

MECHANICAL CODE DISCUSSION

Use of Open Combustion Appliances



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THE USE OF OPEN COMBUSTION appliances within buildings often results in harmful or dangerous conditions.

Please consider:

- Open combustion appliance cannot be located within or accessed through bedrooms, due to danger of CO poisoning.
- Open combustion furnaces connected to common vents in multi-family building may result in CO spilling in another occupant's dwelling.
- Open combustion gas furnaces and water heaters with open combustion air duct, located in newer tight construction, must be isolated within a sealed, insulated room.
- Open combustion gas appliances are susceptible to back drafting due to negative pressures created by exhaust fans, improperly located return airs, or wind.
- Open combustion gas appliances exposed to household and business chemical fumes often create harmful or corrosive by products.
- Flame rods in open combustion appliances are susceptible to the

effects of laundry soaps, fabric softeners, hair sprays and other household chemicals; resulting in frequent flame sensing failures.

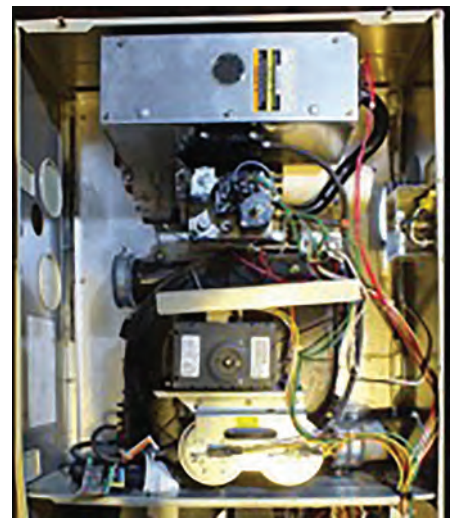
Direct vent gas appliances resolve virtually all concerns, *if installed correctly*, in a truly direct vent manner.

The IRC, IMC and IFGC define:

DIRECT-VENT APPLIANCE:

A fuel-burning *appliance* with a sealed combustion system that draws *all* air for combustion from the outside atmosphere and discharges *all* flue gases to the outside atmosphere.

For many years, direct vent gas furnace included a sealed burner compartment, with a sight glass installed in the front panel, to allow observation of the operation of ignition system and burner operation. The inducer fan, pressure switches, gas valve and other components located in this upper compartment of the furnace are basically exposed to the interior atmosphere of the furnace room. The upper furnace door/panel is not air tight, and sealing of gas line, venting or other penetrations of the cabinet wall is not required.



The current trend in many furnace designs is to eliminate the sealed burner compartment, creating a direct vent condition by sealing the entire upper compartment in the furnace, complete with a gasket and positive latches on the upper door/panel.

When installing these newer direct



vent furnaces, the manufacturer's installation instructions must be followed, with a specific focus on sealing all penetrations, and insuring the door is installed properly on the furnace. Failure to complete each the following will result in a non-direct vent condition.

- Venting adapter plates and gaskets must be installed at the cabinet wall penetrations.
- Gas line must include the rubber grommet sealing the cabinet.
- Any holes through the side or top of the cabinet MUST be sealed.

This includes any knockouts not used due to vent configuration changes (left, right or top).

- The intake/combustion air pipe must be installed completely from outside, with all joints and connections sealed.

Thanks for your response to previous discussions, your suggestions and

questions, your attendance and participation at the classes, and the education summit!

—Brent ■



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