

Meeting New Energy Star[®] 3.0 Requirements



Welcome to HAC's webcast!

The webcast, sound, and recording will begin at 2:00 pm EST.

To submit a question during the webinar please use the chat box on the lower right-hand side of the screen. If you would like to verbally ask a question, please click the "Raise Hand" button at the top of the screen.

Meeting New Energy Star[®] 3.0 Requirements



Rural Community Development Initiative (RCDI)

Presented by: Gene Gonzales, Southwest Regional Director

HOUSING ASSISTANCE COUNCIL
May 21, 2014



Housing Assistance Council

Building Rural Communities



- Established in 1971
- National nonprofit organization
- Created to increase the availability of decent and affordable housing for low-income people in rural areas throughout the U.S.
- Provide services to local, state, and national organizations

Housing Assistance Council



Housing Assistance Council

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Sacramento, CA 95814
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Upcoming Webinars



Nonprofit Board Basics

Date: June 18, 2014

Location: http://ruralhome.adobeconnect.com/e8eeqfufacj/event/event_info.html

From Shelter to Shelter: Housing Veterans in Rural America

Date: June 25, 2014

Location: http://ruralhome.adobeconnect.com/e7t536khd3s/event/event_info.html

Nonprofit Board Membership: From Basics to Beyond

Date: July 16, 2014

Location: http://ruralhome.adobeconnect.com/e4tqikl3etl/event/event_info.html

Nonprofit Strategic Planning

Date: July 30, 2014

Location: http://ruralhome.adobeconnect.com/e5ar1plgk8s/event/event_info.html

Register online @ <http://www.ruralhome.org/hac-services/training>

Shonterria Charleston, 404-892-4824 ext. 27 or shonterria@ruralhome.org.

Pop Quiz:



- **What do you see?**



The Disease



- Inefficient Construction



The Cure




- Tight Construction



Areas of Focus



- 
- A magnifying glass with a black handle and a silver frame, positioned over the list of focus areas.
- Envelope
 - Insulation
 - Duct System

Envelope (Air/Pressure Barrier)



- Basically the “shell” that separates the environment that we want from the environment that we don’t want
- Note: The duct system becomes part of the envelope if it resides outside of the main shell

Loose Envelop



Loose Envelope



Most holes are smaller than this!

Loose Envelope



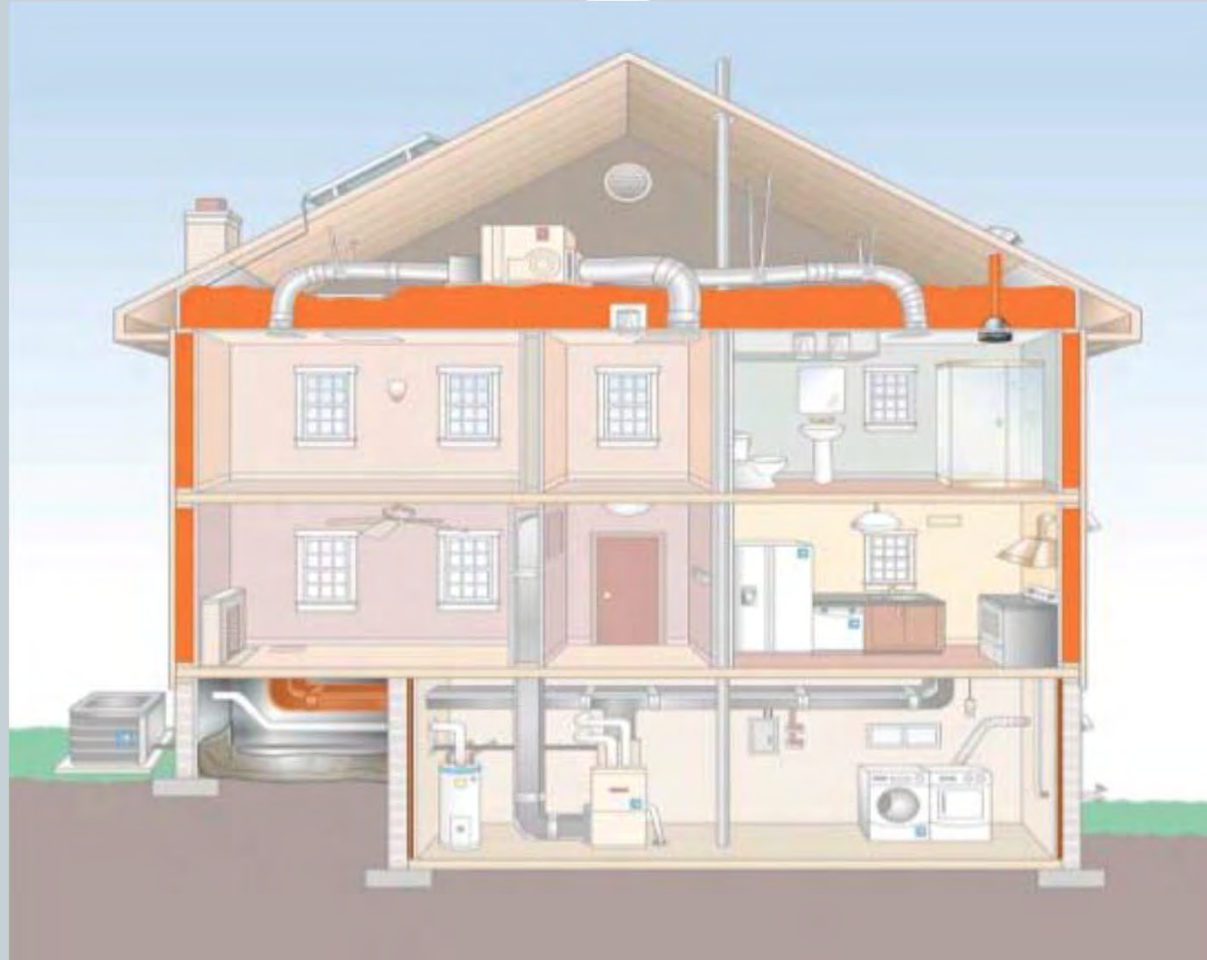
Here's an Example



Tight Construction?



Tight Construction





Tight Construction!





Tight Construction!





Tight Construction!





Tight Construction!





Tight Construction!



Tight Construction



- Air Sealing Before Drywall
 - Bottom Plate
 - Behind Tub (Probably the most overlooked)
 - Plumbing Rough Openings
 - Window & Door Rough Openings
 - Electrical Penetrations
 - HVAC Penetrations

Tight Construction



- Air Sealing After Drywall
 - Caulk Electrical Outlets to Drywall
 - Caulk Light & Fan Fixtures to Drywall
 - Caulk HVAC Boots to Drywall
 - Seal Around Tub Drains w/ Rigid Board/Foam
 - Weather-strip Attic Hatch

Tight Construction



- Air Sealing –Exterior
 - Tape or Caulk Seams in Sheathing
 - Caulk or Glue Sheathing to Framing
 - Seal House wrap to Framing at Top and Bottom Plates, Overlapped Seams, Window/Door openings

Insulation (Thermal Barrier)



- Basically the home's coat
- In order for insulation to be fully effective, it must touch 6 lateral surfaces (5 in some cases) without compressing the air pockets and leaving any significant voids



Poor Insulation





Poor Insulation





Poor Insulation





Poor Insulation





Poor Insulation



So this is what you get...

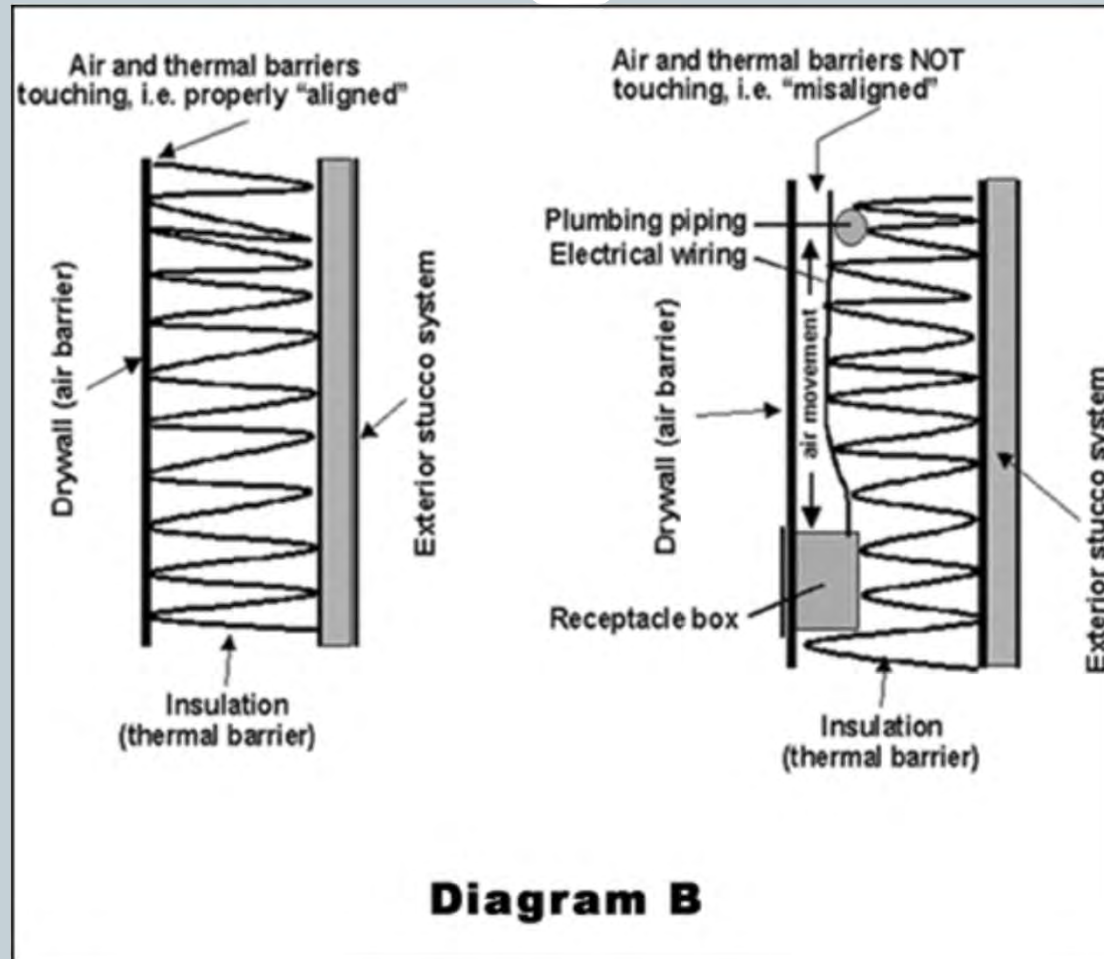


Insulation



- R-Value Killers
 - Gaps
 - Voids
 - Compressions
 - Misalignment

Proper Insulation





Well Insulated





Well Insulated





Well Insulated



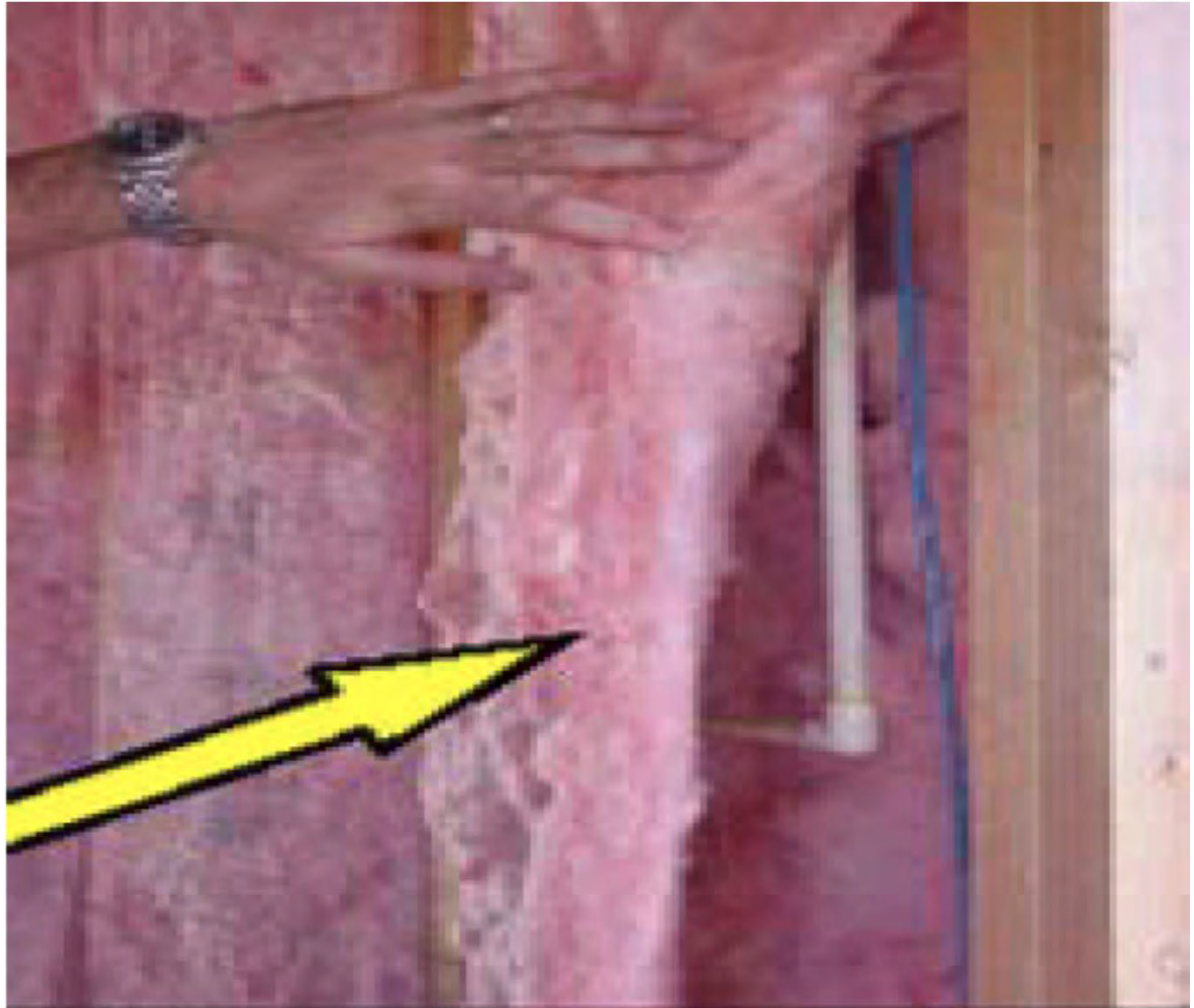


Well Insulated





Well Insulated



Insulation



- **Attic Insulation**
 - Insulate Attic Access
 - Recessed Cans
 - Insulate Knee walls w/ 6th Side
 - Storage (Raise height of joists)



Well Insulated





Well Insulated





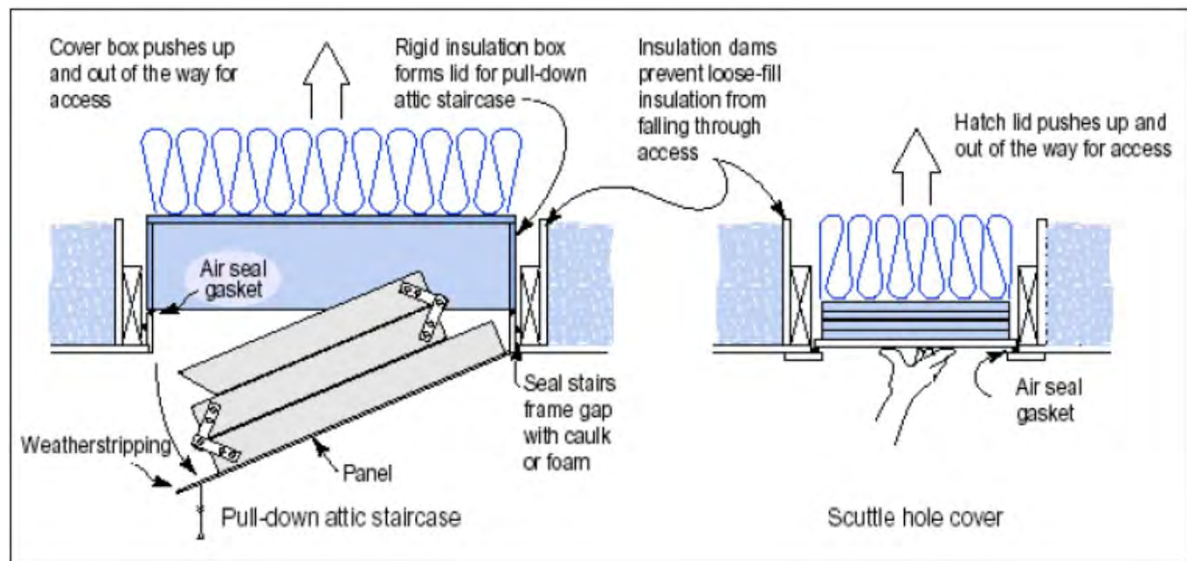
Well Insulated

Knee Wall





Insulation



Duct System: (Fluid Conduit)



- This system allows occupants to control sensible & latent levels of interior environment

Loose Duct System





Easy Diagnosis





Overlooked by Code Officials





Not Tight!





Not Tight: Ducts!





Not Tight: Ducts!





More Difficult to Diagnose





**Leaked
Like a
Sieve!**



Tight Ducts



- Benefits of Tight Construction & Improved Ventilation
 - Improved air distribution
 - Reducing drafts, noise, and moisture
 - Less dust pollen, insects
 - Improved efficiency & lower bills
 - Prolonged life of mechanical equipment



Tight Duct System





Tight Ducts: Yes!





Tight Ducts: You Betcha!





Tight Ducts: The Outline Techniques





**Tight Ducts:
No Leaks
Here!**





Tight Upflow!





**Tight
Upflow!**





Tight Ducts





Tight Ducts





Tight Ducts: The Icing on The Cake





Tight Ducts: Light Batter





Tight Ducts: Slather it On!



Duct Work: Proper Designs



- Ducts Sized with ACCA Manual D
- Avoid Using Building Cavities as Ducts
- Locate Inside the Envelope if Possible
- Seal With Mastic
- Insulate Well

Flex Ducting



- **Flex Duct Installation**
 - Straight, short runs
 - Support w/ 1 Inch Straps At Least Every 5 Feet
 - Sag no More than $\frac{1}{2}$ Inch Per Foot
 - Cut Duct to Proper Length
 - Do NOT Pinch Duct to Change Directions or Make Connections



**Remember
Flex
Ducting is
Not a
Slinky**



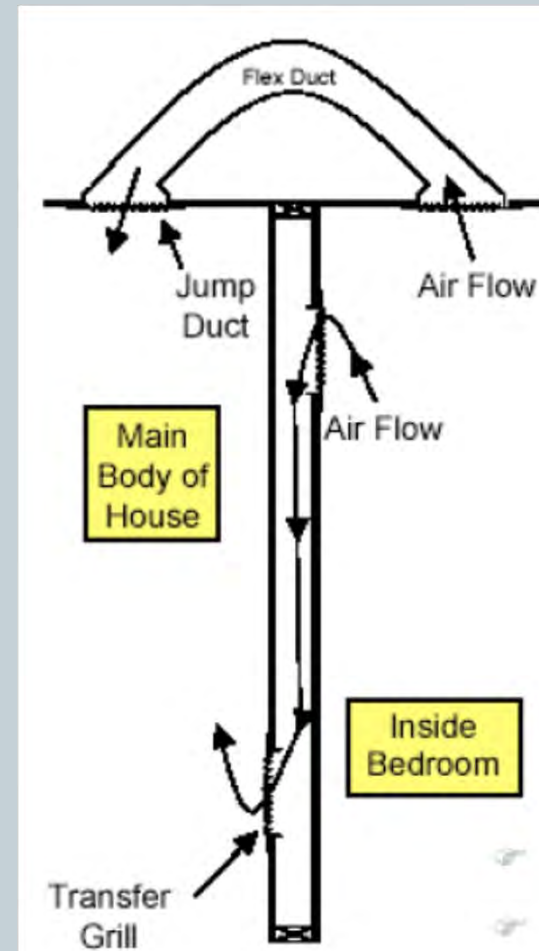
Ducts Next Step



- Bedrooms
 - Transfer Grilles
 - Jump-Over Ducts



Courtesy of DR Wastchak, L.L.C.





So how
can we
verify
this?





So how
can we
verify
this?

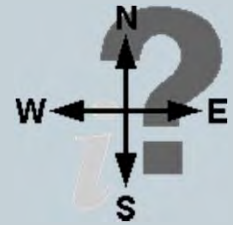


Resources



Important Websites:

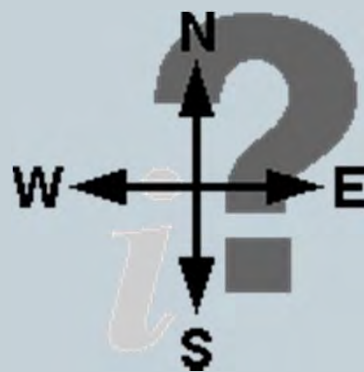
- ❑ www.ruralhome.org
- ❑ www.energystar.gov
- ❑ <http://www.epa.gov/watersense>
- ❑ www.usgbc.com
- ❑ <http://greenhomeguide.com/program/leed-for-homes>



YouTube Videos:

- <http://youtu.be/SvuXT1NQGis>
 - Attic Air-Sealing: Part 1, Evaluation (GreenHomes America)
- <http://youtu.be/cJViGzGmn7I>
 - Swiftsure Energy Duct Testing

QUESTIONS



CONTACT



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Wrap Up



**Materials from today's webinar
and the recording will be available
on HAC's website.**

www.ruralhome.org

