



GREEN ECONOMIES YOUTH FELLOWS PRESENTS

# HOW-TO GUIDES

NAILS & MASTIC



**INDOOR DUCTS**

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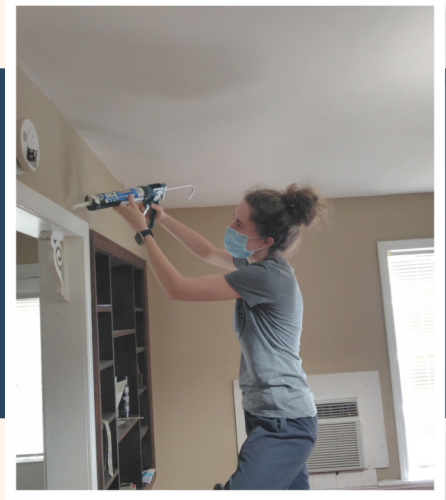
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# CONTENTS

# IMPORTANCE OF DUCT WORK



A home's interior HVAC ducts are a potential source of leaked air. Therefore, it is important to make sure they are sealed properly.

Ducts are typically either on the ceiling or on the floor depending on where the rest of the home heating/cooling system is.

In most homes, the area that contains the majority of the duct work (crawlspace/basement or attic) isn't well insulated.

That means if there are gaps in where the ducts enter the house, some of that cold or hot air from the crawlspace or attic, is getting into the home.

Through the use of the simple materials outlined in this guide, you can make your home as energy efficient as possible.



## PRECAUTIONS

- If applying the mastic with your hands, be careful of any sharp metal, rough patches of floor, wall, or ceiling, and of any nails, screws, or tacks.
- Wear safety goggles when hammering in tacks or applying mastic (especially for ceiling vents)

## MATERIALS

- Mastic
- Tacks

## TOOLS

- Hammer
- Screwdriver (to remove duct cover)





## STEPS

Pull off the vent cover and assess the needs of the vent

- a. For small spaces or cracks between the duct and the wall, floor, or ceiling, use mastic.
- b. For larger spaces, you may need to use a nail or tack to push the duct closer to the wall.

### NOTE:

**It may be helpful to turn the hammer sideways and use the side of the tool since the space in the vent will be small.**



## 01

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If there is a large space between the wall and duct, you will need to use a nail or tack.

## 02

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Center the nail about halfway along the side of the duct with the large space. It should be about an inch or two below the edge of the vent.



## 03

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Using a hammer, push the nail through the metal and then through the wall. The nail will have to go through both.

## 04

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After hammering in the nail, the space should be smaller and you can begin to apply mastic.



## 01

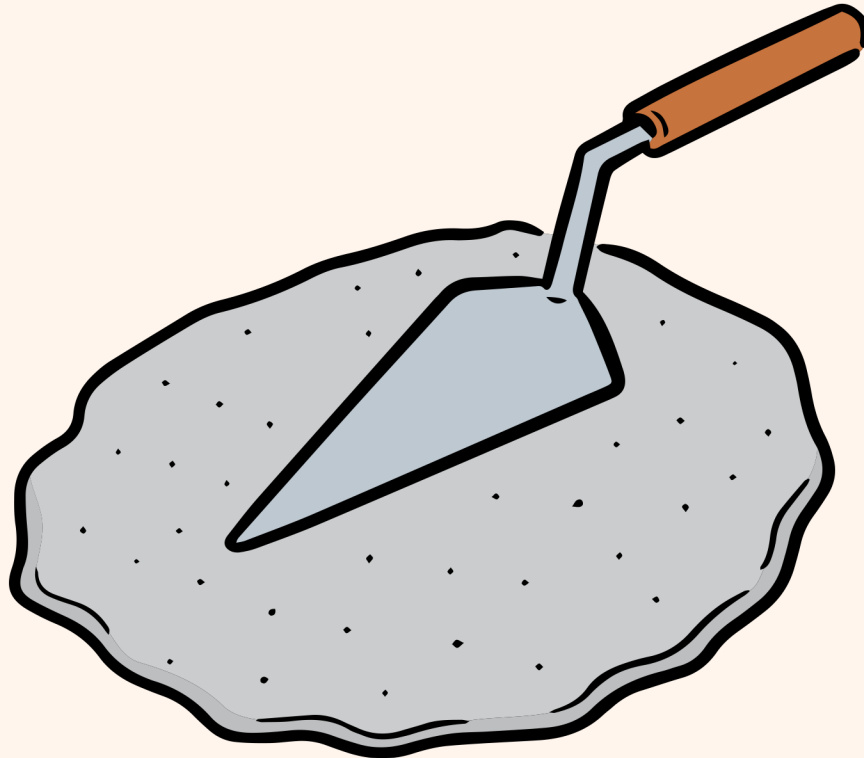
Apply the mastic to the spaces or cracks between the metal duct and the wall, floor, or ceiling. Mastic can be applied with your finger or with a paint spatula.

## 02

The mastic should not be applied inside of the cracks/spaces, but should instead simply cover the cracks/spaces. As the mastic dries it will prevent any air from escaping around the duct, into the crawlspace, attic, or walls.

## 03

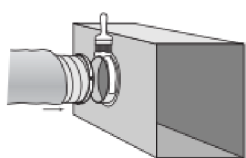
Once the mastic is applied, remove any excess without creating holes in the mastic and put the vent cover back on.



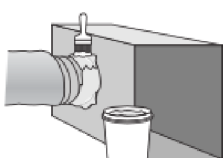
# FREE KITS

Get an energy savings kit free of charge from SWEET Alabama and lower your monthly bills.

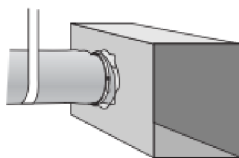
## How to seal flex-duct joints



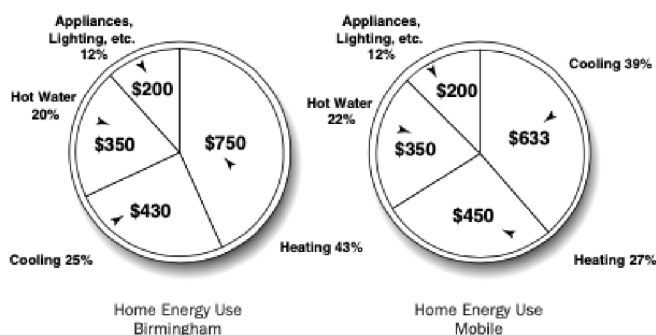
Roll back outer cover and insulation on flex duct and spread mastic on connector and plenum



Slide inner liner over connector, install compression strap, apply mastic over liner and strap



Secure outer cover with compression strap, provide support strap within one foot of connection



## Energy Literacy: Understanding Units That Measure Energy

**Watt (W)** - A watt is the basic unit of power used to measure electricity capacity and is equivalent to one joule per second. The higher the watt rating (e.g., 40, 60, 100W), the brighter the light. LED bulbs use far less watts to produce the same amount of light.

**Kilowatt (kW)** - A kilowatt is 1,000 watts.

**Kilowatt hour (kWh)** - A kilowatt hour is 1,000 watts used for one hour (power x time). It is the unit of energy most commonly used on household electricity meters.

**Therm** - A therm is the energy equivalent of burning 100 cubic feet of natural gas.

# TERMINOLOGY TOOLBOX

## **Caulk**

/kôk/: a waterproof filler and sealant, used in building work and repairs.

## **Crawlspace**

/ˈkrôl ˌspās/: an area of limited height under a floor or roof, giving access to wiring and plumbing.

## **Energy Burden**

/ˈenərjē ˈbærd(ə)n/: percentage of household income that goes toward energy costs (electricity, home heating, etc.)

## **Faceplate**

/ˈfās.plāt/: the covering of the front of an electrical device, outlet or light switch.

## **Galvanized Ductwork**

/ˈgalvəˌnīzd ˈdæktwərk/: coated steel with a thin zinc layer used most often for building ducts. This material's zinc coating helps prevent corrosion and rust buildup.

## **Insulation**

/ˌɪnsəˈlāSH(ə)n/: material used that reduces heat loss or heat gain by providing a barrier between the inside of your home and the significantly different temperature outside.

## **Jamb**

/jam/: a side post or surface of a doorway, window, or fireplace.

## **Mastic**

/ˈmastik/: high-grade construction adhesive commonly used to bond ceiling, wall, floor, etc.

## **Outlet Gasket**

/ˈoutˌlet ˈgaskæt/: foam material used to seal off the wall cavity behind outlets & switch areas from the living space.

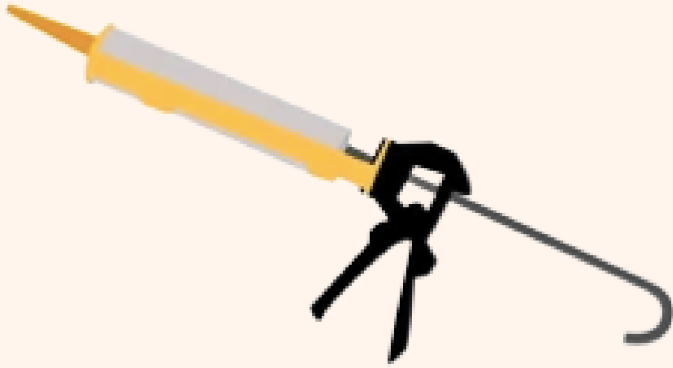
## **Vent**

/vent/: an opening that allows air, gas, or liquid to pass out of or into a confined space.

## **Weather Strip**

/ˈweɪˌHərˌstri:p/: a strip of material to cover the joint of a door or window and the sill, casing, or threshold so as to exclude rain, snow, and cold air.

# TERMINOLOGY TOOLBOX



**Caulk/Caulking Gun**



**Crawlspace**



**Galvanized Ductwork**



**Insulation (Foam)**

# TERMINOLOGY TOOLBOX



**Jamb**



**Mastic Sealant**



**Outlet Gaskets**



**Weather Strip**