

# Duct Sealing

Your duct system is responsible for efficiently distributing conditioned air throughout your home. Potential savings from a high efficiency HVAC unit can be negated if conditioned air is leaking into your attic and crawlspace through gaps in your ductwork or if your ducts are not insulated. ENERGY STAR® estimates that the typical home loses 20 to 40 percent of the air that moves through the ductwork. Proper duct sealing and duct insulation is an important step in optimizing the performance of your HVAC system.

## Why is duct sealing important?

Heating and cooling accounts for approximately 45 percent of your home's energy usage. Sealing your leaky air ducts may be the single most important thing you can do to improve your home's energy performance.

## What is the benefit of duct sealing?

1. Reduces summer and winter energy bills
2. Improves comfort in your home
3. Improves the quality of indoor air
4. Increases the life span of HVAC units
5. Reduces noise from the HVAC system
6. Reduces excessive dust



## How do you seal your ducts?

Sealing your ducts does not require a lot of material, just time and special attention. The most important thing to remember when duct sealing is, "Don't use duct tape." The adhesives in duct tape are not designed to withstand typical temperature and moisture variations that are present around ductwork. Duct mastic and mastic tape are designed for HVAC applications and are the preferred methods for a durable and long lasting seal. Duct mastic or mastic tape is applied directly to connections and seams on the internal duct, not to the insulation, liner or sleeve on the outside of the duct.

## How much money could I save?

Studies have shown that a 30 percent reduction in duct leakage, on average, will reduce your annual energy consumption by as much as 16 percent.



Subject to TVA Installation Requirements (see reverse side).

Homes with unvented combustion appliances that are the primary heat source for the home are not eligible for program upgrade installations.

## ENERGY SAVING TIPS

- Keep furniture from blocking registers.
- Keep interior doors and registers open.
- Check duct system quarterly for damage that needs repair or sealing.

For more details, call 1-855-2eScore (1-855-237-2673) or go to [www.2eScore.com](http://www.2eScore.com)

# TVA Installation Requirements for Duct Sealing\*

## Duct sealing shall be performed in the following areas:

1. Largest leaks, including disconnected ducts, missing end caps, etc.
2. Areas of highest pressure, including air handler and plenums.
3. Entire return duct system, except hard pipe seams.
4. Panned joists, wood plenums, wall cavities, and/or other building cavities used as part of the duct system.
5. Supply take-offs, including starting collars.

## Proper duct sealing requires use of the following materials and procedures:

- Sheet metal and flexible ducts must be mechanically fastened.
- Ducts shall be sealed with UL 181 approved mastic or mastic tape before insulation is applied – regular duct tape is not allowed.
- Apply mastic directly on the duct (not insulation or sleeve).
- Ensure that the mastic is installed on a clean and dry surface.
- Gaps larger than 1/4" should be sealed with fiberglass mesh tape and mastic.
- Quality Contractor Network (QCN) member shall advise participant to install a working carbon monoxide (CO) monitor if the home has any gas appliances or an attached garage.

## Basic Steps to Duct Sealing



**Pull back outside sleeve and duct insulation to expose flexible duct**



**Install tie-strap and apply fiberglass mesh tape**



**Apply mastic directly on the duct**

## Duct insulation requirements:

- New ducts must be vapor sealed, weatherproof, and have a minimum R-8 insulation.
- Existing ducts with less than R-4 insulation must be insulated to R-8.

## Duct repair and replacement requirements:

- New ducts must be mechanically fastened and sealed with mastic paste or mastic tape.
- New supply branch ducts must have a damper installed at each take-off and originate no less than 12 inches from the end of the trunk line.
- Each level of the home must have at least one return air grille.

\* This sheet is not a substitute for the TVA Standards.

## RECOMMENDED BEST PRACTICES

- Verify that the duct system is correctly sized prior to sealing.
- Duct leakage to the outside after sealing is no more than 10 percent of system fan capacity.
- Do not use panned joists, wood plenums, wall cavities and/or other building cavities as part of new or existing duct system.
- Do not turn air handler on until after mastic has had time to cure.
- Invoice specifies locations of duct sealing, materials used, labor hours and diagnostic readings (if available).