

Alabama Energy Code Guide



for Homeowners

Are you interested in learning about Alabama's new energy efficiency code for homes and how **you** can identify ways to make your home more energy-efficient? Use this checklist to assess your home's energy performance and identify ways to improve the efficiency of your home.

This checklist does not cover every aspect of Alabama's energy code, but it addresses the requirements that are easiest to identify in a home after construction is complete. Energy-efficient homes are more comfortable, cost less to operate, and reduce air pollution.

Energy-Efficient Lighting

Lighting has an enormous impact - approximately 12 percent - on the energy use in your home. The energy code requires that builders use high efficiency light bulbs (such as compact fluorescents, high-efficiency halogens, LEDs, etc.) in at least 50 percent of the permanent lighting fixtures in new homes. Take advantage of the easy energy savings that come from installing compact fluorescents and install them in all of your fixtures and lamps.



Windows — New or Remodeled Homes

Energy code requirements specify a U-factor for windows and skylights. A U-factor is a rating that indicates how much heat loss the window allows. U-factors generally range from 0.2 (very little heat loss) to 1.2 (high heat loss). Single-paned windows are about 1.0, double-paned windows about 0.5, and high-performance double-paned windows are about 0.3. Skylights and windows must meet separate U-factors. The solar heat gain coefficient measures how well a window blocks heat from the sun. This is especially important in warm regions.

- Ask for documentation of the U-factor and solar heat gain coefficients. If the home is new, ask the builder for copies of window labels or invoices to confirm that the requirements are met.
- Some manufacturers label their windows with serial numbers or other indicators, which you can use to track down information on the efficiency rating. Look for them etched in the corner of the window glass and/or paper or metal labels that may be attached to the window sill, header, or tracks on the sides. Contact the customer service department of the manufacturer to confirm the product's ratings.

	Window U-Factor	Skylight U-Factor	Solar Heat Gain Coefficient
Baldwin & Mobile Counties	0.65	0.75	0.30
All Other Counties	0.50	0.65	0.30



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☐ Windows — Existing Homes, not Remodeled

Windows account for 18- 20 percent of energy loss in homes. There are a number of factors that should be considered when evaluating older windows, as energy performance varies significantly based on the materials used and the condition they are in.

- Can you see daylight around the sides of the window frame or sash?
- Are windows loose in their tracks; can you slip a piece of paper between the sash and frame when they are closed and locked?
- What are the windows made of? Aluminum is typically known as a poor insulator. Fiberglass, wood, and vinyl do a better job, but much depends on the construction of the windows.
- Are windows single, double, or triple-paned? Note: storm windows installed over single-paned windows can perform about as well as conventional double-paned windows, but do not match the performance of high-performance windows with low-E glass and gas fills.
- The ability of double or triple panes to block heat transfer depends greatly on whether they are “low-E coated”. Low-E coatings are invisible, but can be detected by specialists.

To learn more about window technology and benefits, please visit the Efficient Windows Collaborative web site: http://www.efficientwindows.org/code_overview.cfm

☐ Check the access hatches and doors in the attic

These can be a major source of air leakage in the home, sending air conditioning out through the roof in the summer. You may be able to feel air movement under the door or around the hatch. Hatches/doors to the attic should be weather-stripped, insulated and airtight. The insulation should be attached so that it isn’t damaged or become loose when the hatch or door is used.



Insulated attic hatch and insulated ducts

☐ Get under the house and get to know the crawl space

Either the floor over the crawl space should be insulated or (preferred) - if the crawl space does not have a vent - the crawl space walls should be insulated. Insulation should be attached securely without gaps.



Crawl space vent



An example of proper installation (no vent)



An example of improper installation

☐ Look for sources of air leakage into and out of the home

Air leakage is responsible for 30 percent or more of the energy loss in homes. All joints, seams, and penetrations between the inside and outside of the home should be sealed. Caulk, gaskets, spray foam, or weatherstripping can be used to seal the air leaks.



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- Check to see whether leaks have been sealed in a home by looking at where phone lines, electrical lines, plumbing and other services enter the house. Are the holes plugged with caulk or other sealants?
- Check the holes in the attic floor where pipes and ducts lead to the rooms below. Are they sealed with foam, caulk, or other materials to prevent airflow?
- Open cabinets beneath the kitchen sink, kitchen island, bathroom sinks, etc., and look at pipes leading to the floor below or out through walls. Are the spaces around the pipes filled with caulk, foam, or other materials to prevent airflow?
- In the basement, look at exterior walls where pipes and wires lead to the outside. Are there airspaces around the pipes/wires or have they been sealed?
- Check where pipes and ducts pass up through the basement ceiling to the floor above. Are there gaps and spaces that create drafts and waste energy or are they sealed tightly?

For more information on air leakage from homes, please visit:
<http://www.pacificnorthwestinspections.com/index.php/resource-library/online-resources/914-hvac/275-stackeffect>

Fireplaces

Generally speaking, fireplaces often reduce the energy efficiency of a home. The energy code requires that the doors of wood-burning fireplaces have gaskets to reduce air leaks.



Fireplace with door gaskets

Ductwork should be insulated and sealed

Leaky ducts are responsible for 10-30 percent of energy loss in a home.

- Are the ducts in your attic insulated? If so, look at the label on the insulation – what R-level is it? Unless the attic ceiling and walls are insulated, current codes require that ducts running through an attic space be insulated to a minimum of R-6.
As of July 1, 2013, the insulation requirement increases to R-8.
- All ducts and air handlers should be sealed with mastic (a special type of caulk that is easily visible).
NOTE: Duct tape is not appropriate for sealing ductwork; it deteriorates too quickly.
- In addition, as of July 1, 2013, the energy code requires the entire duct system to be tested in new homes if any part of the ductwork is located in an un-insulated crawlspace, attic or garage. Leaky ducts are a major source of energy loss which means that this requirement is extremely valuable in making homeownership affordable, month after month. If you have ductwork in the crawlspace, attic or garage, make sure it's sealed and insulated. After July 2013, ask for a copy of the report documenting the air tightness.



This duct has been sealed but not insulated

For more information on sealing ducts, please visit:
http://www.ehow.com/how_5708485_seal-duct-work.html



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Have a blower door test done. The most effective and objective way to evaluate air leakage in a home is to have a “blower door” test done. The cost of a blower door test ranges from \$250.00-350.00.

NOTE: The energy code requires new homes to be tested with blower doors, unless the air sealing in the home was inspected by a qualified and independent professional. Having a home professionally inspected and/or tested is an important safeguard for consumers.

For more information on blower door testing, please visit:
<http://www.greenbuildingadvisor.com/blogs/dept/musings/blower-door-basics>



Blower door test

Insulation Certificate Requirement

Properly installed insulation is critical for making a home comfortable and affordable, yet insulation is where homes are often short-changed. The energy code provides added protection for home buyers when insulation is blown or sprayed into walls and ceilings. Builders must provide a certificate listing the type, manufacturer and R-value (a measure of the material’s performance) of the insulation. Depending on the type, the installer must provide additional information, such as number of bags installed, coverage area and thickness of the insulation after it settles, and sign, date and post the certificate on the job site. Request a copy of the certificate to confirm the insulation was installed properly.

Insulation Requirements that Apply in Alabama

	Ceiling R-value	Wood Frame Wall R-value	Floor R-value
Baldwin & Mobile Counties	30	13	13
All Other Counties	30	13	19

Energy Certificate (Voluntary)

Builders can attach a permanent certificate that lists materials, equipment values and ratings on or in the electrical distribution panel. While this requirement is voluntary in Alabama, it’s a great way for builders to show homeowners that they have met the energy code requirements. The certificate should not obstruct the visibility of the circuit directory label, service disconnect label or other required labels. Examples of completed energy certificate can be found on Alabama Department of Economic and Community Affairs’s web site.

For more information, visit the Alabama Department of Economic and Community Affairs web site: www.adeca.alabama.gov/C0/codes

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