

2021 International Energy Conservation Code

ORDINANCE NO. 1247

AN ORDINANCE ADOPTING THE INTERNATIONAL ENERGY CONSERVATION CODE, 2021 EDITION, REGULATING THE DESIGN OF BUILDING ENVELOPES FOR ADEQUATE THERMAL RESISTANCE AND LOW AIR LEAKAGE AND THE DESIGN AND SELECTION OF MECHANICAL, ELECTRICAL, SERVICE WATER-HEATING AND ILLUMINATION SYSTEMS AND EQUIPMENT IN THE CITY OF SOUTHLAKE; PROVIDING FOR THE ADOPTION OF LOCAL AMENDMENTS THERETO; PROVIDING FOR RECORDING OF SUCH CODE AS A PUBLIC RECORD; PROVIDING THAT THIS ORDINANCE SHALL BE CUMULATIVE OF ALL ORDINANCES; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY FOR VIOLATIONS HEREOF; PROVIDING A SAVINGS CLAUSE; PROVIDING FOR PUBLICATION IN PAMPHLET FORM; PROVIDING FOR PUBLICATION IN THE OFFICIAL NEWSPAPER; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Southlake is a home rule city acting under its charter adopted by the electorate pursuant to Article XI, Section 5 of the Texas Constitution and Chapter 9 of the Local Government Code; and

WHEREAS, the City Council of the City of Southlake deems it necessary to adopt this ordinance governing the design of building envelopes for adequate thermal resistance and low air leakage and the design of mechanical electrical, service water-heating and illumination systems and equipment, in order to protect the health, safety and welfare of the citizens of the City of Southlake.

WHEREAS, beginning in the spring of 2021, NCTCOG's Regional Codes Coordinating Committee (RCCC) and its five advisory boards conducted open review meetings over a one-year period to review the 2021 editions of the International Codes and to develop regional amendments. Their review and recommendations were completed and endorsed by NCTCOG's Executive Board in October, 2021. Now NCTCOG encourages jurisdictions in North Central Texas to adopt the 2021 International Energy Conservation Code along with its respective regional amendments.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF
SOUTHLAKE, TEXAS:**

**Section 1
Adoption**

That the International Energy Conservation Code, 2021 Edition, published by the International Code Council, including the standards referenced therein, is hereby adopted as the Energy Conservation Code of the City of Southlake regulating the design of building envelopes for adequate thermal resistance and low air leakage and the design and selection of mechanical, electrical, service water-heating and illumination systems and equipment in the City of Southlake. A True and correct copy of this document is referenced in Exhibit "A."

**Section 2
Amendments**

That the 2021 International Energy Conservation Code, as adopted herein, is hereby amended as provided in Exhibit "B" incorporated herein and attached hereto for all purposes of this ordinance. The City of Southlake, Texas may from time to time determine that additional local modifications to the Energy Conservation Code are necessary and appropriate to meet the unique needs of the City of Southlake, Texas. To effectuate these local modifications, the City Council shall enact individual ordinances amending this Ordinance, fully setting forth the change to be made in the Energy Conservation Code. These amendments shall be consolidated as Exhibit "B" to this Ordinance.

**Section 3
Recording**

The material contained in Exhibits "A" and "B" to this ordinance shall not be included in the formal municipal codification of ordinances but shall be maintained as a public record in the office of the City Secretary and/or the office of Building Inspections and will be available for public inspection and copying during regular business hours.

**Section 4
Cumulative Clause**

This ordinance shall be cumulative of all provisions of ordinances of the City of Southlake, Texas, except where the provisions of this ordinance are in direct conflict with the provisions of such ordinances, in which event the conflicting provisions of such ordinances are hereby repealed.

**Section 5
Severability**

It is hereby declared to be the intention of the City council that the phrases, clauses, sentences, paragraphs, and sections of this ordinance are severable, and if any phrase, clause sentence, paragraph or section of this ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this ordinance, since the same would have been

enacted by the City Council without the incorporation in this ordinance of any such unconstitutional phrase, clause, sentence, paragraph or section.

Section 6 Penalty

Any person, firm or corporation who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement of any of the provisions of this ordinance shall be fined not more than Two Thousand Dollars (\$ 2,000.00) for all violations involving zoning, fire safety or public health and sanitation, including dumping or refuse, and shall be fined not more than five hundred dollars (\$500) for all other violations of this ordinance each day that a violation is permitted to exist shall constitute a separate offense.

Section 7 Saving Clause

All rights and remedies of the City of Southlake are expressly saved as to any and all violations of the provisions of any ordinances affecting the regulation of the design of building envelopes for adequate thermal resistance and low air leakage and the design and selection of mechanical, electrical service water-heating and illumination systems and equipment within the City which have accrued at the time of the effective date of this ordinance; and, as to such accrued violations and all pending litigation, both civil and criminal, whether pending in court or not, under such ordinances, same shall not be affected by this ordinance but may be prosecuted until final disposition by the courts.

Section 8 Publication

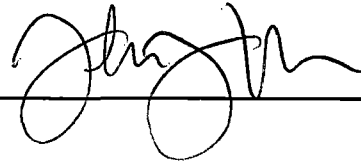
The City Secretary of the City of Southlake is hereby authorized to publish this ordinance in book or pamphlet form for general distribution among the public, and the operative provisions of this ordinance as so published shall be admissible in evidence in all courts without further proof than the production thereof.

The City Secretary of the City of Southlake is hereby directed to publish in the official newspaper of the City of Southlake, the caption, penalty clause, publication clause and effective date of this ordinance one time within ten days after passage of this ordinance, as required by Section 3.13 of the Charter of the City of Southlake.

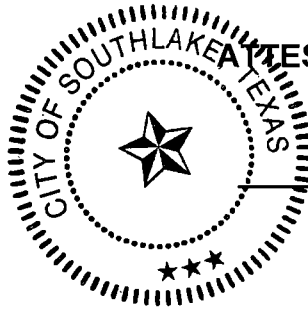
Section 10 Effective Date

This ordinance shall be in full force and effect from and after its passage and publication as required by law but not before May 1, 2022.

APPROVED ON FIRST READING THIS 5 DAY OF APRIL, 2022.



MAYOR

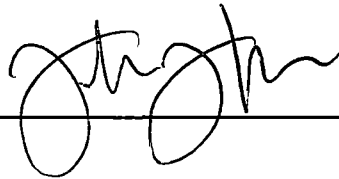


ATTEST:

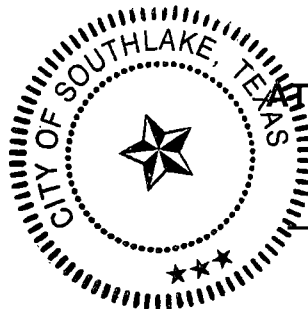


CITY SECRETARY

APPROVED ON SECOND READING THIS 19 DAY OF APRIL, 2022.



MAYOR



ATTEST:



CITY SECRETARY

APPROVED AS TO FORM AND LEGALITY:



CITY ATTORNEY

PUBLISHED: 4/23/22

EFFECTIVE: 4/20/22

EXHIBIT A

2021 International Energy Conservation Code Complete Edition

Located in the Building Inspections Office
1400 Main St., Suite 250
City of Southlake, Texas
76092

EXHIBIT B

Amendments to the 2021 International Energy Conservation Code

The following sections, paragraphs, and sentences of the *2021 International Energy Conservation Code* (IECC) are hereby amended as follows: Standard type is text from the IECC. Underlined type is text inserted. ~~Lined through type is deleted text from IECC.~~ A double (**) asterisk at the beginning of a section identifies an amendment carried over from the 2018 edition of the code and a triple (***) asterisk identifies a new or revised amendment with the 2021 code. Section numbers in parenthesis represent the corresponding numbers of the energy provisions of the 2021 International Residential Code for parallel amendments.

****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 R402.4.1.2 (N1102.4.1.2) and R403.3.3 (N1103.3.3) respectively.

(Reason: This amendment is added to allow alternative compliance in accordance with Texas HB 1365, 78th Legislature. Codified in Chapter 388 Texas Building Energy Performance Standards: §388.003(i). The last sentence to Section R102.1.2 was added to insure that every house is tested in accordance with the mandatory provisions of the code.)

****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).

(Reason: This term is referenced in Section R402.3.2. This definition of DYNAMIC GLAZING is also found in the Commercial provisions of the code.)

*****Section R401.2.5 Additional Energy efficiency; deleted in its entirety.**

(Reason: The deletion is based on the Complexity of the section and lack of tools to verify compliance and due to conflict with HB2439, 86th Regular Session)

*****Table 402.1.2 Maximum Assembly/Climate Zone items: amend table as follows.**

Climate Zone	Fenestration U-Factor ^f	Ceiling U-Factor
2	.40	0.26-0.29
3	0.30 0.32	0.26-0.29

***Table 402.1.3 Insulation/Climate Zone items: amend table as follows.

Climate Zone	Fenestration U-Factor ^{b, i}	Ceiling R-Value	Wood Frame Wall R-Value	Slab R-Value & Depth
2	.40	49-42	13 or 0 + 10	0
3	0.30 0.32	49-42	19 or 13+53ci, 0+15	10ci, 2-ft 0

(Reason: Amended table to meet current building techniques, market conditions and product availability. Amended to avoid conflict between North Texas termite zone and slab R value in code.)

NEW WORDING:

***Section R402.4.1 Building thermal envelope; add section R402.4.1.4 to read as follows

R402.4.1.4 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R402.1.2 or R402.1.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit enclosure area. For each tested unit that exceeds the maximum air leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

(Reason: For many multifamily (R2 classifications) projects, it is very costly and time consuming to test each dwelling unit for projects where there may be dozens of dwelling units in each building. Considering that the same tradesman generally constructs a building, it is reasonable to deem that construction practices are consistent and that if a reasonable sampling of units tested pass then all units would pass. These amendments are in line with the commercial provisions of the commercial 2021 IECC and RESNET sampling guidelines.)

*** Section R402.4.6 Electrical and Communication outlet boxes. Delete after the first sentence to read as follows.

~~***R402.4.6 Electrical and communication outlet boxes (air-sealed boxes). Electrical and communication outlet boxes installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. Electrical and communication outlet boxes shall be tested in accordance with NEMA OS 4, Requirements for Air-Sealed Boxes for Electrical and Communication Applications, and shall have an air leakage rate of not greater than 2.0 cubic feet per minute (0.944 L/s) at a pressure differential of 1.57 psf (75 Pa). Electrical and communication outlet boxes shall be marked "NEMA OS 4" or "OS 4" in accordance with NEMA OS 4. Electrical and communication outlet boxes shall be installed per the manufacturer's instructions and with any supplied components required to achieve compliance with NEMA OS 4.~~

(Reason: Allow for alternatives and Avoid requiring proprietaries products.)

***Section C402.5.2 Dwelling and sleeping unit enclosure testing. Added the underlined to read as follows

C402.5.2 Dwelling and sleeping unit enclosure testing. The building thermal envelope shall be tested in accordance with ASTM E779, ANSI/RESNET/ICC 380, ASTM E1827 or an equivalent method approved by the code official. The measured air leakage shall not exceed 0.30 cfm/ft² (1.5 Us m²) of the testing unit enclosure area at a pressure differential of 0.2 inch water gauge (50 Pa). Where multiple dwelling units or sleeping units or other occupiable conditioned spaces are contained within one building thermal envelope, each unit shall be considered an individual testing unit, and the building air leakage shall be the weighted average of all testing unit results, weighted by each testing unit's enclosure area. Units shall be tested separately with an unguarded blower door test as follows:

1. Where buildings have fewer than eight testing units, each testing unit shall be tested.
2. For buildings with eight or more testing units, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit enclosure area. For each tested unit that exceeds the maximum air leakage rate, an additional two three units shall be tested, including a mixture of testing unit types and locations.

(Reason: For many multifamily (R2 classifications) projects, it is very costly and time consuming to test each dwelling unit for projects where there may be dozens of dwelling units in each building. Considering that the same tradesman generally constructs a building, it is reasonable to deem that construction practices are consistent and that if a reasonable sampling of units tested pass then all units would pass. These amendments are in line with RESNET sampling guidelines.)

*****Section R403.3 Ducts; add section R403.3.8 to read as follows**

R403.3.8 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R403.3.5, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that exceeds the maximum duct leakage rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

(Reason: For many multifamily (R2 classifications) projects, it is very costly and time consuming to test each dwelling unit for projects where there may be dozens of dwelling units in each building. Considering that the same tradesman generally constructs a building, it is reasonable to deem that construction practices are consistent and that if a reasonable sampling of units tested pass then all units would pass. These amendments are in line with the commercial provisions of the commercial 2021 IECC and RESNET sampling guidelines.)

*****Section R403.6 Mechanical Ventilation; add section R403.6.4 to read as follows**

R403.6.4 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R403.6.3, the greater of seven units or 20 percent of the testing units in the building shall be tested, including a top floor unit, a ground floor unit, a middle floor unit, and a unit with the largest testing unit floor area. For each tested unit that does not meet the minimum ventilation rate, an additional three units shall be tested, including a mixture of testing unit types and locations. Where buildings have fewer than eight testing units, each testing unit shall be tested.

(Reason: For many multifamily (R2 classifications) projects, it is very costly and time consuming to test each dwelling unit for projects where there may be dozens of dwelling units in each building. Considering that the same tradesman generally constructs a building, it is reasonable to deem that construction practices are consistent and that if a reasonable sampling of units tested pass then all units would pass. These amendments are in line with the commercial provisions of the commercial 2021 IECC IECC and RESNET sampling guidelines.)

*****Section R404.1; revised in its entirety to read as follows:**

Section R404.1 Lighting equipment (Mandatory). Not less than 75 percent of the lamps in permanently installed lighting fixtures or not less than 90 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

(Reason: This retains the 2015 language will allow for more flexibility.)

*****Section R404.2 Interior Lighting Controls; deleted in its entirety.**

(Reason: The deletion is to eliminate confusion as the intent does not reflect what is written.)

*****R405.2 Performance-based compliance. Added to underlined to read as follows.**

R405.2 Performance-based compliance. Compliance based on total building performance requires that a *proposed design* meets all of the following:

1. The requirements of the sections indicated within Table R405.2.
2. The building thermal envelope greater than or equal to levels of efficiency and solar heat gain coefficients in Table R402.1.1 or R402.1.3 of the 2009 *International Energy Conservation Code*.
3. An annual energy cost that is less than or equal to the annual energy cost of the 2021 standard reference design or 8% less than the annual energy cost of the 2018 standard reference design. Energy prices shall be taken from a source *approved* by the code official, such as the Department of Energy, Energy Information Administration's State Energy Data System Prices and Expenditures reports. Code officials shall be permitted to require time-of-use pricing in energy cost calculations.

Exception: The energy use based on source energy expressed in Btu or Btu per square foot of *conditioned floor area* shall be permitted to be substituted for the energy cost. The source energy multiplier for electricity shall be 3.16. The source energy multiplier for fuels other than electricity shall be 1.1.

(Reason: At the time of the approval of these recommended amendments, software to calculate and show compliance with section R405 of the 2021 IECC was not available. The underlined amendment allows an alternative option to show compliance until software is available.)

****TABLE R406.4 (N1106.4) MAXIMUM ENERGY RATING INDEX; amend to read as follows:**

**TABLE R406.4 (N1106.4) ¹
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	52-63
3	52-63

¹ This table is effective until August 31, 2022.

**TABLE R406.4 (N1106.4) ²
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	52-59
3	52-59

² The table is effective from September 1, 2022 to August 31, 2025.

**TABLE R406.4 (N1106.4) ³
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	52-57
3	52-57

³ The table is effective from September 1, 2025 to August 31, 2028.

**TABLE R406.4 (N1106.4) ³
MAXIMUM ENERGY RATING INDEX**

CLIMATE ZONE	ENERGY RATING INDEX
2	52-55
3	52-55

⁴ This table is effective on or after September 1, 2028.

(Reason: The tables reflect the values and timetable set forth in HB 3215, 87th Regular Session Codified in Chapter 388 Texas Building Energy Performance Standards: §388.003.)

*****Section R408 ADDITIONAL EFFICIENCY PACKAGE OPTIONS; deleted in its entirety.**

(Reason: The deletion is based on the omission of R401.2.5 and R408 no longer applies and due to conflict with HB2439, 86th Regular Session.)

NOTE: HB 3215 was signed into law by the Governor on June 14, 2021 as part of the 87th Regular Session Codified in Chapter 388 Texas Building Energy Performance Standards: §388.003 (i), (j), and (k). HB 3215 now allows a **Home Energy Rating System Index (ex. HERS Index)** utilizing ANSI/RESNET/ICC Standard 301 (as it existed on January 1, 2021) shall be considered in compliance with State law provided that:

- *The home includes compliance with the Mandatory requirements of 2018 IECC Section R406.2.*
- *The home includes compliance with Building thermal envelope provisions of Table R402.1.2 or Table R402.1.4 of the 2018 IECC*

END