North Liberty Fire Department

Construction Permit Application

Aboveground Storage Tanks and Motor Vehicle Fuel Dispensing

Permit Requirements
2021 International Fire Code Section 105.6.8 Flammable and combustible liquids. A construction permit is required: 1. To install, repair or modify a pipeline for the transportation of flammable or *combustible liquids*. 2. To install, construct or alter tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and *combustible liquids* are produced, processed, transported, stored, dispensed or used. 3. To install, alter, remove, abandon or otherwise dispose of a flammable or *combustible liquid* tank. **2021 International Fire Code, Section 105.6.12 Hazardous materials.** A construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility or other area regulated by Chapter 50 where the hazardous materials in use or storage exceed the amounts listed in Table 105.5.22. **Exceptions:** 1. Routine maintenance. 2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work. Table 105.6.20 Storage Amounts: ○ Flammable Liquids (Class IB, Gasoline): Excess of 5 Gallons (Inside) or 10 Gallons (Outside) ○ Combustible Liquids (Class II; Diesel Fuel or IIIA): Excess of 25 Gallons (Inside) or 60 Gallons (Outside) ○ Combustible Liquids (Class IIIB; Hydraulic Oil & Ethylene Glycol) **State of Iowa Fire Marshal's Office.** Aboveground Tanks with capacity greater than 1,100 gallons are required to register with the State of Iowa Fire Marshal's Office. More information can be found at http://www.dps.state.ia.us/fm/inspection/flammable/index.shtml

Permit Fee	
Flammable & Combustible Liquids: $150.00 Hazardous Materials: $200.00 **Total $350.00**	Application Date:

Site Information			
Business Name	**Address**	**Property Owner Name**	**Parcel ID#**

Application Information			
Business Name:	Last Name:	First Name:	MI:
Address:			
Phone #:	Email address:		

Contractor Supplying Tank			
Business Name:			
Business Address:			
City:	State:	Zip:	Business Phone #:
Contact Name:	Contact Phone #:	Email Address:	

North Liberty Fire Department

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Aboveground Storage Tanks and Motor Vehicle Fuel Dispensing

Tank Information							
	Manufacturer of Tank	**Size of Tank**	**Tank Construction**	**Tank Type (Single or Double Walled)**	**Product to be Stored Within Tank**	**UL Listing Number for Tank**	**Iowa DNR Tank Registration # (If >1,100 Gal)**
Tank #1		Gallons					
Tank #2		Gallons					
Tank #3		Gallons					
Tank #4		Gallons					

Attach the Following Documents to this Application
(Permits will not be processed without all the information below)

1) Product information sheets regarding the listing and approvals of all major components of the fuel dispensing system being installed; Tanks, piping, dispenser, etc.
2) Site Plan (See Below)

Site Plan Information

The Site Plan Shall include the following information with measurements provided. Requirements can be found in the Permit & Requirement section.

- Property Line(s)
- Public Street
- On-site Building(s)
- Tank(s)
- Dispenser(s)
- Vehicle Impact Protection
- Electrical (NFPA 70/NEC, 2017 Edition)
- Location of Emergency Shutoffs/Electrical Disconnects
- Trespass Precautions
- Location of Fire Extinguisher

North Liberty Fire Department

Construction Permit Application

Aboveground Storage Tanks and Motor Vehicle Fuel Dispensing

Statement of Veracity
Upon approval of this application, I agree to abide the requirements set forth in the currently adopted edition of the International Fire Code and the authority having jurisdiction, that being the North Liberty Fire Department. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the code official from requiring the correction of errors in the construction documents and other data. Any addition to or alteration of approved construction documents shall be approved in advance by the code official, as evidenced by the issuance of a new or amended permit. Permit applicants and the applicants' agents and employees shall carry out the proposed activity in compliance with this code and other laws or regulations applicable thereto, whether specified or not, and in complete accordance with approved plans and specifications. Permits which purport to sanction a violation of this code or any applicable law or regulation shall be void and approvals of plans and specifications in the issuance of such permits shall likewise be void. I understand that the location must pass an inspection after installation and prior to use. I do hereby grant permission for that inspection. Responsible Party:

Printed First Name:	Printed Last Name:	Signature:

Permit Submittal Requirements.

1) Complete and sign permit application
2) Submit permit application online: https://portal.iworq.net/NORTHLIBERTY/new-permit/600/418
3) Attach permit application, product specification sheet and site plan
4) Fee= $350 (Total for both permits)

North Liberty Fire Department

Construction Permit Application

Aboveground Storage Tanks and Motor Vehicle Fuel Dispensing

Site Plan

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1																1
2																2
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17																17
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	

North Liberty Fire Department
Construction Permit Application
Aboveground Storage Tanks and Motor Vehicle Fuel Dispensing

Permit Review & Code Requirements		
The following Guide is provided to assist you with Fire Code requirements. All code numbers reference the 2018 International Fire Code unless otherwise indicated. This application shows only a portion of the current Fire Code. All Federal, State, and local laws shall be complied with. Online access to complete fire code requirements can be found <here>.		
General Requirements		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement**
	IFC 2305.7	**Control of brush and debris.** Fenced and diked areas surrounding above-ground tanks shall be kept free from vegetation, debris and other material that is not necessary to the proper operation of the tank and piping system. Weeds, grass, brush, trash and other combustible materials shall be kept not less than 10 feet from fuel-handling equipment.
	IFC 2306.3 **NFPA 30A** **4.3.7.1**	**Security.** Above-ground tanks for the storage of liquid motor fuels shall be safeguarded from public access or unauthorized entry in an approved manner. Tanks that are not enclosed in vaults shall be enclosed with a chain link fence at least (6 ft.) high. The fence shall be separated from the tanks by at least (10 ft.) and shall have a gate that is secured against unauthorized entry. Exception: Tanks are not required to be enclosed with a fence if the property on which the tanks are located has a perimeter security fence.
	IFC 2305.5	**Fire extinguishers.** *Approved* portable fire extinguishers complying with Section 906 with a minimum rating of 2-A:20-B:C shall be provided and located such that an extinguisher is not more than 75 feet from pumps, dispensers or storage tank fill-pipe openings.
	IFC 2304.3.5	**Emergency procedures.** An *approved* emergency procedures sign, in addition to the signs required by Section 2305.6, shall be posted in a conspicuous location and shall read: IN CASE OF FIRE, SPILL OR RELEASE 1. USE EMERGENCY PUMP SHUTOFF 2. REPORT THE ACCIDENT! FIRE DEPARTMENT TELEPHONE NO. 911 FACILITY ADDRESS _____
	IFC 2305.6	**Warning signs.** Warning signs shall be conspicuously posted within sight of each dispenser in the fuel-dispensing area and shall state the following: 1. No smoking. 2. Shut off motor. 3. Discharge your static electricity before fueling by touching a metal surface away from the nozzle. 4. To prevent static charge, do not reenter your vehicle while gasoline is pumping. 5. If a fire starts, do not remove nozzle—back away immediately. 6. It is unlawful and dangerous to dispense gasoline into unapproved containers. 7. No filling of portable containers in or on a motor vehicle. Place container on ground before filling.
	IFC 2306.6.2.6	**Spill containers.** A spill container having a capacity of not less than 5 gallons shall be provided for each fill connection. For tanks with a top fill connection, spill containers shall be noncombustible and shall be fixed to the tank and equipped with a manual drain valve that drains into the primary tank. For tanks with a remote fill connection, a portable spill container is allowed.

Electrical Requirements		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement**
	IFC 2301.5	**Electrical.** Electrical wiring and equipment shall be suitable for the locations in which they are installed and shall comply with Section 605, NFPA 30A and NFPA 70.
	NFPA 30A 8.3.1	**Installation in Classified Locations.** Where Class I (Gasoline) liquids are stored, handled, or dispensed, electrical wiring and electrical utilization equipment shall be designed and installed in accordance with the requirements for Class I, Division 1 or Division 2 classified locations, as set forth in 8.3.2 and in *NFPA 70*.
	NFPA 30A 8.3.2	**Installation in Classified Locations.** Table 8.3.2 shall be used to delineate and classify areas for the purposes of installing electrical wiring and electrical utilization equipment where Class I liquids are stored, handled, or dispensed. [See also Figure 8.3.2(a) and Figure 8.3.2(b).]
Dispenser Requirements		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement**
	IFC 2303.1	**Location of dispensing devices.** Dispensing devices shall be located as follows: 1. Ten feet or more from *lot lines*. 2. Ten feet or more from buildings having combustible exterior wall surfaces or buildings having Non-combustible exterior wall surfaces that are not part of a 1-hour fire-resistance-rated assembly or buildings having combustible overhangs. **Exception:** Canopies constructed in accordance with the *International Building Code* providing weather protection for the fuel islands. 3. Such that all portions of the vehicle being fueled will be on the premises of the motor fuel-dispensing facility. 4. Such that the nozzle, where the hose is fully extended, will not reach within 5 feet of building openings. 5. Twenty feet or more from fixed sources of ignition.
	IFC 2306.7.2	**Fixed pumps required.** Class I and II liquids shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and prevent leakage or accidental discharge.
	IFC 2306.7.3	**Mounting of dispensers.** Dispensing devices, except those installed on top of a protected above-ground tank that qualifies as vehicle-impact resistant, shall be protected against physical damage by mounting on a concrete island 6 inches or more in height, or shall be protected in accordance with Section 312. Dispensing devices shall be installed and securely fastened to their mounting surface in accordance with the dispenser manufacturer's instructions. **312.2 Posts.** Guard posts shall comply with all of the following requirements: 1. Constructed of steel not less than 4 inches in diameter and concrete filled. 2. Spaced not more than 4 feet between posts on center. 3. Set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter. 4. Set with the top of the posts not less than 3 feet above ground. 5. Located not less than 3 feet (914 mm) from the protected object.

	IFC 2306.7.4	**Dispenser emergency shutoff valve.** An *approved* automatic emergency shutoff valve designed to close in the event of a fire or impact shall be properly installed in the liquid supply line at the base of each dispenser supplied by a remote pump. The valve shall be installed so that the shear groove is flush with or within ½ inch of the top of the concrete dispenser island and there is clearance provided for maintenance purposes around the valve body and operating parts. The valve shall be installed at the liquid supply line inlet of each overhead- type dispenser. Where installed, a vapor return line located inside the dispenser housing shall have a shear section or *approved* flexible connector for the liquid supply line emergency shutoff valve to function. Emergency shutoff valves shall be installed and maintained in accordance with the manufacturer's instructions, tested at the time of initial installation and not less than yearly thereafter in accordance with Section 2305.2.4.
	IFC 2306.7.5	**Dispenser hose.** Dispenser hoses shall be not more than 18 feet in length unless otherwise *approved*. Dispenser hoses shall be *listed* and *approved*. When not in use, hoses shall be reeled, racked or otherwise protected from damage.
	IFC 2306.7.8	**Gravity and pressure dispensing.** Flammable liquids shall not be dispensed by gravity from tanks, drums, barrels or similar containers. Flammable or *combustible liquids* shall not be dispensed by a device operating through pressure within a storage tank, drum or container.
	IFC 2306.7.5.1	**Emergency breakaway devices.** Dispenser hoses for Class I (Gasoline) and II (Diesel) liquids shall be equipped with a *listed* emergency breakaway device designed to retain liquid on both sides of a breakaway point. Such devices shall be installed and maintained in accordance with the manufacturer's instructions. Where hoses are attached to hose-retrieving mechanisms, the emergency breakaway device shall be located between the hose nozzle and the point of attachment of the hose-retrieval mechanism to the hose.
	IFC 2306.7.6	**Fuel delivery nozzles.** A listed automatic-closing-type hose nozzle valve with or without a latch-open device shall be provided on island-type dispensers used for dispensing Class I, II or III liquids. Overhead-type dispensing units shall be provided with a *listed* automatic-closing-type hose nozzle valve without a latch-open device. **Exception:** A *listed* automatic-closing-type hose nozzle valve with latch-open device is allowed to be used on overhead-type dispensing units where the design of the system is such that the hose nozzle valve will close automatically in the event the valve is released from a fill opening or upon impact with a driveway.
	IFC 2306.7.6.1	**Special requirements for nozzles.** Where dispensing of Class I, II or III liquids is performed, a listed automatic-closing-type hose nozzle valve shall be used incorporating all of the following features: 1. The hose nozzle valve shall be equipped with an integral latch-open device. 2. Where the flow of product is normally controlled by devices or equipment other than the hose nozzle valve, the hose nozzle valve shall not be capable of being opened unless the delivery hose is pressurized. If pressure to the hose is lost, the nozzle shall close automatically. **Exception:** Vapor recovery nozzles incorporating insertion interlock devices designed to achieve shutoff on disconnect from the vehicle fill pipe. 3. The hose nozzle shall be designed such that the nozzle is retained in the fill pipe during the filling operation. 4. The system shall include *listed* equipment with a feature that causes or requires the closing of the hose nozzle valve before the product flow can be resumed or before the hose nozzle valve can be replaced in its normal position in the dispenser.

Emergency Disconnect Requirements		
	IFC 2303.2	**Emergency disconnect switches.** An *approved* emergency disconnect switch shall be provided at an *approved* location to stop the transfer of fuel to the fuel dispensers in the event of a fuel spill or other emergency. The emergency disconnect switch for exterior fuel dispensers shall be provided with *ready access* and shall be located within 100 feet of, but not less than 20 feet from, the fuel dispensers. Such devices shall be distinctly *labeled* as: EMERGENCY FUEL SHUTOFF. Signs shall be provided in *approved* locations.
	IFC 2303.2.1	**Height.** The height of the emergency disconnect switch shall be not less than 42 inches and not more than 48 inches measured vertically, from the floor level to the activating button.
Above-Ground Tank Requirements		
	IFC 5704.2.9	**Locations where above-ground tanks are prohibited.** For above ground storage tanks of 276 gallons capacity or more, the minimum distance between such above ground tanks and any Residential Zone boundary must be at least 100 feet. If the above ground tank is located in an approved vault, the minimum separation distance from a Residential Zone boundary may be reduced to no less than 50 feet.
	IFC 5704.2.9.6.1	**Locations where above-ground tanks are prohibited.** Storage of Class I (Gasoline) and II (Diesel) 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 in the entire City of North Liberty. Exception: I-1 & I-2 Zoning and/or approval by the Fire Chief
	IFC 2306.2.3	**Above-ground tanks located outdoors, above grade (Gasoline).** Above-ground tanks used for outdoor, above-grade storage of Class I liquids shall be *listed* and *labeled* as protected above-ground tanks in accordance with UL 2085 and shall be in accordance with Chapter 57. Such tanks shall be located in accordance with **Table 2306.2.3.**
	IFC 2306.2.3	**Above-ground tanks located outdoors, above grade (Diesel).** Above-ground tanks used for outdoor, above-grade storage of Class II or IIIA liquids shall be *listed* and *labeled* as protected above-ground tanks in accordance with UL 2085 and shall be installed in accordance with Chapter 57. Tank locations shall be in accordance with **Table 2306.2.3.**
	IFC 2306.2.3	Tanks containing fuels shall not exceed 12,000 gallons in individual capacity or 48,000 gallons in aggregate capacity. Installations with the maximum allowable aggregate capacity shall be separated from other such installations by not less than 100 feet.
	IFC 2306.2.3	**Above-ground tanks located outdoors, above grade (Lubricating & Hydraulic Oil).** Above-ground tanks used for outdoor, above-grade storage of Class IIIB liquid motor fuel shall be *listed* and *labeled* in accordance with UL 142 or *listed* and *labeled* as protected above-ground tanks in accordance with UL 2085 and shall be installed in accordance with Chapter 57. Tank locations shall be in accordance with **Table 2306.2.3.**
	IFC 2306.2.4	**Above-ground tanks located in above-grade vaults or below-grade vaults.** Above-ground tanks used for storage of Class I, II or IIIA liquid motor fuels are allowed to be installed in vaults located above grade or below grade in accordance with Section 5704.2.8 and shall comply with Sections 2306.2.4.1 and 2306.2.4.2. Tanks in above-grade vaults shall also comply with **Table 2306.2.3.**
	IFC 2306.2.4.1	**Tank capacity limits.** Tanks storing Class I and Class II liquids at an individual site shall be limited to a maximum individual capacity of 15,000 gallons and an aggregate capacity of 48,000 gallons.
	IFC 2306.2.4.2	**Fleet vehicle motor fuel-dispensing facilities.** Tanks storing Class II and Class IIIA liquids at a fleet vehicle motor fuel-dispensing facility shall be limited to a maximum individual capacity of 20,000 gallons and an aggregate capacity of 80,000gallons.

IFC TABLE 2306.2.3 — **Minimum Separation Requirements for Above-Ground Tanks**

TANK TYPE	INDIVIDUAL TANK CAPACITY (gallons)	MINIMUM DISTANCE FROM NEAREST IMPORTANT BUILDING ON SAME PROPERTY (feet)	MINIMUM DISTANCE FROM NEAREST FUEL DISPENSER (feet)	MINIMUM DISTANCE FROM LOT LINE THAT IS OR CAN BE BUILT ON, INCLUDING THE OPPOSITE SIDE OF A PUBLIC WAY (feet)	MINIMUM DISTANCE FROM NEAREST SIDE OF ANY PUBLIC WAY (feet)	MINIMUM DISTANCE BETWEEN TANKS (feet)
Protected above-ground tanks	Less than or equal to 6,000	5	25[a, c]	15	5	3
	Greater than 6,000	15	25[a, c]	25	15	3
Tanks in vaults	0–20,000	0[b]	0	0[b]	0	Separate compartment required for each tank
Other tanks	All	50	50	100	50	3

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

a. At fleet vehicle motor fuel-dispensing facilities, a minimum separation distance is not required.
b. Underground vaults shall be located such that they will not be subject to loading from nearby structures, or they shall be designed to accommodate applied loads from existing or future structures that can be built nearby.
c. For Class IIIB liquids in protected above-ground tanks, a minimum separation distance is not required.

IFC 2306.4

Physical protection.
Guard posts complying with Section 312 or other *approved* means shall be provided to protect above-ground tanks against impact by a motor vehicle unless the tank is *listed* as a protected above-ground tank with vehicle impact protection.
312.2 Posts. Guard posts shall comply with all of the following requirements:
1. Constructed of steel not less than 4 inches in diameter and concrete filled.
2. Spaced not more than 4 feet between posts on center.
3. Set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter.
4. Set with the top of the posts not less than 3 feet above ground.
5. Located not less than 3 feet (914 mm) from the protected object.

	IFC 2306.5 **IFC** **5704.2.9.7.3**	**Secondary containment.** Above-ground tanks shall be provided with drainage control or diking in accordance with Chapter 57. Drainage control and diking is not required for *listed* secondary containment tanks. Secondary containment systems shall be monitored either visually or automatically. Enclosed secondary containment systems shall be provided with emergency venting in accordance with Section 2306.6.2.5. Protected above-ground tanks shall be provided with secondary containment, drainage control or diking in accordance with Section 5004.2. A means shall be provided to establish the integrity of the secondary containment in accordance with NFPA 30.
	IFC 5704.2.3.1	**Smoking and open flame.** Signs shall be posted in storage areas prohibiting open flames and smoking. Signs shall comply with Section 5703.5.
	IFC 5704.2.3.2	**Label or placard.** Tanks more than 100 gallons in capacity, which are permanently installed or mounted and used for the storage of Class I, II or III liquids, shall bear a label and placard identifying the material therein. Placards shall be in accordance with NFPA 704.
	IFC 5703.5	**Labeling and signage (Gasoline).** Signage for identification and warning such as for the inherent hazard of flammable liquids or smoking shall be provided in accordance with this chapter and Sections 5003.5 and 5003.6. **Style.** Warning signs shall be of a durable material. Signs warning of the hazard of flammable liquids shall have white lettering on a red background and shall read: DANGER— FLAMMABLE LIQUIDS. Letters shall be not less than 3 inches (76 mm) in height and 1/2 inch (12.7 mm) in stroke. **Location.** Signs shall be posted in locations as required by the *fire code official*. Piping containing flammable liquids shall be identified in accordance with ASME A13.1. **Warning labels.** Individual containers, packages and cartons shall be identified, marked, labeled and placarded in accordance with federal regulations and applicable state laws. **Identification.** Color coding or other *approved* identification means shall be provided on each loading and unloading riser for flammable or *combustible liquids* to identify the contents of the tank served by the riser.
	IFC 5704.2.7	**Design, fabrication and construction requirements for tanks.** The design, fabrication and construction of tanks shall comply with NFPA 30. Each tank shall bear a permanent nameplate or marking indicating the standard used as the basis of design.
	IFC 5704.2.7.1	**Materials used in tank construction.** The materials used in tank construction shall be in accordance with NFPA 30. The materials of construction for tanks and their appurtenances shall be compatible with the liquids to be stored.
	IFC 5704.2.7.7	**Design of supports.** The design of the supporting structure for tanks shall be in accordance with the *International Building Code* and NFPA 30.
	IFC 5704.2.7.8	**Locations subject to flooding.** Where a tank is located in an area where it is subject to buoyancy because of a rise in the water table, flooding or accumulation of water from fire suppression operations, uplift protection shall be provided in accordance with Sections 22.14 and 23.14 of NFPA 30.
	IFC 5704.2.7.9	**Corrosion protection.** Where subject to external corrosion, tanks shall be fabricated from corrosion- resistant materials, coated or provided with corrosion protection in accordance with Section 23.3.5 of NFPA 30.

	IFC 5704.2.7.11	**Tank lining.** Steel tanks are allowed to be lined only for the purpose of protecting the interior from corrosion or providing compatibility with a material to be stored. Only those liquids tested for compatibility with the lining material are allowed to be stored in lined tanks.
	IFC 5704.2.9.6	**Above-ground tanks outside of buildings.** Above-ground tanks outside of buildings shall comply with Sections 5704.2.9.6.1 through 5704.2.9.6.3.
Piping, Valves, Fitting & Filling Requirements		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement** The design, fabrication, assembly, testing and inspection of piping, valves, fittings and ancillary equipment for use with flammable or *combustible liquids* shall be in accordance with Chapter 57 and Sections 2306.6.1 through 2306.6.2.
	IFC 5703.6	**Design and fabrication of piping systems and components.** Piping system components shall be designed and fabricated in accordance with the applicable standard listed in Table 5703.6.2 and Chapter 27 of NFPA 30, except as modified by Section 5703.6.2.1.
	IFC 2306.6.1	**Protection from damage.** Piping shall be located such that it is protected from physical damage.
	IFC 2306.6.2.1	**Tank openings.** Tank openings for above ground tanks shall be through the top only.
	IFC 2306.6.2.2	**Fill-pipe connections.** The fill pipe for above-ground tanks shall be provided with a means for making a direct connection to the tank vehicle's fuel delivery hose so that the delivery of fuel is not exposed to the open air during the filling operation. Where any portion of the fill pipe exterior to the tank extends below the level of the top of the tank, a check valve shall be installed in the fill pipe not more than 12 inches from the fill-hose connection.
	5704.2.7.5.1	**Connections below liquid level.** Connections for tank openings below the liquid level shall be liquid tight.
	IFC 5704.2.7.5.5	**Fill pipes and discharge lines.** For top-loaded tanks, a metallic fill pipe shall be designed and installed to minimize the generation of static electricity by terminating the pipe within 6 inches of the bottom of the tank, and it shall be installed in a manner that avoids excessive vibration.
	IFC 2306.6.2.4	**Siphon prevention.** An *approved* anti-siphon method shall be provided in the piping system to prevent flow of liquid by siphon action.
	IFC 2306.7.9	**Vapor-recovery and vapor-processing systems.** Vapor-recovery and vapor-processing systems shall be in accordance with Sections 2306.7.9.1 through 2306.7.9.2.4.
	5704.2.7.5.7	**Protection against vapor release.** Tank openings provided for purposes of vapor recovery shall be protected against possible vapor release by means of a spring-loaded check valve or dry-break connections, or other *approved* device, unless the opening is a pipe connected to a vapor processing system. Openings designed for combined fill and vapor recovery shall be protected against vapor release unless connection of the liquid delivery line to the fill pipe simultaneously connects the vapor recovery line. Connections shall be vapor tight.
	IFC 5704.2.7.5.8	**Overfill prevention.** An *approved* means or method in accordance with Section 5704.2.9.7.5 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. **Exception:** Outside above-ground tanks with a capacity of 1,320 gallons or less.

	IFC 5704.2.9.7.5	**Overfill prevention.** Protected aboveground tanks shall not be filled in excess of 95 percent of their capacity. An overfill prevention system shall be provided for each tank. During tank-filling operations, the system shall comply with one of the following: The overfill prevention system shall include the following: 1.1. An independent means of notifying the person filling the tank that the fluid level has reached 90 percent of tank capacity by providing an audible or visual alarm signal, providing a tank level gauge marked at 90 percent of tank capacity, or other *approved* means. 1.2. Automatic shut off of the flow of fuel to the tank when the quantity of liquid in the tank reaches 95 percent of tank capacity. For rigid hose fuel-delivery systems, an *approved* means shall be provided to empty the fill hose into the tank after the automatic shutoff device is activated. 2. The system shall reduce the flow rate to not more than 15 gallons per minute (0.95 L/s) so that at the reduced flow rate, the tank will not overfill for 30 minutes, and automatically shut off flow into the tank so that none of the fittings on the top of the tank are exposed to product because of overfilling.
	IFC 5704.2.9.7.5.1	**Fill Point Information signs.** A permanent sign shall be provided at the fill point for the tank, documenting the filling procedure and the tank calibration chart. **Exception:** Where climatic conditions are such that the sign may be obscured by ice or snow, or weathered beyond readability or otherwise impaired, said procedures and chart shall be located in the office window, lock box or other area available to the person filling the tank.
	IFC 5704.2.9.7.5.2	**Determination of available tank capacity.** The filling procedure shall require the person filling the tank to determine the gallonage required to fill it to 90 percent of capacity before commencing the fill operation.
	IFC 5704.2.7.5.4	**Manual gauging.** Openings for manual gauging, if independent of the fill pipe, shall be provided with a liquid-tight cap or cover. Covers shall be kept closed when not gauging.
Venting		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement**
	IFC 5704.2.7.3.1	**Vent lines.** Vent lines from tanks shall not be used for purposes other than venting unless *approved*.
	IFC 5704.2.7.3.2	**Vent-line flame arresters and pressure- vacuum vents.** *Listed* or *approved* flame arresters or pressure-vacuum (PV) vents that remain closed unless venting under pressure or vacuum conditions shall be installed in normal vents of tanks containing Class IB (Gasoline) and IC liquids. Vent-line flame arresters shall be installed in accordance with their listing or API 2000 and maintained in accordance with Section 21.8.6 of NFPA 30 or API 2000. In-line flame arresters in piping systems shall be installed and maintained in accordance with their listing or API 2028. Pressure-vacuum vents shall be installed in accordance with Section 21.4.3 of NFPA 30 or API 2000 and maintained in **a**ccordance with Section 21.8.6 of NFPA 30 or API 2000. **Exception:** Where determined by the *fire code official* that the use of these devices can result in damage to the tank.

	IFC 5704.2.7.3.3	**Vent pipe outlets.** Vent pipe outlets for tanks storing Class I, II or IIIA liquids shall be located such that the vapors are released at a safe point outside of buildings and not less than 12 feet above the finished ground level. Vapors shall be discharged upward or horizontally away from adjacent walls to assist in vapor dispersion. Vent outlets shall be located such that flammable vapors will not be trapped by eaves or other obstructions and shall be not less than 5 feet from building openings or *lot lines* of properties that can be built upon. Vent outlets on atmospheric tanks storing Class IIIB liquids are allowed to discharge inside a building where the vent is a normally closed vent. **Exception:** Vent pipe outlets on tanks storing Class IIIB liquid inside buildings and connected to fuel-burning equipment shall be located such that the vapors are released to a safe location outside of buildings.
	IFC 5704.2.7.3.4	**Installation of vent piping.** Vent piping shall be designed, sized, constructed and installed in accordance with Section 5703.6. Vent pipes shall be installed such that they will drain toward the tank without sags or traps in which liquid can collect. Vent pipes shall be installed in such a manner so as not to be subject to physical damage or vibration.
	IFC 5704.2.7.3.5	**Manifolding.** Tank vent piping shall not be manifolded unless required for special purposes such as vapor recovery, vapor conservation or air pollution control.
	IFC 5704.2.7.3.5.1	**Above-ground tanks.** For aboveground tanks, manifolded vent pipes shall be adequately sized to prevent system pressure limits from being exceeded where manifolded tanks are subject to the same fire exposure.
	IFC 5704.2.7.3.5.3	**Tanks storing Class I liquids.** Vent piping for tanks storing Class I liquids shall not be manifolded with vent piping for tanks storing Class II and III liquids unless positive means are provided to prevent the vapors from Class I liquids from entering tanks storing Class II and III liquids, to prevent contamination and possible change in classification of less volatile liquid.
Emergency Venting		
Indicate Compliance (Yes, No or N/A)	**Section**	**Requirement**
	IFC 5704.2.7.4	**Emergency venting.** Stationary, aboveground tanks shall be equipped with additional venting that will relieve excessive internal pressure caused by exposure to fires. Emergency vents for Class I, II and IIIA liquids shall not discharge inside buildings. The venting shall be installed and maintained in accordance with Section 22.7 of NFPA 30. **Exceptions:** 1. Tanks larger than 12,000 gallons in capacity storing Class IIIB liquids that are not within the diked area or the drainage path of Class I or II liquids do not require emergency relief venting. 2. Emergency vents on protected above-ground tanks complying with UL 2085 containing Class II or IIIA liquids are allowed to discharge inside the building.