# Energy Code Compliance Guide to Window Selection in Georgia

Code: 2009 International Energy Conservation Code

This guide is designed to help select windows, doors and skylights that will meet the requirements of the 2009 IECC for residential buildings as it relates to Georgia. The requirements in the 2009 IECC are the same for windows used in new buildings, remodeling & additions to existing buildings, and as replacements of existing windows.



## **Step-by-Step Instructions**

- Using the climate zone map or table, match the jurisdiction to the appropriate IECC climate zone. Use the "IECC Prescriptive Window Energy Efficiency Requirements" (on the back of this sheet) to determine the window performance requirements associated with the climate zone.
- 2. Construct the home with windows that have area weighted average U-factor and SHGC values less than or equal to the values for the climate zone and meet the code maximum air leakage requirements.

IECC CLIMATE ZONE 4					
Banks	Fannin	Habersham	Rabun	White	
Catoosa	Floyd	Hall	Stephens	Whitfield	
Chattooga	Franklin	Lumpkin	Towns		
Dade	Gilmer	Murray	Union		
Dawson	Gordon	Pickens	Walker		

IECC CLIMATE ZONE 3				
Baldwin	Crawford	Henry	Muscogee	Taylor
Barrow	Crisp	Houston	Newton	Telfair
Bartow	De Kalb	Irwin	Oconee	Terrell
Ben Hill	Dodge	Jackson	Oglethorpe	Tift
Bibb	Dooly	Jasper	Paulding	Treutlen
Bleckley	Dougherty	Jefferson	Peach	Troup
Bulloch	Douglas	Jenkins	Pike	Turner
Burke	Early	Johnson	Polk	Twiggs
Butts	Elbert	Jones	Pulaski	Upson
Calhoun	Emanuel	Lamar	Putnam	Walton
Candler	Fayette	Laurens	Quitman	Warren
Carroll	Forsyth	Lee	Randolph	Washington
Chattahoochee	Fulton	Lincoln	Richmond	Webster
Cherokee	Glascock	Macon	Rockdale	Wheeler
Clarke	Greene	Madison	Schley	Wilcox
Clay	Gwinnett	Marion	Screven	Wilkes
Clayton	Hancock	McDuffie	Spalding	Wilkinson
Cobb	Haralson	Meriwether	Stewart	Worth
Coffee	Harris	Monroe	Sumter	
Columbia	Hart	Montgomery	Talbot	
Coweta	Heard	Morgan	Taliaferro	

IECC CLIMATE ZONE 2				
Appling	Bryan	Decatur	Lanier	Pierce
Atkinson	Camden	Echols	Liberty	Seminole
Bacon	Charlton	Effingham	Long	Tattnall
Baker	Chatham	Evans	Lowndes	Thomas
Berrien	Clinch	Glynn	McIntosh	Toombs
Brantley	Colquitt	Grady	Miller	Ware
Brooks	Cook	Jeff Davis	Mitchell	Wayne

## The 2009 International Energy Conservation Code

The 2009 IECC was developed by the International Code Council (ICC) and is currently available to states for adoption. The IECC is the national model standard for energyefficient residential construction recognized by federal law. The American Recovery and Reinvestment Act of 2009 makes funds available to jurisdictions that have committed to adopt and implement the 2009 IECC. Users of this guide are strongly recommended to obtain a copy of the IECC and refer to it for any questions and further details on compliance. IECC compliance training is also available from many sources. To obtain a copy of the 2009 IECC, contact the ICC or visit www.iccsafe.org.

# **IECC Prescriptive Window Energy Efficiency Requirements**

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This table of window, door and skylight requirements is from the 2009 IECC and does not necessarily reflect the version of the IECC that may have been adopted by the state or any state-specific amendments. These requirements apply to all fenestration products in residential buildings, including those used in new residences, in additions and to replace existing windows. For a definition of "fenestration" see Note 2 below. The IECC specifies additional requirements for other parts of the building envelope not listed here, such as insulation for walls and ceilings.

Package	Fenestration U-factor	Skylight U-Factor	Glazed Fenestration SHGC
Climate Zone 4	0.35	0.60	NR
Climate Zone 3	0.50	0.65	0.30
Climate Zone 2	0.65	0.75	0.30

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

#### NOTES:

- This table applies to residential buildings as defined in the IECC for compliance under the prescriptive compliance option. The 2009 IECC permits unlimited window area, so long as the prescriptive requirements are satisfied.
- 2. "Fenestration" refers to glazed window and door products in exterior walls of buildings, including glass doors and glass block, along with the accompanying sashes, frames, etc. and opaque doors. "Skylight" refers to glazed products installed at a slope of 15 degrees or more from vertical. "Glazed Fenestration" includes all glazed fenestration and all skylights.
- 3. 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. As a result, a lower number produces greater winter comfort.
- 4. 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. As a result, a lower number produces greater summer comfort.
- 5. Window and skylight U-factor and SHGC values are maximum acceptable levels. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor and SHGC requirements.
- 6. Up to 15 square feet of glazed fenestration is permitted to be exempt from the Ufactor and SHGC requirements. One side-hinged opaque door assembly up to 24 square feet is exempted from the Fenestration U-factor requirement. These exceptions apply in the prescriptive path only. Certain impact rated fenestration may be permitted to have a higher U-factor in climate zones 2 and 3. Special exceptions may apply for fenestration U-factor requirements in thermally isolated sunrooms.
- 7. Window, door and skylight U-factors and SHGCs must be determined from a National Fenestration Rating Council (NFRC) rating that is independently certified and set forth on a label on the product or from a limited table of product default values in the IECC. See <u>www.nfrc.org</u> for more details on the NFRC rating system.
- 8. Windows, doors and skylights must be labeled in a manner to determine that they meet the IECC's air infiltration requirements.
- 9. The labeled product U-factor and SHGC should also be used in calculation procedures to properly size the home's HVAC equipment. The IECC requires the use of an appropriate computational procedure to size equipment.



### Look for the NFRC Label!

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

**Efficient Windows** 



See the Efficient Windows Collaborative (EWC) web site for more information. www.efficientwindows.org

#### Limitations

This guide is an energy code compliance aid for window selection in Georgia based upon the simple prescriptive option of the 2009 IECC and reflects the prescriptive values from Table 402.1.1 of that code. This guide only addresses window requirements and not the requirements applicable to the rest of the home. It does not provide a guarantee that a home meets the IECC. This guide is not designed to reflect the actual energy code, with amendments, if any, adopted in Georgia and does not, therefore, provide a guarantee for meeting the state energy code. For additional details on Georgia's energy code, including how it may differ from the IECC, please contact your local building guide official.