

# Additional Code Facts

**Compliance** with this Code applies statewide and shall be the responsibility of the licensed homebuilder.

**Enforcement** of this Code shall be the responsibility of the local government (if adopted).

**Exempt buildings** include the following:  
(1) Unconditioned buildings that are neither heated nor cooled, (2) mobile homes and temporary use structures such as hunting and fishing camps, and (3) boat houses and remote cabins that are not defined as “dwelling units.”

**HVAC Equipment:** The Arkansas Mechanical Code requires a heating and cooling load analysis (Air Conditioning Contractors of America [ACCA] Manual J or other approved calculation method) to match the appropriate capacity of the systems to the load of the house in your climate. Request a Manual J load analysis from your HVAC company to verify that the systems have been properly sized.

**Duct Insulation:** Supply and return-air metal ducts in crawlspaces, uninsulated basements, attics and framed wall cavities must be vapor sealed and insulated to R-5.6. Ductwork located on the exterior must be insulated to R-8.

**Duct Construction:** All joints, seams and connections must be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded fabric or UL-approved tapes. Standard duct tape is not permitted.

# Helpful Resources

## REScheck™ for Arkansas

The compliance options in this brochure are not all-inclusive and may not reflect your construction practices, product choices or unique designs. As an alternative approach to code compliance, the Arkansas Energy Office offers the REScheck™ for Arkansas program — an easy-to-use code compliance software tool that can evaluate any home with any combination of R-values, window U-factors and specific component areas. For example, depending on window type, a two-story home might comply with the code with a slightly greater window percentage. The computer program provides the flexibility for tradeoffs between all envelope components, window efficiencies and higher-than-minimum heating/cooling equipment.

## Energy Performance Tune-up

This booklet provides Arkansas’s builders with many helpful tips on building better-performing new homes. Improving performance increases comfort, improves longevity and reduces builder callbacks. Ask the Arkansas Energy Office (see below) for a free copy of the *Energy Performance Tune-up*.

## Code Materials and Assistance

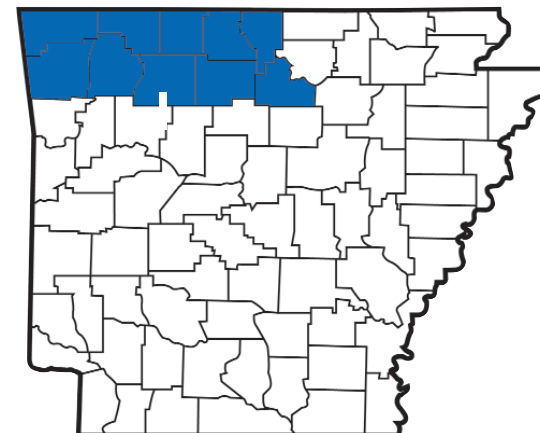
All Energy Code materials and compliance tools are free. Call 1-800-558-2633 or 501-682-1370 to request a DVD or hard copies. Also, you can view and download materials at [www.arkansasenergy.org](http://www.arkansasenergy.org) by clicking on the “Residential” tab, then on the left click on “Builders” then “Energy Code.”



**ARKANSAS**  
Economic Development Commission  
**ENERGY OFFICE**



**Arkansas**  
**2004 Residential**  
**Energy Code**



**ARKANSAS**

**Zone 9B**  
(HDD range is 4000-4499)

**Baxter • Benton**  
**Boone • Carroll**  
**Madison • Marion**  
**Newton • Searcy**  
**Stone • Washington**

# Code Compliance

The 2004 Arkansas Energy Code for new home construction helps to ensure that the state's housing stock continues to retain its value, quality and affordability. This simplified code brochure has been developed for builders to more easily understand, use and comply with the Arkansas Energy Code.

A new home in **ZONE 9** complies with the standards for the *2004 Arkansas Energy Code for New Construction* if the following conditions are met:

- Ceiling insulation is R-38.
- Exterior walls are R-13. With an additional R-3 exterior sheathing, add 1 percent to allowable window area.
- The percentage of double-glazed window area to gross wall area does not exceed values in the Maximum Allowable Window Percentages table.
- Floors over crawlspaces are R-19. If slab insulation is to be installed, then a minimum of R-4 is required. See the "Slab Insulation" section in this brochure.
- The heating and cooling system efficiencies are at least national minimums.

**Ceiling:** R-38. Only where a raised-heel truss or other construction technique is employed to obtain the full height of ceiling insulation extending over the exterior wall's top plate may an R-30 be substituted for an R-38.

**Walls:** Exterior walls are R-13. With an additional R-3 exterior sheathing, add 1 percent to maximum allowable window percentage.

## Maximum Allowable Window Percentages

Window frame type	R-0 slab	R-4 slab or R-19 floor
Wood or vinyl with low-e and gas filled (U-0.41*)	14%	21%
Vinyl or wood (U-0.56*)	10%	15%
Thermal break aluminum (U-0.65*)	8%	13%

\* These U-factors are recognized default values for each window type. The maximum allowable window percentage may increase if a more efficient window (lower U-factor) is used.

**Percentage Window Area:** Estimate percent window in the wall by dividing the total rough opening of the window area by the gross wall area. The window percentage is a ratio of the window area in the heated and cooled space to the gross wall area. This includes, but is not limited to, decorative windows, glass doors and basement windows but excludes opaque doors and skylights.

**Percent Window Area Example:** The total rough opening window area is 180 square feet. The building's perimeter is 150 feet, and the walls are 10 feet high. Therefore, the gross wall area is  $150 \times 10 = 1,500$  square feet. For this example, the percent of window in the wall is:  $180 / 1,500 = 0.12$  or 12 percent.

**Floor R-Value:** R-19. Requirements apply to floors over unconditioned spaces (unconditioned crawl spaces, basements and garages). Floors over outside air (cantilevers, bay windows, etc.) must meet the ceiling requirements.

**Slab Insulation:** R-4 or greater. Slab insulation is not required to meet minimum thermal code compliance. However, if slab insulation is installed, the code requires a total of twenty-four (24) inches of insulation. The first four (4) inches are critical and should be placed vertically around the perimeter of the slab. The remaining twenty (20) inches can run horizontally or vertically under the slab. Any exposed insulation shall be protected.

For most slab foundation types, there is a slab insulation technique that meets these specifications. If perimeter slab insulation is under consideration, check with a pest control company for approved methods in your area.

**National Minimums:** The national minimum system efficiency for cooling is 13 SEER (Seasonal Energy Efficiency Ratio); for heating it is 78 AFUE (Annual Fuel Utilization Efficiency) and for heat pumps it is 7.7 HSPF (Heating Season Performance Factor).

**Air Leakage:** All penetrations to the building envelope must be sealed, caulked, gasketed, weatherstripped or otherwise sealed. This includes, but is not limited to, areas around windows, doors, HVAC ductwork, plumbing pipe, electrical penetrations, etc.

**For questions, call the Energy Code Hotline at 1-800-558-2633 or 501-682-1370, or e-mail your question to [EnergyInfo@ArkansasEDC.com](mailto:EnergyInfo@ArkansasEDC.com)**