

## A Tip for The Week:

Furnace filters are typically an out of sight out of mind little item that can lead to one of two occurrences: "Remember a little now to save a lot later" - or - "Forget a little now and pay a lot later".

The air filter in the furnace (air handler) cabinet is not meant to be for living area air purification, this is a large misunderstanding, as the HVAC systems are not designed to turn that much air volume to be of any significance. People & animals with physical movement are constantly generating contaminants. More than a furnace could ever possibly be able to eliminate.

A typical 2k square footage house will only have approximately 1 to 2-1/2 air changes/hr. unless you run the fan constantly then you can get up to 4 to 7-1/2 changes/hr. to effectively change the air quality in the home this would need to be around 10 to 15 air changes per hour.

If air purification for breathing is desired, then the use of stand-alone air purifiers is recommended to assist.

The main purpose of a furnace filter is to extend the life of the expensive furnace equipment within the cabinet by keeping the large size dust and particulates off the operating items within and to ensure proper air flow through the heat exchanger or evaporator coil and out to the living areas. This will allow the furnace to operate as designed and last much longer saving the homeowner money and headaches in the long run.

Filter companies have slick marketing campaigns using quality of breathable air as the means to sell expensive "high efficiency" filters, but with more efficiency comes more air restriction. The restriction of air flow starts with the initial installation & gets worse as it collects. This is especially affecting the central cooling system evaporator coil when in operation.

3 common types of filters:

- The generic pleated cotton/polyester type is widely used. These greatly increases the air surface area by way of the pleats, has good air flow & filtering. Should be replace once every 3 months. Range in depth size of 1" to 6". Deeper is better.
- The least expensive non-pleated blue fiberglass mesh disposable type will get the job done, has very good air flow & will keep your furnace & home happy, but should be replaced once a month.
- The mid-priced Poly-Ring panel type which has 2 layers of polyester fiberglass matt & is sonically bonded around a wire frame. This has good air flow efficiency as well as good filtering efficiency & should be replaced once every 3 months.

Note: restricted air flow from a "high efficiency" and/or dirty air filter does not affect the fan blower motor, but rather has adverse effects on the heat exchanger (over heating) and evaporator coil (icing over) depending on heating or cooling mode & moving adequate conditioned air supply to the living area.

Changing the furnace (air handler) filter at the manufactures recommend rate is of most importance.

Referenced from Advanced HVAC training course - InterNACHI.

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