

MINUTES

2015 International Energy Conservation Code Task Force Energy Rating Index (ERI) - Duct and Envelope Tightness (DET) Subcommittee

Second Meeting
April 25, 2017, 10:00 A.M.

Call to order- Chairman, Ryan Taylor called the meeting to order at 10:00 A.M. by welcoming and introducing subcommittee members, Department of Community Affairs (DCA) staff, and guests. (See the last page of the minutes for a list of attendees).

Chairman Taylor explained the purpose of the subcommittee is to discuss the code requirements for Energy Rating Index (ERI) - Duct and Envelope Tightness (DET) and report back to the 2015 International Energy Conservation Code (IECC) Task Force. This subcommittee would also discuss any proposed amendments pertaining to the ERI and DET.

Approval of Minutes- The minutes from the March 21, 2017, meeting were reviewed. *A motion was made by Neal Davis and seconded by Elaine Powers to accept the minutes as written. Motion Carried Unanimously*

Discussion of Energy Rating Index (ERI) Amendments-

- There was a discussion on the revised ERI amendment proposed by Southface (see item 44 in the amendment report). Proponent provided testimony in support of his amendment to Section R406.
- There was a discussion on harmonizing the language of the amendment with the Georgia House Bill 57, "Solar Power Free-Market Financing Act of 2015" C202 and R202 (see item 1 and 31 in the amendment report) were proposed to entertain this alignment.
- There was a discussion on whether or not keep the "footnote a" of Table R406.4 Maximum Energy Rating Index in proposed amendments (see items 43, 44 and 45).
- There was a discussion on having 2009 vs. 2015 IECC as the back stop table.
- Eric Lacy, RECA provided a handout on the DOE's position on Energy Efficiency and Renewable Energy in Residential Energy Codes. (Copies are available upon request)
- Solar Energy Industries Association (SEIA) submitted a public comment in support of item 44. (Copies are available upon request)

LUNCH BREAK- The Task Force broke for lunch (11:45 A.M. - 12:30 P.M.)

Item 44 - R406 Energy Rating Index, Compliance Alternative:

A Motion was made by David Hirsch and seconded by Ron Anderson to revise R406 Energy Rating Index, Compliance Alternative, item 44 in the amendment report to delete the last sentence of R406.2 without substitution. Motion Carried Unanimously

Discussion of Performance Testing-

- There was a discussion on residential performance testing.

- There was a discussion on the residential testing protocol.
- There was a discussion on mechanical ventilation and makeup air.
- There was a discussion on duct testing and who would be eligible to perform the test.
- There was a discussion on whether blower door testing should be mandatory for mid-rise multifamily housing units.
- All other items were discussed individually as follows:

Item 31 - R202 On-Site Renewable Energy:

Mike Barcik made a motion and seconded by Neal Davis to approve R202 On-Site Renewable Energy, item 31 in the amendment report as it is. **Motion Carried Unanimously**

Item 32 - R401.2 Compliance:

Mike Barcik made a motion and seconded by Elaine Powers to approve R401.2 Compliance, item 32 in the amendment report as it is. **Motion Carried Unanimously**

Item 33:

Mike Barcik made a motion and seconded by James Martin to carry forward 402.1.4 of the GA 2011 Amendments and revise to read as follows. **Motion Carried Unanimously**

Add a new Section R402.1.6, Compliance Alternative Constraints to read as follows:

R402.1.6 Compliance Alternative Constraints. Where Compliance Alternative Pathways 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 402.1.1. Compliance Alternative Pathways include Total UA Alternative, Simulated Performance Alternative, and Energy Rating Index Alternative.

*Add a new Table 402.1.1, 'Minimum Insulation R-Values for Envelope Components When Trade-offs Are Used' to read as follows:

Table R402.1.1 MINIMUM INSULATION R-VALUES FOR ENVELOPE COMPONENTS WHEN TRADE-OFFS ARE USED										
Climate Zone	Wood Framed Walls	Mass Wall	Attic Kneewall	Basement Wall	Crawl Wall	Floor Over Unheated	Ceilings with Attic Space	Vaulted Unvented Roofline Air-impermeable	Vaulted Vented Roofline Air-permeable	Vaulted Unvented Roofline Air-permeable
2	13	4	18	0	0	13	30	20	20	20+5*
3	13	5	18	5	5	13	30	20	20	20+5*
4	13	5	18	5	5	13	30	20	20	20+15*
Window U-Factor 0.5 max with SHGC 0.30 max									* Air -impermeable as per IRC 806.5	
<p>Note 1: Weather-stripped hinged vertical doors (minimum R-5 insulation or maximum U-0.20), weather-stripped hatches/scuttle hole covers (minimum R-19 insulation or maximum U-0.05), or weather-stripped. Disappearing/ pull-down stairs (minimum R-5 insulation or maximum U-0.20) shall be deemed to meet the minimum insulation R-values of any element.</p> <p>Note 2: Any mass wall (masonry, CMU, etc.)</p> <p>Note 3: Attic kneewall for the purpose of this code is defined as any vertical or near vertical wall in the building envelope that has conditioned space on one side and attic space on the other side.</p> <p>Exception: When the building roofline is insulated, the former kneewall is classified as an interior wall.</p> <p>Note 4: Examples of air-impermeable insulation include spray foam and rigid foam board. Examples of air-permeable insulation include fiberglass batts and cellulose. See 'Roofline Installed Insulation Options' in Appendix RC, of these Georgia State Supplements and Amendments for details.</p>										

Item 37 - R402.2.1 Ceilings with attic spaces:

Chairman requested proponent to revise this item (This is the revised language.)

R402.2.1 Ceilings with attic spaces. Where Section R402.1.2 would require R-38 insulation in the ceiling, installing R-30 over 100 percent of the ceiling area requiring insulation shall be deemed to satisfy the requirement for R-38 wherever the full height of uncompressed R-30 insulation extends completely over the wall top plate at the eaves. ~~Similarly, where Section R402.1.2 would require R-49 insulation in the ceiling, installing R-38 over 100 percent of the ceiling area requiring insulation shall be deemed to satisfy the requirement for R-49 insulation wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves.~~ This reduction shall not apply to the U-factor alternative approach in Section R402.1.4 and the total UA alternative in Section R402.1.5.

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-38 (maximum U-0.027) 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.

This language was submitted shortly before the second Subcommittee meeting, so it was introduced though no vote was taken.

Item 39 - R402.4.1.2 Testing:

*James Martin made a motion and seconded by Neal Davis to disapprove the language for “staged target requirements” in R402.4.1.2 Testing, item 39 in the amendment report as amended. **Motion Carried with Mike Barcik voting against***

*Elaine Powers made a motion and seconded by David Hirsch to approve R402.4.1.2 Testing, item 39 in the amendment report as amended. **Motion Carried Unanimously***

In taking up the remaining language of Item 39, the Subcommittee, with input from present parties interested in multifamily buildings, developed the following language:

Add a new Section R402.4.1.3 Low-rise R-2 multifamily testing.

R402.4.1.3 Low-rise R-2 multifamily testing. Low-rise R-2 multifamily dwellings shall be tested to less than 7 air changes per hour at 50 Pascals (ACH50).

As an alternative to ACH50, compliance for Low-rise R-2 dwellings may be attained by achieving an Envelope Leakage Ratio at 50 Pascals (ELR50) of less than 0.35 (ELR50 < 0.35, where ELR50 = CFM50 / Envelope Shell Area, in square feet).

Add a new Section **R402.4.1.3.1 Low-rise multifamily testing protocol.** (Optional) Where a residential building is classified as R-2, envelope testing may (optionally) employ either or both of the following testing protocols:

1. Employ multiple fans in adjacent units (commonly referred to as Guarded Blower Door testing) to minimize the effect of leakage to adjacent units (not required).

2. Envelope testing of less than 100 percent shall be acceptable assuming a maximum 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 shall also be tested).

Item 58 - R402.4.1.2 Testing:

Mike Barcik made a motion and seconded by David Hirsch to approve R402.4.1.2 Testing, item 58 in the amendment report as revised. The dates may need to be revised depending on the implementation date of the Georgia Energy Code. **Motion Carried Unanimously**

R402.4.1.2 Testing. Effective January 1, 2018, all one and two-family dwelling units shall be tested and verified to less than six air changes per hour at 50 Pascals (ACH50) for Climate Zones 2, 3, and 4. On or after January 1, 2019, all one and two-family dwelling units shall be tested and verified to less than five air changes per hour at 50 Pascals (ACH50) for Climate Zones 2, 3, and 4.

Item 59 - R402.4.1.2 Testing:

James Martin made a motion and seconded by Mike Barcik to accept R402.4.1.2 Testing, item 59 in the amendment report as revised. **Motion Carried Unanimously**

R402.4.1.2 Testing. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2-inch w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. Testing shall be conducted by a certified duct and envelope tightness (DET) verifier.

Item 35, 36 and 56 were discussed as part of item 57 – Table R402.1.2 Insulation and Fenestration Requirements by Component.

Ron Anderson made a motion and seconded by Elaine Powers to accept Table R402.1.2 and Table R402.1.4, item 57 in the amendment report as submitted. **Motion Carried Unanimously**

TABLE R402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT											
Climate Zone	Fenestration U-Factor	Skylight U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Attic Kneewall R-Value	Mass Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab R-Value & Depth	Crawl Space Wall R-Value
2	0.40-0.35	0.55	0.25 0.27	38	13	18	4/6	13	0	0	0
3	0.35	0.55	0.25 0.27	38	20 OR 13+5h 13	18	8/13	19	5/13F	0	5/13
4 except marine	0.35	0.55	0.40 0.27	49 38	20 OR 13+5h 13	18	8/13	19	10/13	10, 2 FT 0	10/13

h. The first value is cavity insulation; the second value is continuous. So "13+5" means R-13 cavity insulation plus R-5 continuous insulation.

TABLE R402.1.4 EQUIVALENT U-FACTORS								
Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass Wall U-Factor	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
2	0.40 <u>0.35</u>	0.55	0.030	0.084	0.165	0.064	0.360	0.477
3	0.35	0.55	0.030	0.060 <u>0.084</u>	0.098	0.047	0.091	0.136
4 except marine	0.35	0.55	0.026 <u>0.030</u>	0.060 <u>0.084</u>	0.098	0.047	0.059	0.065

Item 61, 62 and 63 will be revised.

OLD BUSINESS- There was no further old business.

NEW BUSINESS- There was no new business.

CONCLUSION OF MEETING-

- Ryan Taylor will update the Task Force on the conclusion of the subcommittee.
- No further business or discussion. The meeting adjourned at 5:10 P.M.

Attendees

Task Force Members Present: Ryan Taylor, Mike Barcik, Neal Davis, James Martin, Elaine Powers, David A. Hirsch and Ron Anderson.

Staff Members Present: Ted Miltiades, Seti Ordoobadi, Bill Towson, Matt McConnell and Kadedra Caldwell.

Guests: Craig Conner, Building Quality; David Dowis; SCCS; ; Nick Wortel, APA; Shan Arora, Southface; Curt Rich, NAIMA; Bourke Reeve, Southface; Brian Shanks, Beazer Homes; Phil Brown, ICYNENE Insulation; Randy Nicklas, ICYNENE Insulation; Bettie Sleeth, HBAG; Kelly Lass, HBAG; Josh Roth, BOAG; David Goulding, Ensign Building; Jimmy Reynolds, Green South Energy Solutions; Amanda Hickman, Intercode Inc.; David Gibson, GEFA; Kelly Cutts, GEFA, Lauren Westmorland, SEEA; Penny Mocerri, GA Apartment Association; Haydon Stanley, GA Apartment Association; Andrea Papageorge, Southern Company Gas; Paul Laney, Cobb County; Jeremy Field, Imery Group; Howard Katzman, Building Performance Consulting; Berneta Haynes, Georgia Watch; Luis Imery, Imery Group; Jeffery Saules, Energy Vanguard; Eric Lacy, RECA; Jimmy Christopher, Enviro Foam; Charles Roy, GABPA, GSES; Will Moyers, Home Diagnostic Solutions; Thomas Beusse, American Chemistry Council; Joe Medosh, Energy and Environmental Consulting;; Sandy Herrera, Building Performance Diagnostics.

End of Minutes.