

Every Duct Has A Bill

By George Porter

Lately energy conservation has been making the news everywhere and I think it's time that we, as installers, put our two cents in to try to save the consumer some money. How well a home is installed has a tremendous amount to do with how much heating or cooling it will consume in its lifetime. A few extra minutes and a few extra dollars during installation could affect the savings of thousands of dollars in the lifetime of the home. If there was ever a time for installers to market an energy efficient installation, that time is now.

If for a couple of hundred of dollars you can save the customer thousands of dollars, then you will have created a product that should place you in high demand in your area as an installer. The good part is you don't have to invent anything new. All you have to do is adopt a few procedures that have been in place in other parts of the country and they are so easy and make so much sense that it is scary.

For example, suppose the customer orders a home with R33 insulation in the ceiling, he special orders 6" walls with R19, and he has thermal pane windows throughout the house. Everyone would have to agree that this is an extremely well insulated home. The next time you install a home like this, check the R rating on the crossover ductwork that carries all the air from one side of the house to the other and lays under the home in a very cold area. It is R5.5 and it drastically affects the temperature of the air when it comes out the ductwork on the other side of the home. A system is only as good as its weakest link and if you have R33 in the ceiling, R19 in the walls and R11 in the floor, and R5.5 on your ductwork, then you've got R5.5. All that's required to change all this is have the ductwork be at least the R value of the walls in the home. Not all homes have exterior crossover ducts, but most of them do.

One of the projects I do is working for a local power company inspecting manufactured homes with extremely high heat bills. 90% of all the cases boil down to three things, and we're talking about heat bills that are four times higher than anybody else's in the area. The number one reason for a high heat bill is that the ductwork has fallen off. The number two reason is the hot water heater is set on 160 or 170, and the number three reason is a dirty filter in the furnace.

As installers, we can't keep coming back changing the filter for the homeowner. That's something he'll just have to learn to do himself. But we can sure keep that ductwork from falling down. When you install ductwork, bear in mind that what you do should last forever, not just a year or two or three. That ductwork should remain air tight, insulated and intact for the entire life of the home. If, after a few years, some cheap duct tape dries out, loses its adhesion and allows the ductwork to fall away from the home, those people will use more energy in one month than ten rolls of extremely high quality metal faced duct tape, and it takes no longer to install it than it would with the cheap stuff.

There are many ways to properly connect ductwork on crossovers. One of the best I have seen is using nylon zip ties, then wrapping the entire connection with a heavy metallic duct tape and

then installing no less than four sheet metal screws through the metallic duct tape into the metal duct from the home. Care should be taken that these screws are installed below the nylon band installed underneath the duct tape. You can increase the R value of ductwork by simply wrapping it, usually with a heavy foil backed roll of insulation, covering it with heavy black Visqueen and securely taping the whole thing with a high quality duct tape.

I have seen ductwork that consisted of little more than dryer hose with heat tape insulation wrapped around it. The heat loss on a 10 foot run of this stuff is probably near 50%. Ductwork should not be laying on the ground. It should be as straight and direct as possible and heavily supported underneath so that it cannot develop sags to restrict the flow of air and cause condensation to form when air conditioning is running.

There's probably also a tremendous market to retrofit already installed homes with this kind of a crossover system. It pays for itself handsomely and immediately. The air exiting on the other side of the home may be as much as 10 to 15 degrees warmer than it was before the ductwork was resealed and re-insulated, and that's just for ductwork that isn't insulated. If the ductwork has fallen off, there is no end to the savings that can be had over that situation.

Give it some thought! As we said, every duct has a bill. Let's hope the ones you install are low.