IECC Compliance Guide for New Homes in Texas

Code: 2003 International Energy Conservation Code (IECC) **First Edition**

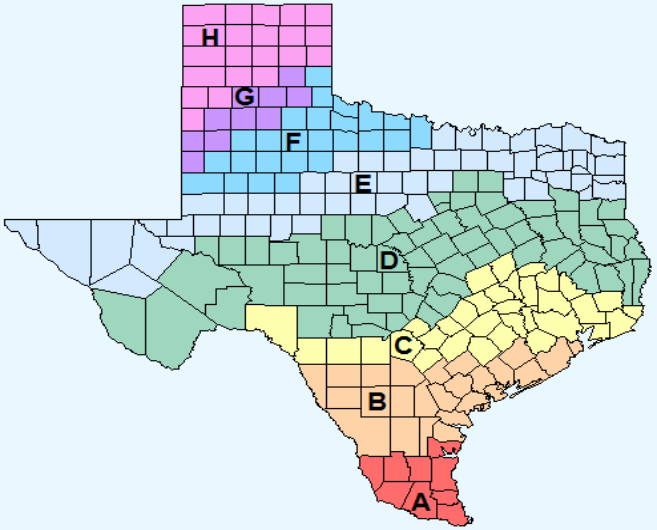
How to Use This Guide

This pamphlet contains eight generic packages designed to simplify compliance with the IECC as it relates to residential occupancies in Texas. Each county is assigned to one of the eight packages (A through H), which vary according to the different climate zones in Texas.

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 H, associated with that county.
2. Use the "Table of IECC Building Envelope Requirements for Texas" (on the back of this sheet) to find the set of construction options or "paths" associated with the package selected above.
3. Select the path best suited to your project (window area, basement vs. crawl space, etc.)
4. Construct the building according to the selected path and comply with certain basic code requirements, which include:
   a. providing preventative maintenance manuals
   b. installing temperature controls
   c. limiting window and door leakage
   d. caulking or sealing joints and penetrations
   e. installing vapor retarders
   f. sealing and insulating ducts

Example:
If you are constructing a home in Harris County, you will comply with the IECC in Texas if you follow any one of the three paths listed in Package C.



Texas Counties by Package

A — 500 - 999 HDD

Brooks	Hidalgo	Kenedy	Starr	Zapata
Cameron	Jim Hogg	Kleberg	Willacy	

B — 1,000 - 1,499 HDD

Aransas	Dimmit	Jim Wells	McMullen	Wharton
Atascosa	Duval	Karnes	Nueces	Zavala
Bee	Frio	La Salle	Refugio	
Brazoria	Galveston	Live Oak	San Patricio	
Calhoun	Goliad	Matagorda	Victoria	
De Witt	Jackson	Maverick	Webb	

C — 1,500 - 1,999 HDD

Austin	Colorado	Hardin	Madison	Uvalde
Bastrop	Comal	Harris	Medina	Val Verde
Bexar	Fayette	Jefferson	Milam	Walker
Brazos	Fort Bend	Kinney	Montgomery	Waller
Burleson	Gonzales	Lavaca	Orange	Washington
Caldwell	Grimes	Lee	Robertson	Wilson
Chambers	Guadalupe	Liberty	San Jacinto	

D — 2,000 - 2,499 HDD

Anderson	Crane	Irion	Mills	Schleicher
Angelina	Crockett	Jasper	Nacogdoches	Shelby
Bandera	Dallas	Johnson	Navarro	Smith
Bell	Edwards	Kendall	Newton	Somervell
Blanco	Ellis	Kerr	Panola	Sutton
Bosque	Falls	Kimble	Pecos	Tarrant
Brewster	Freestone	Lampasas	Polk	Terrell
Brown	Gillespie	Leon	Presidio	Tom Green
Burnet	Hamilton	Limestone	Reagan	Travis
Cherokee	Hays	Llano	Real	Trinity
Coleman	Henderson	Mason	Rusk	Tyler
Comanche	Hill	McCulloch	Sabine	Upton
Concho	Hood	McLennan	San Augustine	Williamson
Coryell	Houston	Menard	San Saba	Runnels

E — 2,500 - 2,999 HDD

Andrews	Ector	Howard	Mitchell	Sterling
Bowie	El Paso	Hudspeth	Montague	Taylor
Callahan	Erath	Hunt	Morris	Throckmorton
Camp	Fannin	Jack	Nolan	Titus
Cass	Fisher	Jeff Davis	Palo Pinto	Upshur
Coke	Franklin	Jones	Parker	Van Zandt
Collin	Glasscock	Kaufman	Rains	Ward
Cooke	Grayson	Lamar	Red River	Winkler
Culberson	Gregg	Loving	Reeves	Wise
Delta	Harrison	Marion	Rockwall	Wood
Denton	Haskell	Martin	Shackelford	Young
Eastland	Hopkins	Midland	Stephens	

F — 3,000 - 3,499 HDD

Archer	Collingsworth	Foard	King	Scurry
Baylor	Cottle	Gaines	Knox	Stonewall
Borden	Crosby	Garza	Lubbock	Terry
Childress	Dawson	Hardeman	Lynn	Wichita
Clay	Dickens	Kent	Motley	Wilbarger

G — 3,500 - 3,999 HDD

Briscoe	Donley	Hale	Hockley	Swisher
Cochran	Floyd	Hall	Lamb	Yoakum

H — 4,000 - 4,499 HDD

Armstrong	Deaf Smith	Hutchinson	Parmer	Wheeler
Bailey	Gray	Lipscomb	Potter	
Carson	Hansford	Moore	Randall	
Castro	Hartley	Ochiltree	Roberts	
Dallam	Hemphill	Oldham	Sherman	

HDD = Heating Degree Days

Obtaining the IECC

The IECC is the national model energy standard certified by the US Department of Energy pursuant to the Energy Policy Act (EPAct). EPAct requires that all states review and consider adopting the IECC as the state building energy code.

The IECC is published by the International Code Council (ICC). For additional details on the IECC, contact the ICC by phone at (703) 931-4533 or visit their website at www.iccsafe.org.

Limitations

This guide is an energy code (IECC based) compliance aid for Texas. It does not provide a guarantee for meeting the IECC. The guide has not been customized to reflect any state-specific amendments to the IECC that Texas may adopt or has adopted, and does not, therefore, provide a guarantee for meeting the state energy code. For additional details on Texas' energy code, please contact your local building code official.

Table of IECC Building Envelope Requirements for Texas

Simplified Prescriptive Paths for Compliance with the IECC in Texas

		WINDOWS AND INSULATION					FOUNDATION TYPE			
Package		Window Area	Window U-factor	Window SHGC	Ceiling	Wall	Floor	Basement Wall	Slab Perimeter	Crawl Space Wall
A	500-999 HDD	15%	0.90	0.40	R-19	R-11	R-11	R-0	R-0	R-4
		20%	0.75	0.40	R-30	R-13	R-11	R-0	R-0	R-4
		25%	0.65	0.40	R-30	R-13	R-11	R-0	R-0	R-4
B	1,000-1,499 HDD	15%	0.75	0.40	R-19	R-11	R-11	R-0	R-0	R-5
		20%	0.70	0.40	R-30	R-13	R-11	R-0	R-0	R-5
		25%	0.55	0.40	R-30	R-13	R-11	R-0	R-0	R-5
C	1,500-1,999 HDD	15%	0.75	0.40	R-26	R-13	R-11	R-5	R-0	R-5
		20%	0.60	0.40	R-30	R-13	R-11	R-5	R-0	R-5
		25%	0.52	0.40	R-30	R-13	R-13	R-6	R-0	R-6
D	2,000-2,499 HDD	15%	0.65	0.40	R-30	R-13	R-11	R-5	R-0	R-6
		20%	0.52	0.40	R-38	R-13	R-11	R-5	R-0	R-6
		25%	0.50	0.40	R-38	R-13	R-19	R-8	R-0	R-10
E	2,500-2,999 HDD	15%	0.60	0.40	R-30	R-13	R-19	R-6	R-4, 2 ft.	R-7
		20%	0.50	0.40	R-38	R-13	R-19	R-6	R-0	R-7
		25%	0.46	0.40	R-38	R-16	R-19	R-6	R-0	R-7
F	3,000-3,499 HDD	15%	0.55	0.40	R-30	R-13	R-19	R-7	R-4, 2 ft.	R-8
		20%	0.46	0.40	R-38	R-13	R-19	R-7	R-0	R-9
		25%	0.45	0.40	R-38	R-19	R-19	R-7	R-0	R-9
G	3,500-3,999 HDD	15%	0.50	NR	R-30	R-13	R-19	R-8	R-5, 2 ft.	R-10
		20%	0.42	NR	R-38	R-13	R-19	R-8	R-6, 2 ft.	R-10
		25%	0.41	NR	R-38	R-19	R-19	R-8	R-6, 2 ft.	R-10
H	4,000-4,499 HDD	15%	0.45	NR	R-38	R-13	R-19	R-8	R-5, 2 ft.	R-11
		20%	0.37	NR	R-38	R-13	R-19	R-9	R-6, 2 ft.	R-13
		25%	0.37	NR	R-38	R-19	R-19	R-9	R-6, 2 ft.	R-13

HDD = Heating Degree Days

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

* According to the IECC, Texas qualifies as an area of "very heavy" termite infestation probability. Under an exception in the IECC, the slab perimeter insulation requirement in these paths may be avoided by following other IECC compliance options. Some states have prohibited or restricted the use of slab perimeter insulation due to termite infestation probability. Please check with your local building code official to determine whether slab insulation is allowed in your area.

NOTES:

1. This table is based upon the 2003 International Energy Conservation Code (IECC), published by the International Code Council, and does not reflect any state-specific amendments to the IECC.
2. Source of requirements for the Table: 2003 IECC, Ch. 5, Prescriptive Packages for Climate Zones 2-9. Alternate compliance approaches must be used for glazing areas over 25%.
3. Window area %, U-factors, and SHGCs are maximum acceptable levels.
4. Insulation R-values are minimum acceptable levels.
5. This table applies to single-family, wood-frame residential buildings. For steel-framed wall construction or high-mass wall construction refer to Chapter 5 of the IECC.
6. "Window" refers to any translucent or transparent material (i.e., glazing) in exterior openings of buildings, including skylights, sliding glass doors, the glass areas of opaque doors, and glass block, along with the accompanying sashes, frames, etc.
7. Window U-factor and SHGC must be determined from a National Fenestration Rating Council (NFRC) label on the product or from a limited table of product "default" values in the IECC.
8. Window area % is the ratio of the rough opening of windows to the gross wall area, expressed as a percentage.
9. Opaque doors must have a maximum U-factor of 0.35. One exempt door allowed.
10. 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).
11. R-2 shall be added to the requirements for heated slabs.
12. Floors over outside air must meet ceiling requirements.
13. R-values for walls represent the sum of cavity insulation plus insulated sheathing, if any. Crawl space wall R-value shall only apply to unventilated crawl spaces.
14. Prescriptive packages are based upon normal HVAC equipment efficiencies (see Chapter 5 of the IECC). The code also requires the HVAC system to be properly sized using a computational procedure like ACCA Manual J.