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U.S. Fire Administration / National Fire Academy

Coffee Break Training

Topic: Clearances from Heat-Producing Appliances

Learning Objective: *The student shall be able to address minimum required clearances from infrared heaters.*

Every inspector knows that the combination of heating appliances and combustible materials can create a dangerous environment. If combustible materials are too close to heat sources they may be ignited easily, resulting in a serious fire.

While some oil-fired or other open-flame heating appliances are obvious hazards, what about suspended tube or space heaters that have no visible flame but emit electromagnetic infrared energy that warms solid surfaces? What clearances from combustibles (structural or contents) should be provided for these appliances that may emit up to 200,000 Btu (211 MJ) with surface temperatures up to 1,400 °F (760 °C)? Unfortunately, there's no simple answer.

The model building and fire codes reference the *International Fuel Gas Code*, or ANSI Z223.1/NFPA 54, *National Fuel Gas Code* for the installation and clearance requirements for suspended infrared heaters like those pictured.

Photo courtesy
Fire Chief Daryl A. Rausch,
Monroe, Wisconsin.

1. Clearances from combustible material for *listed* heaters must be in accordance with the manufacturer's installation instructions. Each product and situation may be different from the next.

2. *Unlisted* heaters must be installed in accordance with clearances from combustible material acceptable to the Authority Having Jurisdiction (AHJ) or code official, who may require additional testing or analysis to verify minimum clearances.

In those areas where combustible materials are stored, signs must be posted to specify the maximum permissible stacking height to maintain required clearances from the heater to the combustibles. The signs should be clearly visible and legible to all who work in the facility.

It also is important to note that these heaters are not explosion-proof. Where there is the possibility of exposure to flammable vapors, the code official or AHJ should be consulted.

For additional information, refer to the *International Fuel Gas Code*, or ANSI Z223.1/NFPA 54.