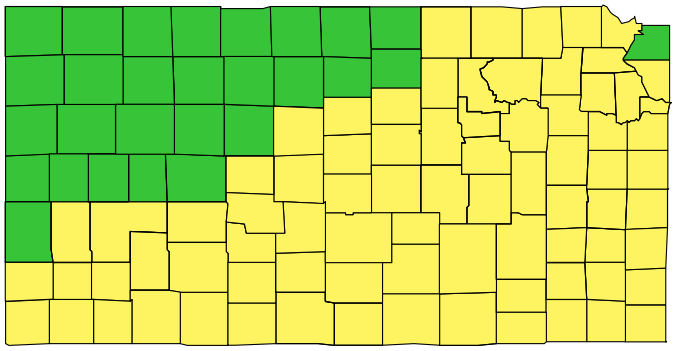
Energy Code Compliance Guide to Window Selection in Kansas

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 Kansas. 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.



IECC CLIMATE ZONE 5			
Cheyenne	Hamilton	Osborne	Sherman
Cloud	Jewell	Phillips	Smith
Decatur	Lane	Rawlins	Thomas
Ellis	Logan	Republic	Trego
Gove	Mitchell	Rooks	Wallace
Graham	Ness	Scott	Wichita
Greeley	Norton	Sheridan	

IECC CLIMATE ZONE 4			
Allen	Edwards	Labette	Reno
Anderson	Elk	Leavenworth	Rice
Atchison	Ellsworth	Lincoln	Riley
Barber	Finney	Linn	Rush
Barton	Ford	Lyon	Russell
Bourbon	Franklin	Marion	Saline
Brown	Geary	Marshall	Sedgwick
Butler	Grant	McPherson	Seward
Chase	Gray	Meade	Shawnee
Chautauqua	Greenwood	Miami	Stafford
Cherokee	Harper	Montgomery	Stanton
Clark	Harvey	Morris	Stevens
Clay	Haskell	Morton	Sumner
Coffey	Hodgeman	Nemaha	Wabaunsee
Comanche	Jackson	Neosho	Washington
Cowley	Jefferson	Osage	Wilson
Crawford	Johnson	Ottawa	Woodson
Dickinson	Kearny	Pawnee	Wyandotte
Doniphan	Kingman	Pottawatomie	
Douglas	Kiowa	Pratt	

Step-by-Step Instructions

1. 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.

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 energy-efficient 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 5	0.35	0.60	NR
Climate Zone 4	0.35	0.60	NR

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

NOTES:

1. 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 U-factor 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 www.nfrc.org 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 Collaborative

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 Kansas 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 Kansas and does not, therefore, provide a guarantee for meeting the state energy code. For additional details on Kansas' energy code, including how it may differ from the IECC, please contact your local building guide official.