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.~~ Section numbers in parenthesis represent the corresponding numbers of the energy provisions of the 2021 *International Residential Code* for parallel amendments.

Section C102/R102; amend by adding Sections C102.1.2 and R102.1.2 (N1101.4.1) 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 (N1101.4.1) 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. 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 (N1101.4.1) was added to insure that every house is tested in accordance with the mandatory provisions of the code.)

Section R105.2.1; amend to read as follows:

R105.2.1 Footing and foundation inspection. Inspections ~~shall verify the~~ associated with footings and foundations shall verify compliance with the code as to ~~insulation~~ *R*-value, location, thickness, depth of burial, and protection of insulation as required by the code and *approved* plans and specifications.

Section R105.2.2; amend to read as follows:

R105.2.2 Framing and Air Barrier Rough-in Inspection. Inspections at framing and rough-in shall be made before application of ~~interior finish~~ insulation and shall verify compliance with the code as to: ~~types of insulation and corresponding *R*-values and their correct location and proper installation; fenestration properties such as *U*-factor and SHGC and proper installation;~~ air leakage controls as required by the code; and *approved* plans and specifications.

Section R105.2.3; amend to read as follows:

R105.2.3 ~~Plumbing Rough-in Inspection.~~ ~~Inspections at plumbing rough-in shall verify compliance as required by the code and *approved* plans and specifications as to types of insulation and corresponding *R*-values and protection, and required controls.~~ **Insulation and Fenestration Rough-in Inspection.** Inspections at framing and rough-in shall be made before application of interior finish and shall verify compliance with the code as to: types of insulation and corresponding R-values and their correct location and proper installation; fenestration properties such as U-factor and SHGC and proper installation.

Section R105.2.4; change to read as follows:

R105.2.4 ~~Mechanical Rough-in Inspection.~~ ~~Inspections at mechanical rough-in shall verify compliance as required by the code and *approved* plans and specifications as to installed HVAC equipment type and size, required controls, system insulation and corresponding *R*-value, system air leakage control, programmable thermostats, dampers, whole-house ventilation, and minimum fan efficiency.~~ **~~Exception:~~**

~~Systems serving multiple dwelling units shall be inspected in accordance with Section C105.2.4.~~ **Plumbing Rough-in Inspection.** Inspections at plumbing rough-in shall verify compliance as required by the code and approved plans and specifications as to types of insulation and corresponding *R*-values and protection and required controls.

Section R105.2.5; change to read as follows:

R105.2.5 ~~Final Inspection.~~ ~~The *building* shall have a final inspection and shall not be occupied until *approved*. The final inspection shall include verification of the installation of all required *building* systems, equipment and controls and their proper operation and the required number of high-efficacy lamps and fixtures.~~ **Mechanical Rough-in Inspection.** Inspections at mechanical rough-in shall verify compliance as required by the code and approved plans and specifications as to installed HVAC equipment type and size, required controls, system insulation and corresponding *R*-value, system air leakage control, programmable thermostats, dampers, whole-house ventilation, and minimum fan efficiency. **Exception:** Systems serving multiple dwelling units shall be inspected in accordance with Section C105.2.4.

Section 105.2.6; change to read as follows:

R105.2.6 Final Inspection. The building shall have a final inspection and shall not be occupied until approved. The final inspection shall include verification of the installation of all required building systems, equipment, and controls and their proper operation and the required number of high-efficacy lamps and fixtures.

Section R202 (N1101.6); *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.

*(Reason: The amendment to **Section 402.3.2 (N1102.3.2) Glazed fenestration SHGC** was proposed by the TAB. ESL determined the proposal to be not less restrictive than the 2015 IECC. This added definition is necessary as part of that amendment. The amendment will provide additional options for SHGC selection.)*

Section R202 (N1101.6); *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 DYMANIC GLAZING is also found in the Commercial provisions of the code.)

Section R401.2.5; delete this section in its entirety.

~~**R401.2.5 Additional energy efficiency.** This section establishes requirements applicable to all compliance approaches to achieve additional energy efficiency.~~

~~1. For buildings complying with Section R401.2.1, one of the additional efficiency package options shall be installed according to Section R408.2.~~
~~2. For buildings complying with Section R401.2.2, the building shall meet one of the following:~~
~~2.1. One of the additional efficiency package options in Section R408.2 shall be installed without including such measures in the proposed design under Section R405; or~~

~~2.2. The proposed design of the building under Section R405.2 shall have an annual energy cost that is less than or equal to 95 percent of the annual energy cost of the standard reference design.~~

~~3. For buildings complying with the Energy Rating Index alternative Section R401.2.3, the Energy Rating Index value shall be at least 5 percent less than the Energy Rating Index target specified in Table R406.5.~~

~~The option selected for compliance shall be identified in the certificate required by Section R401.3.~~

Table R402.1.2; amend by changing the WOOD FRAME WALL U-FACTOR for CLIMATE ZONE 3 to read "0.082."

Table R402.1.2; amend to read as follows:

CLIMATE ZONE	FENESTRATION *U*-FACTOR[f]	CEILING *U*-Factor
2	0.40	0.29 ~~0.026~~
3	0.32 ~~0.30~~	0.29 ~~0.026~~

(Reason: Carries forward the value in the 2015 IECC/IRC.)

Table R402.1.2 (N1102.1.2) in Section R402.1.2 is amended by amending the Fenestration U-factor for Climate Zone 3 to read "0.35."

CLIMATE ZONE	FENESTRATION U-FACTOR
3	~~0.30~~ 0.35

Table R402.1.2; amended by amending the Fenestration U-factor for Climate Zone 3 to read "0.35."

CLIMATE ZONE	FENESTRATION U-FACTOR
3	~~0.32~~ 0.35

Table R402.1.3 is amended to read as follows:

Climate Zone	*Fenestration U-Factor[b,i]*	*Ceiling R-Value*	*Wood Frame Wall R-Value*	*Slab R-Value & Depth*
2	.40	42 ~~49~~	~~13 or 0&10ci~~ 13 or 0 + 10	0
3	0.32 ~~0.30~~	42 ~~49~~	~~20 or 13&5ci[h] or 0&15ci[h]~~ 19 or 13+3ci, 0+15	0

Section C402.2/R402.2; is amended by adding Sections C402.2.8/R402.2.13 to read as follows:

Section C402.2.8/R402.2.13 Insulation installed in walls. To ensure 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, netting, or other equivalent material approved by the building official.

Section R402.3.2 (N1102.3.2) is amended 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.

Projection Factor	SHGC Multiplier (all Other Orientation)	SHGC Multiplier (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

Section R402.4.1.2 (N1102.4.1.2) is amended by amending the first sentence to read as follows:

R402.4.1.2 Testing. The building or dwelling unit shall be tested ~~for air leakage~~ and verified as having an air leakage rate of not exceeding 5 air changes per hour in *Climate Zone* 3. {Remainder of text unchanged.}

Section R402.4.1.2 (N1102.4.1.2) is further amended by adding the following paragraph to the end of the Section 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.

Section R402.4 is amended by adding Section 402.4.1.4 and table to read as follows:

R402.4.1.4 Testing option—ACH tradeoff. As an option to the air leakage rate set out in Section R402.4.1.2 (N1102.4.1.2), 1-and-2-family homes meeting all of the listed criteria below and the thermal envelope requirements in Table R402.4.1.3 (N1102.4.1.3) will be considered compliant when tested and verified as having an air leakage rate to not less than or equal to four air changes per hour when tested and reported in accordance with the testing standards and reporting criteria listed in Section R402.4.1.2 (N1102.4.1.2).

The compliance equivalency is limited as follows:

1. Limited to a conditioned floor area between 1,000 and 6,000 square feet,
2. Limited to between 2 and 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, and
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.

Dwellings using electric resistance strip heating do not qualify for this tradeoff.

TABLE R402.4.1.4 (N1102.4.1.3)[a]

Envelope Component	Option #1	Option #2
R402.4 Air Leakage	≤ 4 ACH50	≤ 4 ACH50
Wall Insulation R-value	R13 + R3b	R13 + R3b
Fenestration U-factor	≤ 0.32	≤ 0.32
Fenestration SHGC	≤ 0.25	≤ 0.25
Ceiling R-value	≥ R49	≥ R49
Duct Insulation R-value	R8	R6
Radiant Barrier Required	No	Yes

[a] Except for the values listed in the table, all other mandatory code provisions are applicable.

The first value listed is the R-value of cavity insulation, the second value is the R-value of the continuous insultation or insulated siding.

Section R402.4 is amended by adding Section R402.4.1.5 to read as follows:

Section R402.4.1.5 Sampling options for R2 multifamily dwelling units. For buildings with eight or more testing units that must be tested as required by R402.4.1.2 or R402.4.1.3, 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.

Section R402.4 is amended by adding Sections R402.4.1.6 and R402.4.1.7 to read as follows:

R402.4.1.6 Testing options for R2 multifamily dwelling units. As an option to the air leakage rate set out in Section R402.4.1.2, multifamily dwelling units will be considered compliant when tested and verified as having an air leakage rate to the air leakage rate set out in either Section R402.4.1.4.1 or Section R402.4.1.4.2 when tested and reported in accordance with the testing standards and reporting criteria listed in Section R402.4.1.2.

R402.4.1.6.1 Total air leakage rate for interior multifamily dwelling units. Interior multifamily dwelling units with a measured, "unguarded" total air leakage result of 5.3 ACH50 or less shall be considered compliant.

R402.4.1.6.2 Total air leakage rate for corner multifamily dwelling units. Corner multifamily units with a measured, "unguarded" total leakage result of less than 5.0 shall be considered compliant.

R402.4.1.7 Sampling options for R2 multifamily dwelling units. For buildings having three or more dwelling units, a minimum of 15% of the dwelling units in each building must be tested as required by Section R402.4.1.2. Prior to beginning sampling for testing, "Initial Testing" is required for each multifamily property. "Initial Testing" shall consist of the 3rd party testing contractor performing the required tests on at least three consecutive dwelling units. Test results from the "Initial Testing" must satisfy minimum code requirements before sampling is permitted. Dwelling units selected for the "Initial Testing" must be within the same building. Dwelling units selected for "Initial Testing" shall not be included in a "sample group" or counted toward the minimum 15% of dwelling units tested. The building official shall randomly select the three dwelling units for "Initial Testing." The building official may delegate the random selection to the designated 3rd party testing contractor.

R402.4.1.7.1 Sample group Identification and Sampling. The builder shall identify a "sample group" which may be a building, floor, fire area, or portion thereof. All of the dwelling units within the "sample group" must be at the same stage of construction and must be ready for testing. The building official shall randomly select at least 15% of dwelling units from each "sample group" for testing. The building official may delegate the random selection to the designated 3rd party testing contractor.

If each tested dwelling unit within a "sample group" meets the minimum code requirements, then all dwelling units in the "sample group" are considered to meet the minimum code requirements.

Before a building may be deemed compliant with the testing as required, each "sample" group must be deemed compliant with the minimum code requirements. The sum total of all of the tested dwelling units across all "sample groups" shall not be less than a minimum of 15% of the dwelling units in a building.

R402.4.1.7.2 Failure to Meet Code Requirement(s). If any dwelling units within the identified "sample group" fail to meet a code requirement as determined by testing, the builder will be directed to correct the cause(s) of failure, and 30% of the remaining dwelling units in the "sample group" will be randomly selected for testing by the building official, or third-party testing contractor, regarding the specific cause(s) of failure.

If any failures occur in the additional dwelling units, all remaining dwelling units in the sample group must be individually tested for code compliance.

A multifamily property with three failures within a 90-day period is no longer eligible to use the sampling protocol in that community or project until successfully repeating "Initial Testing." Sampling may be reinstated after at least three consecutive dwelling units are individually verified to meet all code requirements.

A Certificate of Occupancy may not be issued for any building until testing has been performed and deemed to satisfy the minimum code requirements on the dwelling unit(s) identified for testing.

Section C402.5.2 is amended to read as follows:

Section 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/ft^2 (1.5 L/s m^2) 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.

Section R402.4.6 is amended to read as follows:

Section 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.~~

Section R403.3.3 (N1103.3.3) is amended by adding the following to the end of the section:

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.

Section R403.3.3 is amended by adding 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.

Section R403.3.4 is amended by adding Section R403.3.4.2 to read as follows:

R403.3.4.2 Sampling options for R2 multifamily dwelling units. For buildings having three or more dwelling units, a minimum of 15% of the dwelling units in each building must be tested as required by Section R403.3.3. Prior to beginning sampling for testing, "Initial Testing" is required for each multifamily property. "Initial Testing" shall consist of the 3rd party testing contractor performing the required tests on at least three consecutive dwelling units. Test results from the "Initial Testing" must satisfy minimum code requirements before sampling is permitted. Dwelling units selected for "Initial Testing" shall not be included in a "sample group" or counted toward the minimum 15% of dwelling units tested. The building official shall randomly select the three dwelling units for "Initial Testing." The building official may delegate the random selection to the designated 3rd party testing contractor.

R403.3.4.2.1 Sample group Identification and Sampling. The builder shall identify a "sample group" which may be a building, floor, fire area, or portion thereof. All of the dwelling units within the "sample group" must be at the same stage of construction and must be ready for testing. The building official shall randomly select at least 15% of dwelling units from each "sample group" for testing. The building official may delegate the random selection to the designated 3rd party testing contractor.

If each tested dwelling unit within a "sample group" meets the minimum code requirements, then all dwelling units in the "sample group" are considered to meet the minimum code requirements.

Before a building may be deemed compliant with the testing as required, each "sample group" must be deemed compliant with the minimum code requirements. The sum total of all of the tested dwelling units across all "sample groups" shall not be less than a minimum of 15% of the dwelling units in a building.

R403.3.4.2.2 Failure to Meet Code Requirement(s). If any dwelling units within the identified "sample group" fail to meet a code requirement as determined by testing, the builder will be directed to correct the cause(s) of failure, and 30% of the remaining dwelling units in the "sample group" will be randomly selected for testing by the building official, or third-party testing contractor, regarding the specific cause(s) of failure. If any failures occur in the additional dwelling units, all remaining dwelling units in the sample group must be individually tested for code compliance.

A multifamily property with three failures within a 90-day period is no longer eligible to use the sampling protocol in that community or project until successfully repeating "Initial Testing." Sampling may be reinstated after at least three consecutive dwelling units are individually verified to meet all code requirements.

A Certificate of Occupancy may not be issued for any building until testing has been performed and deemed to satisfy the minimum code requirements on the dwelling unit(s) for testing.

Section R403.6 is amended by adding 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.

Section C403.7.4 is amended to read as follows:

C403.7.4 Energy recovery ventilation systems (Mandatory). ~~Energy recovery ventilation systems shall be provided as specified in either Section C403.7.4.1 or C403.7.4.2, as applicable.~~ Where the supply airflow rate of a fan system exceeds the values specified in Tables C403.7.4(1) and C403.7.4(2), the system shall include an energy recovery system. The energy recovery system shall be configured to provide a change in the enthalpy of the outdoor air supply of not less than 50 percent of the difference between the outdoor air and return air enthalpies, at design conditions. Where an air economizer is required, the energy recovery system shall include a bypass or controls that permit operations of the economizer as required by Section C403.5.

Exception: An energy recovery ventilation system shall not be required in any of the following conditions:

1. Where energy recovery systems are prohibited by the International Mechanical Code.
2. Laboratory fume hood systems that include not fewer than one of the following features:
   - 2.1 Variable-air-volume hood exhaust and room supply systems configured to reduce exhaust and makeup air volume to 50 percent or less of design values.
   - 2.2 Direct makeup (auxiliary) air supply equal to or greater than 75 percent of the exhaust rate, heated not warmer than 2°F (1.1°C) above room setpoint, cooled to not cooler than 3°F (1.7°C) below room setpoint, with no humidification added, and no simultaneous heating and cooling used for dehumidification control.
3. Systems serving spaces that are heated to less than 60°F (15.5°C) and that are not cooled.
4. Where more than 60 percent of the outdoor hearing energy is provided from site-recovered or site-solar energy.
5. Heating energy recovery in Climate Zones 1 and 2.
6. Cooling energy recovery in Climate Zones 3C, 4C, 5B, 5C, 6B, 7 and 8.
7. Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
8. Where the largest source of air exhausted at a single location at the building exterior is less than 75 percent of the design outdoor air flow rate.
9. Systems expected to operate less than 20 hours per week at the outdoor air percentage covered by Table C403.7.4(1).
10. Systems exhausting toxic, flammable, paint or corrosive fumes or dust.
11. Commercial kitchen hoods used for collecting and removing grease vapors and smoke.
12. Individual ventilation systems that serve an individual dwelling unit or sleeping unit.

Section C403.11. is amended by adding Section C403.11.2 to read as follows:

Section C403.11.2 Duct and plenum insulation and sealing (Mandatory). Supply and return air ducts and plenums shall be insulated with not less than R-6 insulation where located in unconditioned spaces and where located outside the building with not less than R-8 insulation in *Climate Zones* 1 through 4 and not less than R-12 insulation in *Climate Zones* 5 through 8. Where located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by not less than R-8 insulation in *Climate Zones* 1 through 4 and not less than R-12 insulation in *Climate Zones* 5 through 8.

Exceptions:

1. Where located within equipment.
2. Where the design temperature difference between the interior and exterior of the duct or plenum is not greater than 15°F (8°C).

Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section 603.9 of the *International Mechanical Code*.

Environmental ducts and plenums installed in vertical chases, both supply and exhaust, where the ducts or plenums will not be accessible after construction completion, shall be leak tested in accordance with the SMACNA HVAC Air Leakage Test Manual to the installed ductwork class and pressure requirements.

Documentation shall be furnished demonstrating that representative sections totaling not less than 25 percent of the duct area have been tested and that all tested sections comply with the requirements of this section.

Section R404.1 (N1104.1) is amended in its entirety to read as follows:

Section R404.1 (N1104.1) ~~General~~ Lighting equipment (Mandatory). ~~This section covers the minimum efficiency of, and controls for, service water-heating equipment and insulation of service hot water piping.~~ Not less than 75 percent of the lamps in permanently installed lighting fixtures or not less than 75 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.

Section R404.2 is deleted.

Section R405.2 (N1105.2) is amended to read as follows:

Section 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 Expenditure reports. Code officials shall be permitted to require time-of-use pricing in energy cost calculations.

Exceptions:

1. The energy used 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.

2. For one- and two-family dwellings, the maximum envelope leakage of 4 ACH50 is permitted provided the envelope leakage in the Standard Reference Design is 3 ACH50 and all other requirements of Section R405 are met, including all other mandatory measures. The annual energy cost or source energy usage of the Proposed Design must be equal to or less than that of the Standard Reference Design.

3. For multifamily or townhomes and buildings classified as Group R2 and Group R4 of three stories or less, the maximum envelope leakage of less than 5 ACH50 is permitted provided the envelope leakage in the Standard Reference Design is 3 ACH50 and all other requirements of Section R405 are met, including all other mandatory measures. The annual energy cost or source energy usage of the Proposed Design must be equal to or less than that of the Standard Reference Design.

Section R405.5.2 is amended to read as follows:

Section R405.5.2 Specific approval. Performance analysis tools meeting the applicable provisions of Section R405 shall be permitted to be *approved*. Tools are permitted to be *approved* based on meeting a specified threshold for a jurisdiction. The *code official* shall be permitted to approve such tools for a specified application or limited scope. 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.

Section C405.9 is deleted:

Table R406.5 is amended to read as follows:

TABLE R406.5[1]

Maximum Energy Rating Index

Climate Zone	Energy Rating Index
3	~~57~~ 65

[1]This table is effective until August 31, 2019.

TABLE R406.5[2]

Maximum Energy Rating Index

Climate Zone	Energy Rating Index
3	~~57~~ 63

[2]This table is effective from September 1, 2019 to August 31, 2022.

TABLE R406.5[3]

Maximum Energy Rating Index

Climate Zone	Energy Rating Index
3	~~57~~ 59

[3]This table is effective on or after September 1, 2022.

MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
2	~~57~~ 63
3	~~57~~ 63

[1]This table is effective until August 31, 2022.

TABLE R406.5 (N1106.4)[2]

MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
2	~~57~~ 59
3	~~57~~ 59

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

TABLE R406.5 (N1106.4)[3]

MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
2	57
3	57

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

TABLE R406.5 (N1106.4)[4]

MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX
2	~~57~~ 55
3	~~57~~ 55

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

Section R408 is deleted

END