2025 Amendment SCAC Subcommittee
April 18th, 2024
10:00 AM – Room 302
Minutes

10AM MEETING BEGINS

INTRODUCTIONS OF SUBCOMMITTEE MEMBERS AND GUESTS…….Joel Rodriguez, Chairman

2025 PROPOSED AMENDMENTS…….…….……Joel Rodriguez, Chairman

- Mike Barcik and Amelia Godfrey spoke on amendments 1, 2 and 3. (See attached 2025 Amendment SCAC Subcommittee chart and Southface & Owens Corning presentation)
- Discussion opened up regarding the amendments
- Josh Roth made a motion to disapprove of the amendments with Elaine Powers as a second. Motion passed 4-3 with Joel Rodriguez, Ryan Taylor and Chad Payne dissenting from the motion

Lunch 12:00PM

2025 PROPOSED AMENDMENTS (CONTINUED)…….Joel Rodriguez, Chairman

- Jimmy Cotty, joined by John Loyer and Tom Culp, spoke on amendments 4, 5, 6 and 7 (See attached 2025 Amendment SCAC Subcommittee chart)
- Discussion occurred regarding the amendments
- Elaine Powers made a motion to disapprove of the amendments with Lucian Gavriliuc as a second. Motion passed with 5 votes, Josh Roth and Joel Rodriguez abstained

1:21PM CONCLUSION OF MEETING

- Ryan Taylor made a motion to conclude the meeting with Josh Roth as second. Motion passed unanimously.

IN ATTENDANCE

Subcommittee: Joel Rodriguez, Josh Roth, Elaine Powers, Ryan Taylor, Lucien Gavriliuc, Maurice Redmond, Chad Payne

DCA Staff: Ted Miltiades, Donna Brown, Christian Poulos, Jimmy Reynolds, Craig Messina, Emerence Poiraud

Guests: Eric Lacey (RECA), Shawn Mullins (Owens Corning), Nelson Conarroe (Owens Corning), Kevin Gaston (CISPI), Austin Hackney (HBAG), Tom Culp (Birch Point Consulting),

John Loyer (Somfy), Jimmy Cotty (Somfy), Amelia Godfrey (Southface), Mike Barcik (Southface), James Brooker (City of Alpharetta), Kelly Cutts (GEFA)

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

ITEM NUMBER	ARTICLE	SUMMARY	PROPONENT	ACTION
		Proposed		
IECC – 2025 - 1	**R 403.3.7**	*Add new section to read as follows:* **R403.3.7 Duct Systems Located in Conditioned Space (Optional)** For *duct systems* to be considered inside a *conditioned space*, the *space conditioning equipment* shall be located completely on the conditioned side of the *building thermal envelope*. The *ductwork* shall comply with the following as applicable: 1. The *ductwork* shall be located completely on the conditioned side of the *building thermal envelope*. 2. *Ductwork* in ventilated attic spaces or unvented attics with vapor diffusion ports shall be buried within ceiling insulation in accordance with R403.3.8 and shall comply with the following: 2.1. The air handler is located completely within the *continuous air barrier* and within the *building thermal envelope*. 2.2. The *ductwork* leakage, as measured either by a rough-in test of the supply and return ductwork or a post-construction *duct system* leakage test to outside the *building thermal envelope* in accordance with Section R403.3.3, 1.5 cubic feet per minute (42.5 L/min) per 100 square feet (9.29 m2) of *conditioned floor area* served by the *duct system*. The ceiling insulation R-value installed against and above the insulated *ductwork* is greater than or equal to the proposed ceiling insulation R-value, less the R-value of the insulation on the *ductwork*.	Amelia Godfrey, Mike Barcik, Shawn Mullins	**D**
IECC – 2025 - 2	**R 403.3.8**	*Add new section to read as follows:* **R403.3.8 Ductwork Buried Within Ceiling Insulation** (Optional) Where supply and return ductwork is partially or completely buried in ceiling insulation, such ductwork shall comply with the following:	Amelia Godfrey, Mike Barcik, Shawn Mullins	**D**

		1. The supply and return ductwork shall be insulated with not less than R-8 insulation. 2. At all points along the ductwork the ceiling insulation R-value against and above the top of the insulated ductwork shall be not less than R-19. 3. In Climate Zones 2A and 3A the supply ductwork shall be completely buried within ceiling insulation, insulated to an R-value of not less than R-13 and in compliance with the vapor retarder requirements of Section 604.11 of the International Mechanical Code or Section M1601.4.6 of the International Residential Code, as applicable. **Exception 1:** Sections of the supply ductwork that are less than 3 feet (914 mm) from the supply outlet. **Exception 2:** In Climate Zones 2A and 3A where installed in an unvented attic with vapor diffusion ports, the supply ductwork shall be completely buried within the insulation in the ceiling assembly at the floor of the attic, insulated to an R-value of not less than R-8 and in compliance with the vapor retarder requirements of Section 604.11 of the International Mechanical Code or Section M1601.4.6 of the International Residential Code, as applicable.		
IECC – 2025 - 3	**R 403.3.9**	*Add new section to read as follows:* **R403.3.9 *R*-value of Deeply Buried Ducts** (Optional) Where complying using Section R405, the sections of ductwork that are installed in accordance with Section R403.3.7 surrounded with blown-in attic insulation having an *R*-value of R-30 or greater, and located such that the top of the ductwork is not less than 3.5 inches (89 mm) below the top of the insulation and covered by a minimum R-19, the ductwork insulation R-value of the ductwork shall be considered the combined R-value of the ductwork insulation plus the ceiling insulation above the ductwork.	Amelia Godfrey, Mike Barcik, Shawn Mullins	**D**

IECC – 2025 -4	**C 406**	*Revise and add the following sections to read as follows:* **SECTION C406** **ADDITIONAL EFFICIENCY PACKAGE OPTIONS** **C406.1 Requirements.** Buildings shall comply with at least one of the following: 1. More efficient HVAC performance in accordance with Section C406.2. 2. Reduced lighting power density system in accordance with Section C406.3. 3. Enhanced lighting controls in accordance with Section C406.4. 4. On-site supply of renewable energy in accordance with Section C406.5. 5. Provision of a dedicated outdoor air system for certain HVAC equipment in accordance with Section C406.6. 6. High-efficiency service water heating in accordance with Section C406.7. 7. Automated shading load management in accordance with Section C406.8. **C406.8 Automated Shading Load Management.** Where *fenestration* on east, south, and west exposures is greater than 20 percent of wall area, load management credits shall be achieved as follows: 1. *Automatic* exterior shading devices or *dynamic glazing* that are capable of reducing solar gain (SHGC) through sunlit *fenestration* by not less than 50 percent when fully closed. The exterior shades shall have fully open and fully closed SHGC determined in accordance with AERC 1. 2. *Automatic* interior shading devices shall have a solar reflectance of not less than 0.50 for the surface facing the *fenestration*. The interior shades shall have fully open and fully closed SHGC determined in accordance with AERC 1. 3. All shading devices, *dynamic glazing*, or shading attachments shall: 3.1 Provide not less than 80 percent coverage of the total *fenestration* on east, south, and west exposures in the *building*. 3.2 Be automatically controlled and shall modulate in multiple steps or continuously the amount of solar gain and light transmitted into the space in response to peak periods and either daylight levels or solar intensity. 3.3 Include a *manual* override located in the same *enclosed space* as the shaded vertical *fenestration* that shall override operation of *automatic* controls for no longer than four hours. Such override shall be locked out during peak periods. For this section, directional exposures shall exclude *fenestration* that has an orientation deviating by more than 45 degrees of facing the cardinal direction.	John Loyer, Somfy Systems Inc., Jimmy Cotty	**D**

		CHAPTER 6 [CE] **REFERENCED STANDARDS** **AERC** Attachments Energy Rating Council 355 Lexington Ave 15th Floor New York, NY 10017 **AERC-1-2021** Procedures for Determining Energy Performance Properties of Fenestration Attachments		
IECC – 2025 - 5	**C 402.4.3.3**	Revise section C402.4.3.3 to read as follows: **C402.4.3.3 Dynamic glazing.** Where *dynamic glazing* or fenestration products combined with permanently mounted shading attachments are ~~is~~ intended to satisfy the SHGC and VT requirements of Table C402.4, the ratio of the higher to lower labeled SHGC shall be greater than or equal to 2.4, and the *dynamic glazing* and shading attachments shall be automatically controlled to modulate the amount of solar gain into the space in multiple steps. *Dynamic glazing* and fenestration products combined with permanently mounted automated shading attachments shall be considered separately from other fenestration, and area-weighted averaging with other fenestration that is not automated~~*dynamic glazing*~~ shall not be permitted. Automated shading attachments shall have fully open and fully closed SHGC and VT determined in accordance with AERC 1. **Exception:** *Dynamic glazing* and fenestration products combined with shading attachments are ~~is~~ not required to comply with this section where both the lower and higher labeled SHGC already comply with the requirements of Table C402.4. **CHAPTER 6 [CE]** **REFERENCED STANDARDS** **AERC** Attachments Energy Rating Council 355 Lexington Ave 15th Floor New York, NY 10017 **AERC-1-2021** Procedures for Determining Energy Performance Properties of Fenestration Attachments	John Loyer, Somfy Systems Inc., Jimmy Cotty	**D**

<table>
<tr>
<td>IECC – 2025 - 6</td>
<td>C407.5.1(1)</td>
<td>Revise Table C407.5.1(1) to read as follows.

TABLE C407.5.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS
<table>
<tr><th>BUILDING COMPONENT</th><th>STANDARD REFERENCE DESIGN</th><th>PROPOSED DESIGN</th></tr>
<tr><td rowspan="4">Vertical fenestration other than opaque doors</td><td>Area
1.The proposed vertical fenestration area; where the proposed vertical fenestration area is less than 40 percent of above- grade wall area.
2. 40 percent of above-grade wall area; where the proposed vertical fenestration area is 40 percent or more of the above- grade wall area.</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table C402.4</td><td>As proposed</td></tr>
<tr><td>SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used</td><td>As proposed</td></tr>
<tr><td>Shading:
External shading and PF: None
Manually controlled shading devices such as blinds or shades are not required to be modeled.
Automatically controlled permanently attached shading devices shall not be modeled.</td><td>~~As proposed~~
Manually controlled shading devices shall be modeled the same as in the standard reference design.
Automatically controlled permanently mounted shading devices shall be modeled.</td></tr>
<tr><td rowspan="4">Skylights</td><td>Area
1. The proposed skylight area; where the proposed skylight area is less than 3 percent of gross area of roof assembly.
2. 3 percent of gross area of roof assembly; where the proposed skylight area is 3 percent or more of gross area of roof assembly</td><td>As proposed</td></tr>
<tr><td>U-factor: as specified in Table C402.4</td><td>As proposed</td></tr>
<tr><td>SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.</td><td>As proposed</td></tr>
<tr><td>Shading:
Manually controlled shading devices such as blinds or shades are not required to be modeled.
Automatically controlled permanently attached shading devices shall not be modeled.</td><td>Manually controlled shading devices shall be modeled the same as in the standard reference design.
Automatically controlled permanently mounted shading devices shall be modeled.</td></tr>
</table>
</td>
<td>John Loyer, Somfy Systems Inc., Jimmy Cotty</td>
<td>D</td>
</tr>
</table>

<table>
<tr>
<td>IECC – 2025 - 7</td>
<td>R405.5.2(1)</td>
<td>Revise Table R405.5.2(1) to read as follows:
TABLE R405.5.2(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS
<table>
<tr><th>BUILDING COMPONENT</th><th>STANDARD REFERENCE DESIGN</th><th>PROPOSED DESIGN</th></tr>
<tr><td rowspan="7">Vertical fenestration other than opaque doors</td><td>Total area[h] =
(a)The proposed glazing area, where the proposed glazing area is less than 15 percent of the conditioned floor area
(b)15 percent of the conditioned floor area, where the proposed glazing area is 15 percent or more of the conditioned floor area.</td><td>As proposed</td></tr>
<tr><td>Orientation: equally distributed to four cardinal compass orientations (N, E, S & W).</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>SHGC: as specified in Table R402.1.2 except that for climates with no requirement (NR) SHGC = 0.40 shall be use</td><td>As proposed</td></tr>
<tr><td>Interior shade fraction: 0.92-(0.21 SHGC for the standard reference design)

Automatically controlled permanently attached shading devices shall not be modeled.</td><td>For fixed or manually controlled shading devices, 0.92-(0.21 × SHGC as proposed).

Automatically controlled permanently mounted shading devices shall be modeled.</td></tr>
<tr><td>External shading: None</td><td>As proposed</td></tr>
<tr><td>Skylights</td><td>None</td><td>As proposed

Shading: Manually controlled shading devices shall be modeled the same as in the standard reference design.

Automatically controlled permanently mounted shading devices shall be modeled.</td></tr>
</table>
</td>
<td>John Loyer, Somfy Systems Inc., Jimmy Cotty</td>
<td>D</td>
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SOUTHFACE & OWENS CORNING

Proposed new language for R403.3

Amelia Godfrey – Program Manager of EarthCraft House
Mike Barcik – Technical Principal, Southface
Shawn Mullins – Sr. Sales Lead: Technical Sales, National Codes and Product Alignment

INTENT

- Provide builders and HVAC designers a new option in the GA Energy Code for bringing ductwork into conditioned space
- Clarify and simplify existing model code language to meet specific GA climate zone requirements
- Ensure proper installation of systems

PROOF OF PERFORMANCE

- Proposed language is already used in the relevant portions of the 2018 and 2021 IECC
- Extensive research by US DOE has produced guidance addressing condensation concerns
- Industry has current partnerships with Florida Solar Energy Center (FSEC) to verify and further maximize the efficiency of this strategy in neighboring states

TWO PROPOSED OPTIONS AND ONE DEFINITION

1. Ducts that are in Conditioned Space (R-8 ducts covered with at least R-30 insulation)
2. Ducts that are Buried in insulation (R-8 covered with at least R-19 insulation)

3. The third amendment proposes how to define the R-value of buried ducts (duct R-value + insulation above it)

1: R403.3.2 DUCT SYSTEMS LOCATED IN CONDITIONED SPACE

R403.3.7

Summary:

Ducts that are in Conditioned Space (R-8 ducts covered with at least R-30 insulation)

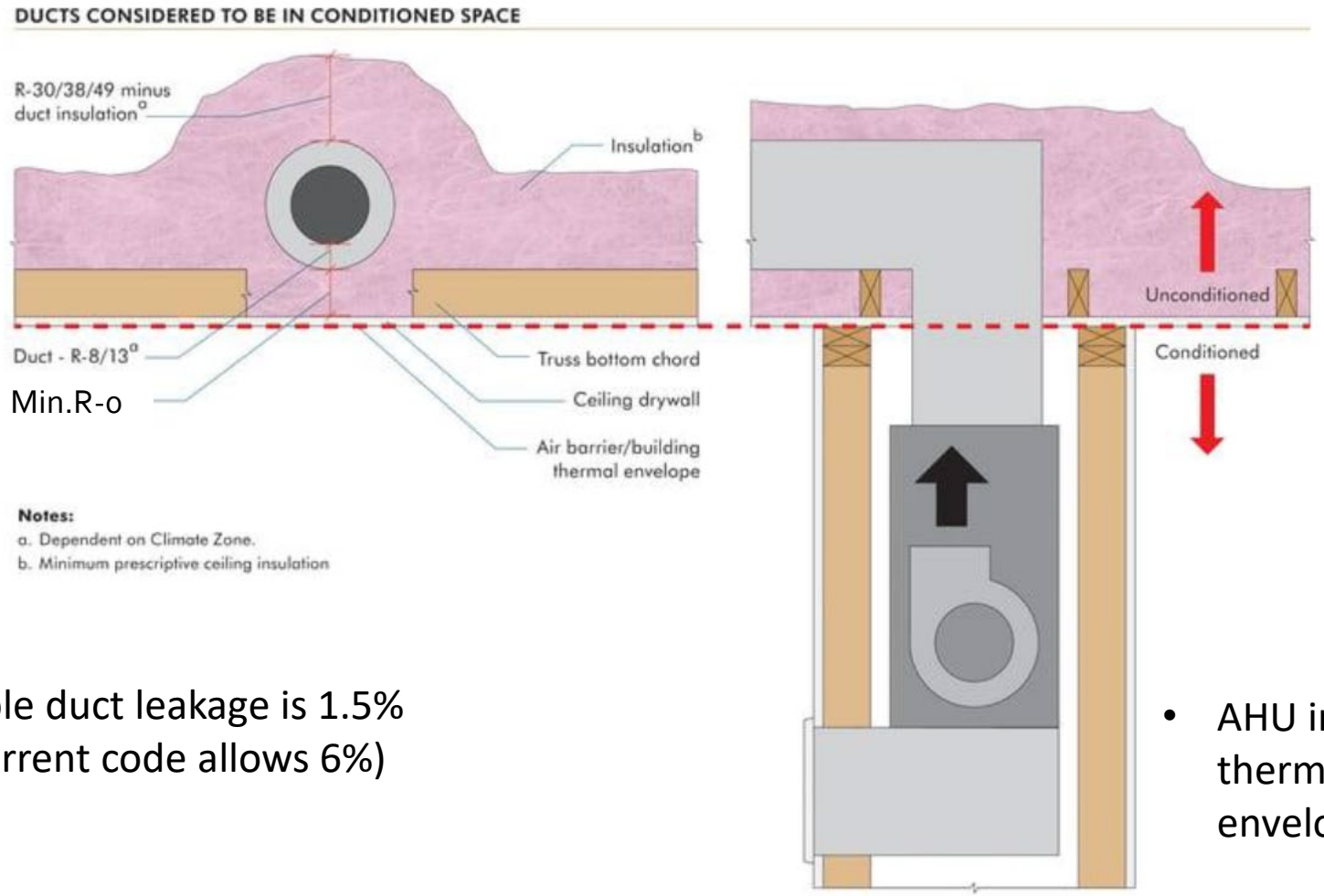
R403.3.2 Duct Systems Located in Conditioned Space

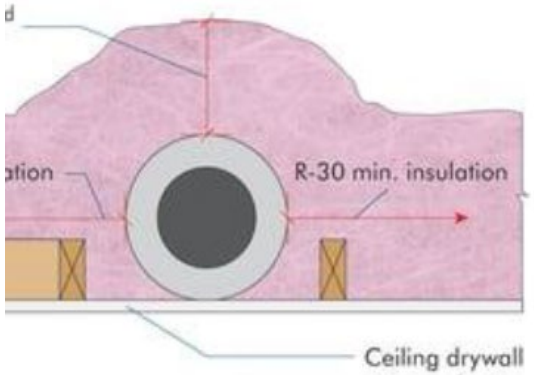
For *duct systems* to be considered inside a *conditioned space,* the *space conditioning equipment* shall be located completely on the conditioned side of the *building thermal envelope*. The *ductwork* shall comply with the following as applicable:

1. The *ductwork* shall be located completely on the conditioned side of the *building thermal envelope*.
2. *Ductwork* in ventilated attic spaces or unvented attics with vapor diffusion ports shall be buried within ceiling insulation in accordance with R403.3.3 and shall comply with the following:
   - 2.1 The air handler is located completely within the continuous air barrier and within the building thermal envelope.
   - 2.2 The *ductwork* leakage, as measured either by a rough-in test of the supply and return ductwork or a post-construction *duct system* leakage test to outside the *building thermal envelope* in accordance with Section R403.3.3, 1.5 cubic feet per minute (42.5 L/min) per 100 square feet (9.29 m2) of *conditioned floor area* served by the *duct system*.
   - 2.3 The ceiling insulation R-value installed against and above the insulated *ductwork* is greater than or equal to the proposed ceiling insulation R-value, less the R-value of the insulation on the *ductwork*.

AMENDMENT ONE: R403.3.~~2~~ R403.3.7: DUCT SYSTEMS LOCATED IN CONDITIONED SPACE

R-30 insulation + R-8 Ducts = GA Code Requirement of R-38





R-25 insulation + R-13 Ducts = GA Code Requirement of R-38

- Allowable duct leakage is 1.5% (GA's current code allows 6%)
- AHU inside thermal envelope

Image Source: Insulation Institute, Deeply Buried Ducts, https://information.insulationinstitute.org/blog/new-options-for-hvac-duct-design

2: R403.3.~~3~~ DUCTWORK BURIED WITHIN CEILING INSULATION

R403.3.8

Summary:
Ducts that are buried in insulation (R-8 covered with at least R-19 insulation)

R403.3.~~3~~ Ductwork Buried Within Ceiling Insulation

Where supply and return ductwork is partially or completely buried in ceiling insulation, such ductwork shall comply with the following:

1. The supply and return ductwork shall be insulated with not less than R-8 insulation.
2. At all points along the ductwork the ceiling insulation R-value against and above the top of the insulated ductwork shall be not less than R-19.
3. In Climate Zones 2A and 3A the supply ductwork shall be completely buried within ceiling insulation, insulated to an R-value of not less than R-13 and in compliance with the vapor retarder requirements of Section 604.11 of the International Mechanical Code or Section M1601.4.6 of the International Residential Code, as applicable.

    Exception 1: Sections of the supply ductwork that are less than 3 feet (914 mm) from the supply outlet.

    Exception 2: In Climate Zones 2A and 3A where installed in an unvented attic with vapor diffusion ports, the supply ductwork shall be completely buried within the insulation in the ceiling assembly at the floor of the attic, insulated to an R-value of not less than R-8 and in compliance with the vapor retarder requirements of Section 604.11 of the International Mechanical Code or Section M1601.4.6 of the International Residential Code, as applicable.

R403.3.8

AMENDMENT TWO: R404.3.3 DUCTWORK BURIED WITHIN CEILING INSULATION – UNVENTED ATTIC WITH VAPOR DIFFUSION PORTS

- At all points along the ductwork, the ceiling insulation R-value against and above the top of the insulated ductwork shall be not less than R-19
- Allowable duct leakage is 6% (GA's current code)

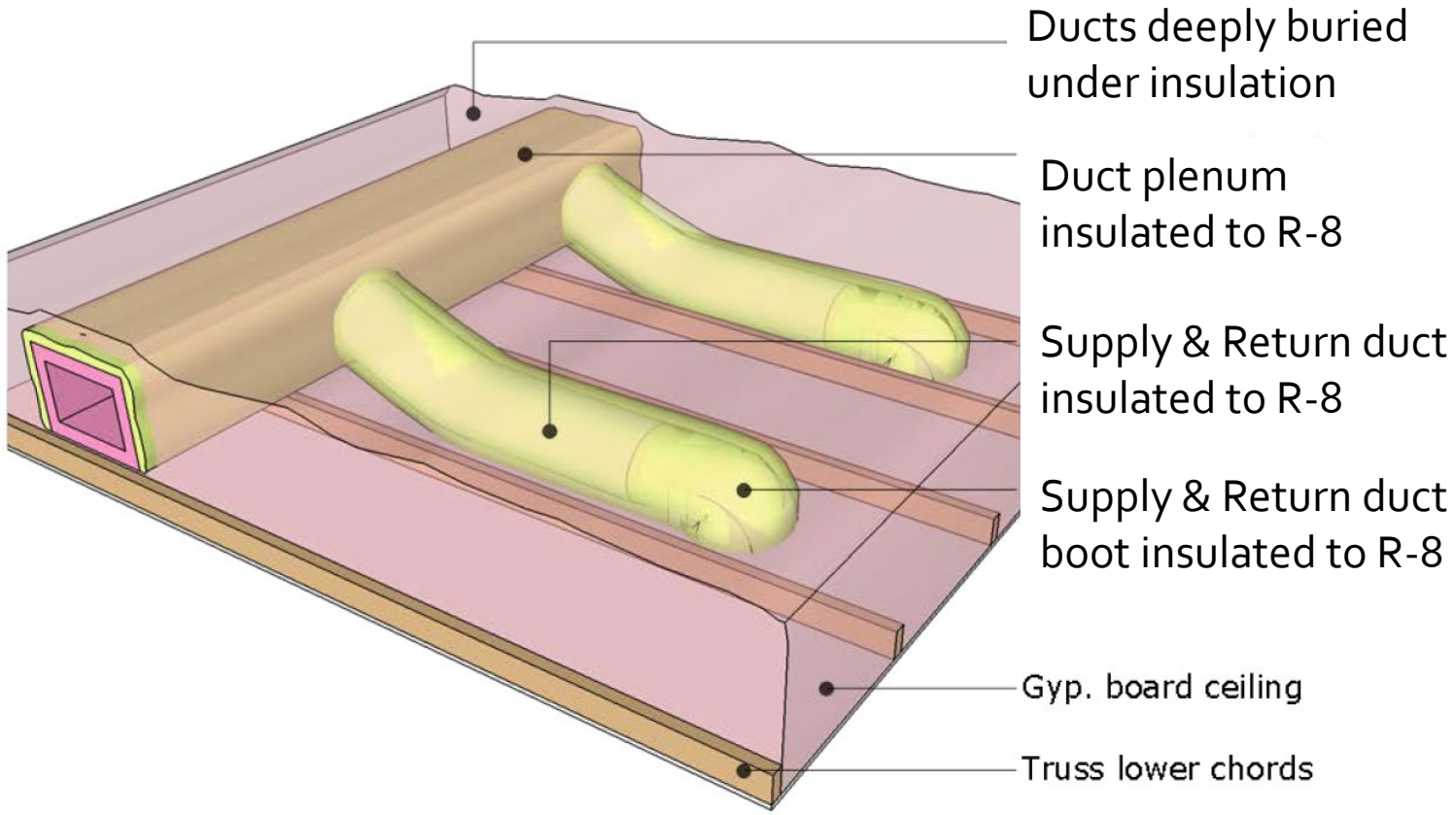


Figure 4. Detail of buried and encapsulated duct

Image Source: Shapiro et al, *Reducing Thermal Losses and Gains with Buried and Encapsulated Ducts in Hot-Humid Climates*

3. R403.3.4 R-VALUE OF DEEPLY BURIED DUCTS

Summary:

The third amendment proposes how to define the R-value of buried ducts (duct R-value + insulation above it)

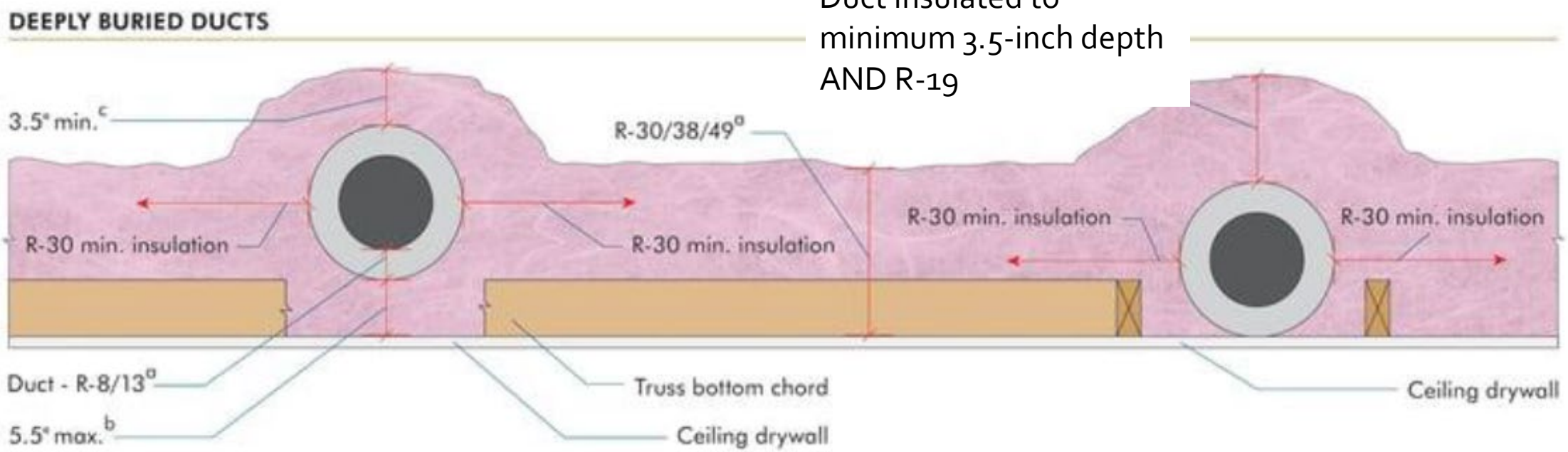
R403.3.9

R403.3.4 *R*-value of Deeply Buried Ducts

Where complying using Section R405, the sections of ductwork that are installed in accordance with Section R403.3.3 surrounded with blown-in attic insulation having an *R*-value of R-30 or greater, and located such that the top of the ductwork is not less than 3.5 inches (89 mm) below the top of the insulation and covered by a minimum R-19, the ductwork insulation R-value of the ductwork shall be considered the combined R-value of the ductwork insulation plus the ceiling insulation above the ductwork.

R403.3.9

AMENDMENT THREE: R403.3.4 DEFINES R-VALUE OF DEEPLY BURIED DUCTS



Duct insulated to minimum 3.5-inch depth AND R-19

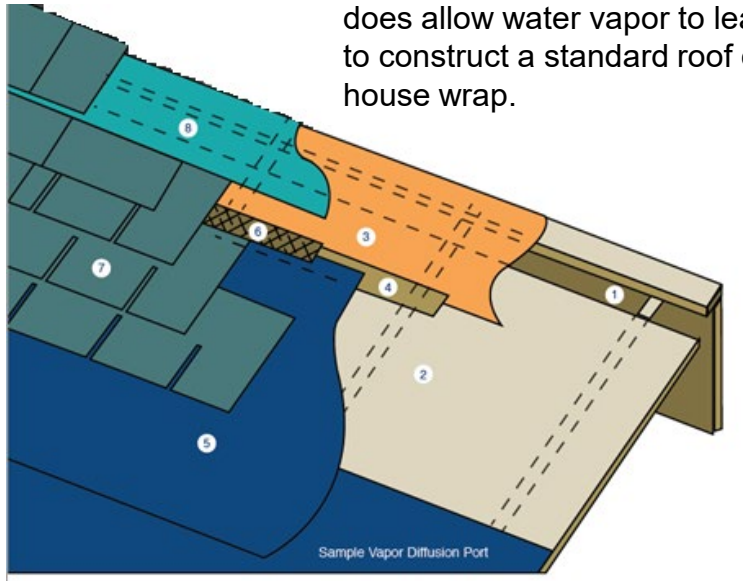
Total duct R-value is R-value of duct + R-value of insulation above it

Image Source: Insulation Institute, Deeply Buried Ducts, https://information.insulationinstitute.org/blog/new-options-for-hvac-duct-design

UNVENTED ATTIC WITH VAPOR DIFFUSION PORTS – ALLOW R-8 INSTEAD OF R-13 FOR BURIED DUCTS

Getting Vapor Diffusion Ports Right

A vapor diffusion port prevents air from moving in or out of the attic – but it does allow water vapor to leave the space. One way of building the port is to construct a standard roof or ridge vent but seal the vent with a typical house wrap.

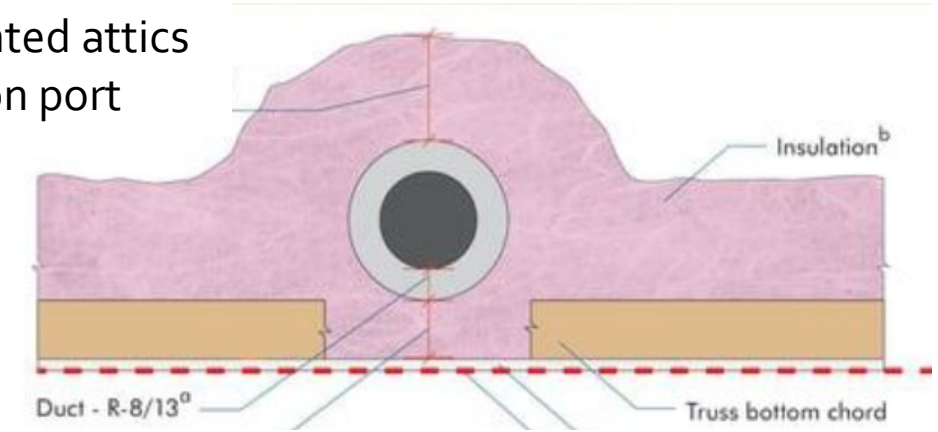


01. Vent holes or strip cut in roof sheathing sized per the IRC code requirement or 1/600th of the ceiling area.
02. Roof sheathing.
03. Membrane that is vapor permeable but prevents air from entering—housewrap is typically used in this application.
04. Durable adhesive tape (compatible with both surfaces) holds the vapor permeable membrane (3) in place and air seals between the roof sheathing (2) and the membrane (3).
05. Roofing underlayment—typically 15 or 30 pound asphalt felt.
06. Durable adhesive tape that is compatible with both surfaces to hold the roofing underlayment in place.
07. Asphalt roofing shingles - or other low perm material in contact with the roof.
08. Typical roof ridge vent to protect the membrane (3) and prevent rain, snow, and debris from entering.

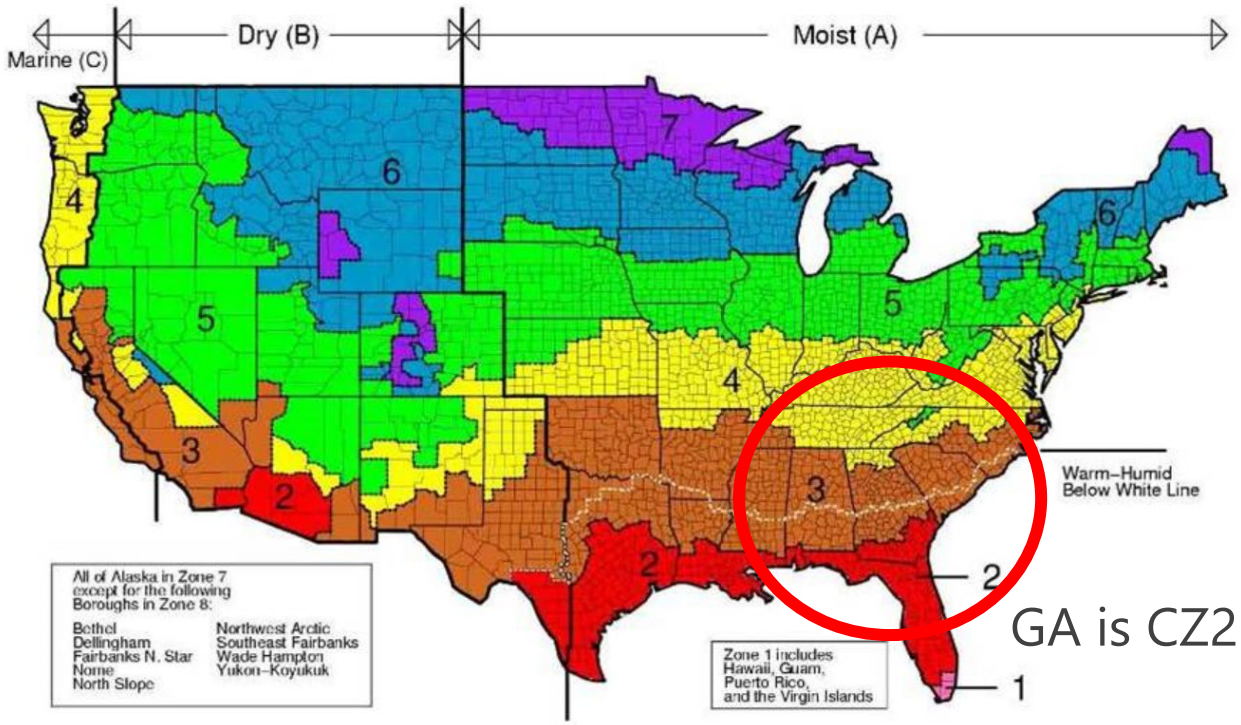
Image Source: Insulation Institute, *Building Unvented Attic Assemblies – No89*

Georgia State Minimum Standard One and Two Family Dwelling Code, Chapter 2 Definitions: **[RB] VAPOR DIFFUSION PORT.** *A passageway for conveying water vapor from an unvented attic to the outside atmosphere.*

- Ducts insulated to R-13 in vented attics
- Ducts R-8 in unvented attics with vapor diffusion port

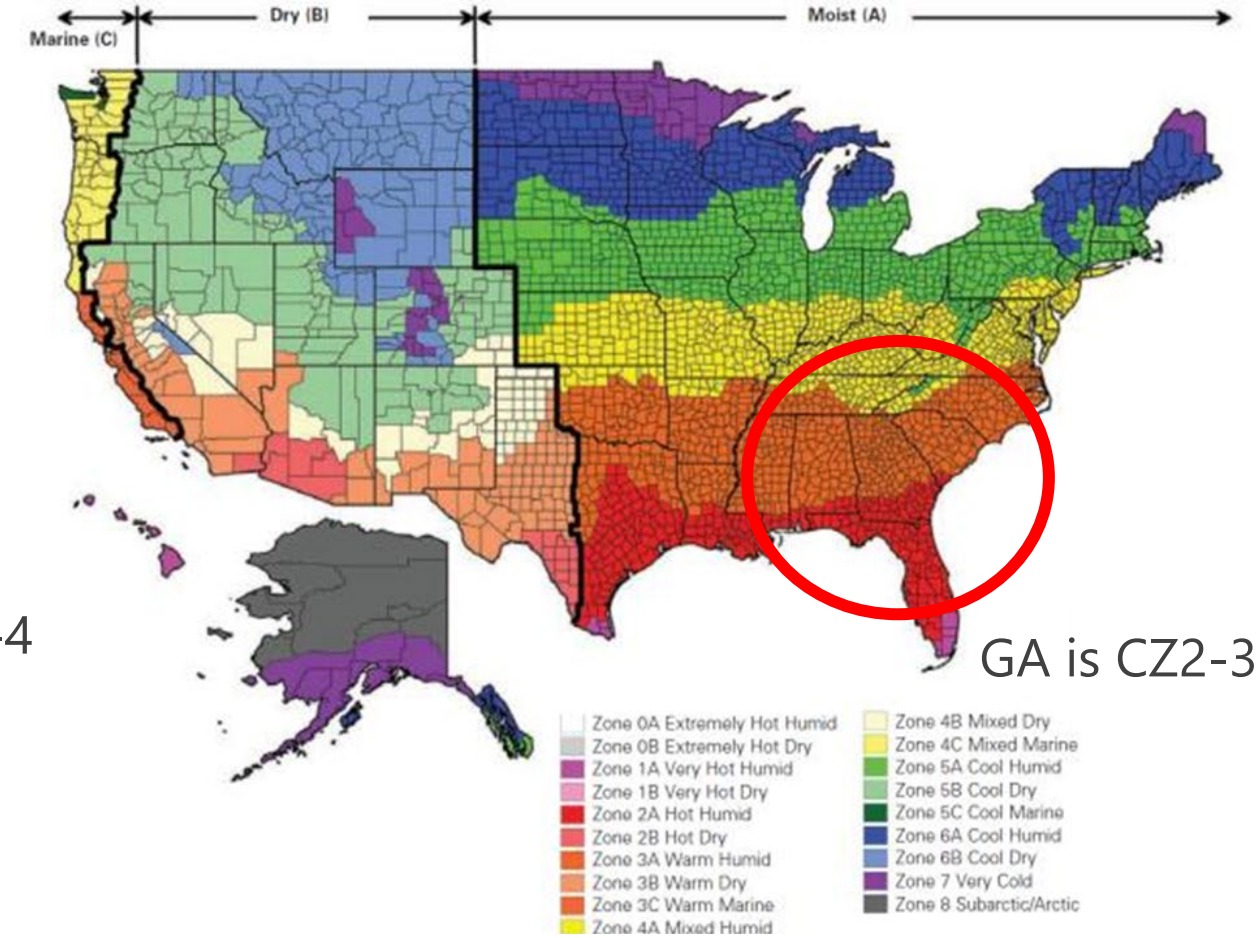


CLIMATE ZONES REDRAWN IN 2021



GA is CZ2-4

IECC 2003-18 Climate Zones



GA is CZ2-3

IECC 2021 Climate Zones