Technical Bulletin: Proper Air Handler Sealing in Low Volume Homes

June 1, 2013

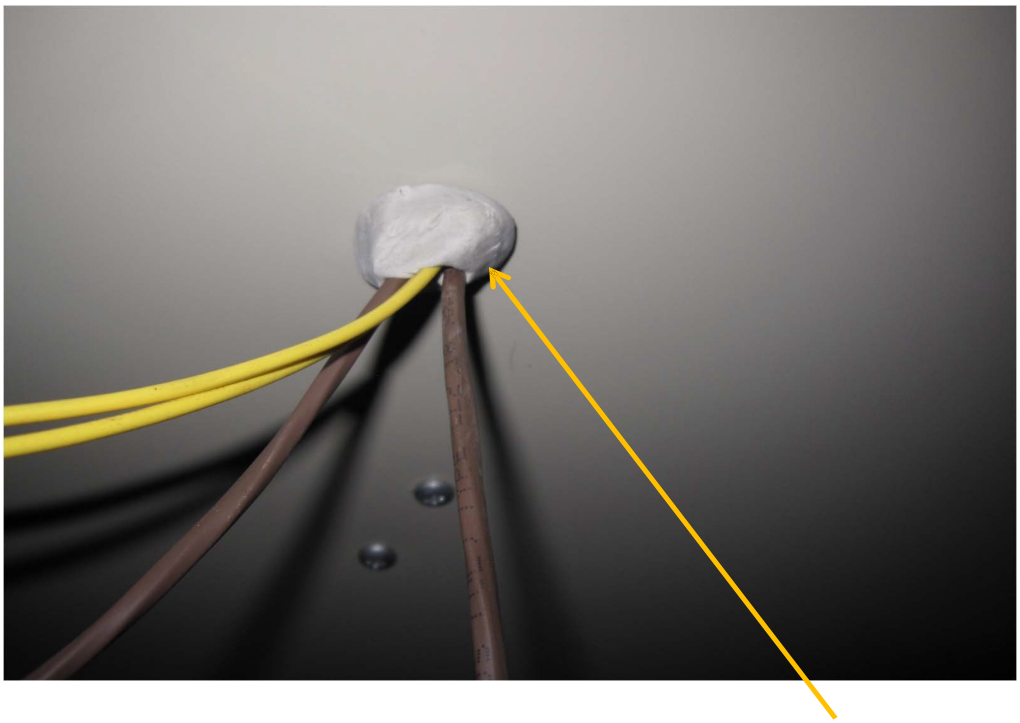
With the implementation of the 2012 IECC in Maryland, many of our participants are struggling to reach 4% total duct leakage. In the cases where the ductwork is seemingly tight, below are some suggestions for proper furnace cabinet air sealing.

Materials:

Putty for sealing serviceable cabinet

UL 181-B tape for sealing serviceable cabinet panels

Techniques:



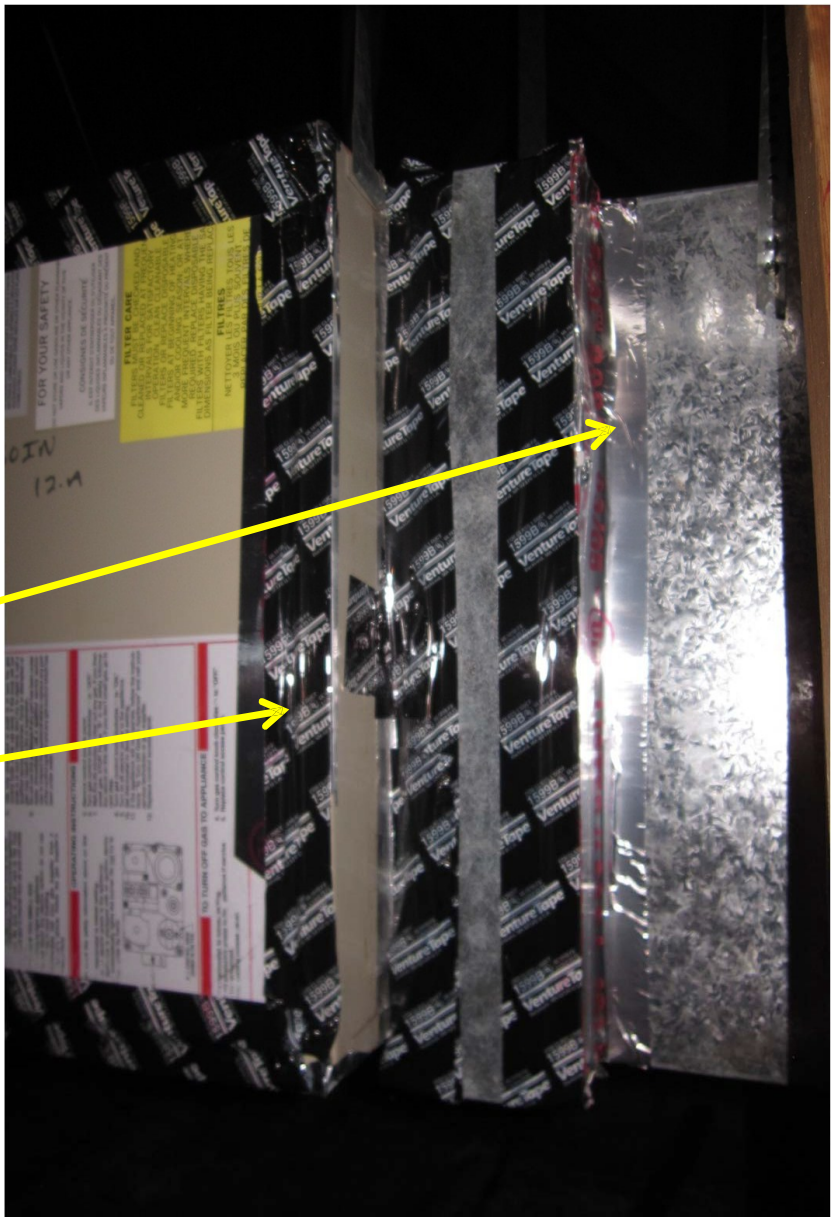
Proper way to seal cabinet wire penetrations with non-permanent putty. It will last indefinitely but can be removed for servicing.

Detail showing UL181B flex tape to make non-permanent seals on blower access panel and filter access door. This seals up air leaks but can be removed for service. The aluminum tape won't peel off for servicing.

Note: UL181A tape may be used to seal the plenum(s) to the furnace cabinet but is not to be used for general sealing of sheet metal duct and fittings – that's what mastic is for.

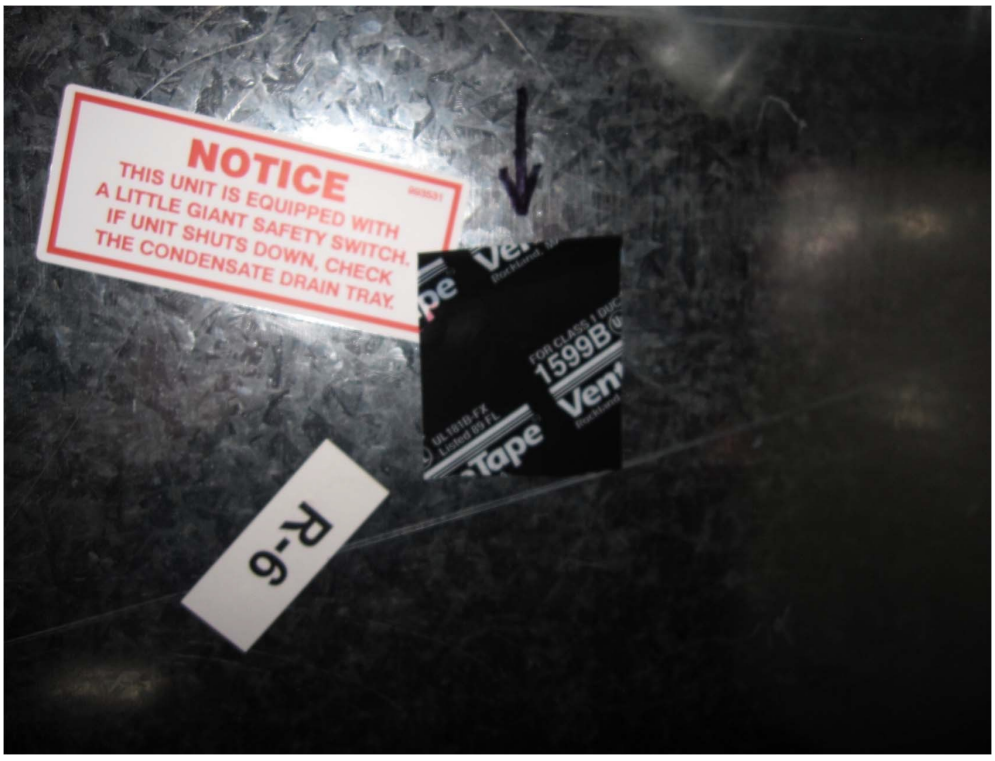
Permanent IL181A metal tape but should be mastic.

Non-permanent flex tape



Detail showing blower access panel taped with flex tape to make it serviceable in the future. This type of tape can be removed and replaced with new tape after servicing.

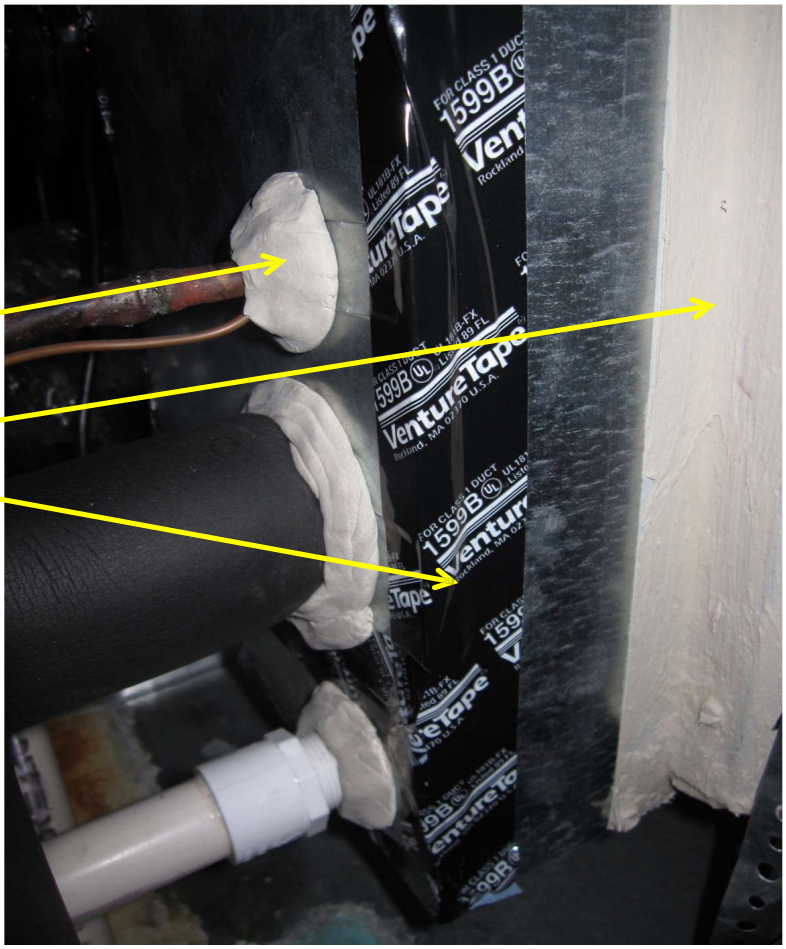
Sealing and marking psychrometric or static pressure access ports with non-permanent tape. A tightly fitting plug could also be used (see www.caplugs.com)



Detail showing proper sealing of coil cabinet penetrations that must remain serviceable with putty.

Mastic sealing of coil to transition.

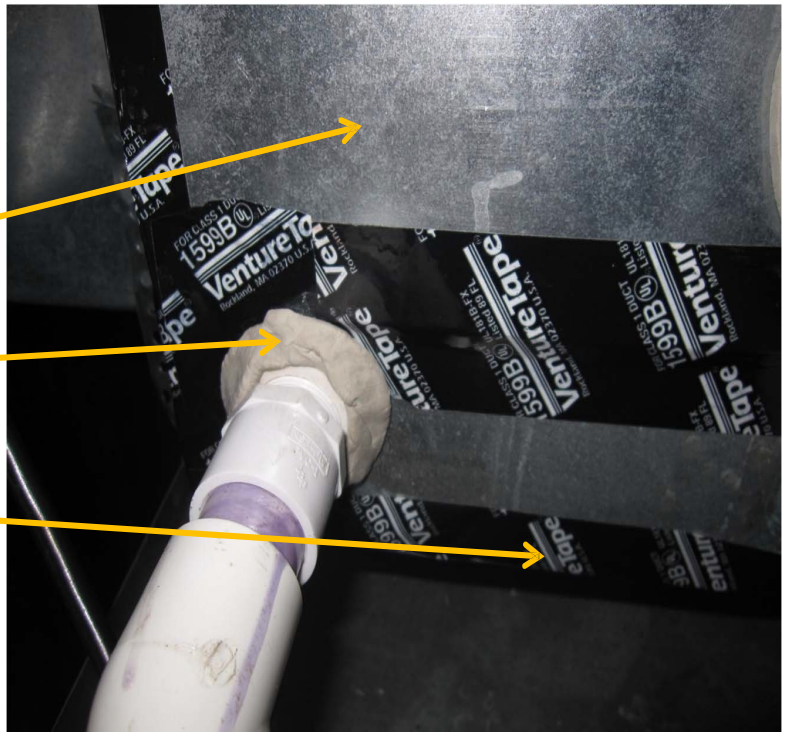
Non-permanent sealing of coil access panels.



Coil enclosure access panel must remain serviceable.

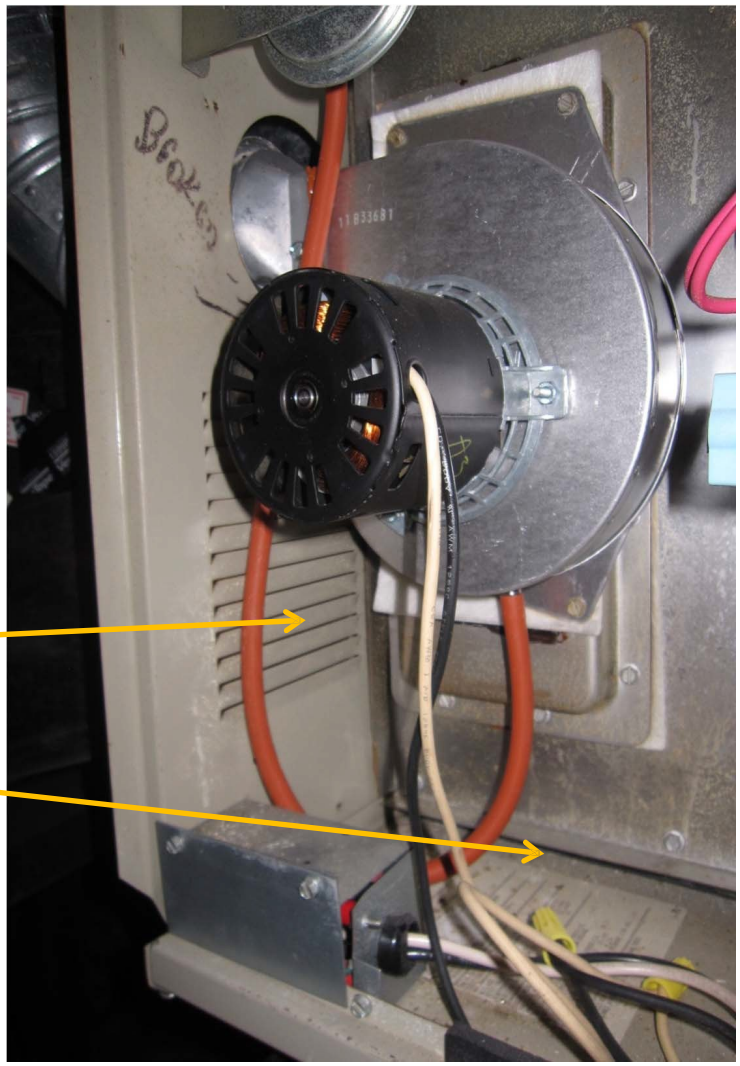
Putty seal around coil overflow drain.

Non-permanent sealing of coil access panels.



Though probably not necessary with this type of fitting, it may be necessary to putty-seal wire penetrations from the burner compartment to the blower compartment.

Do NOT seal up those louvers or openings in the burner section! That section is sealed from the airstream with gaskets. If you do detect any air leakage around the gasket, seal it with RTV silicone.



Do NOT seal up those louvers or openings in the burner section!