

DIY: Sealing Leaky Ducts

Priority: High

Difficulty Level: Moderate - Requires systematic work in tight, dark spaces like attics, crawlspaces, or basements.

Time Commitment: Takes about 2 to 5 hours depending on how much ductwork is exposed and accessible.

Physical Requirements: Involves sustained kneeling, crawling, reaching overhead, and working in tight quarters.

Purpose

The purpose of sealing leaky ductwork is to ensure that the air you pay to heat or cool actually reaches your living spaces instead of escaping into unconditioned areas like your attic, basement, or crawlspace.

- Lower energy bills: Saves up to 20% on heating and cooling costs by eliminating lost air.
- Improve indoor comfort: Directs full airflow to rooms that always feel too hot or too cold.
- Enhance air quality: Prevents dust, mold, and insulation particles from being sucked into the vents.
- Extend HVAC lifespan: Reduces equipment runtime and wear by helping the system hit target temperatures faster.

Indicators that this Action is worth doing in your home

- If you can see cracks between vent sections or other obvious breaks, holes, or cracks in the ducts system.
- If you can physically feel escaping air blowing against your hand along the ducts with the HVAC system fan turned on.

Video:

[Leaky Ducts? How to Seal and Insulate for Better Home Efficiency](#)

Materials Needed

- Mastic duct sealant: A thick, brushable paste explicitly designed for permanently sealing metal and flexible ducts.
- Fiberglass mesh tape: Reinforces seams and gaps wider than 1/4 inch before applying mastic.
- Foil tape (UL 181A-P rated): High-quality aluminum tape used for tight, flat metallic seams (never use standard cloth duct tape).
- Paintbrush or putty knife: Spread the wet mastic paste smoothly over joints.
- Damp cloth: Cleans away thick layers of dust so the sealant adheres properly.

Basic Directions

- Turn on the HVAC fan: Run the system fan continuously so you can physically feel escaping air blowing against your hand to locate leaks.
- Clean the duct joints: Wipe down all metal connections with a damp cloth to remove dust, oil, and old, peeling tape.
- Target key leak areas: Focus heavily on the "plenum" (the large metal box attached directly to the furnace/AC unit) and all Y-junctions or branch take-offs.
- Apply mesh tape to wide gaps: Wrap fiberglass mesh tape over any cracks or connection seams wider than the thickness of a nickel.
- Brush on the mastic sealant: Paint a thick layer of mastic over all joints, seams, and screws, ensuring it extends at least one inch past the edge of the seam and is about the thickness of a nickel.
- Seal vent boot connections: Remove the registers inside your rooms and apply mastic or caulk where the metal duct boot meets the drywall ceiling or floor.

Tips

- Avoid standard gray duct tape: Traditional cloth "duct" tape dries out, loses its glue, and fails quickly under HVAC heat cycles.
- Wear protective gear: Put on a dust mask, safety glasses, and long sleeves to protect yourself from fiberglass insulation and tight crawlspace dust.
- Check the insulation jacket: If your ducts are wrapped in fiberglass blankets, gently peel back the insulation at the joints, seal the bare metal duct beneath, and then re-secure the insulation wrap.
- Look for disconnected lines: Pay attention to flexible duct runs that may have completely slipped off their metal collars over time, which dumps 100% of that room's air into the attic.