

then the pressure difference between the basement and the attic is likely to increase air infiltration into the basement. It is usually a good idea to seal this flow path.

Leaking Ducts Can Also Be Hazardous to Your Health

These are all signs that serious duct leakage may be which over time has accumulated on the surface as the air is being pulled through the insulation.

Comfort and Sizing

Air conditioning cooling capacity is often measured in "tons". A ton of cooling represents the heat energy required to melt one ton of ice in 24 hours. Because duct systems lose energy that is supposed to heat or cool the house, they change the effective capacity of the heating and cooling equipment. For example, a three ton air conditioner connected to a duct system of 70% efficiency effectively becomes a two ton air conditioner. A duct system guaranteed to reduce duct leakage would allow the homeowner to purchase a smaller air conditioning system.

Simulation results showed that improved ducts (low leakage) and improved system installation (minimally leaking and insulated ductwork) can allow the use of a smaller nameplate capacity air conditioner without reducing the actual heating or cooling delivered at the air supply registers to the occupied space or the pulldown time. (A three ton unit can be used rather than a four ton for a typical house). If system nameplate capacity is unchanged, improving duct systems results in the pulldown being reduced by more than an hour, so the occupants become comfortable sooner.

Unfortunately, the old axiom of "out-of-sight, out-of-mind" applies to most aspects of an air

conditioning system. For most homeowners, as long as the system is keeping them cool, they usually do not give it much thought. What they do not see is how much their system is costing them per year. Most duct systems are installed in attics or building cavities where they are rarely seen or inspected. The lower quality of air duct currently on the market may lead to poor seals, loose fittings and duct runs, and tears in the system that mean additional leakage, which has already been addressed at length. Not only does this mean the homeowner has an inefficient system, but a leaking ductwork is unhealthy for the occupants as well.

THE GUSTAFSON SOLUTION

Gustafson is the world leader in HVAC air duct systems, but until now has never offered an option for the residential market. The company's G3 and HV2 self-sealing gasketed fittings provide the tightest fitting ducts available, that are easy to install and do not require the sealant that is normally required for most duct systems. Gustafson's HV2 solution offers a true win/win situation for all parties involved. The homeowner will reduce their average cooling cost by greater than 50%. Since the HV2 gasket reduces mold and dust distribution, the homeowner's family will have safer air distributed throughout the house. Furthermore, the HV2 gasket insures that fiberglass insulation will not be sucked into the system and distributed throughout the house. Round metal ductwork is also easier to clean than conventional ductwork, which further reduces dust distribution throughout the house. All of this may reduce illness as well as costly doctor's visits. The Gustafson ductwork also means the homeowner can purchase a smaller air conditioning system which will use less energy. The system will run more efficiently, which means it will last longer and avoid costly repairs. On a larger level, energy consumption is reduced, along with toxic