

STATE OF NEW HAMPSHIRE DEPARTMENT OF SAFETY

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INFORMATIONAL BULLETIN

Table with 5 columns: BULLETIN #, TITLE, DATE ISSUED, SUPERSEDES, RELEASED BY, APPROVED BY, SOURCE, SUPERSEDED BY. Row 1: 2010-04, VENTING AND INTERCONNECTION OF HEATING APPL., NOVEMBER 22, 2010. Row 2: JBC, RBF, MECH SAFETY; NFPA 31, 54, 211.

Venting and Interconnection of Fuel Fired Appliances

This informational bulletin is designed to address questions and concerns from fire chiefs and building officials with respect to the venting of vaporized, solid fuel and gas fired heating appliances in the home. Given today's economic times, combined with a desire for cleaner renewable energy sources; many homeowners are adding or upgrading their heating equipment in their homes. The design and construction of high efficiency units can change conventional venting methods requiring the contractor, homeowner and public safety official to verify proper venting for not only the newly installed equipment, but the remaining equipment vented into a conventional chimney. Public officials are urged to work closely with contracting firms during the permit process to verify that the new appliance being installed not only meets the clearance to combustible surfaces, but has sufficient air for combustion and is properly vented.

Solid Fuel Heating Appliances

Solid fuel heating appliances are most commonly referred as the "wood stove". The solid fuel heating appliance family includes such organic materials as wood, wood pellet, corn, and coal stoves. For each of these appliances the NFPA 211 (Standard for Chimneys, Fireplaces, Vents, and Solid Fuel burning Appliances, 2003 Edition) is the prescriptive document.

NFPA 211 (Section 9.8) prohibits the interconnection of solid fuel-burning appliances into any chimney serving another appliance. Meaning; each chimney flue may only service one solid fuel-burning appliance. No combination of fuel-gas, oil-fired, or additional wood, wood pellet, coal or corn stoves may be vented into the same chimney flue as a solid fuel-burning appliance.

Exception: A solid fuel-burning appliance designed, constructed and listed to operate on a combination of fuels is permitted to be installed in a single chimney flue. The exception contends that the appliance is designed and constructed in such a manner that both fuels could not be used in conjunction with each other, and that safety controls have been integrated in such a manner as to prevent and/or shut down the appliance

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before it reaches its over firing and venting capacity.

NFPA 211 (Section 13.3 & Chapter 14) mandates that in addition to verifying the chimney is suitable and large enough to properly vent the solid fuel-burning appliance, an inspection of the chimney must be conducted prior to any change in fuel usage.

## Oil Burning Appliances

The venting of oil burning appliances can be accomplished through the previously discussed NFPA 211 document, and the NFPA 31 (Standard for the Installation of Oil-Burning Equipment, 2001 Edition). The NFPA 31 document applies specifically to oil-burning appliances and offers additional clarification and details not available in NFPA 211.

Oil burning equipment is permitted to be vented in combination with other oil burning equipment, and with some restrictions fuel gas appliance. Oil burning appliances are not permitted to be vented in the same chimney flue as solid fuel-burning appliances such as wood stoves, coal or pellet stoves and/or heaters (NFPA 211 {Section 9.8.2}).

Both the NFPA 31 (Section 6.5) & 211 (Section 9.8.3 & 9.8.4) standards permit the combination of multiple oil burning appliances or fuel gas and oil appliances. Careful attention should be given by the official to compel the properly licensed installer for their calculated confirmation that the chimney flue in question will be sized to handle both the maximum load of combined BTU's, as well as the minimum BTU load when the smallest appliance is operating by itself.

**Example:** A 130,000 BTU oil-fired furnace is installed in the basement near a 40,000 BTU gas-fired hot water heater. Both units intend to utilize the same chimney flue for venting the exhaust. The installer must produce the math and/or reference charts from NFPA 54 (The National Fuel Gas Code) to verify that the chimney flue will be large enough to properly vent the exhaust gasses when both units are operating simultaneously, yet small enough to provide sufficient draft when only the hot water heater operates in the summer months.

Although both the oil-fired and gas-fired appliances are permitted to be joined an approved or listed vent connector; both NFPA 211 and NFPA 31 require that the chimney have sufficient draft and that both units are equipped with primary safety controls and are located in the same room. In most cases where a combination of oil-fired equipment and gas-fired equipment is vented into the same chimney flue; two separate openings into the chimney flue are recommended. When two or more openings to the chimney flue are used; they must be at different levels and the smaller vent pipe shall be at the higher level. Officials should verify that proper clearances to combustible materials have been met.

**REMINDER:** Although two openings are permitted into a single chimney flue; **NO combination of solid fuel-fired appliances are permitted to be vented into an oil-fired or gas-fired flue.**

## Fuel Gas Fired Appliances

Propane and Natural Fuel Gas-fired appliance are vented through the NFPA 211 document and the NFPA 54 (National Fuel Gas Code, 2002 Edition). Both documents discuss the need for restrictive measures when a clay lined chimney is converted solely for gas-fired equipment use. Because gas-fired equipment has lower exhaust gas temperatures, many clay lined chimneys are not suitable for exhausting gas-fired equipment. In order to bring these chimney flues into compliance an insulated liner material is often needed. When these chimney flues have been converted or are specifically constructed for gas-fired equipment use only, a label in compliance with NFPA 211 (Section 10.5) must be installed at the breeching warning of the limitations and conversion for fuel gas-fired equipment only.

Sample Label in accordance with NFPA 211 (Section 10.5); **This [type of chimney venting material] is for [type of appliance or category of appliance in accordance with NFPA 54 3.3.6.11] appliances that burn [type of fuel (natural gas or propane)] fuel ONLY. Do NOT Connect Other Types of Appliances.**

When the combination of oil-fired appliances and gas-fired appliances are vented into the same chimney flue, the small diameter vent connector (usually serving the gas-fired appliance) must be vented into the chimney flue above the larger diameter vent connector. **NO combination of gas-fired and solid fuel-fired appliances may ever be vented into the same chimney flue.**

**REMINDER:** NFPA 54 (Chapters 12 & 13) Requires that Gas-fired appliances are not permitted to be vented in an exterior clay tile lined chimney in New England. The output exhaust gas temperatures of propane and/or natural gas-fired appliances are not hot enough to sustain sufficient draft in the cold winter temperatures. Exhaust gasses will commonly condense creating a hazardous carbon monoxide release into the dwelling. Gas-fired appliances vented into exterior clay lined chimney flues **requires an additional approved (metal) lining material with insulation in order** for the appliance to vent correctly.