

IECC Compliance Guide to Window Selection in Arkansas

Designed to Comply with the IECC Requirements for New Single-Family Residential Buildings in Arkansas

Code: 2000 International Energy Conservation Code (IECC)

First Edition

How to Use This Guide

This guide is designed to help select windows that will meet the requirements of the IECC in Arkansas. Each county is assigned to one of four packages (A through D), which vary according to the different climate zones in Arkansas.

Step-by-Step Instructions

1. Use the color-coded map to locate the county in which construction is taking place and find the package (A through D) associated with that county.
2. Use the "Table of IECC Requirements for Window Selection in Arkansas" (on the back of this sheet) to choose a prescriptive path based upon the package selected in Step 1, above.
3. Construct the home with windows that have area weighted average U-factors and SHGCs less than or equal to the values for the selected path and meet the code maximum air leakage requirements.

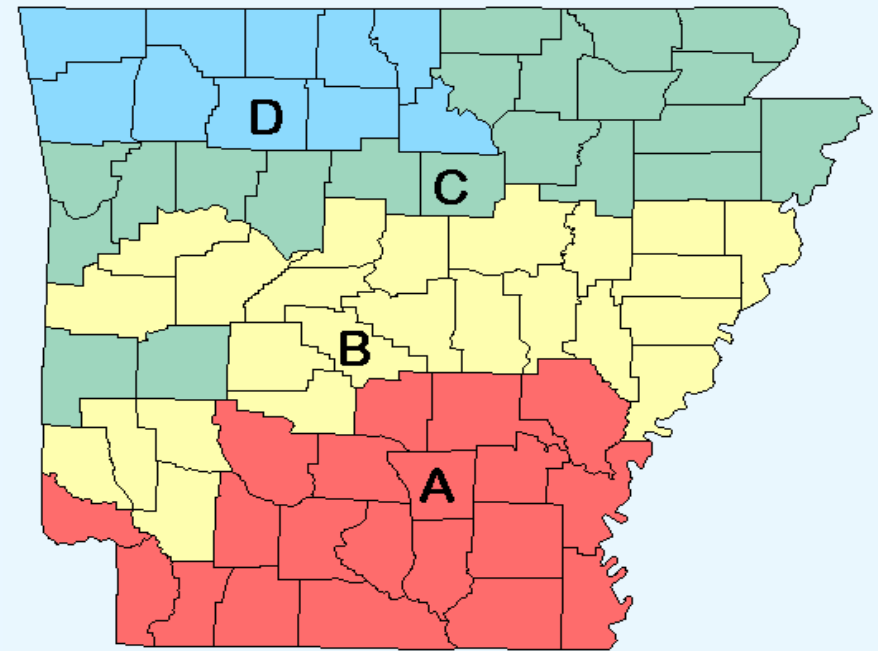
Example: If you are constructing a home with a window area of 20% in Pulaski County, found in Package B, you will comply with the IECC window requirements in Arkansas if your windows have an area weighted average maximum U-factor of 0.46, an SHGC of 0.40, and air leakage less than 0.3 cfm/sq.ft.

Obtaining the IECC

The IECC is published by the International Code Council (ICC). For additional details on the IECC or to purchase a copy, contact the ICC or visit its website at www.iccsafe.org.

Limitations

This guide is an energy code (IECC based) window selection compliance aid for Arkansas and does not provide a guarantee for meeting the state energy code. The guide has not been customized to reflect any state-specific amendments to the IECC that Arkansas may adopt or has adopted. The window requirements in this guide also depend upon the energy performance values of other envelope components in the home, i.e., insulation R-values in ceilings, walls, etc., not identified in this guide. For those values, refer to Tables in Chapter 5 of the IECC. For additional details on Arkansas' energy code, contact your local building code official.



Arkansas Counties by Package

A	2,500 to 2,999 HDD			C	3,500 to 3,999 HDD		
Arkansas	Columbia	Lincoln	Clay	Independence	Poinsett		
Ashley	Dallas	Little River	Cleburne	Izard	Polk		
Bradley	Desha	Miller	Craighead	Jackson	Pope		
Calhoun	Drew	Nevada	Crawford	Johnson	Randolph		
Chicot	Grant	Ouachita	Franklin	Lawrence	Sebastian		
Clark	Jefferson	Union	Fulton	Mississippi	Sharp		
Cleveland	Lafayette		Greene	Montgomery	Van Buren		
B	3,000 to 3,499 HDD			D	4,000 to 4,499 HDD		
Conway	Lee	Pulaski	Baxter	Madison	Stone		
Crittenden	Logan	Saline	Benton	Marion	Washington		
Cross	Lonoke	Scott	Boone	Newton			
Faulkner	Monroe	Sevier	Carroll	Searcy			
Garland	Perry	St. Francis					
Hempstead	Phillips	White					
Hot Spring	Pike	Woodruff					
Howard	Prairie	Yell					

HDD = Heating Degree Days

Table of IECC Requirements for Window Selection in Arkansas

Simplified Prescriptive Window Requirements for Compliance with the IECC for New Single-Family Residential Buildings in Arkansas

Package	Window Area %	Maximum Window U-factor*	Maximum Window SHGC*
A	15	0.60	0.40
	20	0.50	0.40
	25	0.46	0.40
B	15	0.55	0.40
	20	0.46	0.40
	25	0.45	0.40
C	15	0.50	NR
	20	0.42	NR
	25	0.41	NR
D	15	0.45	NR
	20	0.37	NR
	25	0.37	NR

"NR" means no requirement is specified in this package.

* U-factors and SHGCs may be determined by calculating an area weighted average U-factor and SHGC for all windows. For example, Area Weighted Average U-factor equals $((Area1 \times U1) + (Area2 \times U2)) / (Total \text{ Area})$. The area weighted average must not exceed the maximum values in the selected path.


NOTES:

1. This table of window requirements is based upon the International Energy Conservation Code (IECC) and does not reflect any state-specific amendments to the IECC. The IECC specifies additional requirements for other parts of the building envelope not listed here, such as insulation for walls and ceilings.
2. This table applies to single-family, residential construction.
3. "Window" refers to any translucent or transparent material (i.e., glazing) in exterior openings of buildings, including skylights, glass doors, the glass areas of opaque doors, and glass block, along with the accompanying sashes, frames, etc.
4. Window area % is the ratio of the area of the rough opening of windows to the gross wall area, expressed as a percentage. Up to one percent of total window area may be exempt from the U-factor requirement.
5. U-factor is a number, generally between 0.2 and 1.20, that indicates the rate of heat loss (or gain) through a window. A lower U-factor demonstrates a greater resistance to heat loss and gain, i.e., better insulating value, of the window. This number is important for winter comfort.
6. SHGC, or Solar Heat Gain Coefficient, is a number between 0 and 1 that indicates the fraction of radiation (heat) from the sun that is transmitted through the window; the lower the SHGC, the less the amount of solar radiation that is allowed to pass through the window and become unwanted additional heat in the summer. This number is critical for summer comfort.
7. Window U-factor and SHGC must be determined from a National Fenestration Rating Council (NFRC) label on the product (see sample label below), or from a limited table of product "default" values in the IECC.
8. The code requires that windows be labeled in a manner to determine that they meet the IECC's air infiltration requirements; specifically, equal to or better than 0.30 cfm per square foot of window area (swinging doors below 0.50 cfm) as determined in accordance with AAMA/WDMA 101/I.S.2 (ASTM E 283).
9. The labeled product U-factor and SHGC values should also be used in calculation procedures to properly size the home's HVAC equipment. The IECC requires the use of a computational procedure like ACCA Manual J to size equipment. Properly sized equipment will operate more efficiently and effectively and will save money up front because consumers can avoid paying extra for oversized equipment.

Look for the NFRC Label!



The 2 most important values to look for are: **U-factor and Solar Heat Gain Coefficient (SHGC)**

 World's Best Window Co. Millennium 2000 ⁺ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient
0.35	0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance	Air Leakage (U.S./I-P)
0.51	0.2
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

For more information on energy efficient windows, go to the Efficient Windows Collaborative website at: www.efficientwindows.org

