

How to Pass an Energy Conservation Inspection Town of Rehobeth, AL

1) Educate and Evaluate:

Know and understand what a building thermal envelope is and how to properly identify it on your building.

2) Prepare and Provide:

Prepare your building plan submittals in sufficient detail and provide the necessary documentation for plan review and approval.

3) Communicate and Confirm:

Explain to your framers that it is important to follow the energy conservation requirements and confirm that they know what they are supposed to do.

4) Visit and Verify:

Visit your project often to verify that the work is being done correctly.

- ✓ Ensure that all penetrations, joints, seams, gaps, etc. in the **building thermal envelope** are sealed creating a continuous air barrier between the conditioned spaces inside and the unconditioned spaces outside. The goal is to make the **building thermal envelope** virtually airtight.
- ✓ Make sure that all windows and doors are installed and flashed correctly and have legible NFRC labels confirming that they meet or exceed the prescriptive U-factor (max 0.50) and SHGC (max 0.30) requirements for Climate Zone 3 in Table 402.1.1 of the IECC or the values listed on the REScheck report if you choose the REScheck option for plan approval.

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value & Depth	Crawl Space Wall R-Value
1	1.2	0.75	0.30	30	13	3/4	13	0	0	0
2	0.65	0.75	0.30	30	13	4/6	13	0	0	0
3	0.50	0.65	0.30	30	13	5/8	16	5/13	0	5/13

- ✓ Confirm that the Building Thermal Envelope is insulated to code requirements and that the insulation is installed correctly by being in continuous contact throughout the entire envelope.
- ✓ Ensure that your HVAC contractor has installed a heating and cooling system according to "Manual J" calculations and that the system was approved during the plan review. Also check for the proper sealing and insulation of the duct system. Beginning July 1st, 2013, A duct blaster test will be required unless the air handler and all of the systems duct work is located completely inside conditioned spaces. Also make sure that all mechanical, ventilation, and/or exhaust systems are installed correctly. Additionally, in order to pass the final inspection and receive a Certificate of Occupancy, you will be required to submit a successful blower door test or an Air Barrier and Insulation Checklist which must be verified by a Town of Rehobeth Building Inspector or a qualified third party that is independent of the insulation installer and approved by the Building Official to perform such inspections.
- ✓ If you have a circulating water heater or swimming pool, be certain that the specific requirements for each have been met.
- ✓ See to it that at least half of the light bulbs installed in permanent light fixtures are high-efficacy. The definition of high-efficacy is: Compact fluorescent lamps, T-8 or smaller diameter linear fluorescent lamps or lamps with a minimum capacity to produce: 60 lumens per watt for lamps over 40 watts, 50 lumens per watt for lamps over 15 watts up to 40 watts, or 40 lumens per watt for lamps 15 watts or less.
- ✓ The Town of Rehobeth Energy Code Compliance Certificate is posted on or near the electrical panel or air handler.

STATEMENT OF COMPLIANCE WITH ALABAMA STATE ENERGY CODES FOR
RESIDENTIAL BUILDINGS

TOWN OF REHOBETH, AL

(2009 IECC with State of Alabama Amendments for Residential Dwellings)

The 2009 International Energy Conservation Code, published by the International Codes Council, when used in conjunction with the State of Alabama Energy and Residential Codes, constitutes the official Alabama State Energy Code for Residential Buildings. This Code establishes minimum regulations for energy efficient design, erections, construction, and/or alteration of one-and-two family dwellings and townhouses not more than three stories above grade in height with a separate means of egress and their accessory structures. Compliance with this Energy Code by designers and builders is mandatory.

This form must be completed entirely, signed and submitted at the time of permit application.

BUILDING PERMIT NUMBER: _____ DATE: _____

JOB SITE ADDRESS: _____

CONTRACTOR/BUILDER: _____

I/we do certify by signature below that the above permitted structure shall be built in compliance with the State of Alabama Energy Codes using one of the following methods: (Indicate with an "X" the appropriate choice.)

_____ **Insulation, Window and Door Requirements by Component (Prescriptive Component Approach)**

This approach is assumed unless documentation is provided by the builder that either the trade-off or simulated performance options are being used. Insulation and window requirements prescribed in the 2009 IECC or Chapter 11 of the International Residential Code must be strictly adhered to in addition to the *mandatory* requirements for building envelope air sealing and mechanical systems (plumbing, electrical, HVAC). Applicants must complete the Energy Code Prescriptive Approach Worksheet and submit it along with the permit application and the construction plans for review.

_____ **REScheck with 2009 IECC as chosen option (Component UA Trade-off Approach)**

Applicant must prepare and submit a REScheck report along with a building permit application, this form, and the construction plans for review. REScheck is available as a free download at <http://www.energycodes.gov/rescheck/>. REScheck allows you to demonstrate compliance with the weighted-average SHGC requirements and to perform simple trade-offs among building envelope components as well as receive credit for higher than standard heating and cooling equipment efficiencies. If using REScheck, you must use the **Alabama** version. Unless you are familiar with using REScheck software, download the '*REScheck Software Users Guide*', while at the DOE website. The user's guide is imperative to understanding and using the software program correctly. After download and to establish the correct minimum compliance values for use in Houston County, select **City of Dothan** as your destination location. REScheck will automatically preset all climatic defaults specifically for *IECC Codes* compliance in Houston County.

Two (2) signed copies of the REScheck printed report for the work to be permitted must be submitted with each building permit application. One copy will be stamped "Reviewed For Codes Compliance" and will be given back to you at permit issue. This copy must be on the construction site and available to inspectors during inspections. The remaining copy will be retained for County records.

Mandatory requirements for building envelope air sealing and mechanical systems must be met even if using REScheck.

_____ **IECC Section R405 (Simulated Performance Approach)**

Section R405 provides an alternative way to meet the code's goal of effective use of energy based on comprehensive analysis showing that the predicted annual energy costs of a *proposed home design* is less than or equal to that of a *standard reference design* (the same home built to meet the prescriptive criteria in the code). Because of the level of detail required in the analysis, this method is not often used for residential buildings. Please contact the Building Official for more information.

Mandatory requirements for building envelope air sealing and mechanical systems must be met even if using the Simulated Performance Approach

Energy Code Prescriptive Approach Worksheet

Town of Rehobeth, AL

Building Permit No: _____ Date: _____

Builder: _____ Phone Number: _____

Insulation Co: _____ Phone Number: _____

Heating & Air Co: _____ Phone Number: _____

Building Envelope Information

Type (batt/blown/spray foam)

R-value

Flat Ceiling R-value: (R30 min)	_____	_____
Sloped Ceiling/Roof Deck R-value: (R30 min), (R19 w/REScheck)	_____	_____
Exterior Wall R-value: (R13 min)	_____	_____
Attic Knee Wall R-value: (R13 min)	_____	_____
Attic Knee Wall Sheathing R-value: (R5 min)	_____	_____
Basement Stud Wall R-value: (R13 min)	_____	_____
Basement Mass Wall R-value: (R5 min)	_____	_____
Sealed Crawlspace Stud Wall R-value: (R13 min)	_____	_____
Sealed Crawlspace Mass Wall R-value: (R5 min)	_____	_____
Floor over Unconditioned Space R-value: (R19 min)	_____	_____
Floor over Air R-value: (R19 min)	_____	_____
Other Insulation R-value and description: _____	_____	_____

Window Size

#of

U-Factor (from NFRC label)

SP:GC (from NFRC label)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Skylight	_____	_____	_____
Glazed Door	_____	_____	(>50% glazed)
Opaque Door	_____	_____	(<50% glazed)

Mechanical (Systems Information)

Water Heater Type: _____ Gas _____ Electric _____ Circulating Pump? _____ Yes _____ No

Number and Size of Heating & Cooling Systems: _____ / _____

Number of Air Handlers: _____

Heating System Type: _____ Gas _____ Heat Pump _____ Other (explain) _____

Cooling System Type: _____ Split _____ Heat Pump _____ Other (explain) _____

Total House Heating Load: _____ Btu/h Based on ACCA Manual J

Total House Cooling Load: _____ Btu/h Based on ACCA Manual J

Heating & Cooling Load Calculations Performed By: _____ Name: _____

Date: _____ Signature: _____

Alabama State License Number or P.E. Registration Number: _____

SIGNATURE: (Applicant) _____ PRINTED NAME: _____

COMPANY NAME: _____ ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

AIR BARRIER AND INSULATION INSPECTION VERIFICATION CHECKLIST

TOWN OF REHOBETH, AL

In the checklist below, 'AB' and 'I' stand for the air barrier and insulation inspection components to be verified. Town of Rehobeth (TOR) Building Inspections will always verify the 'I' components and as many of the 'AB' components as possible during scheduled inspections. If the (TOR) does not verify the 'AB' components, they may be verified by a person independent of the insulation installer who is qualified to perform such inspections and who has been approved by the Building Official. Compliance may also be verified by a blower door test. **Note: If any 'AB' component is covered up before a visual inspection is completed a blower door test becomes mandatory.**

Component		Criteria	Y, N, or N/A	Comments	Initials	Date
Floors (including above-garage and cantilevered floors)						
General	I	Insulation is installed to maintain permanent contact with underside of subfloor decking.				
	AB	Air barrier is installed at any exposed edge of insulation.				
Rim Joists	I	Rim joists are insulated.				
	AB	Rim joists include air barrier.				
Walls						
General	I	Corners and headers are insulated.				
	AB	Junction of foundation and sill plate is sealed.				
Crawl space walls	I	Insulation is permanently attached to walls.				
	I	Exposed earth in unvented crawl spaces are covered with Class I vapor retarder with overlapping joints taped.				
Windows and doors	AB	Space between window/door jambs and framing are sealed.				
Garage separation	AB	Air sealing is provided between the garage and conditioned spaces.				
Plumbing and wiring	I	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.				
Shower/tub on exterior wall	I	Showers and tubs on exterior walls have insulation.				
	AB	Showers and tubs on exterior walls have an air barrier separating them from the exterior wall.				
Electrical/phone box on exterior walls	AB	Air barrier extends behind boxes or air sealed-type boxes are sealed.				
Common wall	AB	Air barrier is installed in common wall between dwelling units.				
Fireplace	AB	Fireplace walls include an air barrier.				

Ceiling/Attic						
General	AB	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.				
	AB	Attic access (except unvented attic), knee wall, or drop down stair is sealed.				
Recessed lighting	AB	Recessed light fixtures penetrating thermal envelope are air tight, IC-rated, and sealed to drywall.				
Other/All						
Air barrier and thermal barrier	I	Exterior thermal envelope insulation for framed assemblies is installed in substantial contact and continuous alignment with building envelope air barrier.				
	AB	Breaks or joints in air barrier are filled or repaired. Air-permeable insulation is NOT used as a sealing material. Air -permeable insulation is inside of air barrier.				
Shafts, penetrations	AB	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.				
Narrow Cavities	I	Batts in narrow cavities are cut to fit, or narrow cavities are filled with sprayed/blown insulation.				
HVAC register boots	AB	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.				

Third Party Certification

The undersigned certifies that he/she has been approved by the Town of Rehobeth Building Official to perform a visual inspection of the components listed above on the property located at _____
 _____. I/we further certify that the criteria listed for each component that I/we have initialed above has been met and appears to meet the requirements of the Alabama Energy Residential Code.

NAME: _____ Signature: _____

Date: _____

Permit Number: _____