GA Dept. of Community Affairs (DCA)
60 Executive Park South, N.E.
Atlanta, Georgia 30329-2231

PROPOSED CODE AMENDMENTS
2015 International Energy Conservation Code (IECC)
February 23, 2017

DCA Staff: Seti Ordoobadi
Phone: (404) 679-3104
Date Rev.: 02-25-2017

Note Proposed Amendments: (added text to the code is: underlined, deleted text to the code is: ~~struck through~~)

#	SECTION	SUMMARY	PROPONENT	ACT.*
1)	2015 IECC C402.5, ASHRAE 90.1: 5.4.3	Proposed Amendment to require Light Commercial Building Blower Door Testing - (Amend IECC C402.5 and add to ASHRAE 90.1-2013 5.4.3) Regardless of which commercial code is used to demonstrate compliance, air leakage testing shall be required for all mid-rise Multifamily housing units containing up to six stories of residential units. Testing shall follow all the same requirements as low-rise Multifamily (3-stories and under)	Mike Barcik, Southface Representing (GEFA)	
2)	2015 IECC C402.5, ASHRAE 90.1: 5.4.3	Proposed Amendment to require Light Commercial Building Blower Door Testing - (Amend IECC C402.5 and add to ASHRAE 90.1-2013) Regardless of which commercial code is used to demonstrate compliance, air leakage testing shall be required for all new, conditioned (both heated and cooled) commercial buildings < 5,000 s.f. Test results must demonstrate air tightness with an Envelope Leakage Ratio (ELR_{75}) < 0.5 where, $ELR_{75} = CFM_{75}$ / square footage of building shell area CFM of Leakage at 75 Pa (0.3 inches of w.c.) may be measured directly or extrapolated from leakage measured with a blower door at 50 Pa. For conversion purposes, $CFM_{75} = CFM_{50} \times 1.30$ **Exceptions**: warehouses and storage spaces that are not fully conditioned (both heated and cooled) and buildings with *commercial kitchen hoods* **Example 1**. A one-story building measures 50 x 100 (5,000 s.f.) with 12' ceilings. The building shell area is the floors, walls and ceilings that make up the thermal envelope. In this example, • the building envelope (footprint) floor is 50x100 = 5,000 s.f. • the top level ceiling is 50x100 = 5,000 s.f. • the walls are 300' x 12' = 3,600 s.f. • The total shell area is 13,600 s.f. In order for the measured ELR_{75} to pass, the leakage must be less than 6,800 CFM_{75}. $ELR_{75} = CFM_{75}$ / square footage of building shell area = 6,799 /13,600 < 0.5 **Example 2**. A two-story building with 12' ceilings measures 50 x 40 on each level (2,000 s.f. each floor, 4,000 s.f. total). The building shell area is the floors, walls (including the band between the first and second floors) and ceilings that make up the thermal envelope. In this example, • the building envelope (footprint) floor is 50x40 = 2,000 s.f. • the top level ceiling is 50x40 = 2,000 s.f. • the walls are (50'+40'+50'+40') x (12'+1'+12')' = 4,500 s.f. • The total shell area is 8,500 s.f. In order for the measured ELR_{75} to pass, the leakage must be less than 4,250 CFM_{75}. $ELR_{75} = CFM_{75}$ / square footage of building shell area = 4,249 /8,500 < 0.5	Mike Barcik, Southface Representing (GEFA)	

#	SECTION	SUMMARY	PROPONENT	ACT.*
3)	2015 IECC C402.5.3	**Delete Section C402.5.3 Rooms containing fuel-burning appliances without substitution**: ~~C402.5.3 Rooms containing fuel-burning appliances. In *Climate Zones* 3 through 8, where open combustion air ducts provide combustion air to open combustion space conditioning fuel burning appliances, the appliances and combustion air openings shall be located outside of the *building thermal envelope* or enclosed in a room isolated from inside the thermal envelope. Such rooms shall be sealed and insulated in accordance with the envelope requirements of Table C402.1.3 or C402.1.4, where the walls, floors and ceilings shall meet the minimum of the below grade wall *R*-value requirement. The door into the room shall be fully gasketed, and any water lines and ducts in the room insulated in accordance with Section C403. The combustion air duct shall be insulated, where it passes through conditioned space, to a minimum of R-8.~~ ~~Exceptions:~~ ~~1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.~~ ~~2. Fireplaces and stoves complying with Sections 901 through 905 of the *International Mechanical Code*, and Section 2111.13 of the *International Building Code*.~~	Andrea Papageorge, Southern Company Gas	
4)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8,~~ in its entirety.	Barry Dameron, Cobb School Distr.	
5)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Barry Spurlock, Spurlock Associates	
6)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Brian Griffin, Quality Air, Inc.	
7)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Bruce Stuart, Rockdale County Public Schools	
8)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8,~~ in its entirety.	Doug Roland, Cobb School Dist.	
9)	2015 IECC C403.2.8	Removal of Section C403.2.8 titled “Kitchen Exhaust Systems”, including its corresponding Table C403.2.8, in its entirety.	Dennis Bledsoe, Clayton Schools Dist.	
10)	2015 IECC C403.2.8	Removal of Section C403.2.8 titled “Kitchen Exhaust Systems”, including its corresponding Table C403.2.8 in its entirety.	Edward Buhler, Southern A & E	
11)	2015 IECC C403.2.8	**Revise Section C403.2.8 Kitchen exhaust systems**. ~~Replacement air introduced directly into the exhaust hood cavity shall not be greater than 10% of the hood exhaust airflow rate.~~ <u>Replacement</u> conditioned <u>supply</u> air delivered to any space shall not exceed the greater of the following: 1. The ventilation rate required to meet the space heating or cooling load. 2. The hood exhaust flow minus the available transfer air from adjacent space where available transfer air is considered that portion of outdoor ventilation air not required to satisfy other exhaust needs, such as restrooms, and not required to maintain pressurization of adjacent spaces. <u>3. The difference between supply and exhaust airflows for compensating hoods, plus the outdoor air required to satisfy other exhaust needs, such as restrooms, and to maintain pressurization of adjacent spaces.</u> ~~Where total kitchen hood exhaust airflow rate is greater than 5,000 cfm (2360 L/s), each hood shall be …….~~ (remainder of original section to be deleted)	Gregg Cox, Matheson-Ball & Associates	

#	SECTION	SUMMARY	PROPONENT	ACT.*
12)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Jack Gardner, Douglas County School System	
13)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	James Griffin, Quality Air, Inc.	
14)	2015 IECC C403.2.8	**Revise Section C403.2.8 Kitchen exhaust systems**. ~~Replacement air introduced directly into the exhaust hood cavity shall not be greater than 10% of the hood exhaust airflow rate~~. Replacement conditioned supply air delivered to any space shall not exceed the greater of the following: 1. The ventilation rate required to meet the space heating or cooling load. 2. The hood exhaust flow minus the available transfer air from adjacent space where available transfer air is considered that portion of outdoor ventilation air not required to satisfy other exhaust needs, such as restrooms, and not required to maintain pressurization of adjacent spaces. 3. The difference between supply and exhaust airflows for compensating hoods, plus the outdoor air required to satisfy other exhaust needs, such as restrooms, and to maintain pressurization of adjacent spaces. Where total kitchen hood exhaust airflow rate is greater than 5,000 cfm (2360 L/s), each hood shall be ……. (remainder of original section to be deleted)	James Matheson, Matheson Ball & Associates	
15)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Joe Perno, Barrow County Schools	
16)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Josh Patton, Jackson County School	
17)	C403.2.8	Removal ~~of Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Kenneth Elsberry, Paulding School Dist.	
18)	C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its ~~Table C403.2.8~~, in its entirety.	Michael Kicher, Matheson-Ball & Assoc.	
19)	C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its ~~Table C403.2.8~~, in its entirety.	Michael Waldbillig, Southern A&E	
20)	C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Mike Dillon, Spurlock & Assoc.	
21)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Pankaj Daiya, Bartow School Syst.	
22)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Phil Parrott, Cherokee School Distr.	
23)	2015 IECC C403.2.8	Remove the entire code section ~~"C403.2.8 Kitchen Exhaust Systems"~~ from the 2015 International Energy Conservation Code and the corresponding table ~~"Table C403.2.8 Maximum Net Exhaust Flow Rate, CFM per Linear Foot of Hood Length.~~	Robert Scott Brown, Matheson-Ball & Assoc.	
24)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Scott Buchberger, Robertson Loia Roof	
25)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Scott Burgess, Oconee County Schools	
26)	2015 IECC C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems''~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Tim Fisher, Gwinnett County Schools	
27)	C403.2.8	Removal of ~~Section C403.2.8 titled "Kitchen Exhaust Systems"~~, including its corresponding ~~Table C403.2.8~~, in its entirety.	Tim Williams, Rome County Schools	

<table>
<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td>28)</td><td>2015 IECC C407.3 and C407.4.2</td><td>Revise Sections C407.3 and C407.4.2 as follows:
C407.3 Performance-based compliance. Compliance based on total building performance requires that a proposed building (proposed design) be shown to have an annual energy cost that is less than or equal to the annual energy cost of the 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 Price and Expenditure Report. Code officials shall be permitted to require time-of-use pricing in energy cost calculations. ~~Nondepletable energy collected off site shall be treated and priced the same as purchased energy. Energy from nondepletable energy sources collected on site shall be omitted from the annual~~ The reduction in energy cost of the proposed design~~.~~ <u>associated with on-site renewable energy shall be not more than 5% of the total energy cost. The amount of renewable energy purchased from off-site sources shall be the same in the standard reference design and the proposed design.</u>
Exception: Jurisdictions that require site energy (1 kWh = 3413 Btu) rather than energy cost as the metric of comparison.

C407.4.2 Additional documentation. The code official shall be permitted to require the following documents:
1. Documentation of the building component characteristics of the standard reference design.
2. Thermal zoning diagrams consisting of floor plans showing the thermal zoning scheme for standard reference design and proposed design.
3. Input and output reports from the energy analysis simulation program containing the complete input and output files, as applicable. The output file shall include energy use totals and energy use by energy source and end-use served, total hours that space conditioning loads are not met and any errors or warning messages generated by the simulation tool as applicable.
4. An explanation of any error or warning messages appearing in the simulation tool output.
5. A certification signed by the builder providing the building component characteristics of the proposed design as given in Table C407.5.1(1).
<u>6. Documentation of the reduction in energy use associated with on-site renewable energy.</u></td><td>Eric Lacey, RECA</td><td></td></tr>
<tr><td>29)</td><td>Table C407.5.1(1)</td><td>Revise Table C407.5.1(1)
Incorporate the following approved 2015 IECC code change as of the end of the 2016 ICC Group B Public Comment Hearings: CE 259-16 Part I (Commercial provisions) TABLE C407.5.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS
<table>
<tr><th>BUILDING COMPONENT CHARACTERISTICS</th><th>STANDARD REFERENCE DESIGN</th><th>PROPOSED DESIGN</th></tr>
<tr><td>Space use classification</td><td>Same as proposed</td><td>The space use classification shall be chosen in accordance with Table C405.5.2 for all areas of the building covered by this permit. Where the space use classification for a building is not known, the building shall be categorized as an office building.</td></tr>
<tr><td rowspan="5">Roofs</td><td>Type: Insulation entirely above deck</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table C402.1.4</td><td>As proposed</td></tr>
<tr><td>Solar absorptance: 0.75</td><td>As proposed</td></tr>
<tr><td>Emittance: 0.90</td><td>As proposed</td></tr>
<tr><td rowspan="5">Walls, above-grade</td><td>Type: Mass wall where proposed wall is mass; otherwise steel-framed wall</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table C402.1.4</td><td>As proposed</td></tr>
<tr><td>Solar absorptance: 0.75</td><td>As proposed</td></tr>
<tr><td>Emittance: 0.90</td><td>As proposed</td></tr>
</table>
Continued on the next page</td><td>Roger LeBrun, (VELUX America LLC)</td><td></td></tr>
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#	SECTION	SUMMARY	PROPONENT	ACT.*
	Table C407.5.1(1)	Continued from the previous page	Roger LeBrun, VELUX America	

Walls, below-grade	Type: Mass wall	As proposed
	Gross area: same as proposed	As proposed
	U-Factor: as specified in Table C402.1.4 with insulation layer on interior side of walls	As proposed
Floors, above-grade	Type: joist/framed floor	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
Floors, slab-on-grade	Type: Unheated	As proposed
	F-factor: as specified in Table C402.1.4	As proposed
Opaque doors	Type: Swinging	As proposed
	Area: Same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
Vertical fenestration other than opaque doors	Area	
	1.The proposed ~~glazing~~ vertical fenestration area; where the proposed ~~glazing~~vertical fenestration area is less than 40 percent of above-grade wall area.	As proposed
	2.40 percent of above-grade wall area; where the proposed ~~glazing~~ vertical fenestration area is 40 percent or more of the above-grade wall area.	
	U-factor: as specified in Table C402.4	As proposed
	SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used	As proposed
	External shading and PF: None	As proposed
Skylights	Area	
	1.The proposed skylight area; where the proposed skylight area is less than that permitted by Section C402.1 ~~3 percent of gross area of roof assembly~~.	As proposed
	2. The area permitted by Section C402.1 ~~3 percent of gross area of roof assembly~~; where the proposed skylight area exceeds that permitted by Section C402.1 ~~is 3 percent or more of gross area of roof assembly~~	
	U-factor: as specified in Table C402.4	As proposed
	SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.	As proposed
Lighting, interior	The interior lighting power shall be determined in accordance with Section C405.4.2. Where the occupancy of the building is not known, the lighting power density shall be 1.0 Watt per square foot (10.7 W/m^2) based on the categorization of buildings with unknown space classification as offices.	As proposed
Lighting, exterior	The lighting power shall be determined in accordance with Table C405.5.2(2). Areas and dimensions of tradable and nontradable surfaces shall be the same as proposed.	As proposed

SWHF = Service water heat recovery factor, DWHR = Drain water heat recovery.
a. Where no heating system exists or has been specified, the heating system shall be modeled as fossil fuel. The system characteristics shall be identical in both the standard reference design and proposed design.
b. The ratio between the capacities used in the annual simulations and the capacities determined by sizing runs shall be the same
for both the standard reference design and proposed design.
c. Where no cooling system exists or no cooling system has been specified, the cooling system shall be modeled as an air-cooled single-zone system, one unit per thermal zone. The system characteristics shall be identical in both the standard reference design and proposed design.
d. If an economizer is required in accordance with Table C403.3 and where no economizer exists or is specified in the proposed design, then a supply -air economizer shall be provided in the standard reference design in accordance with Section C403.3.
e. The SWHF shall be applied as follows:
1. Where potable water from the DWHR unit supplies not less than one shower and not greater than two showers, of which the drain water from the same showers flows through the DWHR unit then SWHF = [1 – (DWHR unit efficiency · 0.36)].
2. Where potable water from the DWHR unit supplies not less than three showers and not greater than four showers, of which the drain water from the same showers flows through the DWHR unit then SWHF = [1 – (DWHR unit efficiency · 0.33)].
3. Where potable water from the DWHR unit supplies not less than five showers and not greater than six showers, of which the drain water from the same showers flows through the DWHR

<table>
<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td>30)</td><td>2015 IECC R401.2</td><td>Revise Section R401.2 as follows:
R401.2 Compliance. Projects shall comply with <u>all provisions of Chapter 4 labeled “Mandatory”</u> and one of the following:
1. Sections R401 through R404.
2. Section R405<u>.</u> <s>and the provisions of Sections R401 through R404 labeled “Mandatory.”</s>
3. <s>An energy rating index (ERI) approach in</s> Section R406.
<u>4. The most recent version of REScheck, keyed to the 2015 IECC.</u></td><td>Eric Lacey, RECA</td><td></td></tr>
<tr><td>31)</td><td>2015 IECC R401.2.1</td><td>Delete Section R401.2.1 and replace with the following:
<u>R401.2.1 (Mandatory) – Where trade-offs are used, the minimum R-values, maximum U-factors, and maximum SHGCs for thermal envelope components in projects complying under this code (including the use of REScheck) shall be according to Table R401.2.1.</u>
<u>Table R401.2.1
MINIMUM R-VALUES AND MAXIMUM U-FACTORS AND SHGC
FOR ENVELOPE COMPONENTS WHEN TRADE-OFFS ARE USED</u>
<table>
<tr><th><u>CLIMATE ZONE</u></th><th><u>FENES-TRATION U-FACTOR</u></th><th><u>SKYLIGHT U-FACTOR</u></th><th><u>FENES-TRATION SHGC</u></th><th><u>CEILING R-VALUE</u></th><th><u>WOOD FRAME WALL R-VALUE</u></th><th><u>ATTIC KNEE WALL R-VALUE</u></th><th><u>MASS WALL R-VALUE</u></th><th><u>FLOOR R-VALUE</u></th><th><u>BASEMENT WALL R-VALUE</u></th><th><u>SLAB R-VALUE & DEPTH</u></th><th><u>CRAWL SPACE WALL R-VALUE</u></th><th><u>ROOFLINE INSULATION R- VALUE[a]</u></th></tr>
<tr><td><u>2</u></td><td><u>0.50</u></td><td><u>0.75</u></td><td><u>0.30</u></td><td><u>30</u></td><td><u>13</u></td><td><u>18</u></td><td><u>4/6</u></td><td><u>13</u></td><td><u>0</u></td><td><u>0</u></td><td><u>0</u></td><td><u>21</u></td></tr>
<tr><td><u>3</u></td><td><u>0.50</u></td><td><u>0.65</u></td><td><u>0.30</u></td><td><u>30</u></td><td><u>13</u></td><td><u>18</u></td><td><u>5/8</u></td><td><u>19</u></td><td><u>5/13</u></td><td><u>0</u></td><td><u>5/13</u></td><td><u>21</u></td></tr>
<tr><td><u>4</u></td><td><u>0.35</u></td><td><u>0.60</u></td><td><u>0.30</u></td><td><u>38</u></td><td><u>13</u></td><td><u>18</u></td><td><u>5/10</u></td><td><u>19</u></td><td><u>10/13</u></td><td><u>10, 2ft</u></td><td><u>10/13</u></td><td><u>21</u></td></tr>
</table>
<u>a. Unvented attic assemblies shall comply with IRC Section R806.5.</u></td><td>Eric Lacey, RECA</td><td></td></tr>
<tr><td>32)</td><td>2015 IECC Tables R402.1.2 and R402.1.4</td><td>Revise Tables R402.1.2 and R402.1.4 as follows:
TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT
<table>
<tr><th>CLIMATE ZONE</th><th>CEILING R-VALUE</th><th>WOOD FRAME WALL R-VALUE</th><th><u>ATTIC KNEE WALL R-VALUE</u></th><th>MASS WALL R-VALUE</th><th>FLOOR R-VALUE</th><th>BASEMENT WALL R-VALUE</th><th>SLAB R-VALUE & DEPTH</th><th>CRAWL SPACE WALL R-VALUE</th></tr>
<tr><td>2</td><td>38</td><td>13</td><td><u>18</u></td><td>4/6</td><td>13</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td>38</td><td>20 or 13+5</td><td><u>20 or 13+5</u></td><td>8/13</td><td>19</td><td>5/13</td><td>0</td><td>5/13</td></tr>
<tr><td>4</td><td>49</td><td>20 or 13+5</td><td><u>20 or 13+5</u></td><td>8/13</td><td>19</td><td>10/13</td><td>10, 2ft</td><td>10/13</td></tr>
</table>
TABLE R402.1.4
EQUIVALENT U-FACTORS
<table>
<tr><th>Climate Zone</th><th>CEILING U-FACTOR</th><th>FRAME WALL U-FACTOR</th><th><u>ATTIC KNEE WALL U-FACTOR</u></th><th>MASS WALL U-FACTOR</th><th>FLOOR WALL U-FACTOR</th><th>BASEMENT WALL U-FACTOR</th><th>CRAWL SPACE WALL U-FACTOR</th></tr>
<tr><td>2</td><td>0.030</td><td>0.084</td><td><u>0.065</u></td><td>0.165</td><td>0.064</td><td>0.360</td><td>0.477</td></tr>
<tr><td>3</td><td>0.030</td><td>0.060</td><td><u>0.060</u></td><td>0.098</td><td>0.047</td><td>0.091</td><td>0.136</td></tr>
<tr><td>4</td><td>0.026</td><td>0.060</td><td><u>0.060</u></td><td>0.098</td><td>0.047</td><td>0.059</td><td>0.065</td></tr>
</table></td><td>Eric Lacey, RECA</td><td></td></tr>
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<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td>33)</td><td>Tables R402.1.2 and 402.1.4</td><td>Revise Tables R402.1.2 and R402.1.4 as follows:
TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT
<table>
<tr><th>CLIMATE ZONE</th><th>FENESTRATION U-FACTOR</th><th>SKYLIGHT U-FACTOR</th><th>GLAZED FENESTRATION SHGC</th></tr>
<tr><td>2</td><td>~~0.40~~ 0.35</td><td>~~0.65~~ 0.55</td><td>0.25</td></tr>
<tr><td>3</td><td>0.35</td><td>0.55</td><td>0.25</td></tr>
<tr><td>4</td><td>0.35</td><td>0.55</td><td>~~0.40~~ 0.25</td></tr>
</table>
TABLE R402.1.4
EQUIVALENT U-FACTORS
<table>
<tr><th>CLIMATE ZONE</th><th>FENESTRATION U-FACTOR</th><th>SKYLIGHT U-FACTOR</th><th>GLAZED FENESTRATION SHGC</th></tr>
<tr><td>2</td><td>~~0.40~~ 0.35</td><td>~~0.65~~ 0.55</td><td>0.25</td></tr>
<tr><td>3</td><td>0.35</td><td>0.55</td><td>0.25</td></tr>
<tr><td>4</td><td>0.35</td><td>0.55</td><td>0.25</td></tr>
</table></td><td>Eric Lacey, RECA</td><td></td></tr>
<tr><td>34)</td><td>Tables R402.1.2 and R402.1.4</td><td>Revise Table R402.1.2 as follows:
Table R402.1.2
Insulation and Fenestration Requirements By Component
<table>
<tr><th>Climate Zone</th><th>Fenestration U-Factor[b]</th><th>Skylight [b] U-Factor</th><th>Glazed Fenestration SHGC[b,e]</th><th>Ceiling R-value</th><th>Wood Frame Wall R-Value</th><th>Mass Wall R-Value[i]</th><th>Floor R-Value</th><th>Basement[c] Wall R-Value</th><th>Slab[d] R-Value & Depth</th><th>Crawl Space[c] Wall R-Value</th></tr>
<tr><td>2</td><td>0.40</td><td>0.65</td><td>0.25</td><td>38</td><td>13</td><td>4/6</td><td>13</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>3</td><td>0.35</td><td>0.55</td><td>0.25</td><td>38</td><td>~~20 or 13+5[h]~~
15 or 13+2[h]</td><td>8/13</td><td>19</td><td>5/13[f]</td><td>0</td><td>5/13</td></tr>
<tr><td>4 except Marine</td><td>0.35</td><td>0.55</td><td>0.40</td><td>49</td><td>~~20 or 13+5[h]~~
15 or 13+2[h]</td><td>8/13</td><td>19</td><td>10/13</td><td>10, 2ft</td><td>10/13</td></tr>
</table>
h. The first value is cavity insulation, the second is continuous insulation, so R-13+~~5~~2 means R-13 cavity plus R-~~5~~2 continuous insulation.
(all other footnotes remain unchanged)
TABLE R402.1.4
Equivalent U-Factors
<table>
<tr><th>Climate Zone</th><th>Fenestration U-Factor</th><th>Skylight [b] U-Factor</th><th>Ceiling U-Factor</th><th>Frame Wall U-Factor</th><th>Mass Wall U-Factor[b]</th><th>Floor U-Factor</th><th>Basement[c] Wall U-Factor</th><th>Crawl Space[c] Wall U-Factor</th></tr>
<tr><td>2</td><td>0.40</td><td>0.65</td><td>0.030</td><td>0.084</td><td>0.165</td><td>0.064</td><td>0.360</td><td>0.477</td></tr>
<tr><td>3</td><td>0.35</td><td>0.55</td><td>0.030</td><td>~~0.060~~
0.079</td><td>0.098</td><td>0.047</td><td>0.091[c]</td><td>0.136</td></tr>
<tr><td>4 except Marine</td><td>0.35</td><td>0.55</td><td>0.026</td><td>~~0.060~~
0.079</td><td>0.098</td><td>0.047</td><td>0.059</td><td>0.065</td></tr>
</table>
(All footnotes remain unchanged)</td><td>Nick Wortel, APA
The Engineered Wood Association</td><td></td></tr>
<tr><td>35)</td><td>2015 IECC R402.2.1</td><td>Revise Section 402.2.1 Ceilings with attic spaces.
402.2.1 Ceilings with attic spaces. (Beginning of section left unchanged)…. in Section 402.1.4. For HVAC attic platforms used for locating and servicing equipment, R-19 (maximum U-0.047) shall be deemed to meet the requirements of R-~~30/~~38/49 (maximum U-~~0.035/~~0.030/0.025) in the ceiling. R-19 is deemed acceptable for up to 32 square feet of attic decking per HVAC system. R-19 shall be deemed acceptable for a maximum 32 inch wide passage to the HVAC system as referenced under M1305.1.3 of the International Residential code. (Effective January 1, 2011)</td><td>Randy Nicklas, ICYNENE, Inc.</td><td></td></tr>
</table>

#	SECTION	SUMMARY	PROPONENT	ACT.*
36)	2015 IECC R402.2.14	**Add a new Section 402.2.14 to read as follows:** **Insulation Installation Details** **Wall and ceiling** insulation that makes up portions of the building thermal envelope in GA residences shall be installed to Passing Grade quality. Two criteria affect installed insulation grading: **voids/ gaps** (in which no insulation is present in a portion of the overall insulated surface) and **compression/incomplete fill** (in which the insulation does not fully fill out or extend to the desired depth). <u>Voids/Gaps</u> o Voids or gaps in the insulation are only occasional and very small for Passing Grade (< 1% of overall component surface area) <u>Compression/Incomplete Fill</u> o Compression/Incomplete Fill for both *air permeable insulation* (e.g., fiberglass, cellulose) and *air impermeable insulation* (e.g., spray polyurethane foam) must be less than 1 inch in depth or less than 20% of the intended depth, whichever is more stringent. The allowable area of compression/incomplete fill must be less than 5% of the overall insulated surface to achieve a Passing Grade. o Any compression/incomplete fill with a **depth** greater than the above specifications (up to 1" or 20% of the intended depth, whichever is more stringent) shall not achieve a Passing Grade. <u>Additional Wall Insulation Requirements</u> o All vertical air permeable insulation shall be installed in substantial contact with an air barrier on all six (6) sides. <u>*Exception*</u>: Unfinished basements and fireplaces (insulation shall be restrained to stay in place). For unfinished s, air permeable insulation and associated framing in a framed cavity wall shall be installed less than ¼" from the basement wall surface. o Attic kneewall details – Attic kneewalls shall be insulated to a total R-value of at least R-18 through any combination of cavity and continuous insulation. Air permeable insulation shall be installed with a fully sealed attic-side air barrier (e.g., OSB with seams caulked, rigid insulation with joints taped, etc.). Attic kneewalls with air impermeable insulation shall not require an additional attic-side air barrier. **Underfloor insulation** that makes up portions of the building thermal envelope in GA residences shall be installed to Passing Grade quality. Two criteria affect installed insulation grading: **voids/ gaps** (in which no insulation is present in a portion of the overall insulated surface) and **compression/incomplete fill** (in which the insulation does not fully fill out or extend to the desired depth). <u>Voids/Gaps</u> o Voids or gaps in the insulation are minimal for Passing Grade (< 2% of overall component surface area) <u>Compression/Incomplete Fill</u> o Compression/Incomplete Fill for both *air permeable insulation* (e.g., fiberglass, cellulose) and *air impermeable insulation* (e.g., spray polyurethane foam) must be less than 1 inch in depth or less than 20% of the intended depth, whichever is more stringent. The allowable area of compression/incomplete fill must be less than 10% of the overall insulated surface to achieve a Passing Grade. o Any compression/incomplete fill with a **depth** greater than the above specifications (up to 1" or 20% of the intended depth, whichever is more stringent) shall not achieve a Passing Grade.	Abe Kruger, SK Collaborative	

#	SECTION	SUMMARY	PROPONENT	ACT.*
37)	R402.4.1.2	Suggested adjustments for residential envelope leakage testing. The 2015 IECC as written requires < 3 ACH50 for all homes in Climate Zones 3 & 4 and < 5 ACH50 for all homes in Climate Zone 2. Amend the following: **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour ~~in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8~~ for all houses permitted in the state of GA during calendar year 2018. After this transition year, the following staggered target requirements shall be in place: Less than 5 ACH50 for Home size < 1,000* s.f. (this would apply to majority of Multifamily units) Less than 4 ACH50 for Home size ≥ 1,000* s.f. and < 2,500** s.f. Less than 3 ACH50 for Homes size ≥ 2,500** s.f. * – could adjust up to 1,500 max. ** – could adjust up to 3,000 max. As an alternative to ACH50, compliance for any size home may be attained by achieving an ELR50 < 0.25 where ELR50 is defined as CFM50 / shell area of building thermal envelope (s.f.) Multifamily BD testing may optionally: Employ multiple fans in adjacent units (commonly referred to as Guarded BD testing) to minimize effect of leakage to adjacent units (not required). Employ a sampling protocol of 1 in 4 units per floor (if sampled unit passes, the remaining up to three units are deemed to comply; if sampled unit fails, it must be sealed and retested and the remaining up to three units must also be tested) Testing shall be conducted in accordance with …	David Goulding, Ensign Building Solutions; Mike Barcik, Southface, Representing (GEFA)	
38)	R402.4.4	**Delete Section R402.4.4 without substitution:** ~~R402.4.4 Rooms containing fuel-burning appliances. In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening shall be located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope. Such rooms shall be sealed and insulated in accordance with the envelope requirements of Table R402.1.2, where the walls, floors and ceilings shall meet not less than the basement wall *R*-value requirement. The door into the room shall be fully gasketed and any water lines and ducts in the room insulated in accordance with Section R403. The combustion air duct shall be insulated where it passes through conditioned space to a minimum of R-8.~~ ~~Exceptions:~~ ~~1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.~~ ~~2. Fireplaces and stoves complying with Section R402.4.2 and Section R1006 of the *International Residential Code*.~~	Andrea Papageorge, Southern Company Gas	
39)	2015 IECC R403.3	**R403.3 (N1102.3) Ducts.** Ducts and air handlers shall be installed in accordance with Sections R403.3.1 through ~~R403.3.5~~ R403.3.7. **New Text:** **R403.3.6 Ducts buried within ceiling insulation.** Where supply and return air ducts are partially or completely buried in ceiling insulation, such ducts shall comply with all of the following: 1. The supply and return ducts have insulation of an R-value not less than of R-8. 2. At all points along each duct, the sum of the ceiling insulation R-values against and above the top of the duct, and against and below the bottom of the duct is not less than R-19, excluding the R-value of the duct insulation. 3. In climate zones 1A, 2A and 3A, the supply ducts which are completely buried within ceiling insulation, are insulated to an R-value of not less than R-13 and are in compliance with the vapor retarder requirements of Section 604.11 of the *International Mechanical Code* or Section M1601.4.6 or the *International Residential Code*, as applicable. **Exception:** Sections of the supply duct that are less than 3 feet from the supply outlet shall not be required to comply with these requirements. Continued on the next page	Charles Cottrell, North American Insulation Manufacturers Association (NAIMA)	

<table>
<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td></td><td>2015 IECC R403.3</td><td>Continued from the previous page
<u>R403.3.6.1 Deeply buried duct effective R-value.</u> <u>Sections of ducts installed in accordance with Section R403.3.6 and directly on or within 5.5 inches of the ceiling board and surrounded with blown attic insulation of R-30 or greater and the top of the duct is buried a minimum of 3.5 inches below the insulation shall be permitted to claim an effective duct insulation of R-25 for the deeply buried section of the duct when using a simulated energy performance analysis.</u>
<u>R403.3.7 Ducts located in conditioned space.</u> <u>For ducts to be considered as inside a conditioned space, the ducts shall comply with either of the following:</u>
<u>1. The duct system is located completely within the continuous air barrier and within the building thermal envelope.</u>
<u>2. The ducts are buried within ceiling insulation in accordance with Section R403.3.6 and all of the following conditions exist:</u>
<u>2.1 The air handler is located completely within the continuous air barrier and within the building thermal envelope.</u>
<u>2.2 The duct leakage, as measured either by a rough-in test of the ducts or a post-construction total system leakage test to outside the building thermal envelope in accordance with Section R403.3.4, is less than or equal to 1.5 cubic feet per minute (42.5 L/min) per 100 square feet (9.29 m^2) of conditioned floor area served by the duct system.</u>
<u>2.3 The ceiling insulation R-value installed against and above the insulated duct is greater than or equal to the proposed ceiling insulation R-value, less the R-value of the insulation on the duct.</u></td><td>Charles Cottrell, North American Insulation Manufacturers Association (NAIMA)</td><td></td></tr>
<tr><td>40)</td><td>Table R405.5.2(1)</td><td>Incorporate the following approved 2015 IECC code change as of the end of the 2016 ICC Group B Public Comment Hearings: CE 259-16 Part II (Residential provisions)
TABLE R405.5.2(1)
[N1105.5.2(1)] SPECIFICATIONS FORTHESTANDARDREFERENCEANDPROPOSEDDESIGNS
<table>
<tr><th>BUILDING COMPONENT</th><th>STANDARD REFERENCE DESIGN</th><th>PROPOSED DESIGN</th></tr>
<tr><td rowspan="5">Above-grade walls</td><td>Type: mass wall if proposed wall is mass; otherwise wood frame.</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table R402.1.4</td><td>As proposed</td></tr>
<tr><td>Solar absorptance = 0.75</td><td>As proposed</td></tr>
<tr><td>Emittance = 0.90</td><td>As proposed</td></tr>
<tr><td rowspan="3">Basement and crawl space walls</td><td>Type: same as proposed</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: from Table R402.1.4, with insulation layer on interior side of walls</td><td>As proposed</td></tr>
<tr><td rowspan="3">Above-grade floors</td><td>Type: wood frame</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table R402.1.4</td><td>As proposed</td></tr>
<tr><td rowspan="3">Ceilings</td><td>Type: wood frame</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table R402.1.4</td><td>As proposed</td></tr>
<tr><td rowspan="4">Roofs</td><td>Type: composition shingle on wood sheathing</td><td>As proposed</td></tr>
<tr><td>Gross area: same as proposed</td><td>As proposed</td></tr>
<tr><td>Solar absorptance = 0.75</td><td>As proposed</td></tr>
<tr><td>Emittance = 0.90</td><td>As proposed</td></tr>
<tr><td>Attics</td><td>Type: vented with aperture = 1 ft^2 per 300 ft^2 ceiling area</td><td>As proposed</td></tr>
<tr><td rowspan="2">Foundations</td><td>Type: same as proposed</td><td>As proposed</td></tr>
<tr><td>Foundation wall area above and below grade and soil characteristics: same as proposed</td><td>As proposed</td></tr>
</table>
Continued on the next page</td><td>Roger LeBrun, VELUX America</td><td></td></tr>
</table>

#	SECTION	SUMMARY	PROPONENT	ACT.*
	Table R405.5.2(1)	Continued from the previous page	Roger LeBrun, VELUX America	

Opaque doors	Area: 40 ft^2	As proposed
	Orientation: North	As proposed
	U-factor: same as fenestration from Table R402.1.4	As proposed
Vertical fenestration other than opaque doors	Total vertical fenestration area[h] = (a) The proposed ~~glazing~~ vertical fenestration area, where the proposed ~~glazing~~ fenestration area is less than 15 percent of the conditioned floor area (b) ~~15 percent of the conditioned floor area.~~ The adjusted vertical fenestration area, where the proposed ~~glazing~~ fenestration area is 15 percent or more of the conditioned floor area. The adjusted vertical fenestration area shall be calculated as follows: AVF_{adj} - AVF x 0.15 X CFA/AF Where AVF_{adj} = Adjusted Vertical Fenestration Area AVF = Proposed Vertical Fenestration Area CFA = Conditioned Floor Area AF = Proposed Total Fenestration Area	As proposed
	Orientation: equally distributed to four cardinal compass orientations (N, E, S & W).	As proposed
	U-factor: as specified in Table R402.1.4	As proposed
	SHGC: as specified in Table R402.1.2 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.	As proposed
	Interior shade fraction: 0.92-(0.21 × SHGC for the standard reference design)	0.92-(0.21 × SHGC as proposed)
	External shading: none	As proposed
Skylights	~~None~~ Skylight Area = (a) The proposed skylight area where the proposed fenestration area is less than 15 percent of the conditioned floor area, or, (b) The adjusted skylight area where the proposed fenestration area is 15 percent or greater of the conditioned floor area. The adjusted skylight area shall be calculated as follows: ~~$ASKY_{adj}$ = ASKY * 0.15 * CFA/AF~~ $ASKY_{adj}$ = Adjusted Skylight Area ASKY = Proposed Skylight Area CFA = Conditioned Floor Area AF = Proposed Total Fenestration Area	As proposed
continue skylights	Orientation: As Proposed	As Proposed
continue skylights	U-factor: As specified in Table R402.1.4	As Proposed
continue skylights	SHGC: As specified in Table R402.1.2 including footnore (b) of that table, except that for climates with no requirement (NR): SHGC = 0.40	As Proposed
continue skylights	Interior shade fraction for the area of proposed skylights with SHGC ratings that include a pre-installed interior shade: 0.92 - 0.21 x SHGC for the standard reference design	As Proposed with shades assumed closed 50% of the time.

Continued on the next page

#	SECTION	SUMMARY	PROPONENT	ACT.*
	Table R405.5.2(1)	Continued from the previous page <table><tr><td>continue skylights</td><td>External Shading: None</td><td>As Proposed</td></tr><tr><td>Thermally isolated sunrooms</td><td>None</td><td>As proposed</td></tr><tr><td>Air exchange rate</td><td>Air leakage rate of 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8 at a pressure of 0.2 inches w.g (50 Pa). The mechanical ventilation rate shall be in addition to the air leakage rate and the same as in the proposed design, but no greater than $0.01 \times CFA + 7.5 \times (N_{br} + 1)$ where: CFA = conditioned floor area N_{br} = number of bedrooms Energy recovery shall not be assumed for mechanical ventilation.</td><td>For residences that are not tested, the same air leakage rate as the standard reference design. For tested residences, the measured air exchange rate[a] . The mechanical ventilation rate[b] shall be in addition to the air leakage rate and shall be as proposed.</td></tr></table> For SI: 1 square foot = 0.93 m2, 1 British thermal unit = 1055 J, 1 pound per square foot = 4.88 kg/m2, 1 gallon (US) = 3.785 L, Â°C = (Â°F-32)/1.8, 1 degree = 0.79 rad. a. Where required by the *code official*, testing shall be conducted by an *approved* party. Hourly calculations as specified in the ASHRAE *Handbook of Fundamentals*, or the equivalent shall be used to determine the energy loads resulting from infiltration. b. The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with Equation 43 of 2001 ASHRAE *Handbook of Fundamentals*, page 26.24 and the "Whole-house Ventilation" provisions of 2001 ASHRAE *Handbook of Fundamentals*, page 26.19 for intermittent mechanical ventilation. c. Thermal storage element shall mean a component not part of the floors, walls or ceilings that is part of a passive solar system, and that provides thermal storage such as enclosed water columns, rock beds, or phase-change containers. A thermal storage element must be in the same room as fenestration that faces within 15 degrees (0.26 rad) of true south, or must be connected to such a room with pipes or ducts that allow the element to be actively charged. d. For a proposed design with multiple heating, cooling or water heating systems using different fuel types, the applicable standard reference design system capacities and fuel types shall be weighted in accordance with their respective loads as calculated by accepted engineering practice for each equipment and fuel type present. e. For a proposed design without a proposed heating system, a heating system with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and proposed design. f. For a proposed design home without a proposed cooling system, an electric air conditioner with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and the proposed design. g. For a proposed design with a non-storage-type water heater, a 40-gallon storage-type water heater with the prevailing federal minimum energy factor for the same fuel as the predominant heating fuel type shall be assumed. For the case of a proposed design without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency for the same fuel as the predominant heating fuel type shall be assumed for both the proposed design and standard reference design. For residences with conditioned basements, R-2 and R-4 residences and townhouses, the following formula shall be used to determine glazing fenestration area: *AF* = As x *FA* x *F* where: *AF* = Total glazing fenestration area. *As* = Standard reference design total glazing fenestration area. *FA* = (Above-grade thermal boundary gross wall area)/above-grade boundary wall area + .0.5 x below-grade boundary wall area). *F* = (Above-grade thermal boundary wall area)/ (above-grade thermal boundary wall area + common wall area) or 0.56, whichever is greater. and where: Thermal Boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions. Below-grade boundary wall is any thermal boundary wall in soil contact. Common wall area is the area of walls shared with an adjoining dwelling unit. *L* and *CFA* are in the same units.	Roger LeBrun, VELUX America	
41)	R406	**Revise Section R406 Energy Rating Index Compliance Alternative** **R406.1 Scope.** This section establishes criteria for compliance using an Energy Rating Index (ERI) analysis. **R406.2 Mandatory requirements.** Compliance with this section requires that the mandatory provisions identified in Sections R401 and R403.5.3 be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 *International Energy Conservation Code*. **Exception:** Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6. Continued on the next page	Amanda Hickman, Leading Builders of America	

#	SECTION	SUMMARY	PROPONENT	ACT.*
	R406	Continued from the previous page **R406.3 Energy Rating Index.** The Energy Rating Index (ERI) shall be ~~a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1-percent change~~ determined in ~~the total energy use of the rated design relative to the total energy use of the *ERI reference design*~~ accordance with ANSI/RESNET/ICC 301 except for buildings constructed in accordance with the International Residential Code, the ERI reference design ventilation rate shall be in accordance with the following: ~~.The ERI shall consider all energy used in the *residential building*.~~ Energy used to recharge or refuel a vehicle for on-road (and off-site) transportation purposes shall not be included in the ERI *reference design* or the *rated design*. Ventilation rate = (0.01 x total square foot area of house) + (7.5 (N_{br} + 1)) **Equation 4-1** where, Ventilation rate in units of cubic feet per minute N_{br} = Number of bedrooms ~~**R406.3.1 ERI reference design.**~~ ~~The *ERI reference design* shall be configured such that it meets the minimum requirements of the 2006 *International Energy Conservation Code* prescriptive requirements. The proposed *residential building* shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the *ERI reference design*.~~ **R406.4 ERI-based compliance.** Compliance based on an ERI analysis requires that the *rated design* be shown to have an ERI less than or equal to the appropriate value listed in Table R406.4 when compared to the *ERI reference design*. **TABLE R406.4 MAXIMUM ENERGY RATING INDEX** CLIMATE ZONE | ENERGY RATING[a] INDEX 2 | ~~52~~ 57 3 | ~~51~~ 57 4 | ~~54~~ 62 a. Where on-site renewable energy is included for compliance using the ERI analysis per Section R406.4, the building shall meet the mandatory requirements with Section R406.2 and the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R402.1.2 or Table R402.1.4 of the 2015 International Energy Conservation Code. **R406.5 Verification by approved agency.** Verification of compliance with Section R406 shall be completed by an *approved* third party. **R406.6 Documentation.** Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with Sections R406.6.1 through R406.6.3. **R406.6.1 Compliance software tools.** ~~Documentation verifying that~~ the ~~methods and accuracy of the compliance software tools conform to the provisions of this section~~ ERI shall be ~~provided to the *code official*~~ Approved Software Rating Tools in accordance with ANSI/RESNET/ICC 301. **R406.6.2 Compliance report.** Compliance software tools shall generate a report that documents that the ERI of the *rated design* complies with Sections R406.3 and R406.4. The compliance documentation shall include the following information: 1. Address or other identification of the residential building. 2. An inspection checklist documenting the building component characteristics of the *rated design*. The inspection Continued on the next page	Amanda Hickman, Leading Builders of America	

#	SECTION	SUMMARY	PROPONENT	ACT.*
	R406	Continued from the previous page checklist shall show results for both the *ERI reference design* and the *rated design*, and shall document all inputs entered by the user necessary to reproduce the results. 3. Name of individual completing the compliance report. 4. Name and version of the compliance software tool. **Exception:** Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the four (north, east, south and west) cardinal orientations. **R406.6.3 Additional documentation.** The *code official* shall be permitted to require the following documents: 1. Documentation of the building component characteristics of the *ERI reference design*. 2. A certification signed by the builder providing the building component characteristics of the *rated design.* 3. Documentation of the actual values used in the software calculations for the *rated design*. ~~**R406.7 Calculation software tools.**~~ ~~Calculation software, where used, shall be in accordance with Sections R406.7.1 through R406.7.3.~~ ~~**R406.7.1 Minimum capabilities.**~~ ~~Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3, and shall include the following capabilities:~~ ~~1. Computer generation of the *ERI reference design* using only the input for the *rated design*.~~ ~~The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*.~~ ~~2. Calculation of whole building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section R403.7.~~ ~~3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.~~ ~~4. Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.~~ ~~**R406.7.2**~~ **R406.6.4 Specific approval.** Performance analysis tools meeting the applicable sections of Section R406 shall be *approved*. ~~Tools are permitted~~ Documentation demonstrating the approval of performance analysis tools in accordance with Section R406.6.1 shall be provided to ~~be *approved* based on meeting a specified threshold for a jurisdiction~~ the code official. The *code official* shall approve tools for a specified application or limited scope. ~~**R406.7.3**~~ **R406.6.5 Input values.** Where~~n~~ calculations require input values not specified by Sections R402, R403, R404 and R405, those input values shall be taken from ~~an approved source~~ ANSI/RESNET/ICC 301. **Add new standard to Chapter 6 Residential:** ANSI/RESNET/ICC 301-2014 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index First Published March 7, 2014 republished January 2016 An electronic version of standard ANSI/RESNET/ICC 301 is posted at: http://codes.iccsafe.org/app/book/content/PDF/ICC%20Standards/ICC_301-2014/ICC_RESNET_301.pdf	Amanda Hickman, Leading Builders of America	

<table>
<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td>42)</td><td>R406</td><td>
The Southeast Energy Efficiency Alliance (SEEA), Southern Environmental Law Center (SELC), and Southface Energy Institute propose the following amendment to Section R406 of the 2015 International Energy Conservation Code (IECC):
• Specify that the Energy Rating Index (ERI) shall also consider all energy that is generated by solar technology located on the same property as the residential building.
Set the ERI at less than or equal to 55 for the entire state.
R406.1 Scope. This section establishes criteria for compliance using an Energy Rating Index (ERI) analysis.
R406.2 Mandatory requirements. Compliance with this section requires that the mandatory provisions identified in Sections R401.2 and R403.5.3 be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.2 or 402.1.4 of the 2009 International Energy Conservation Code. <u>All mandatory requirements of the Georgia Energy Code must be satisfied.</u>
Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.
R406.3 Energy Rating Index. The Energy Rating Index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the ERI reference design has an Index value of 100 and a residential building that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1-percent change in the total energy use of the rated design relative to the total energy use of the ERI reference design. The ERI shall consider all energy used in the residential building <u>and all energy that is generated by solar technology, as defined in Section R406.3.2, located on the same property, as defined in Section R406.3.3, as the residential building</u>.
R406.3.1 ERI reference design. The ERI reference design shall be configured such that it meets the minimum requirements of the 2006 International Energy Conservation Code prescriptive requirements.
The proposed residential building shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the ERI reference design.
<u>R406.3.2 ERI definition of solar technology. For the purpose of Section R406 only, solar technology means a system that:
1. Generates electric energy that is fueled solely by ambient sunlight;
2. Is installed on the residential building's side of the electric service provider's meter; and
3. Produces electric energy primarily intended for use in the residential building.
Solar technology can export electric energy to the utility grid as long as it is installed on the residential building's side of the electric service provider's meter. This definition of solar technology excludes systems that produce electric energy solely for export to the utility grid.
R406.3.3 ERI definition of property. For the purpose of Section R406 only, property means the tract of land on which the residential property is located, together with all adjacent contiguous tracts of land utilized by the same retail electric customer.</u>
R406.4 ERI-based compliance. Compliance based on an ERI analysis requires that the rated design be shown to have an ERI less than or equal to <u>55</u> ~~the appropriate value listed in Table R406.4~~when compared to the ERI reference design.
R406.5 Verification by approved agency. Verification of compliance with Section R406 shall be completed by an approved third party.
~~TABLE R406.4
MAXIMUM ENERGY RATING INDEX~~
<table>
<tr><th>~~CLIMATE ZONE~~</th><th>~~ENERGY RATING INDEX~~</th></tr>
<tr><td>~~1~~</td><td>~~52~~</td></tr>
<tr><td>~~2~~</td><td>~~52~~</td></tr>
<tr><td>~~3~~</td><td>~~51~~</td></tr>
<tr><td>~~4~~</td><td>~~54~~</td></tr>
<tr><td>~~5~~</td><td>~~55~~</td></tr>
<tr><td>~~6~~</td><td>~~54~~</td></tr>
<tr><td>~~7~~</td><td>~~53~~</td></tr>
<tr><td>~~8~~</td><td>~~53~~</td></tr>
</table>
</td><td>Shan Arora, Southface</td><td></td></tr>
</table>

#	SECTION	SUMMARY	PROPONENT	ACT.*
	R406	Continued from the previous page **R406.6 Documentation.** Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with Sections R406.6.1 through R406.6.3. **R406.6.1 Compliance software tools.** Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the *code official*. **R406.6.2 Compliance report.** Compliance software tools shall generate a report that documents that the ERI of the *rated design* complies with Sections R406.3 and R406.4. The compliance documentation shall include the following information: 1. Address or other identification of the residential building. 2. An inspection checklist documenting the building component characteristics of the *rated design*. The inspection checklist shall show results for both the *ERI reference design* and the *rated design*, and shall document all inputs entered by the user necessary to reproduce the results. 3. Name of individual completing the compliance report. 4. Name and version of the compliance software tool. **Exception:** Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the four (north, east, south and west) cardinal orientations. 5. A residential building with solar technology, as defined in Section R406.3.2, should be modeled in the orientation of the solar technology or the nearest cardinal direction. **R406.6.3 Additional documentation.** The *code official* shall be permitted to require the following documents: 1. Documentation of the building component characteristics of the *ERI reference design*. 2. A certification signed by the builder providing the building component characteristics of the *rated design.* 3. Documentation of the actual values used in the software calculations for the *rated design*. **R406.7 Calculation software tools.** Calculation software, where used, shall be in accordance with Sections R406.7.1 through R406.7.3. **R406.7.1 Minimum capabilities.** Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3, and shall include the following capabilities: 1. Computer generation of the *ERI reference design* using only the input for the *rated design*. The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*. 2. Calculation of whole building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section R403.7. 3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing. 4. Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings. **R406.7.2 Specific approval.** Performance analysis tools meeting the applicable sections of Section R406 shall be *approved*. Tools are permitted to be *approved* based on meeting a specified threshold for a jurisdiction. The *code official* shall approve tools for a specified application or limited scope. **R406.7.3 Input values.** When calculations require input values not specified by Sections R402, R403, R404 and R405, those input values shall be taken from an approved source.	Shan Arora, Southface	

<table>
<tr><th>#</th><th>SECTION</th><th>SUMMARY</th><th>PROPONENT</th><th>ACT.*</th></tr>
<tr><td>43)</td><td>R406.4</td><td>Revise Table R406.4 and add footnote “a” as follows:
TABLE R406.4
MAXIMUM ENERGY RATING INDEX[a]
<table><tr><th>CLIMATE ZONE</th><th>ENERGY RATING INDEX</th></tr><tr><td>2</td><td><s>52</s> 57</td></tr><tr><td>3</td><td><s>51</s> 57</td></tr><tr><td>4</td><td><s>54</s> 62</td></tr></table>a. When on-site renewable energy is included for compliance using the ERI analysis per Section R406.4, the building shall meet the mandatory requirements with Section R406.2 and the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R402.1.2 or Table R402.1.4 of the 2015 International Energy Conservation Code.</td><td>Eric Lacey, RECA</td><td></td></tr>
<tr><td>44)</td><td>Appendix RA</td><td>Delete without substitution:
<s>APPENDIX RA (IRC APPENDIX T) RECOMMENDED PROCEDURE FOR WORST-CASE TESTING OF ATMOSPHERIC VENTING SYSTEMS UNDER R402.4 OR R405 CONDITIONS ≤ 5ACH50</s>
• All Sections and Tables are to be deleted and are not shown due to space considerations.</td><td>Andrea L Papageorge, Southern Company Gas</td><td></td></tr>
</table>