

Air Filtration

Air filtration on your heating and cooling system is not only important for the air quality of your home or work space, but it also is important in keeping your system clean and operating at its peak efficiency. Filtration is located on the return air side of your heating equipment so that all air must pass through it before entering your HVAC equipment. The true function of the filter is to remove particles from the air that would otherwise gather in your blower wheel, secondary heat exchanger coil, or your evaporator coil which would restrict the air flow and reduce heat transfer in your system. A loss of heat transfer, both heating and air conditioning, would reduce efficiency and could cause your air conditioner to freeze up, or your furnace to overheat, even causing the heat exchanger to crack. A clean filter is very important as well because a dirty or plugged filter would have the same effect by restricting necessary air flow.

Your HVAC air filtration device is also a great way to improve the air quality in your home or work space by removing air borne particles, even smoke, bacteria, and viruses, depending on your air filtration devices. Some of our customers use their "fan on" setting on their thermostat most, or all, of the day to better filter the air in their home rather than just when their system is calling for heat or cool. One of the best filtration devices is an electronic air cleaner which works by magnetizing particles and then capturing those particles on collector cells, these collector cells are made of metal and need to be removed 2-3 times a year to be rinsed off, allowed to dry, and then put back into air cleaner (tip; use caution on cells not to bend plates or break tiny ionizing wires, and only use a very mild detergent because harsh detergents will corrode aluminum collector plates). Electronic air cleaners have little resistance on air flow because of the space between cells and are very efficient in removing air borne particles, smoke, and even bacteria and viruses. Media filters are the next best filtration, they are filters with a media material designed to trap particles as air passes through them. Filters are rated by M.E.R.V. (Minimum Efficiency Rating Value), the higher the number the better the efficiency, but bear in mind, the more efficient a media style filter is the more restrictive it is and must be changed regularly per manufacturer recommendations. Ultra-violet lamps can be added to your system as well to aid in killing bacteria and viruses. These lamps are relatively inexpensive but the bulbs should be changed yearly and the bulbs can cost in the \$70-\$100 range.

Simply, inexpensive, throw-away filters will achieve the purpose of protecting your equipment if air quality is not a big concern, and they are the least restrictive to air flow. However, if you use these types of filters realize that they are not very efficient when new, in fact, they get more efficient as they get dirtier, so I do not recommend changing them monthly, usually three or four times a year is adequate. Changing them too often will allow particles to pass through them when they are new. Visual inspections every month is a good idea and change them when they are visually dirty.