** Tanks with a connection in the bottom or the end for gravity-dispensing liquids shall be mounted and equipped as follows:

1. Supports to elevate the tank for gravity discharge shall be designed to carry all required loads and provide stability.
2. Bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat-activated releasing device. Where this valve cannot be operated manually, it shall be supplemented by a second, manually operated valve.

**SECTION 3804  
LOCATION OF CONTAINERS**

**3804.1 General.** The storage and handling of LP-gas and the installation and maintenance of related equipment shall comply with NFPA 58 and be subject to the approval of the fire code official, except as provided in this chapter.

**3804.2 Maximum capacity within established limits.** Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L) (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).

**Exception:** In particular installations, this capacity limit shall be determined by the fire code official, after consideration of special features such as topographical conditions,

nature of occupancy, and proximity to buildings, capacity of proposed containers, degree of fire protection to be provided and capabilities of the local fire department.

**3804.3 Container location.** Containers shall be located with respect to buildings, public ways, and lot lines of adjoining property that can be built upon, in accordance with Table 3804.3.

**3804.3.1 Special hazards.** Containers shall also be located with respect to special hazards such as above-ground flammable or combustible liquid tanks, oxygen or gaseous hydrogen containers, flooding or electric power lines as specified in NFPA 58, Section 6.4.5.

**3804.4 Multiple container installation.** Multiple container installations with a total water storage capacity of more than 180,000 gallons (681 300 L) [150,000-gallon (567 750 L) LP-gas capacity] shall be subdivided into groups containing

**TABLE 3804.3  
LOCATION OF LP-GAS CONTAINERS**

CONTAINER CAPACITY (water gallons)	MINIMUM SEPARATION BETWEEN CONTAINERS AND BUILDINGS, PUBLIC WAYS OR LOT LINES OF ADJOINING PROPERTY THAT CAN BE BUILT UPON		MINIMUM SEPARATION BETWEEN CONTAINERS <sup>b,c</sup> (feet)
	Mounded or underground containers <sup>a</sup> (feet)	Above-ground containers <sup>b</sup> (feet)	
Less than 125 <sup>d</sup>	10	5 <sup>e</sup>	None
125 to 250	10	10	None
251 to 500	10	10	3
501 to 2,000	10	25 <sup>e,f</sup>	3
2,001 to 30,000	50	50	5
30,001 to 70,000	50	75	(0.25 of sum of diameters of adjacent containers)
70,001 to 90,000	50	100	
90,001 to 120,000	50	125	

For SI: 1 foot = 304.8 mm, 1 gallon = 3.785 L.

- a. Minimum distance for underground containers shall be measured from the pressure relief device and the filling or liquid-level gauge vent connection at the container, except that all parts of an underground container shall be 10 feet or more from a building or lot line of adjoining property which can be built upon.
- b. For other than installations in which the overhanging structure is 50 feet or more above the relief-valve discharge outlet. In applying the distance between buildings and ASME containers with a water capacity of 125 gallons or more, a minimum of 50 percent of this horizontal distance shall also apply to all portions of the building which project more than 5 feet from the building wall and which are higher than the relief valve discharge outlet. This horizontal distance shall be measured from a point determined by projecting the outside edge of such overhanging structure vertically downward to grade or other level upon which the container is installed. Distances to the building wall shall not be less than those prescribed in this table.
- c. When underground multicontainer installations are comprised of individual containers having a water capacity of 125 gallons or more, such containers shall be installed so as to provide access at their ends or sides to facilitate working with cranes or hoists.
- d. At a consumer site, if the aggregate water capacity of a multicontainer installation, comprised of individual containers having a water capacity of less than 125 gallons, is 500 gallons or more, the minimum distance shall comply with the appropriate portion of Table 3804.3, applying the aggregate capacity rather than the capacity per container. If more than one such installation is made, each installation shall be separated from other installations by at least 25 feet. Minimum distances between containers need not be applied.
- e. The following shall apply to above-ground containers installed alongside buildings:
  1. Containers of less than a 125-gallon water capacity are allowed next to the building they serve when in compliance with Items 2, 3 and 4.
  2. Department of Transportation (DOT) specification containers shall be located and installed so that the discharge from the container pressure relief device is at least 3 feet horizontally from building openings below the level of such discharge and shall not be beneath buildings unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from container pressure relief devices shall be located not less than 5 feet from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
  3. ASME containers of less than a 125-gallon water capacity shall be located and installed such that the discharge from pressure relief devices shall not terminate in or beneath buildings and shall be located at least 5 feet horizontally from building openings below the level of such discharge and not less than 5 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances, or mechanical ventilation air intakes.
  4. The filling connection and the vent from liquid-level gauges on either DOT or ASME containers filled at the point of installation shall not be less than 10 feet from exterior sources of ignition, openings into direct vent (sealed combustion system) appliances or mechanical ventilation air intakes.
- f. This distance is allowed to be reduced to not less than 10 feet for a single container of 1,200-gallon water capacity or less, provided such container is at least 25 feet from other LP-gas containers of more than 125-gallon water capacity.