# Aboveground Storage Tank Design Checklist

**Project and Location: Central Washington Complex Fuel Storage Tank**

This checklist is a *guide* for reviewing installations of Aboveground Storage Tanks (ASTs) for flammable and combustible liquids. This checklist addresses some, but not all, safety issues involved in fuel tank installations. Most of the design criteria is found in the current NFPA 30 (2018), *Flammable and Combustible Liquids Code*, NFPA 30A (2018), *Motor Fuel Dispensing Facilities and Repair Garages*, or is established by the State in which the tank is located. These, plus any other applicable codes, need to be referenced for complete details on requirements. Note: The requirements of LPG (propane) facilities are covered under NFPA 58 (2017), *Liquefied Petroleum Gas Code*, and are not addressed here.

Citations below refer to chapters or sections found in NFPA 30, *Flammable and Combustible LiquidsCode*, unless otherwise noted. All items are mandatory unless listed as a recommendation. **The following apply to aboveground tanks storing gasoline, diesel, or oil at pressures less than 2.5psig., with a storage capacity of less than 12,000 gallons.**

| # | Design / Construction | Yes | No | NA |
|---|---|---|---|---|
| 1 | ASTs shall comply with NFPA 30, Chapter 21.4 or a specific State requirement(s).<br>*(The States and the EPA manage the AST program. In all cases, the stricter rules apply.)* | | | |
| 2 | Tanks shall be approved double-wall construction or otherwise meet secondary containment standards. | | | |
| 3 | Emergency vents will be installed to limit pressure to less than 2.5 psig.<br>Vents shall release vapors not less than 12 ft above adjacent ground level and shall be at least 5 ft from any building opening. *Must not vent to a point under a roof or overhang.* | | | |
| 4 | Vents outlets will be located so that vapors are not trapped by eaves, roofs, or other obstructions. | | | |
| 5 | Each connection to an AST through which liquid could normally flow shall have a valve located as close to the shell of the tank as practical. | | | |
| 6 | Fuel dispensers shall be wired to meet NEC standards for Hazardous Locations.<br>(Class 1 Division 1 within pits; Class 1, Division 2 within 18" around dispenser and within 6" of ground within 20', etc.). | | | |
| **#** | **Installation / Location** | **Yes** | **No** | **NA** |
| 7 | The installation of an AST will comply with NFPA 30, Chapter 22 or a specific State requirement(s). | | | |
| 8 | Installations shall be approved by the appropriate State regulatory agency where required. (States have primacy regarding AST installations.) | | | |
| 9 | Tanks and dispensers shall be protected from vehicular traffic through the use of bollards, setbacks, concrete islands, etc.<br>*Bollards will be a minimum 4 in. diameter steel pipe (3' high) filled with concrete; buried 3 feet deep in concrete footing; spaced not more than 4 feet on center.* | | | |
| 10 | Tanks located in areas subject to earthquakes or flooding must meet certain requirements. NFPA 30, 22.5 and 22.14 | | | |
| 11 | Tanks shall be located at least 5 feet from the nearest important building (property line setbacks vary). | | | |

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| 12 | ASTs shall be located at least 20 feet away from propane tanks.<br>*Exceptions exist for propane tanks smaller than 125 gallons located near ASTs with a capacity of less than 660 gallons. See 30, 22.4.2.4* | | | |
| 13 | Secondary containment, dikes, etc. shall be installed as required. | | | |
| 14 | Suitable measures, such as dikes, curbing, or grading, will be taken to prevent accumulation of flammable or combustible liquids under adjacent propane tanks. | | | |
| 15 | An installation of a tank inside a building that has a canopy or roof that limits the dissipation of heat or dispersion of flammable vapors will meet Storage Tank Building requirements in NFPA 30, Chapter 24. | | | X |
| 16 | At least one portable fire extinguisher will a minimum rating of 40B:C will be mounted in a location near the AST / fuel dispensing equipment, within 30 feet, but not adjacent to a dispenser. A larger 80B:C extinguisher must be within 100 feet of the dispenser. NFPA 30A | | | |
| **#** | **Labeling** | **Yes** | **No** | **NA** |
| 17 | Tanks will be labeled as to their contents and hazards. | | | |
| 18 | Fuel Dispensers shall have a clearly labeled emergency electrical disconnect at a remote location, in plain view not less than 20 feet or more than 100 feet from the dispensers. | | | |
| 19 | All fuel dispensing equipment (pumps, hoses, nozzles) will be listed for such use. Hoses used for dispensing Class 1 or 2 liquids to vehicles must have a listed breakaway fitting. | | | |
| 20 | Warning signs will be conspicuously posted in any dispensing area with the following (or equivalent) wording:<br><br>**No Smoking. Stop motor.**<br>**It is unlawful and dangerous to dispense gasoline into unapproved containers.**<br>**No filling of portable containers in or on a motor vehicle.**<br>**Place container on ground before filling.** | | | |
| 21 | Tanks containing diesel fuel for motor vehicles must be labeled to meet requirements of 40 CFR 80.570 through 80.574 regarding sulfur content of the fuel. | | | |

Project Leaders should contact the Regional Environmental Compliance Coordinator for additional regulatory information, contract language, and tank installation requirements.

Project Leaders must ensure all operators of AST systems comply with any additional applicable operational requirements such as inventory control documentation, employee training, Spill Prevention Control and Countermeasure (SPCC) Plans, etc.