



Coffee Break Training - Fire Protection Series

Hazardous Materials: Indoor Tanks for Oil-Burning Equipment

No. FP-2011-38 September 20, 2011

Learning Objective: The student shall be able to identify the fire code requirements for indoor tanks connected to oil-burning equipment.

When a combustible liquid tank is attached to an oil-fired appliance, such as this residential boiler, it is regulated by specific sections of the fire and mechanical codes pertinent to heating equipment. It is not regulated by the general hazardous materials or flammable and combustible liquids sections found in other parts of the fire code.

The storage tank in today's photograph is installed in the basement of a single-family dwelling. Since it is connected to a fuel-oil piping system, the maximum amount of fuel oil permitted in the tank is 660 gallons (2,498 L). Depending upon the grade of fuel oil used, this amount could exceed the maximum allowable quantity permitted by the general hazardous materials or flammable and combustible liquids sections found elsewhere.



The tank attached to this oil-fired boiler must meet the requirements of both the fire code and the appropriate mechanical code.

If the amount of fuel in the storage tank exceeded 660 gallons, the tank would have to be installed in a special room constructed in accordance with the locally-adopted building code for hazardous materials storage.

National Fire Protection Association (NFPA) 31, *Standard for the Installation of Oil-Burning Equipment*, also requires the following clearances between the tank and the burner.

Tank capacity	Minimum Clearance
Less than 10 gal (38 L)	At least 2 ft (0.6 m) from any ignition source, either in or external to the appliance being served, and not placed in a way that the temperature of the fuel in the tank exceeds the temperature of its surroundings by 25 °F (-4 °C) or more.
Between 10 gal (38 L) and 1,320 gal (5,000 L)	At least 5 ft (1.5 m) horizontally from any open flame or 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 ft (0.3 m) past the liquid fuel-burning appliance or the tank, whichever is greater, and extending vertically from floor to ceiling.

The grade of fuel oil used in a burner must match the burner's rating and comply with the burner manufacturers' specifications.

For additional information, refer to *International Fire Code*, Chapter 6, NFPA 1 *Uniform Fire Code*™ Chapter 11, the *International Mechanical Code*, and NFPA 31, Chapter 7.

