

Aboveground Storage Tank Vent Installation Requirements - Overview

ASTs installed under NFPA 31 – Standard for Installation of Oil Burning Equipment shall follow that standard, which may refer to NFPA 30.
 ASTs installed under NFPA 37 – Standard for the Installation and Use of Stationary Combustion Engines shall follow that standard, which may refer to NFPA 30.
 Used oil ASTs at approved scrap and automobile recycling facilities shall follow Comm 10.300((9)).
 Public collection used oil ASTs shall comply with Comm 10.305(3)(c).
 Venting for hazardous liquid ASTs within Comm 350 shall follow engineering practices and the requirements of Comm 10.350(6).

System access	Comm 10.400(10) SYSTEM ACCESS. (a) All new aboveground storage tank systems shall be designed and constructed to allow access to all connections between the tank and piping, venting, and appurtenances that require maintenance or replacement.					
	Class IA	Class IB	Class IC	Class II	Class IIIA	Class IIIB
Normal Vent Required	Yes NFPA 30-21.4.3.1 Atmospheric storage tanks shall be adequately vented to prevent the development of vacuum or pressure that can distort the roof of a cone roof tank or that exceeds the design pressure of other atmospheric tanks when filling or emptying the tank or because of atmospheric temperature changes.	Same	Same	Same	Same	Same
Vent Sizing	NFPA 30-21.4.3.2 & 21.4.3.4 Normal vents shall be sized in accordance with either API Standard 2000, <i>Venting Atmospheric and Low-Pressure Storage Tanks</i> , or another approved standard. Alternatively, the normal vent shall be at least as large as the largest filling or withdrawal connection but in no case shall it be less than 1.25 in. (32 mm) nominal inside diameter If any tank or pressure vessel has more than one fill or withdrawal connection and simultaneous filling or withdrawal can be made, the vent size shall be based on the maximum anticipated simultaneous flow.	Same	Same	Same	Same	Same
Type of vent - Inside storage	Closed vent NFPA 30-21.4.3.6 Tanks and pressure vessels that store Class IA liquids shall be equipped with venting devices that are normally closed except when venting under pressure or vacuum conditions.	Closed vent or flame arrestor NFPA 30-21.4.3.7 Tanks and pressure vessels that store Class IB and Class IC liquids shall be equipped with venting devices or with listed flame arrestors. When used, vent devices shall be normally closed except	Same as Class IB	Open vent, closed vent or flame arrestor	Open vent, closed vent or flame arrestor	Open vent, closed vent or flame arrestor

		when venting under pressure or vacuum conditions.				
Type of vent - outside storage	Same as inside storage.	Closed vent or flame arrestor. Open vent for AST less than 1,000 gal. NFPA 30-21.4.3.8 . . . and <i>outside aboveground atmospheric tanks of less than 23.8 bbl (1000 gal.)</i> capacity that contain other than Class IA liquids shall be permitted to have open vents.	Same as Class IB	Open (or closed vent or flame arrestor)	Open (or closed vent or flame arrestor)	Open (or closed vent or flame arrestor) NFPA 30-22.7.1.1.3 Exception: Tanks storing Class IIIB liquids that are larger than 285 bbl (45,306 L) capacity (11,970 [12,000] gallons) and are not within the diked area or the drainage path of tanks storing Class I or Class II liquids do not need to meet this requirement.
Emergency vent required	<p>Yes NFPA 30-22.7.1.1 Every aboveground storage tank shall have emergency relief venting in the form of construction or a device or devices that will relieve excessive internal pressure caused by an exposure fire.</p> <p>NFPA 30-22.7.1.1 This requirement shall also apply to each compartment of a compartmented tank, the interstitial space (annulus) of a secondary containment-type tank, and the enclosed space of tanks of closed-top dike construction.</p> <p>NFPA 30-22.7.1.2 For vertical tanks, the emergency relief venting construction referred to in 22.7.1.1 shall be permitted to be a floating roof, a lifter roof, a weak roof-to-shell seam, or another approved pressure-relieving construction.</p>					<p>Same Venting based upon tank construction (traditional E-vent, combined vent, or other recognized construction, i.e., UL 80).</p> <p>NFPA 30-22.7.1.1.3 Exception: Tanks storing Class IIIB liquids that are larger than 285 bbl (12,000 gal) capacity and are not within the diked area or the drainage path of tanks storing Class I or Class II liquids do not need to meet this (venting) requirement.</p>
Vent may terminate inside a storage tank	No NFPA 30-24.13.5 Vents shall terminate outside the building.	Same	Same	Same	Same	Yes

building	<p>Storage tank building: NFPA 30-3.3.6.2 Storage Tank Building. A three-dimensional space that is enclosed by a roof and a wall that covers more than one-half of the possible area of the sides of the space, is of sufficient size to allow entry by personnel, will likely limit the dissipation of heat or dispersion of vapors, and restricts access for fire fighting. Note: NFPA 30/30A Handbook paraphrase of explanatory narrative: “With the exception of inside tanks for oil burning appliances and for fuel for stationary engines it is the intent of NFPA 30 to apply the provisions of Chapter 24 Storage Tank Buildings to any indoor installation of storage tanks.</p> <p>NFPA 30-24.1.1 Scope. This chapter shall apply to installations of tanks storing Class I, Class II, and Class IIIA liquids in storage tank buildings.</p> <p>NFPA 30-24.13.1 Vents for tanks inside tank buildings shall be designed to ensure that vapors are not released inside the building. Compliance with 24.13.2 and 24.13.6 shall be deemed as meeting the requirements of 24.13.1.</p> <p>NFPA 30-24.13.3 Emergency venting by the use of weak roof-to-shell seam shall not be permitted.</p>					
Vent may terminate inside a building not constructed to Storage Tank Building standard or not sprinklered.	No - based upon more restrictive requirements for rated structure (storage tank building).	No - based upon more restrictive requirements for rated structure (storage tank building).	No - based upon more restrictive requirements for rated structure (storage tank building).	No - based upon more restrictive requirements for rated structure (storage tank building).	No - based upon more restrictive requirements for rated structure (storage tank building).	No - based upon more restrictive requirements for rated structure (storage tank building).