

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE OF THE CITY OF DENTON, TEXAS AMENDING CHAPTER 28, SPECIFICALLY SECTIONS 28-253 AND 28-254, OF THE CODE OF ORDINANCES TO PROVIDE FOR THE ADOPTION OF THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE, AS PUBLISHED BY THE INTERNATIONAL CODE COUNCIL; PROVIDING FOR AMENDMENTS THERETO; PROVIDING A PENALTY FOR VIOLATION OF A FINE NOT TO EXCEED \$2,000.00; PROVIDING FOR SEVERABILITY; REPEALING ALL ORDINANCES IN CONFLICT THEREWITH; AND PROVIDING AN EFFECTIVE DATE.

THE COUNCIL OF THE CITY OF DENTON TEXAS HEREBY ORDAINS:

SECTION 1. Chapter 28, Section 28-253 of the Code or Ordinances of the City of Denton is hereby amended in its entirety to read as follows:

**Sec. 28-253. Adoption of the energy conservation code.**

The International Energy Conservation Code, 2015 edition as published by the International Code Council is hereby adopted and designated as the energy conservation code for the city subject to the deletions and amendments enumerated in section 28-254. A copy of this code shall be maintained in the Office of the City Secretary and be available for public inspection.

SECTION 2.

**(1) Section C102/R102; add Section C102.1.2 and R102.1.2 to read as follows:**

**C102.1.2 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.

**R102.1.2 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. Regardless of the program or the path to compliance, each 1- and 2-family dwelling shall be tested for air and duct leakage as prescribed in Section R402.4 and R403.3.3 respectively.

**(2) Section C202 and R202; add the following definition:**

**PROJECTION FACTOR.** The ratio of the horizontal depth of the overhang, eave or permanently attached shading device, divided by the distance measured vertically from the bottom of the fenestration glazing to the underside of the overhang, eave or permanently attached shading device.

**(3) Section R202; add the following definition:**

**DYNAMIC GLAZING.** Any fenestration product that has the fully reversible ability to change its performance properties, including *U*-factor, solar heat gain coefficient (SHGC), or visible transmittance (VT).

**(4) Section R402.3.2 Glazed fenestration SHGC; amend by adding a paragraph and table following the exception to read as follows:**

Where vertical fenestration is shaded by an overhang, eave, or permanently attached shading device, the SHGC required in Table R402.1.2 shall be reduced by using the multipliers in Table R402.3.2 SHGC Multipliers for Permanent Projections.

**Table R402.3.2 SHGC Multipliers for Permanent Projections <sup>a</sup>**

| Projection Factor | SHGC Multiplier<br>(all Other Orientation) | SHGC Multiplier<br>(North Oriented) |
|-------------------|--|-------------------------------------|
| 0 - 0.10          | 1.00                                       | 1.00                                |
| >0.10 – 0.20      | 0.91                                       | 0.95                                |
| >0.20 – 0.30      | 0.82                                       | 0.91                                |
| >0.30 – 0.40      | 0.74                                       | 0.87                                |
| >0.40 – 0.50      | 0.67                                       | 0.84                                |
| >0.50 – 0.60      | 0.61                                       | 0.81                                |
| >0.60 – 0.70      | 0.56                                       | 0.78                                |
| >0.70 – 0.80      | 0.51                                       | 0.76                                |
| >0.80 – 0.90      | 0.47                                       | 0.75                                |
| >0.90 – 1.00      | 0.44                                       | 0.73                                |

<sup>a</sup> North oriented means within 45 degrees of true north.

**(5) Section R402.4.1.2 Testing; Add a last paragraph to read as follows:**

Mandatory testing shall only be performed by individuals that are certified to perform air infiltration testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

**(6) Section R402.4.1.2; add the following exception.**

Structures meeting limitations 1 thru 5 below as well as all of the requirements under Option 1 or Option 2 of table 402.4.1 shall be deemed to be in compliance with this code.

1. Limited to one- and two- family residences with a conditioned floor area between 1,000 and 6,000 square feet.
2. Limited to one- and two-family residences containing between 2 to 6 bedrooms.
3. Assumes all ductwork and mechanical equipment is located in the unconditioned attic.
4. Assumes typical wood framing in the walls and roof.
5. Assumes one of the following heating/cooling systems:
  - a. All electric system with a heat pump for heating, or
  - b. A system with electric cooling and natural gas heating.(Note: electric resistance strip heating does not qualify for this tradeoff.)

**Table 402.4.1**

| <b>Envelope Component</b>       | <b>Option #1</b>        | <b>Option #2</b>        |
|---------------------------------|-------------------------|-------------------------|
| R402.4 Air Leakage              | $\leq 4\text{ACH}^{50}$ | $\leq 4\text{ACH}^{50}$ |
| Wall Insulation <i>R</i> -value | $R_{13} + R_3^b$        | $R_{13} + R_3^b$        |
| Fenestration <i>U</i> -factor   | $\leq 0.32$             | $\leq 0.32$             |
| Fenestration SHGC               | $\leq 0.25$             | $\leq 0.25$             |
| Ceiling <i>R</i> -value         | $\geq R_{49}$           | $\geq R_{49}$           |
| Duct Insulation <i>R</i> -value | R8                      | R6                      |
| Radiant Barrier Required        | No                      | Yes                     |

<sup>a</sup> Except for the values listed in the table, all other mandatory code provisions are applicable.

<sup>b</sup> The first value listed is the *R*-value of cavity insulation, the second value is the *R*-value of the continuous insulation or insulated siding.

**(7) R403.3.3 Duct Testing (Mandatory); Add a last paragraph to read as follows:**

Mandatory testing shall only be performed by individuals that are certified to perform duct testing leakage testing certified by national or state organizations as approved by the building official. The certified individuals must be an independent third-party entity, and may not be employed; or have any financial interest in the company that constructs the structure.

**(8) Section C402.2.7/R402.2; Add Section C402.2.9 and R402.2.14 to read as follows:**

**Section C402.2.7/R402.2.14 Insulation installed in walls.** To insure that insulation remains in place, insulation installed in walls shall be totally enclosed on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing, or other equivalent material approved by the building official.

**(9) Section R405.4.2.1 add the following:**

5. Name, phone number, and certification number of the individual completing the compliance report. The preparer of the compliance report shall possess one of the following certifications: ICC (International Code Council) Commercial Energy Plans Examiner, ICC (International Code Council) Residential Energy Inspector/Plans Examiner, HERS (Home Energy Rating) rater, or may be a Texas Registered Architect or Texas Licensed Professional Engineer.

**(10) Section R405.4.2.2 add the following:**

4. (Remainder unchanged)... attached to a City of Denton Energy Compliance form.

**(11) Section R405.6.2; add the following sentence to the end of paragraph:**

Acceptable performance software simulation tools may include, but are not limited to, REM Rate™, Energy Gauge and IC3. Other performance software programs accredited by RESNET BESTEST and having the ability to provide a report as outlined in R405.4.2 may also be deemed acceptable performance simulation programs and may be considered by the building official.

**(12) TABLE R406.4 MAXIMUM ENERGY RATING INDEX; amend to read as follows:**

**TABLE R406.4<sup>1</sup>**  
**MAXIMUM ENERGY RATING INDEX**

| CLIMATE ZONE | ENERGY RATING INDEX |
|--------------|---------------------|
| 3            | 65                  |

<sup>1</sup> This table is effective until August 31, 2019.

**TABLE R406.4<sup>2</sup>**  
**MAXIMUM ENERGY RATING INDEX**

| CLIMATE ZONE | ENERGY RATING INDEX |
|--------------|---------------------|
| 3            | 63                  |

<sup>2</sup> The table is effective from September 1, 2019 to August 31, 2022.

**TABLE R406.4<sup>3</sup>**  
**MAXIMUM ENERGY RATING INDEX**

| CLIMATE ZONE | ENERGY RATING INDEX |
|--------------|---------------------|
| 3            | 59                  |

<sup>3</sup> This table is effective on or after September 1, 2022.

**(13) C407.4.2 Additional Documentation; *add the following:***

6. Compliance reports, all additional documentation, and a final compliance and commissioning verification report shall be prepared by a qualified third party energy verifier. The third party energy verifier shall include his name, phone number, and certification number on each document provided to the City. The third party verifier shall be certified with one of the following certifications: ICC (International Code Council) Commercial Energy Plans Examiner, ICC (International Code Council) Commercial Energy Inspector, HERS (Home Energy Rating) rater, or may be a Texas Registered Architect or Texas Licensed Professional Engineer.

SECTION 3. If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect any other provision or application, and to this end the provisions of this ordinance are severable.

SECTION 4. That all provisions of the ordinances of the City of Denton in conflict with the provision of this ordinance are hereby repealed, and all other provisions of the ordinances of the City or Denton, not in conflict with the provision of this ordinance, shall remain in full force and effect.

SECTION 5. That any person violating any provision of this ordinance shall, upon conviction, be fined a sum not to exceed two thousand dollars (\$2,000.00). Each day that a provision of this Ordinance is violated shall constitute a separate and distinct offence.

SECTION 6. That this ordinance shall become effective November 1, 2016 and the City secretary is hereby directed to cause the caption of this ordinance to be published twice in the Denton Record Chronicle, the official newspaper of the City of Denton, Texas, within ten (10) days of the date of its passage.

PASSED AND APPROVED this, the \_\_\_\_\_ day of \_\_\_\_\_, 2016

\_\_\_\_\_  
CHRIS WATTS, MAYOR

ATTEST:  
JENNIFER WALTERS, CITY SECRETARY

BY:\_\_\_\_\_

APPROVED AS TO LEGAL FORM:  
ANITA BURGESS, CITY ATTORNEY

BY:\_\_\_\_\_