



Nearly all new homes use central Heating Ventilation and Air Conditioning (HVAC) systems to provide comfort conditioning. By far, the most popular of all central air conditioning systems is the ducted forced-air system. While the mechanical elements of these systems seem to be constantly evolving in efficiency and dependability, the duct work that distributes heated or cooled air throughout the house has changed little.

DUCT LEAKS

Studies covering both new and old homes show that duct leaks accounts for 20 to 60 percent of all air exchange in homes. When conditioned air escapes through duct leaks, homeowners lose conditioned air and unconditioned air is drawn into the home.

Sophisticated blower door testing can identify homes with leaky ducts and measure the severity of the leaks. Some HVAC contractors offer blower door testing for free or at a nominal price. Most duct leaks are readily identified through close visual inspection of the ductwork and occur within 10 feet of the air handler; the area of the duct system exposed to the highest levels of vibration, pressure, humidity and temperature difference.

Flex Ducts

- ☛ These are round insulated ducts resembling clothes dryer vents, but much larger.
- ☛ They are double wall, insulated and seamless.
- ☛ Try to avoid unnecessary kinks, curves and bumps since every irregularity in the duct layout adds resistance and cuts down airflow.
- ☛ Flex duct leaks usually occur at joints and junctions.

Box-Shaped Ducts

- ☛ Could be made of metal but are usually made of duct board.
- ☛ Joints and seams of metal duct systems are secured with special metal closure strips.
- ☛ Duct board ducts are simply taped shut. As a home ages, taped seams and joints loosen and begin to leak.

DUCT REPAIR

Duct leaks can be repaired by using metal foil duct tape or mastic adhesive.

Metal Foil Tape

- ☛ Most duct leaks, regardless of the type of duct, can be repaired using metal foil duct tape.
- ☛ Care should be taken when using metal foil tape, as the edges are sharp enough to inflict a cut.
- ☛ Metal foil tape must be **burnished or rubbed**

down with a plastic putty knife or an old credit card. If this step is neglected, the tape will loosen quickly, and the leak will return.

- ☛ All tape must be applied to clean dry surfaces.

Mastic Adhesive

- ☛ A more permanent method of duct repair.
- ☛ A thick latex paste, usually reinforced with chopped fiberglass that is applied in a thick coat over potential and existing leaks.
- ☛ Will not fill large cracks or voids. They must first be taped shut and then reinforced with mastic.
- ☛ Once properly sealed with mastic, potential and existing leaks are permanently repaired.

DUCT CLEANING

Duct cleaning services can cost as much as or more than replacing all the ducts with new. Duct contamination occurs in very rare circumstances and can be a severe health issue. Most contamination can be avoided by regular monthly cleaning or replacement of return air filters, and by annually cleaning and servicing the HVAC system.



Duct Cleaning Tips

- ☛ The return ducts directly behind the HVAC filter are the most likely to be contaminated.
- ☛ Use a soft bristled brush attachment on a vacuum cleaner, and be careful not to bruise or abrade the inner duct wall.
- ☛ In cases of severe mold or mildew contamination, the duct should be replaced. Usually replacement of about 10 feet of duct at the supply and return ducts will suffice.
- ☛ As standards are developed, some companies will be certified by The National Air Duct Cleaning Association (NADCA) or an equivalent trade association. It is important to determine that your contractor is certified, and that the technicians performing the work are also certified.
- ☛ When a company cleans your ducts, they should clean the air handler, fan blades, coil and drain pan as well.

For further information on duct cleaning, please visit the Environmental Protection Web site's online publication, "Should you have the air ducts in your home cleaned?" by visiting: www.epa.gov/iaq/pubs/airduct.html.