

Ask Jon Eakes

WHAT IS A SEALED FURNACE ROOM & WHY IS IT NOT RECOMMENDED?

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Traditional furnace rooms are nothing more than a partition designed to hide an ugly furnace. They are neither sealed nor insulated, and they obtain combustion air from the house through door or wall grills of the open floor joist area. Sealing off the drafty leaks in a house and introducing a system for controlled ventilation means that exhaust fans and chimneys have to compete with each other for air -- which leads to complex and sometimes unpredictable air currents. (search keyword "combustion air" for the title "DOES MY FURNACE GET ENOUGH AIR?") A sealed furnace room was conceived as a way to isolate the two air-supply problems -- combustion and chimney draft air inside the furnace room, fresh air and stale exhaust inside the house.

As you can see by the drawing, there were a lot of fancy details to trying to isolate the furnace in a sealed furnace room. But there were two major problems that were never really adequately solved. With this isolated room, a gas leak would not be detected until it was already explosive. You would never smell it because this room was completely isolated from the air of the house. To safeguard against this, a lot of fresh air ventilation into this room was required. That tended to drop the temperature of this room so low, sometimes below freezing, that the chimney was constantly condensing or even freezing. While ardent conservationists were experimenting to overcome those problems, two technological developments simply made the question irrelevant.

First was the advent of the sealed combustion furnaces. This took the same isolation concept, but built it right into the furnace at the factory. Outdoor air came directly into the furnace and then back out through the flue. These units use no household air and hence are not in competition with any other exhausts in the house. That is the ultimate solution, but very expensive, so not for everyone.

Second was the development of the Hoyme Damper. This is a motorized damper that is interlocked to the furnace so that it opens when the furnace needs air and closes when it does not. The Hoyme damper is the only one I am aware of that is approved by the gas code as fail safe and brings basement air control to ordinary furnaces and boilers. (search keyword "combustion air" for the titles "WHAT IS A COMBUSTION FRESH AIR SUPPLY?" and "The combustion air duct for my furnace freezes the basement. What to do?")

So with these two very good options, don't try to isolate the furnace in some kind of sealed chamber. You will be causing more problems than you solve, not to mention that there now exist much simpler proven solutions

Keywords:

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