



SPECIAL CONCERNS OF HIGH-EFFICIENCY FURNACES

Homeowners are often surprised when their fairly new high-efficiency furnace shuts down unexpectedly in the middle of winter. In many cases, the problem is due to ice build-up in the vent pipe, blocking the exhaust flow. In high-efficiency models, the lower temperature of the exhaust can allow moisture (a by-product of combustion) to condense in the flue, especially when outdoor temperatures drop into the 20's or below.

High-efficiency (or "condensing") furnaces exhaust the combustion gases and bring in fresh air through PVC pipes to the outside, usually routed through the sidewall of the house. If not installed correctly or checked regularly, problems in these pipes can affect the operation of the furnace itself.

If your newer furnace shuts down, check these common venting problems:

- Incorrect size of the exhaust pipe. Manufacturers specify the maximum length and number of elbows that pipe of a given diameter can handle.
- Not enough hangers to support the exhaust pipe. If sags develop in the exhaust piping, condensate can pool in the low spots, blocking the vent enough to trigger a furnace shut-down.
- Incorrect slope of the exhaust pipe – down toward the outdoors, rather than back towards the furnace. The exhaust piping should be pitched at least 1/4-inch per foot, to allow condensate to drain freely back into the furnace.
- Vents positioned too close to the ground, where they can be blocked by snow drifts or critters.
- Running exhaust and intake pipes out different sides of the house. The pipes must be next to each other so that the wind pressure is the same on both.

During wintry weather, it's a good idea to check regularly the exits for the exhaust and intake pipes on the outer wall of the house, to make sure they aren't covered by snow or ice. In addition to shutting down the furnace, a blocked exhaust pipe can allow carbon monoxide to build up inside the house.