

ORDINANCE NO. 27109

An ordinance amending Chapter 59, "Dallas Energy Conservation Code," of the Dallas City Code, as amended; adopting with certain changes the 2006 Edition of the International Energy Conservation Code of the International Code Council, Inc.; providing standards and requirements for the design and construction of energy-efficient buildings and spaces within the city; providing a penalty not to exceed \$2,000; providing a saving clause; providing a severability clause; and providing an effective date.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. That Chapter 59, "Dallas Energy Conservation Code," of the Dallas City Code, as amended, is amended by adopting the 2006 Edition of the International Energy Conservation Code of the International Code Council, Inc. (which is attached as Exhibit A and made a part of this ordinance), with the following amendments:

1. Page v, "Ordinance," is deleted.
2. Subsection 101.1, "Title," of Section 101, "Scope and General Requirements," of Chapter 1, "Administration," of the 2006 International Energy Conservation Code is amended to read as follows:

**"101.1 Title.** This code shall be known as the *Dallas* [~~International~~] *Energy Conservation Code* [of [NAME OF JURISDICTION]], and shall be cited as such. It is referred to herein as 'this code.'

**101.1.1 Additional administrative provisions.** Except as otherwise specified in this chapter, all provisions of Chapter 52, 'Administrative Procedures for the Construction Codes,' of the Dallas City Code apply to this code."

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3. Paragraph 101.4.2, "Historic Buildings," of Subsection 101.4, "Applicability," of Section 101, "Scope and General Requirements," of Chapter 1, "Administration," of the 2006 International Energy Conservation Code is amended to read as follows:

**"101.4.2 Historic buildings.** Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource with a National register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer of the Keeper of the National Register of Historic Places, ~~[are exempt from]~~ shall comply with all of the provisions of this code.

**Exception:** Whenever a provision or provisions shall invalidate or jeopardize the historical designation or listing, that provision or provisions may be exempted.

4. Paragraph 103.1.1, "Above Code Programs," of Subsection 103.1, "General," of Section 103, "Alternate Materials – Method of Construction, Design or Insulating Systems," of Chapter 1, "Administration," of the 2006 International Energy Conservation Code is amended by adding a new Subparagraph 103.1.1.1, "Alternative Compliance," to read as follows:

**"103.1.1.1 Alternative compliance.** A building certified by a national, state or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the code official, be considered in compliance. The United States Environmental Protection Agency's ENERGY STAR Program certification of energy code equivalency shall be considered in compliance."

5. Section 202, "General Definitions," of Chapter 2, "Definitions," of the 2006 International Energy Conservation Code is amended by alphabetically adding the following definition to read as follows:

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**“GLAZING AREA.** Total area of the glazed fenestration measured using the rough opening and including sash, curbing or other framing elements that enclose conditioned space. Glazing area includes the area of glazed fenestration assemblies in walls bounding conditioned basements. For doors where the daylight opening area is less than 50 percent of the door area, the glazing area is the daylight opening area. For all other doors, the glazing area is the rough opening area for the door including the door and the frame.”

6. Subsection 301.1, “General,” of Section 301, “Climate Zones,” of Chapter 3, “Climate Zones,” of the 2006 International Energy Conservation Code is amended to read as follows:

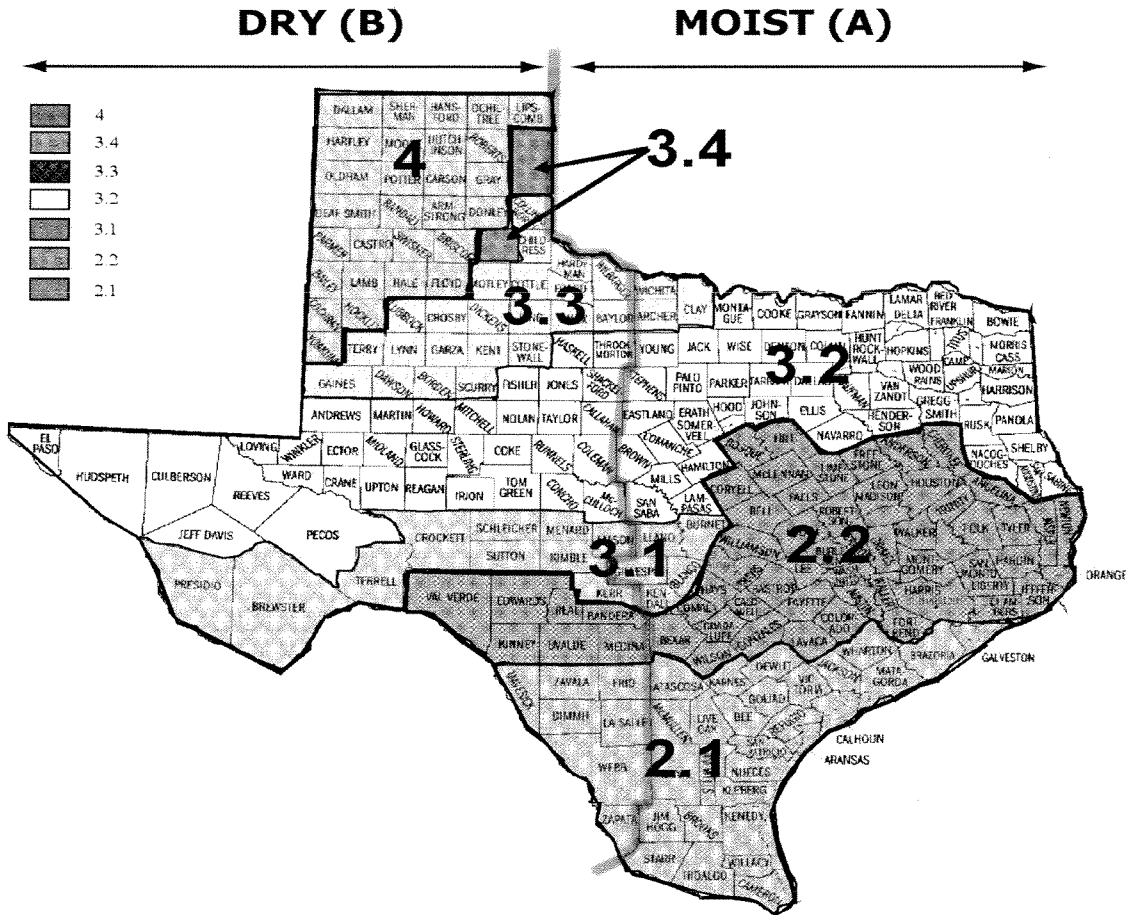
**“301.1 General.** Climate zones from Figure 301.1, Figure 301.2, [~~or~~] Table 301.1(1), Table 301.2(1), or Table 301.3(3) shall be used in determining the applicable requirements from Chapters 4 and 5. Locations not in Table 301.1 (outside the US) shall be assigned a climate zone based on Section 301.3.”

7. Section 301, “Climate Zones,” of Chapter 3, “Climate Zones,” of the 2006 International Energy Conservation Code is amended by adding Figure 301.2, “Texas Climate Zones,” to read as follows:

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“FIGURE 301.2  
TEXAS CLIMATE ZONES



“

8. Table 301.1, “Climate Zones by State, County and Territories,” of Subsection 301.1, “General,” of Section 301, “Climate Zones,” of Chapter 3, “Climate Zones,” of the 2006 International Energy Conservation Code is amended by deleting references to Texas and adding Table 301.1(1), “Climate Zones and Sub Climate Zones For Texas,” to read as follows:

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## "TABLE 301.1(1)

## CLIMATE ZONES AND SUB CLIMATE ZONES FOR TEXAS

## Zone 2

ANDERSON	2.2	DEWITT	2.1	JIMHOGG	2.1	ORANGE	2.2
ANGELINA	2.2	DIMITT	2.1	JIM WELLS	2.1	POLK	2.2
ARANSAS	2.1	DUVAL	2.1	KARNES	2.1	REAL	2.2
ATASCOSA	2.1	EDWARDS	2.2	KENEDY	2.1	REFUGIO	2.1
AUSTIN	2.2	FALLS	2.2	KINNEY	2.2	ROBERTSON	2.2
BANDERA	2.2	FAYETTE	2.2	KLEBERG	2.1	SAN JACINTO	2.2
BASTROP	2.2	FORT BEND	2.2	LASALLE	2.1	SAN PATRICIO	2.1
BEE	2.1	FREESTONE	2.2	LAVACA	2.2	STARR	2.1
BELL	2.2	FRIO	2.1	LEE	2.2	TRAVIS	2.2
BEXAR	2.2	GALVESTON	2.1	LEON	2.2	TRINITY	2.2
BOSQUE	2.2	GOLIAD	2.1	LIBERTY	2.2	TYLER	2.2
BRAZORIA	2.1	GONZALES	2.2	LIMESTONE	2.2	UVALDE	2.2
BRAZOS	2.2	GRIMES	2.2	LIVE OAK	2.1	VALVERDE	2.2
BROOKS	2.1	GUADALUPE	2.2	MADISON	2.2	VICTORIA	2.1
BURLESON	2.2	HARDIN	2.2	MATAGORDA	2.1	WALKER	2.2
CALDWELL	2.2	HARRIS	2.2	MAVERICK	2.1	WALLER	2.2
CALHOUN	2.1	HAYS	2.2	MCLENNAN	2.2	WASHINGTON	2.2
CAMERON	2.1	HIDALGO	2.1	MCMULLEN	2.1	WEBB	2.1
CHAMBERS	2.2	HILL	2.2	MEDINA	2.2	WHARTON	2.1
CHEROKEE	2.2	HOUSTON	2.2	MILAM	2.2	WILLACY	2.1
COLORADO	2.2	JACKSON	2.1	MONTGOMERY	2.2	WILLIAMSON	2.2
COMAL	2.2	JASPER	2.2	NEWTON	2.2	WILSON	2.2
CORYELL	2.2	JEFFERSON	2.2	NUECES	2.1	ZAPATA	2.1

## Zone 3

ANDREWS	3.2	ELPASO	3.2	KERR	3.1	ROCKWALL	3.2
ARCHER	3.3	ELLIS	3.2	KIMBLE	3.1	RUNNELS	3.2
BAYLOR	3.3	ERATH	3.2	KING	3.3	RUSK	3.2
BLANCO	3.1	FANNIN	3.2	KNOX	3.3	SABINE	3.2
BORDEN	3.3	FISHER	3.2	LAMAR	3.2	SAN AUGUSTINE	3.2
BOWIE	3.2	FOARD	3.3	LAMPASAS	3.2	SAN SABA	3.2
BREWSTER	3.1	FRANKLIN	3.2	LLANO	3.1	SCHLEICHER	3.1
BROWN	3.2	GAINES	3.3	LOVING	3.2	SCURRY	3.3
BURNET	3.1	GARZA	3.3	LUBBOCK	3.3	SHACKELFORD	3.2
CALLAHAN	3.2	GILLESPIE	3.1	LYNN	3.3	SHELBY	3.2
CAMP	3.2	GLASSCOCK	3.2	MARION	3.2	SMITH	3.2
CASS	3.2	GRAYSON	3.2	MARTIN	3.2	SOMERVELL	3.2
CHILDRESS	3.3	GREGG	3.2	MASON	3.1	STEPHENS	3.2
CLAY	3.3	HALL	3.4	MCCULLOCH	3.2	STERLING	3.2
COKE	3.2	HAMILTON	3.2	MENARD	3.1	STONEWALL	3.3
COLEMAN	3.2	HARDEMAN	3.3	MIDLAND	3.2	SUTTON	3.1
COLLIN	3.2	HARRISON	3.2	MILLS	3.2	TARRANT	3.2
COLLINGSWORTH	3.3	HASKELL	3.2	MITCHELL	3.2	TAYLOR	3.2
COMANCHE	3.2	HEMPHILL	3.4	MONTAGUE	3.2	TERRELL	3.1
CONCHO	3.2	HENDERSON	3.2	MORRIS	3.2	TERRY	3.3
COOKE	3.2	HOOD	3.2	MOTLEY	3.3	THROCKMORTON	3.2
COTTLE	3.3	HOPKINS	3.2	NACOGDOCHES	3.2	TITUS	3.2
CRANE	3.2	HOWARD	3.2	NAVARRO	3.2	TOM GREEN	3.2
CROCKETT	3.1	HUDSPETH	3.2	NOLAN	3.2	UPSHUR	3.2
CROSBY	3.3	HUNT	3.2	PALO PINTO	3.2	UPTON	3.2
CULBERSON	3.2	IRION	3.2	PANOLA	3.2	VANZANDT	3.2
DALLAS	3.2	JACK	3.2	PARKER	3.2	WARD	3.2
DAWSON	3.3	JEFF DAVIS	3.2	PECOS	3.2	WHEELER	3.4
DELTA	3.2	JOHNSON	3.2	PRESIDIO	3.1	WICHITA	3.3
DENTON	3.2	JONES	3.2	RAINS	3.2	WILBARGER	3.3
DICKENS	3.3	KAUFMAN	3.2	REAGAN	3.2	WINKLER	3.2
EASTLAND	3.2	KENDALL	3.1	RED RIVER	3.2	WISE	3.2
ECTOR	3.2	KENT	3.3	REEVES	3.2	WOOD	3.2
						YOUNG	3.2

## Zone 4

ARMSTRONG	DEAF SMITH	HOCKLEY	PARMER
BAILEY	DONLEY	HUTCHINSON	POTTER
BRISCOE	FLOYD	LAMB	RANDALL
CARSON	GRAY	LIPSCOMB	ROBERTS
CASTRO	HALE	MOORE	SHERMAN
COCHRAN	HANSFORD	OCHILTREE	SWISHER
DALLAM	HARTLEY	OLDHAM	YOAKUM

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9. Table 301.2, "Warm Humid Counties and Territories," of Subsection 301.2, "Warm Humid Counties," of Section 301, "Climate Zones," of Chapter 3, "Climate Zones," of the 2006 International Energy Conservation Code is amended by deleting the references to Texas and adding Table 301.2(1), "Warm Humid Counties for Texas," to read as follows:

**"TABLE 301.2(1)  
WARM HUMID COUNTIES FOR TEXAS**

ANDERSON	2.2	DUVAL	2.1	KAUFMAN	3.2	RED RIVER	3.2
ANGELINA	2.2	EDWARDS	2.2	KENDALL	3.1	REAL	2.2
ARANSAS	2.1	ELLIS	3.2	KENEDY	2.1	REFUGIO	2.1
ATASCOSA	2.1	ERATH	3.2	KINNEY	2.2	ROBERTSON	2.2
AUSTIN	2.2	FALLS	2.2	KLEBERG	2.1	ROCKWALL	3.2
BANDERA	2.2	FAYETIE	2.2	LASALLE	2.1	RUSK	3.2
BASTROP	2.2	FORT BEND	2.2	LAMAR	3.2	SABINE	3.2
BEE	2.1	FRANKLIN	3.2	LAMPASAS	3.2	SAN AUGUSTINE	3.2
BELL	2.2	FREESTONE	2.2	LAVACA	2.2	SAN JACINTO	2.2
BEXAR	2.2	FRIO	2.1	LEE	2.2	SAN PATRICIO	2.1
BLANCO	3.1	GALVESTON	2.1	LEON	2.2	SAN SABA	3.2
BOSQUE	2.2	GILLESPIE	3.1	LLANO	3.1	SHELBY	3.2
BOWIE	3.2	GOLIAD	2.1	LIBERTY	2.2	SMITH	3.2
BRAZORIA	2.1	GONZALES	2.2	LIMESTONE	2.2	STARR	2.1
BROWN	3.2	GREGG	3.2	LIVE OAK	2.1	SOMMERVELL	3.2
BRAZOS	2.2	GRIMES	2.2	MADISON	2.2	TARRANT	3.2
BROOKS	2.1	GUADALUPE	2.2	MARION	3.2	TITUS	3.2
BURLESON	2.2	HAMILTON	3.2	MATAGORDA	2.1	TRAVIS	2.2
BURNET	3.1	HARDIN	2.2	MAVERICK	2.1	TRINITY	2.2
CALDWELL	2.2	HARRIS	2.2	MCLENNAN	2.2	TYLER	2.2
CALHOUN	2.1	HARRISON	3.2	MCMULLEN	2.1	UPSHUR	3.2
CAMERON	2.1	HAYS	2.2	MEDINA	2.2	UVALDE	2.2
CHAMBERS	2.2	HENDERSON	3.2	MILAM	2.2	VAL VERDE	2.2
CAMP	3.2	HIDALGO	2.1	MILLS	3.2	VANZANDT	3.2
CASS	3.2	HOOD	3.2	MONTGOMERY	2.2	VICTORIA	2.1
CHEROKEE	2.2	HOPKINS	3.2	MORRIS	3.2	WALKER	2.2
COLLIN	3.2	HILL	2.2	NACOGDOCHES	3.2	WALLER	2.2
COLORADO	2.2	HOUSTON	2.2	NAVARRO	3.2	WASHINGTON	2.2
COMAL	2.2	HUNT	3.2	NEWTON	2.2	WEBB	2.1
COMANCHE	3.2	JACKSON	2.1	NUECES	2.1	WHARTON	2.1
CORYELL	2.2	JASPER	2.2	ORANGE	2.2	WILLACY	2.1
DALLAS	3.2	JEFFERSON	2.2	PALO PINTO	3.2	WILLIAMSON	2.2
DELTA	3.2	JIM HOGG	2.1	PANOLA	3.2	WILSON	2.2
DENTON	3.2	JIM WELLS	2.1	PARKER	3.2	WOOD	3.2
DEWITI	2.1	JOHNSON	3.2	POLK	2.2	ZAPATA	2.1
DIMITT	2.1	KARNES	2.1	RAINS	3.2	ZAVALA	2.1

“

10. Subsection 401.2, “Compliance,” of Section 401, “General,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended by adding Paragraph 401.2.1, “Compliance Software Tools,” to read as follows:

**“401.2.1 Compliance software tools.** Software tools that are deemed acceptable by the building official may be used to demonstrate energy code compliance. The PNL program REScheck™ is not acceptable for residential compliance.”

11. Paragraph 402.1.1, “Insulation and Fenestration Criteria,” of Subsection 402.1, “General. (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended to read as follows:

**“402.1.1 Insulation and fenestration criteria.** The building thermal envelope shall meet the requirements of Table 402.1.1 based on the climate zone specified in Chapter 3. The use of REScheck™ shall not be an acceptable means of demonstrating envelope compliance.

When compliance using Table 402.1.1 is demonstrated with a ceiling R-value of R30 or less, no more than 33 percent of the total projected ceiling area may be of cathedral type construction (ceiling joist/roof rafter assembly) and the required insulation R-value may be reduced to a minimum of R22 insulation when the remaining ceiling area insulation is increased to R38.”

12. Table 402.1.1, “Insulation and Fenestration Requirements by Component,” of Paragraph 402.1.1, “Insulation and Fenestration Criteria,” of Subsection 402.1, “General (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is deleted and replaced with a new Table 402.1.1, “Insulation and Fenestration Requirements by Component (Texas),” to read as follows:

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“TABLE 402.1.1

**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (TEXAS)<sup>a</sup>**

CLIMATE -SUB CLIMATE ZONE	MAX GLAZED AREA TO WALL AREA RATIO	MAX GLAZED FENESTRATION U-FACTOR	MAX SKYLIGHT U-FACTOR <sup>b</sup>	MAX GLAZED FENESTRATION SHGC	MIN CEILING R-VALUE	MIN WOOD FRAME WALL R-VALUE <sup>c</sup>	MASS WALL R-VALUE	MIN FLOOR R-VALUE	MIN BASEMENT WALL R-VALUE	MIN SLAB R-VALUE & DEPTH <sup>f</sup>	MIN CRAWL SPACE WALL R-VALUE
2.1	15	0.75	0.75	0.38	19	13	6	19	0	0	5
	20	0.70	0.75	0.38	30	13	6	19	0	0	5
	25	0.65	0.75	0.35	30	13	6	19	0	0	5
	30	0.54	0.75	0.35	38	13	6	19	0	0	5
2.2	15	0.65	0.75	0.38	30	13	6	19	5	0	6
	20	0.65	0.75	0.38	38	13	6	19	6	0	6
	25	0.54	0.75	0.35	38	13	6	19	8	0	10
	30	0.46	0.75	0.35	38	16, 13 + 3.7 <sup>e</sup>	6	19	8	0	10
3.1	15	0.65	0.65	0.40	30	13	6	19	5	0	6
	20	0.55	0.65	0.40	38	13	6	19	5	0	6
	25	0.54	0.65	0.35	38	13	6	19	8	0	10
	30	0.46	0.65	0.35	38	16, 13 + 3.7 <sup>e</sup>	7	19	8	0	10
3.2	15	0.60	0.65	0.40	30	13	6	19	6	0	7
	20	0.54	0.65	0.40	38	13	6	19	6	0	7
	25	0.51	0.65	0.40	38	16, 13 + 3.7 <sup>e</sup>	7	19	6	0	7
	30	0.46	0.65	0.38	38	16, 13 + 3.7 <sup>e</sup>	7	19	6	0	7
3.3	15	0.51	0.65	0.40	30	13	6	19	7	0	8
	20	0.45	0.65	0.40	38	13	6	19	7	0	9
	25	0.40	0.65	0.40	38	16, 13 + 3.7 <sup>e</sup>	7	19	7	0	9
	30	0.40	0.65	0.40	38	19, 13 + 8.1 <sup>e</sup>	9	19	7	0	9
3.4	15	0.45	0.60	NR	38	13	6	19	8	5,2 ft	11
	20	0.37	0.60	NR	38	13	6	19	8	6,2 ft	13
	25	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	9	19	8	6,2 ft	13
	30	0.37	0.60	NR	38	19, 13 + 8.1 e	9	30	8	6,2 ft	13
4	15	0.45	0.60	NR	38	13	8	19	8	5,2 ft	11
	20	0.37	0.60	NR	38	13	8	19	9	6,2 ft	13
	25	0.37	0.60	NR	38	19, 13+8.1 <sup>e</sup>	10	19	9	6,2 ft	13
	30	0.37	0.60	NR	38	19, 13 + 8.1 <sup>e</sup>	10	30	9	6,2 ft	13

For SI: 1 foot = 304.8 mm.

- a. R-values are minimums. U-factors and SHGC are maximums. R-19 shall be permitted to be compressed into a 2 x 6 cavity.
- b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration
- c. R-5 shall be added to the required slab edge R-values for heated slabs.
- d. The total R-value may be achieved with a combination of cavity insulation and insulating sheathing that covers 100% of the exterior wall.
- e. The wall insulation may be the sum of the two values where the first value is the cavity insulation and the second value is insulating sheathing. The combination of cavity insulation plus insulating sheathing may be used where structural sheathing covers not more than 25% of the exterior wall area and insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior wall area then the wall insulation requirement may only be satisfied with the single insulation value.”

13. Table 402.1.3, “Equivalent *U*-Factors,” of Paragraph 402.1.3, “*U*-Factor Alternative,” of Subsection 402.1, “General. (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended to read as follows:

**“TABLE 402.1.3  
EQUIVALENT *U*-FACTORS<sup>a</sup>”**

CLIMATE-SUB CLIMATE ZONE	MAX GLAZED AREA TO WALL AREA RATIO	MAX GLAZED FENESTRATION <i>U</i> -FACTOR	MAX SKYLIGHT <i>U</i> -FACTOR	MAX CEILING <i>U</i> -FACTOR	MAX WOOD FRAME WALL <i>U</i> -FACTOR	MAX MASS WALL <i>U</i> -FACTOR	MAX FLOOR <i>U</i> -FACTOR	MAX BASEMENT WALL <i>U</i> -FACTOR	MAX CRAWL SPACE WALL <i>U</i> -FACTOR
2.1	15	0.75	0.75	0.039	0.082	0.124	0.047	0.360	0.136
	20	0.70	0.75	0.034	0.082	0.124	0.047	0.360	0.136
	25	0.65	0.75	0.034	0.082	0.124	0.047	0.360	0.136
	30	0.54	0.75	0.030	0.082	0.124	0.047	0.360	0.136
2.2	15	0.65	0.75	0.034	0.082	0.124	0.047	0.210	0.100
	20	0.65	0.75	0.030	0.082	0.124	0.047	0.210	0.100
	25	0.54	0.75	0.030	0.082	0.124	0.047	0.119	0.065
	30	0.46	0.75	0.030	0.071	0.124	0.047	0.119	0.065
3.1	15	0.65	0.65	0.034	0.082	0.124	0.047	0.210	0.100
	20	0.55	0.65	0.030	0.082	0.124	0.047	0.210	0.100
	25	0.54	0.65	0.030	0.082	0.124	0.047	0.119	0.065
	30	0.46	0.65	0.030	0.071	0.112	0.047	0.119	0.065
3.2	15	0.60	0.65	0.034	0.082	0.124	0.047	0.179	0.075
	20	0.54	0.65	0.030	0.082	0.124	0.047	0.179	0.075
	25	0.51	0.65	0.030	0.071	0.112	0.047	0.179	0.075
	30	0.46	0.65	0.030	0.071	0.112	0.047	0.179	0.075
3.3	15	0.51	0.65	0.034	0.082	0.124	0.047	0.149	0.061
	20	0.45	0.65	0.030	0.082	0.124	0.047	0.149	0.058
	25	0.40	0.65	0.030	0.075	0.112	0.047	0.149	0.058
	30	0.40	0.65	0.030	0.061	0.094	0.047	0.149	0.058
3.4	15	0.45	0.60	0.030	0.082	0.124	0.047	0.119	0.083
	20	0.37	0.60	0.030	0.082	0.124	0.047	0.119	0.152
	25	0.37	0.60	0.030	0.061	0.094	0.047	0.119	0.152
	30	0.37	0.60	0.030	0.061	0.094	0.033	0.119	0.152
4	15	0.45	0.60	0.030	0.082	0.102	0.047	0.119	0.083
	20	0.37	0.60	0.030	0.082	0.102	0.047	0.089	0.152
	25	0.37	0.60	0.030	0.061	0.087	0.047	0.089	0.152
	30	0.37	0.60	0.030	0.061	0.087	0.033	0.089	0.152

a. Nonfenestration *U*-Factors shall be obtained from measurement, calculation or an approved source.”

14. Subsection 402.2, “Specific Insulation Requirements. (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended by adding Paragraph 402.2.11, “Insulation Installed in Walls,” to read as follows:

**“402.2.11 Insulation installed in walls.** Insulation batts installed in walls shall be totally surrounded by an enclosure on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing or other equivalent material approved by the building official.”

15. Subsection 402.3, “Fenestration. (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended to read as follows:

**“402.3 Fenestration. (Prescriptive).**

**402.3.1 U-factor.** An area-weighted average of fenestration products shall be permitted to satisfy the *U*-factor requirements.

**402.3.2 Glazed fenestration SHGC.** An area-weighted average of fenestration products more than 50 percent glazed shall be permitted to satisfy the SHGC requirements. In sub climate zones 2.1, 2.2, 3.1, 3.2 and 3.3, the maximum area-weighted average and the maximum SHGC shall not exceed 0.40.

**402.3.3 Glazed fenestration exemption.** Up to 1 percent [15 square feet (1.4 m<sup>2</sup>)] of glazed fenestration per dwelling unit shall be permitted to be exempt from *U*-factor and SHGC requirements in Section 402.1.1.

**402.3.4 Opaque door exemption.** One opaque door assembly is exempted from the *U*-factor requirement in Section 402.1.1.

**402.3.5 Thermally isolated sunroom [~~*U*-factor.~~** ~~For Zones 4 through 8, the maximum fenestration *U*-factor shall be 0.50 and the maximum skylight *U*-factor shall be 0.75.]~~ New windows and doors separating the sunroom from conditioned space shall meet the building thermal envelope requirements.

**402.3.6 Replacement fenestration.** Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for *U*-factor [~~and SHGC~~] in Table 402.3.7 [~~402.1.1~~].

**Exceptions:**

1. Replacement skylights shall have a maximum *U*-factor for 0.60 when installed in all sub climate zones except for 2.1.

2. For buildings constructed in conformance with an energy code as required by State of Texas Senate Bill Number 5, 77th Legislature, replacement fenestration units may comply with the original construction documents or applicable U-factor in Table 402.1.1.

**402.3.7 Prescriptive path for additions.** As an alternative for demonstrating compliance, additions with a conditioned floor area less than 500 square feet (46.5 m<sup>2</sup>) to existing single-family residential buildings and structures shall meet the prescriptive envelope component criteria in Table 402.3.7 for the sub climate zone applicable to the location. The U-factor of each individual fenestration product (windows, doors and skylights) shall be used to calculate an area-weighted average fenestration product U-factor for the addition, which shall not exceed the applicable listed values in Table 402.3.7. For additions, other than sunroom additions, the total area of fenestration products shall not exceed 40 percent of the gross wall and roof area of the addition. The R-values for opaque thermal envelope components shall be equal to or greater than the applicable listed values in Table 402.3.7.

Conditioned sunroom additions shall maintain thermal isolation and shall not be used as kitchens or sleeping rooms.

In sub climate zones 2.1, 2.2, 3.1, 3.2 and 3.3, the combined solar heat gain coefficient (the area weighted average) of all glazed fenestration products used in additions and as replacement windows in accordance with this section shall not exceed 0.40.”

16. Subsection 402.3, “Fenestration. (Prescriptive),” of Section 402, “Building Thermal Envelope,” of Chapter 4, “Residential Energy Efficiency,” of the 2006 International Energy Conservation Code is amended by adding Table 402.3.7, “Prescriptive Envelope Component Criteria Additions to and Replacement Windows For Existing Detached One- and Two-Family Dwellings,” to read as follows:

**“TABLE 402.3.7  
PRESCRIPTIVE ENVELOPE COMPONENT CRITERIA ADDITIONS TO AND  
REPLACEMENT WINDOWS FOR EXISTING DETACHED ONE- AND TWO-FAMILY  
DWELLINGS<sup>d</sup>**

SUB CLIMATE ZONES	MAXIMUM		MINIMUM				
	Fenestration U-factor	Ceiling R-value <sup>a,e</sup>	Wall R-value <sup>f</sup>	Floor R-value	Basement wall R-value <sup>b</sup>	Slab perimeter R-value	Crawl space wall R-value
2.1	0.75	R-26	R-13	R-11	R-5	R-0	R-5
2.2, 3.1, 3.2, 3.3 and 3.4	0.50	R-30	R-13	R-19	R-8	R-0	R-10
4	0.50	R-38	R-13	R-21	R-10	R-0	R-19

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- a. "Ceiling *R*-value" shall be required for flat or inclined (cathedral) ceilings. Floors over outside air shall meet "Ceiling *R*-value" requirements.
- b. Basement wall insulation to be installed in accordance with Section 402.2.6.
- c. "Crawl space wall *R*-value" shall apply to unventilated crawl spaces only. Crawl space insulation shall be installed in accordance with Section 402.2.8.
- d. Sunroom additions shall be required to have a maximum fenestration *U*-factor of 0.5. in all sub climate zones except sub climate zone 2.1. In all sub climate zones, the minimum ceiling *R*-value for sunroom additions shall be R-19 and the minimum wall *R*-value shall be R-13."

17. Subsection 403.2, "Ducts," of Section 403, "Systems (Mandatory)," of Chapter 4, "Residential Energy Efficiency," of the 2006 International Energy Conservation Code is amended to read as follows:

**"403.2 Ducts.**

**403.2.1 Insulation.** Supply and return ducts shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to a minimum of R-6.

**Exceptions:**

1. Ducts or portions thereof located completely inside the building thermal envelope.
2. Supply and return ducts can be insulated to a minimum of R-6, if the efficiency of the cooling equipment is upgraded to one SEER point above the NAECA (National Appliance Energy Conservation Act) Standard.

**403.2.2 Sealing.** All ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.3.1 of the *Dallas One- and Two-Family Dwelling [International Residential] Code.*"

18. Section 501, "General," of Chapter 5, "Commercial Energy Efficiency," of the 2006 International Energy Conservation Code is amended by adding Subsection 501.3, "Compliance Software Tools," to read as follows:

**"501.3 Compliance software tools.** Software tools used to demonstrate energy code compliance in accordance with this chapter and that are deemed acceptable by the building official may only utilize this code or the 2004 Edition of AHSSRAE 90.1 Energy Standard for Buildings Except Low-rise Residential Buildings when code edition and/or standard selection is available."

19. Paragraph 505.2.1, “Interior Lighting Controls,” of Subsection 505.2, “Lighting Controls. (Mandatory),” of Section 505, “Electrical Power and Lighting Systems (Mandatory),” of Chapter 5, “Commercial Energy Efficiency,” of the 2006 International Energy Conservation Code is amended to read as follows:

**“505.2.1 Interior lighting controls.** Each area enclosed by walls or floor-to-ceiling partitions shall have at least one manual control for the lighting serving that area. The required controls shall be located within the area served by the controls or be a remote switch that identifies the lights served and indicates their status. Each control device shall control a maximum of 2,500 square feet (232.26 square meters) of floor area for a space 10,000 square feet (929.03 square meters) or less and a maximum of 10,000 square feet (929.03 square meters) for a space greater than 10,000 square feet (929.03 square meters).

**Exceptions:**

1. Areas designated as security or emergency areas that must be continuously lighted.
2. Lighting in stairways or corridors that are elements of the means of egress.”

20. That the ASHRAE Standards of Chapter 6, “Referenced Standards,” of the 2006 International Energy Conservation Code are amended to read as follows:

**“ASHRAE** American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.  
 1791 Tullie Circle, NE  
 Atlanta, GA 30329-2305

Standard reference number	Title	Referenced in code section number
119—88(RA 1994)	Air Leakage Performance for Detached Single-family Residential Buildings . . . . .	Table 404.5.2(1)
146-1998	Testing and Rating Pool Heaters . . . . .	Table 504.2
13256-1 (2004)	Water-source Heat Pumps—Testing and Rating for Performance— Part 1: Water-to-air and Brine-to-air Heat Pumps (ANSI/ASHRAE/IESNA 90.1-2004) . . . . .	Table 503.2.3(2)
90.1—2004	Energy Standard for Buildings Except Low-rise Residential Buildings (ANSI/ASHRAE/IESNA 90.1-2004) . . . . .	501.1, 501.2, 501.3, 502.1.1, Table 502.2(2)
ASHRAE—2001	ASHRAE Handbook of Fundamentals-2004 . . . . .	402.1.4, Table 404.5.2(1), 503.2.1
ASHRAE—2004	ASHRAE HVAC Systems and Equipment Handbook-2004 . . . . .	503.2.1”

21. All chapters of the 2006 International Energy Conservation Code adopted by this ordinance are subchapters of Chapter 59 of the Dallas City Code, as amended.

22. All references in the 2006 International Energy Conservation Code to the fire code, building code, plumbing code, mechanical code, electrical code, residential code, existing building code, and fuel gas code refer, respectively, to Chapters 16, 53, 54, 55, 56, 57, 58, and 60 of the Dallas City Code.

SECTION 2. That a person violating a provision of this ordinance, upon conviction, is punishable by a fine not to exceed \$2,000. No offense committed and no liability, penalty, or forfeiture, either civil or criminal, incurred prior to the effective date of this ordinance will be discharged or affected by this ordinance. Prosecutions and suits for such offenses, liabilities, penalties, and forfeitures may be instituted, and causes of action pending on the effective date of this ordinance may proceed, as if the former laws applicable at the time the offense, liability, penalty, or forfeiture was committed or incurred had not been amended, repealed, reenacted, or superseded, and all former laws will continue in effect for these purposes.

SECTION 3. That Chapter 59 of the Dallas City Code, as amended, will remain in full force and effect, save and except as amended by this ordinance. Any existing structure, system, development project, or registration that is not required to come into compliance with a requirement of this ordinance will be governed by the requirement as it existed in the former law last applicable to the structure, system, development project, or registration, and all former laws will continue in effect for this purpose.

SECTION 4. That the terms and provisions of this ordinance are severable and are governed by Section 1-4 of Chapter 1 of the Dallas City Code, as amended.

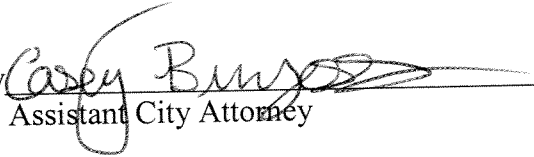
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SECTION 5. That this ordinance will take effect on April 1, 2008, and it is accordingly so ordained.

APPROVED AS TO FORM:

THOMAS P. PERKINS, JR., City Attorney

By   
Assistant City Attorney

Passed     **MAR 26 2008**