# Energy Code Compliance Guide to Window Selection in Texas
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 Texas. 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.
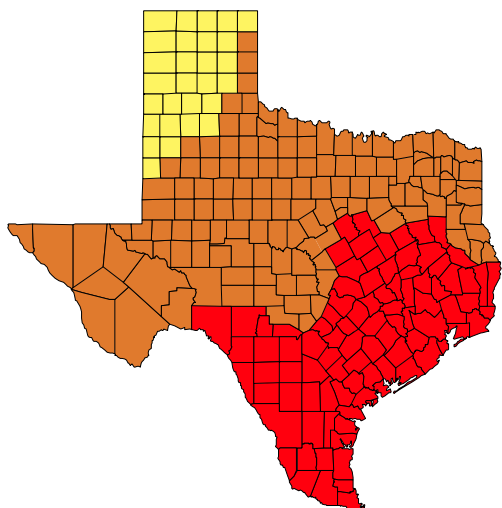
Step-by-Step Instructions

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 CLIMATE ZONE 4

Armstrong	Dallam	Hansford	Moore	Roberts
Bailey	Deaf Smith	Hartley	Ochiltree	Sherman
Briscoe	Donley	Hockley	Oldham	Swisher
Carson	Floyd	Hutchinson	Parmer	Yoakum
Castro	Gray	Lamb	Potter	
Cochran	Hale	Lipscomb	Randall	

IECC CLIMATE ZONE 3

Andrews	Dawson	Hopkins	Midland	Shelby
Archer	Delta	Howard	Mills	Smith
Baylor	Denton	Hudspeth	Mitchell	Somervell
Blanco	Dickens	Hunt	Montague	Stephens
Borden	Eastland	Irion	Morris	Sterling
Bowie	Ector	Jack	Motley	Stonewall
Brewster	El Paso	Jeff Davis	Nacogdoches	Sutton
Brown	Ellis	Johnson	Navarro	Tarrant
Burnet	Erath	Jones	Nolan	Taylor
Callahan	Fannin	Kaufman	Palo Pinto	Terrell
Camp	Fisher	Kendall	Panola	Terry
Cass	Foard	Kent	Parker	Throckmorton
Childress	Franklin	Kerr	Pecos	Titus
Clay	Gaines	Kimble	Presidio	Tom Green
Coke	Garza	King	Rains	Upshur
Coleman	Gillespie	Knox	Reagan	Upton
Collin	Glasscock	Lamar	Red River	Van Zandt
Collingsworth	Grayson	Lampasas	Reeves	Ward
Comanche	Gregg	Llano	Rockwall	Wheeler
Concho	Hall	Loving	Runnels	Wichita
Cooke	Hamilton	Lubbock	Rusk	Wilbarger
Cottle	Hardeman	Lynn	Sabine	Winkler
Crane	Harrison	Marion	San Augustine	Wise
Crockett	Haskell	Martin	San Saba	Wood
Crosby	Hemphill	Mason	Schleicher	Young
Culberson	Henderson	McCulloch	Scurry	
Dallas	Hood	Menard	Shackelford	

IECC CLIMATE ZONE 2

Anderson	Cherokee	Harris	Limestone	Starr
Angelina	Colorado	Hays	Live Oak	Travis
Aransas	Comal	Hidalgo	Madison	Trinity
Atascosa	Coryell	Hill	Matagorda	Tyler
Austin	De Witt	Houston	Maverick	Uvalde
Bandera	Dimmit	Jackson	McLennan	Val Verde
Bastrop	Duval	Jasper	McMullen	Victoria
Bee	Edwards	Jefferson	Medina	Walker
Bell	Falls	Jim Hogg	Milam	Waller
Bexar	Fayette	Jim Wells	Montgomery	Washington
Bosque	Fort Bend	Karnes	Newton	Webb
Brazoria	Freestone	Kenedy	Nueces	Wharton
Brazos	Frio	Kinney	Orange	Willacy
Brooks	Galveston	Kleberg	Polk	Williamson
Burleson	Goliad	La Salle	Real	Wilson
Caldwell	Gonzales	Lavaca	Refugio	Zapata
Calhoun	Grimes	Lee	Robertson	Zavala
Cameron	Guadalupe	Leon	San Jacinto	
Chambers	Hardin	Liberty	San Patricio	

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:

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)

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