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▶ Home Performance with ENERGY STAR in North Carolina

- ▶ What is Home Performance with ENERGY STAR?
- ▶ How is the program administered?
 - > Phase 1
 - > Phase 2
- ▶ What technical issues need to be addressed?



▶ Home Performance with ENERGY STAR

Home Performance with ENERGY STAR, a national program from the U.S. EPA and U.S. DOE, offers a comprehensive, whole-house approach to improving energy efficiency and comfort of existing homes, while helping to protect the environment.



▶ HPwES Terms

- ▶ Sponsor (Advanced Energy)
- ▶ Partner
 - > Executes the participation agreement with the Sponsor
- ▶ Whole Home Performance Assessment
 - > Performed by HPwES partner
- ▶ Contractor
 - > May or may not be HPwES partner
- ▶ Verification Inspection
 - > Performed by HPwES partner
- ▶ HPwES Summary Certificate



▶ Partners Role

1. Sales
2. Home Assessment
3. Contractor Training and Support
4. Verification Inspection
5. Report back to program sponsor



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▶ HPwES Steps

▶ Training

> Elements needed

- Programmatic information
- Building science (BPI Certification)
- Diagnostic
- House Characterization
- Marketing and sales
- Train the supervisor, or train the trainer

Job Instruction Breakdown Sheet

Revision Date

1. ATTIC CHASE (HARD BARRIER)

TOOLS:

Job Instruction Breakdown Sheets standardize the work and provide a tool for training each Critical Detail.

1) Do not enter or exit the house through the chase. 2) Eliminate bending, sagging or movement. 3) Eliminate cracking of ceiling materials or nail pops. 4) Adhesion of sealants to all surfaces to be air sealed in order to stop the passage of air.

✗ Makes or Breaks the Job

+ Could Injure the Worker

✓ Makes the Job Easier

IMPORTANT STEPS

KEY POINTS

REASON

	IMPORTANT STEPS	KEY POINTS	REASON
SAFETY	Before entering attic or cutting put on all personal protection equipment.	This is for your safety.	+ SAFETY MEASURE to reduce the amount of dust particles you breathe, protect your eyes and hands.
JOB PREP	Measure size and cut air barrier material larger than opening in all directions.	1) If the air barrier material bends, sags, or moves when in place a support material must be used. 2) The air barrier system must be rigid.	✗ To assure air barrier material does not fall into the opening, sag bend or move.
	If needed, cut support material .	Support material must not sag or bend when fastened.	✗ So you know framing material is sufficient to support air barrier material .
	Place.	Do not use nails.	✗ Driving nails may crack ceiling finish in house.
AIR BARRIER		Air barrier material must overlap opening in all directions.	✗ 1) Keeps air barrier material from falling into the opening. 2) Allows room for fasteners .
	Fasten air barrier material if needed.	Do not use nails.	✗ Driving nails may crack ceiling finish in house.
AIR SEALING	Air seal ALL edges and penetrations of the air barrier material .	Assure 100% of the edge and all penetrations are air sealed with sealants .	✗ To stop air leakage into and out of the opening.
FINAL	Check your work and record it on the Process Improvement form.	Be thorough, be the best critic of your work. Finding and fixing mistakes at the point of work saves the company money.	✗ Assures defect free work, customer success and supports your crew and company's commitment to quality.

Provide Feedback on Ways to Improve Process

Step-by-step instructions provide a "script" for trainers.

1 - ATTIC CRITICAL DETAIL : AIR SEALING A CHASE

EXISTING HOME TECH TIPS

(HARD BARRIER)



DESIRED OUTCOME(S)

1. Air does not enter or exit the house through the chase.
2. Eliminate bending, sagging or movement.
3. Eliminate cracking of ceiling materials or nail pops.
4. Adhesion of sealants to all surfaces to be air sealed in order to stop the passage of air.

EFFECTS ON THE HOUSE

Openings to the attic allow heat, cold and moisture movement to/from the attic and house and may result in decreased durability.

EFFECTS ON THE OCCUPANTS

Intrusion of unhealthy air from unconditioned areas, reduced comfort, possible back drafts containing poisonous fumes and higher utility bills.

MATERIALS

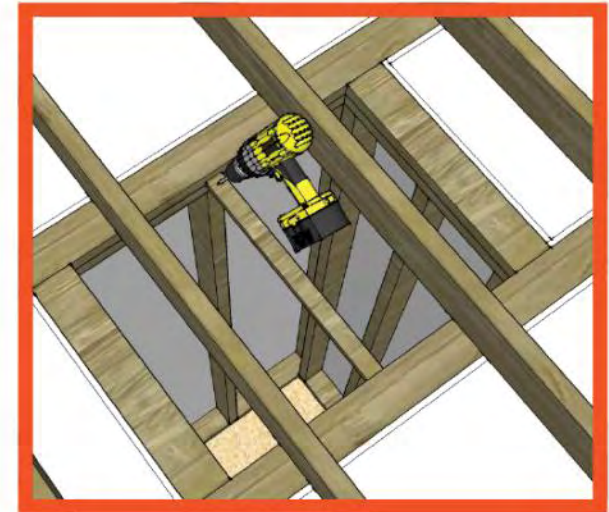
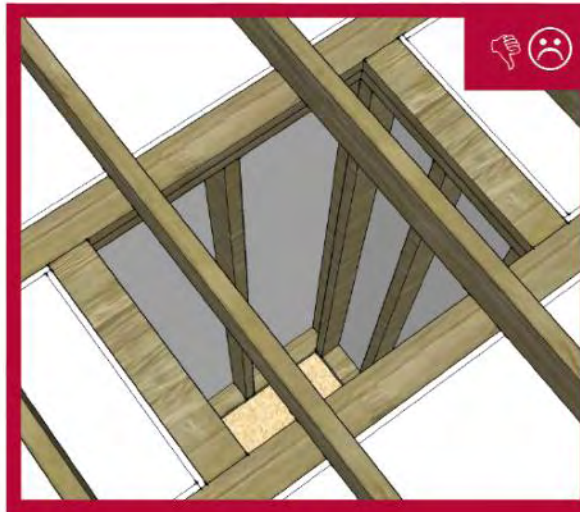
Air Barrier

Support Material

Fasteners

Sealants

TOOLS



SAFETY

- Before entering attic or cutting, put on all personal protection equipment. *This is to reduce the amount of dust particles you breathe, protect your eyes and hands.*

JOB PREP

- Measure size and cut [air barrier material](#) larger than opening in all directions. If [air barrier material](#) bends, sags, or moves when in place, a [support material](#) must be used.
- If needed, cut [support material](#). [Support material](#) must not sag or bend when fastened.
- Fasten any [support material](#) in place.

DO NOT USE NAILS

▶ HPwES Steps

- ▶ Home Energy Audit
 - > Must include a homeowner interview
 - > Building envelope inspection
 - > HVAC and DHW inspections
 - Includes CO and mechanical ventilation
 - > Moisture inspection
 - > Summary report to homeowner
 - > House Characterization rating is applied

HOUSE CHARACTERIZATION FORM

[main menu](#)

PROLOG



[logout](#)

version 1.3 Beta - NOT FOR DISTRIBUTION

STORIES:

1 story

2 Stories

Story & Half

Foyer

Split Level

Multi Level

ROOF PITCH:

> 5/12

≤ 4/12

No Attic

Flat Roof

Hip Roof

SQUARE FOOTAGE:

3100 sqft

FOUNDATION TYPE:

Slab on Grade

Basement

Crawl Space or Piers > 36"

Crawl Space or Piers < 36"

EXTERIOR FEATURES:

None

Closed Porch Attic

Attached Garage

Room Over Garage

Structural Remodel

Custom ID: Adrien 401 [See incentives in your area](#)

Customer name:

Customer phone: [call](#)

Customer email: [email](#) [twitter](#)

Address: 401 Longbourn Drive
Wake Forest, NC 27587

Year built: 2002 (age: 8)

Additional information:

Finished Basement

Save

House Level can be determined by checking ALL that apply to the house during the assessment.

3

HOUSE LEVEL

▶ HPwES Steps

▶ Test Out

- > Checklist to confirm completion of installed measures
- > Proper operation of ventilation system
- > Combustion safety testing, if applicable
- > HVAC commissioning report for new equipment installations

**PROCESS IMPROVEMENT
VERIFICATION**



		ATTIC AIR SEALING	IMPROVE	
SELF-CHECK	1	All CHASES have been properly capped and air sealed with mastic, caulk, or fire rated foam.		
	2	All DROPPED CEILINGS have been properly capped and air sealed with mastic, caulk, or fire rated foam.		
	3	All open SOFFITS have been properly capped and air sealed with mastic, caulk, or fire rated foam.		
	4	All OPEN WALL CAVITIES have been properly capped and air sealed with mastic, caulk, or fire rated foam. (HARD BARRIER)		
	5	All OPEN FLOOR SYSTEMS have been properly capped and air sealed with mastic, caulk, or fire rated foam. (HARD BARRIER)		
	6	All OPEN FLOOR SYSTEMS have been properly blocked with insulation in bags (SOFT BARRIER) and air sealed with mastic, caulk, or fire rated foam.		
	7	All WALL TOP PLATE CRACKS have been properly air sealed with mastic, caulk, or fire rated foam.		
	8	All wiring, venting, ducting, and piping PENETRATIONS have been properly air sealed with mastic, caulk, or fire rated foam.		
	9	All holes adjacent to COMBUSTION VENTS / CHIMNEYS have been properly capped with metal flashing and air sealed with mastic, caulk, or fire rated foam.		
	10	All HVAC/STORAGE PLATFORMS have been properly capped and air sealed with mastic, caulk, or fire rated foam.		
	11	All STAIRWAYS have been properly capped and air sealed with mastic, caulk, or fire rated foam.		

Installer _____ print name _____ signature _____ **Date** _____

Crew Leader _____ print name _____ signature _____ **Date** _____

This Verification form must be signed and filled out by the retrofit **Installer and Crew Leader**. Signing this form certifies that all Critical Details are correct and are as designated.

▶ HPwES Steps

▶ Quality Assurance

- > Jobs must be reported to the sponsor
- > Jobs are reviewed for accurate data
- > Customer feedback at two points
- > On Site Inspection (Minimum of 5%)
 - First 5 homes then move to batch of 1 in 7
- > Data storage and tracking

en español
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Local Governments & Nonprofits

Home Buyers, Homeowners,
Renters & Special Needs
Rental Developers,
Owners / Managers
Lenders, Builders,
& Real Estate Agents
Local Governments
& Nonprofits
Forms &
Resources
About Us

☐ **Homeownership Production**

- New Homes
- Self-Help
- SystemVision
- IDA Loan Pool
- Mortgages for First-

SystemVision™ Energy Guarantee Program

The SystemVision™ Energy Guarantee Program encourages high standards of energy efficiency in the construction of affordable homes. The program is offered by the North Carolina Housing Finance Agency in partnership with [Advanced Energy Corporation](#), a nonprofit organization in Raleigh.

For Your First Home:

4.875%

for a 30-year, fixed-rate mortgage (90-day lock in) without NCHFA downpayment assistance.

en español | home | investors | contact us | help

North Carolina HOUSING FINANCE AGENCY

Home Buyers, Homeowners, & Renters

Home Buyers, Homeowners, Renters & Special Needs | Rental Developers, Owners / Managers | Lenders, Builders, & Real Estate Agents | Local Governments & Nonprofits | Forms & Resources | About Us

Resources for Home Repair and Rehabilitation

We help low-income homeowners who need urgent repairs, accessibility modifications, comprehensive rehabilitation or energy-related home improvements by providing funds to local governments and nonprofit organizations which provide these services. We do not provide funding directly to individuals.

If you need help financing necessary home repairs, check the links at the end of each program description below for a local group servicing your area.

[Single-Family Rehabilitation Program](#)
[Urgent Repair Program](#)
[Displacement Prevention Partnership](#)
[Duke Home Energy Loan Pool](#)

For Your First Home:

4.875%

for a 30-year, fixed-rate mortgage (90-day lock in) without NCHFA downpayment assistance.

[More Interest Rates...](#)

What's New @ NCHFA

Buying a Foreclosed Property?

If you are purchasing a foreclosed property, you

Duke Home Energy Loan Pool

Single-Family Rehabilitation Program

▶ Phase 2

- ▶ Private market approach
- ▶ We hope to involve Utilities
- ▶ Much of the process will be the same
- ▶ Greater emphasis on marketing and sales will be needed

▶ Leverage the Brand



=

Brand Shorthand:

- ▶ Truly Energy Efficient
- ▶ Credible
- ▶ Environmental Leadership



▶ ENERGY STAR Materials

CHANGE FOR THE BETTER WITH ENERGY STAR

Homes that earn the ENERGY STAR® award demonstrate superior energy efficiency performance and are by the U.S. Environmental Protection Agency.


ENERGY STAR Qualified Homes

Experience Advanced Home Building Practices and Technologies


Building a new home can be overwhelming. While choosing flooring, countertops, and colors, it's easy to overlook other important things like durability, comfort, and affordability. Finding a home that meets these requirements may be easier than you think – just look for the ENERGY STAR. Homes that earn the ENERGY STAR have been built to meet EPA's guidelines for energy efficiency. These guidelines require homes to be significantly more efficient than homes built to minimum code requirements. In addition to saving money on your utility bills, the advanced building practices typically used in ENERGY STAR qualified homes can also provide more comfort and durability.

FEATURES OF A TYPICAL ENERGY STAR QUALIFIED HOME

- Tight Construction and Ducts:** Advanced techniques for sealing holes and cracks in the home's "envelope" and duct systems help reduce drafts, moisture, dust, pollen, and noise. As a result, a tightly sealed home can increase comfort, improve indoor air quality, and reduce utility bills.
- High-Performance Windows:** Advanced technologies, such as protective coatings and improved seals, help energy-efficient windows keep heat in during the winter and out during the summer. They also block damaging ultraviolet light that can damage carpets and furnishings.
- Effective Insulation:** Properly installed insulation in floors, walls, and attics not only reduces heat loss in the winter and heat gain in the summer, but also helps maintain even temperatures inside each room of your home and in the areas between those rooms.






ENERGY STAR qualified houses meet the high-efficiency equipment and advanced building standards to make your new house more efficient.



Add to Cart

Home Improvement/Products Showing 1 - 12 of 12

Heating and Cooling - ENERGY STAR Brochure • Type: Brochure • Pages/Size: 1 Page (Quad-Fold) • Language: English • Date of Publication: Aug 2008 • Primary Audience: Partner, Consumer		Download Quantity (Max: 50)
Home Electronics: ENERGY STAR Brochure [207.66 KB] • Type: Brochure • Pages/Size: 1 Page (Quad-Fold) • Language: English • Date of Publication: Aug 2008 • Primary Audience: Partner, Consumer		Download Quantity (Max: 50)
Lighting - ENERGY STAR Brochure [241.1 KB] • Type: Brochure • Pages/Size: 1 Page (Quad-Fold) • Language: English • Date of Publication: Aug 2008 • Primary Audience: Partner, Consumer		Download Quantity (Max: 50)

Help your clients understand the features and benefits of Home Performance with ENERGY STAR with downloadable fact sheets and brochures.



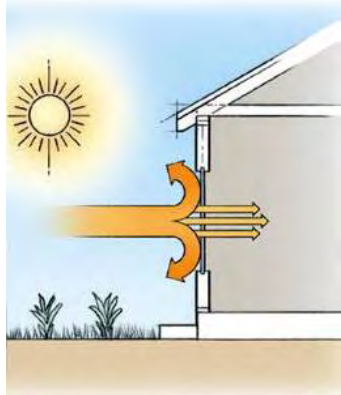
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▶ HPwES CRITERIA



**Effective
Insulation**



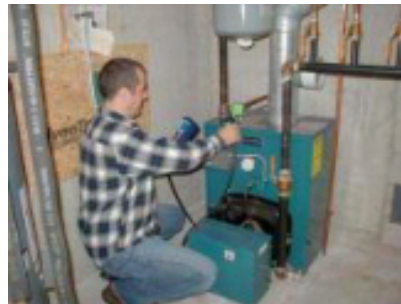
Windows



**Tight Construction
and Ducts**



**Efficient
equipment**



**Safety
Combustion / Ventilation**



**Third-party
verification**

▶ Air Tightness



▶ Air Tightness



▶ Air Tightness



▶ Air Tightness



▶ Air Tightness



▶ Ventilation and Moisture Management



► Insulation and Windows



▶ HVAC Sizing and Installation



▶ Ventilation and Moisture Management



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