



Building Standards and Codes

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TECHNICAL BULLETIN

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Topic: Installation of double walled polyethylene and steel fuel oil storage tanks

This technical bulletin clarifies the applicability of the Residential Code of New York State, 2010 Edition (RCNYS) and the installations of composite polyethylene and steel fuel oil storage tanks. Specifically this bulletin addresses whether or not a tank can be located above-ground and inside the building it serves, or outside of a building and above-ground?

It is our opinion that a double walled, polyethylene and steel fuel oil storage tank can be approved under the requirements of the RCNYS and that this type of tank can be installed in the locations described above.

RCNYS Chapter 22 addresses the piping and storage systems for residential fuel oil. RCNYS Section M2201.1 *Materials*, specifies that oil supply tanks be listed and labeled, and shall conform to UL 58 (1996 Edition) for underground tanks and UL 80 (1996 Edition) for indoor tanks.

RCNYS Requirements for Indoor Tanks (See RCNYS Section 2201.2.1, Tanks within Buildings):

Reference Standard UL 80 requires that tanks be installed and used in accordance with reference standard NFPA 31(2006 Edition). Reference Standard NFPA 31 lists a series of standards that a composite polyethylene and steel fuel oil storage tank shall be tested to. Within NFPA 31 references are made to UL 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, and SU 2258, Outline of Investigation for Tanks for Oil Burner Fuel – Non-metallic. Since NFPA 31 is a referenced standard to the Residential Code, UL 142 and SU 2258 are also considered as the acceptance criteria for verifying the listing and labeling of the above-ground tanks. See RCNYS R103.1 for the requirement for approved materials, equipment and devices.

The following portions of NFPA 31 Section 7.5 have applicability to installation of fuel oil storage tanks inside buildings. This is not a complete listing of the requirements of the reference standard, which must be consulted for the specific conditions of each installation.

Section 7.5.5: A tank that exceeds 60 gallons capacity shall be installed on the lowest floor (story, cellar, or basement) of a building, except as provided for in 7.5.6.

Section 7.5.6: A maximum of 660 gallons of storage tank capacity shall be permitted to be installed on a higher floor provided the following conditions are met:

- (1) The higher floor does not have any floor or open space directly below it.
- (2) The higher floor is provided with a liquid tight sill, containment device, or equivalent means having the ability to hold a minimum of 15 percent of the aggregate tank capacity to prevent spilled fuel oil from entering an adjacent, lower area.

Section 7.5.8: Tanks of a capacity between 10 gallons and 1320 gallons shall not be placed within 5 feet horizontally from any source of heat, either in or external to any liquid fuel burning appliance, unless separated from the source of heat by a barrier having a 1 hour fire resistance rating extending horizontally at least 1 foot past the oil burner or oil tank, whichever is greater, and extending vertically from floor to ceiling.

RCNYS Requirements for Outdoor Tanks (See RCNYS Section 2201.2.2, Outside, above-ground tanks):

RCNYS M2201.2.2 states that outside, above-ground fuel oil storage tanks are permitted provided that they are a minimum of 5 feet from an adjoining property line and are suitably protected from the weather and physical damage.

The following portions of NFPA 31 Section 7.9, have applicability to outside, above ground tanks. . This is not a complete listing of the requirements of the reference standard, which must be consulted for the specific conditions of each installation.

Section 7.9.2: A tank that does not exceed 275 gallons can be a minimum 5 feet to the adjoining lot line, a tank greater than 275 gallons but not more than 660 gallons shall be a minimum 10 feet to the adjoining property line.

Section 7.9.3: A tank whose capacity exceeds 660 gallons shall be installed in accordance with NFPA 30 *Flammable and combustible Liquids Code*

Section 7.9.4: Appurtenances and supports shall be protected from corrosion.

Section 7.9.7: Each oil burner supply line connected to the gravity feed connection of the supply tank shall be provided with a shutoff valve at the tank.

Section 7.9.8: Each tank shall be equipped with an open vent not smaller than the pipe size specified in Table 7.4.7 of the standard.

Section 7.9.9: Each tank shall be provided with a means to determine the liquid level.

In summary, polyethylene and steel fuel oil storage tanks that are listed and labeled for installation and use as fuel oil storage are permitted to be installed for use in the State of New York.

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