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-2023-7 2023 ERB Amendments submittals and Support P21 Opposition P23		Add new definition to section R202 Air-Impermeable Insulation: An insulation that functions as an air barrier or an insulation combined with a atomized sealant-based system that functions as an air barrier.	Joel Martell	
IECC-2023-8 2023 ERB Amendments submittals and Support P24		Add footnote "j" to Table 402.1.2 requiring cantilevered floors over outside air to be insulated to R-30. Revise Table Header Floor *R*-Value[j] j-Cantilevered floors over outside air shall be R-30 and the band area above the supporting wall shall be blocked; penetrations of blocking shall be air sealed.	Mike Barcik, Southface, Bettie Sleeth & Tim Williams - HBAG	
IECC-2023-9 2023 ERB Amendments submittals and Support P24		Add footnote "j" to Table 402.1.4 requiring cantilevered floors over outside air to be maximum U-factor of 0.035. Revise Table Header Floor *U*-Factor[j] j-Cantilevered floors over outside air shall be U-0.035 and the band area above the supporting wall shall be blocked; penetrations of blocking shall be air sealed.	Mike Barcik, Southface, Bettie Sleeth & Tim Williams - HBAG	

IBC-2023-26 2023 ERB Amendments submittals and Support P59		**Revise as Follows** **1511.3.1.1 Exceptions.** A *roof recover* shall not be permitted where any of the following conditions occur: 1. Where the existing roof or roof covering is ~~water soaked~~ found to have moisture present from Infrared testing (per ASTM C1153−10 (Reapproved 2015)), Electrical Impedance testing (per ASTM D7954/ D7954M −15a) or Nuclear testing (per ANSI/SPRI/RCI NT-1 2012 (Reapproved 2017)) to the extent the existing roof or roof covering cannot be removed and restored on a spot basis, or where the existing roof or roof covering has deteriorated to the point ~~that the existing roof or roof covering~~ it is not adequate as a base for additional roofing. 2. Where the existing roof covering is slate, clay, cement or asbestos-cement tile. 3. Where the existing roof has two or more applications of any type of roof covering	Christian N. Dawkins, P.E.	
IRC-2023-27 2023 ERB Amendments submittals and Support P61		**Add new section** **R903.5 Waterproofing weather-exposed areas.** Balconies, decks, landings, exterior stairways, occupied roofs, and similar surfaces exposed to the weather and sealed underneath shall be waterproofed and sloped a minimum of 1/4 unit vertical in 12 units horizontal (2% slope) for drainage away from adjoining walls or assemblies.	Christian N. Dawkins, P.E.	
IRC-2023-28 2023 ERB Amendments submittals and Support P62		Revise as Follows R703.7.3 *Water-resistive barriers* shall be installed as required in Section 703.2 and, where applied over ~~wood-based~~ sheathing, shall include a water-resistive, vapor-permeable barrier with a performance at least equivalent to two layers of Grade D paper. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section R703.4 and intended to drain to the water-resistive barrier shall be directed ~~between the layers~~ over the top of the water-resistive barrier.	Christian N. Dawkins, P.E.	

IRC – 2023 – 29 **Ga Amendments** 2023 ERB Amendments submittals and Support P63		Revise Georgia International Residential Code 2020 Amendments as follows: **SECTION R303** **LIGHT, VENTILATION AND HEATING** ~~*Revise Section R303.4 'Mechanical ventilation' to read as follows:~~ ~~**R303.4 Mechanical ventilation.** Where the air infiltration rate of a *dwelling unit* is 3 air changes per hour or less where tested with a blower door at a pressure of 0.2 inch w.c (50 Pa) in accordance with Section N1102.4.1.2, the *dwelling unit* shall be provided with whole-house mechanical ventilation in accordance with Section M1505.4.~~ ~~(Effective January 1, 2020)~~	Eric Lacey	

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 5

CODE: IRC SECTION: 806

PROPONENT: Shawn Mullins on behalf of Owens Corning DATE: 12/13/21

EMAIL: shawn.mullins@owenscorning.com

ADDRESS: 9538 W Patrick Lane, Peoria, AZ 85383

TELEPHONE NUMBER: (623)695-5694 FAX NUMBER: (480)500-6158

CHECK ONE:
☐ Revise section to read as follows:
☒ Add new section to read as follows:
☐ Delete section and substitute the following:
☐ Delete without substitution:

~~LINE THROUGH MATERIAL TO BE DELETED.~~ UNDERLINE MATERIAL TO BE ADDED

☐ Approve ☐ Approve as amended (DCA STAFF ONLY) ☐ Disapprove ☐ Withdrawn

DESCRIPTION:
See text below and NOTE – this proposal submitted via email to Jim Reynolds: jim.reynolds@dca.ga.gov

REASON/INTENT:
See reason statement below

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
None

PROPOSED SUPPLEMENTAL LANGUAGE TO THE 2018 GEORGIA INTERNATIONAL RESIDENTIAL CODE BUILDING CODE

CHAPTER 8 ROOF-CEILING CONSTRUCTION

SECTION R806

ROOF VENTILATION

R806.1 Ventilation required.

Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow.

Ventilation openings shall have a least dimension of / inch (1.6 mm) minimum and / inch (6.4 mm) maximum.

Ventilation openings having a least dimension larger than / inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of / inch (1.6 mm) minimum and / inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air and shall be protected to prevent the entry of birds, rodents, snakes and other similar creatures.

R806.2 Minimum vent area.

The minimum net free ventilating area shall be / of the area of the vented space.

Exception: The minimum net free ventilation area shall be / of the vented space provided both of the following conditions are met:

1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. Not less than 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically. The balance of the required ventilation provided shall be located in the bottom one-third of the attic space. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

R806.3 Vent and insulation clearance.

Where eave or cornice vents are installed, blocking, bridging and insulation shall not block the free flow of air. Not less than a 1-inch (25 mm) space shall be provided between the insulation and the roof sheathing and at the location of the vent.

R806.4 Installation and weather protection.

Ventilators shall be installed in accordance with manufacturer's instructions. Installation of ventilators in roof systems shall be in accordance with the requirements of Section R903. Installation of ventilators in wall systems shall be in accordance with the requirements of Section R703.1.

R806.5 Unvented attic and unvented enclosed rafter assemblies

5. 2 In Climate Zones 1,2 and 3, air-permeable insulation installed in unvented *attics* shall meet the following requirements.

5.2.1 An approved vapor *diffusion port* shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
5.2.2. The port area shall be greater than or equal to 1:150 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirements.
5.2.3 The vapor-permeable membrane in the *vapor diffusion port* shall have a vapor permeance rating of great than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.
5.2.4 The *vapor diffusion port* shall serve as an air barrier between the *attic* and the exterior of the building.
5.2.5. The *vapor diffusion port* shall protect the *attic* against the entrance of rain or snow.
5.2.6 Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.
5.2.7 The roof slope shall be greater than or equal to 3:12 (vertical/horizontal)
5.2.8 Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing.
5.2.9 *Air-impermeable insulation,* if any, shall be directly above or below the structural roof sheathing and is not required to meet the R-value in Table 806.5. Where directly below the structural roof sheathing, there shall be no space between the *air-impermeable insulation* and air-permeable insulation.
5.2.10 The air shall be supplied to a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m^2) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating.

Reason Statement:

The 2018 IRC introduced unvented attics and unvented enclosed rafter assemblies using only air permeable insulation as an acceptable construction method as long as certain criteria and guidelines are followed. One of the key guidelines in using air permeable insulation in an unvented attic is the addition of a vapor diffusion port, this port constructability is similar to the addition of a ridge vent in traditional roof assemblies. This system has been studied, researched and vetted for many years and has been proven to be successful.
Advantages:

- **Airtightness.** a house that has a conditioned unvented attic can be significantly more airtight than houses without it thus making it more energy efficient. Even though the model code has requirements for duct tightness levels the ductwork and air handlers are often leaky. Often the ductwork and/or the air handlers are located in the attic, if the attic is conditioned the leaks will not have a big energy penalty, if the attic is unconditioned and vented the leaks from these systems can result in a pressure difference causing more infiltration into the home. Figure 1, below outlines this issue.

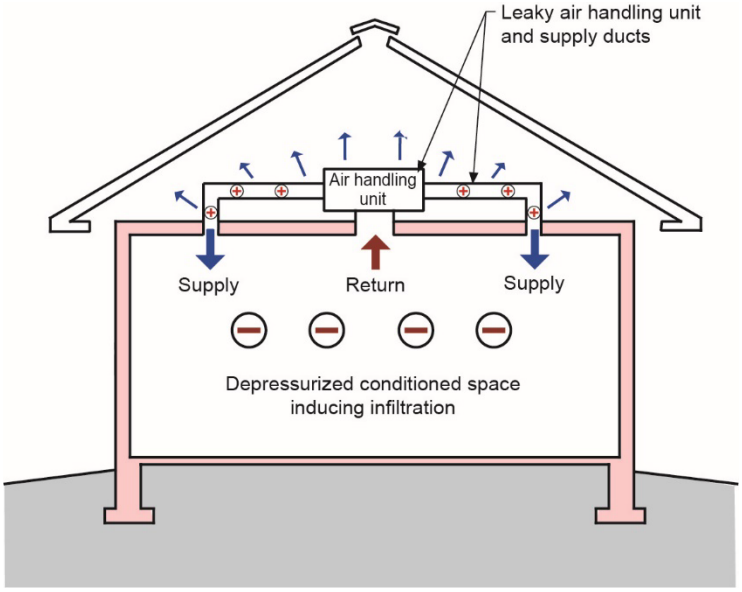

Figure 1. (Lstiburek, J.W.)

- **Fire Protection.** Unvented attics can provide other benefits as well including helping to reduce the spread of fires. This is particularly true for areas where buildings are close to one another, typically fires start in neighboring buildings due to debris getting sucked into the house via attics vents, if there are no vents it can significantly reduce the fire risk.
- **Wind Uplift.** Other benefits come in areas of the country where there is a high wind potential, mostly the coastal areas. High wind events can cause the soffit vents to breakdown and create significant uplift on the roof assemblies which can cause damage to the roof assembly and rest of the dwelling.
- **Moisture Control in Humid Climates.** The traditional way of thinking is that vented attics help to alleviate moisture issues and this may be true in certain climate zones. In a hot humid climate having a vented attic will cause moisture problems, it will bring the hot humid air from outside the home into the attic which causes ductwork to sweat which in turn can cause moisture and mold growth on sheathing and framing. The alternative is unvented attics, these attics have shown to have some moisture concerns as well near the ridge, however, the introduction of vapor diffusion ports has shown to significantly reduce the moisture build up in these area to help to alleviate moisture build up. The difference in moisture is shown below.

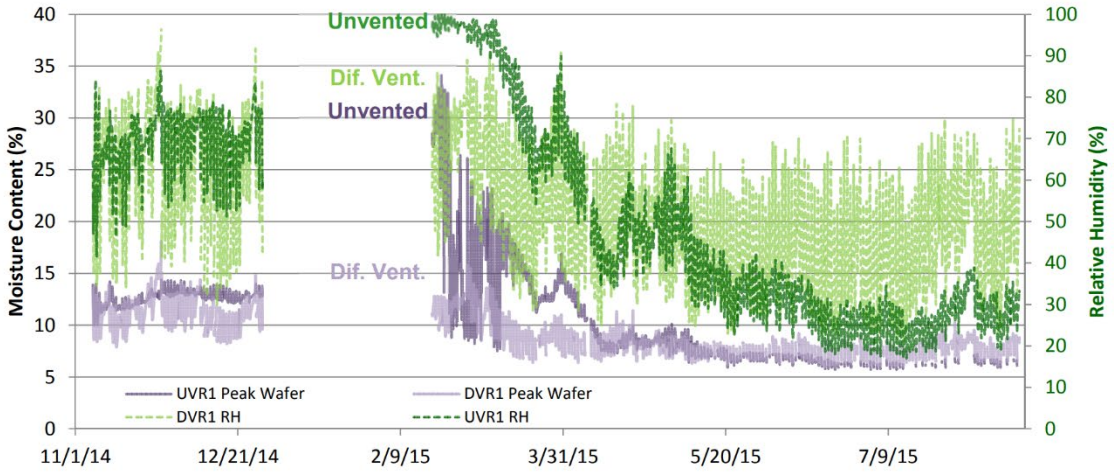

Figure 2. (Ueno, K and Lstiburek, J.W)

- **Cost Effectiveness.** *Description on how using air-permeable insulation to construct a home with a conditioned attic is a low cost pathway for builders*

References:

1. Lstiburek, J.W.; Venting vapor, ASHRAE Journal, July 2015.
2. Ueno, K and Lstiburek, J.W.; Building America Report: Field testing of an unvented roof with fibrous insulation, tiles, and vapor diffusion venting, Building Science Corporation, November 2015.

Regards,

Shawn Mullins
Sr. Sales Lead: Technical Sales & Government Affairs
North American Building Insulation | Sales
M: 623-695-5694
shawn.mullins@owenscorning.com

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: 806 B (DCA USE ONLY) PAGE 1 OF 5

CODE: IRC SECTION: 806

PROPONENT: Shawn Mullins on behalf of Owens Corning DATE: 12/13/21

EMAIL: shawn.mullins@owenscorning.com

ADDRESS: 9538 W Patrick Lane, Peoria, AZ 85383

TELEPHONE NUMBER: (623)695-5694 FAX NUMBER: (480)500-6158

CHECK ONE:
☐ Revise section to read as follows:
☒ Add new section to read as follows:
☐ Delete section and substitute the following:
☐ Delete without substitution:

~~LINE THROUGH MATERIAL TO BE DELETED.~~ UNDERLINE MATERIAL TO BE ADDED

☐ Approve ☐ Approve as amended (DCA STAFF ONLY) ☐ Disapprove ☐ Withdrawn

DESCRIPTION:
See text below and NOTE – this proposal submitted via email to Jim Reynolds: jim.reynolds@dca.ga.gov

REASON/INTENT:
See reason statement below

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
None

PROPOSED SUPPLEMENTAL LANGUAGE TO THE 2018 GEORGIA INTERNATIONAL RESIDENTIAL CODE BUILDING CODE

CHAPTER 8 ROOF-CEILING CONSTRUCTION

SECTION R806

ROOF VENTILATION

R806.1 Ventilation required.

Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall
have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow.
Ventilation openings shall have a least dimension of / inch (1.6 mm) minimum and / inch (6.4 mm) maximum.
Ventilation openings having a least dimension larger than / inch (6.4 mm) shall be provided with corrosion-resistant
wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of /
inch (1.6 mm) minimum and / inch (6.4 mm) maximum. Openings in roof framing members shall conform to the
requirements of Section R802.7. Required ventilation openings shall open directly to the outside air and shall be
protected to prevent the entry of birds, rodents, snakes and other similar creatures.

R806.2 Minimum vent area.

The minimum net free ventilating area shall be / of the area of the vented space.
Exception: The minimum net free ventilation area shall be / of the vented space provided both of the following
conditions are met:
1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. Not less than 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically. The balance of the required ventilation provided shall be located in the bottom one-third of the attic space. Where the location of
wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

R806.3 Vent and insulation clearance.

Where eave or cornice vents are installed, blocking, bridging and insulation shall not block the free flow of air. Not less
than a 1-inch (25 mm) space shall be provided between the insulation and the roof sheathing and at the location of the
vent.

R806.4 Installation and weather protection.

Ventilators shall be installed in accordance with manufacturer's instructions. Installation of ventilators in roof systems
shall be in accordance with the requirements of Section R903. Installation of ventilators in wall systems shall be in
accordance with the requirements of Section R703.1.

R806.5 Unvented attic, sealed attic and unvented enclosed rafter assemblies

R806.5 Unvented attics with insulation and thermal boundary located at the roof deck

1. The unvented attic space is completely within the building thermal envelope.
2. Interior Class I vapor retarders are not installed on the ceiling side (attic floor) of the unvented attic assembly.
3. Where wood shingles or shakes are used, a minimum / -inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. Air-impermeable insulation
4.1. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or, shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
4.2. The air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing and shall be in accordance with the R-values in Table R806.5 for condensation control
4.3. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.
5. Air-permeable Insulation
5.1 Air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing, except that it shall also be in accordance with the R-values in Table R806.5 for condensation control, and thus include a layer of air-impermeable insulation where required by Table R806.5..
5.2 Positively pressured air shall be supplied to the attic space at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating
6. Combination of air-impermeable and air-permeable insulation
6.1. Where both air-impermeable and air-permeable insulation are provided, the air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing and shall be in accordance with the R-values in Table R806.5 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.
6.2. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer
6.3. Positively pressured air shall be supplied to the attic space at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating

R806.6 Sealed attic with diffusion ports with air-permeable insulation and thermal boundary located at the ceiling
1. The unvented attic space is completely within the building thermal envelope.
2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in sealed attics shall meet the following requirements:
2.1 An approved vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
2.2 The port area shall be greater than or equal to 1:150 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
2.3 The vapor-permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.
2.4 The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building.
2.5 The vapor diffusion port shall protect the attic against the entrance of rain and snow.
2.6 Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.

2.7 Positively pressured air to the attic space is not required in this assembly.

R806.7 Enclosed Rafter Spaces
Enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall adhere to the following:
1. Interior Class I vapor retarders are not installed on the ceiling side of the unvented enclosed roof framing assembly.
2. Where wood shingles or shakes are used, a minimum / -inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing
3. Enclosed rafter spaces shall comply with Sections R806.1, R806.2 and R806.3 of this Code.

Reason Statement:

The 2018 IRC introduced unvented attics and unvented enclosed rafter assemblies using only air permeable insulation as an acceptable construction method as long as certain criteria and guidelines are followed. One of the key guidelines in using air permeable insulation in an unvented attic is the addition of a vapor diffusion port, this port constructability is similar to the addition of a ridge vent in traditional roof assemblies. This system has been studied, researched and vetted for many years and has been proven to be successful. This language carries over existing IRC language and further breaks it into more manageable and understandable sections, based on assembly type(s) and thermal boundary location. The expectation is that by doing so the intent of this code can be more easily understood and executed. Additionally, the intention here is to reformat existing base IRC model code language into more manageable and understandable sections, based on assembly type(s) and thermal boundary location. The expectation is that by doing so the intent of this code can be more easily understood and executed.
Advantages:

- **Airtightness.** a house that has a conditioned unvented attic can be significantly more airtight than houses without it thus making it more energy efficient. Even though the model code has requirements for duct tightness levels the ductwork and air handlers are often leaky. Often the ductwork and/or the air handlers are located in the attic, if the attic is conditioned the leaks will not have a big energy penalty, if the attic is unconditioned and vented the leaks from these systems can result in a pressure difference causing more infiltration into the home. Figure 1, below outlines this issue.

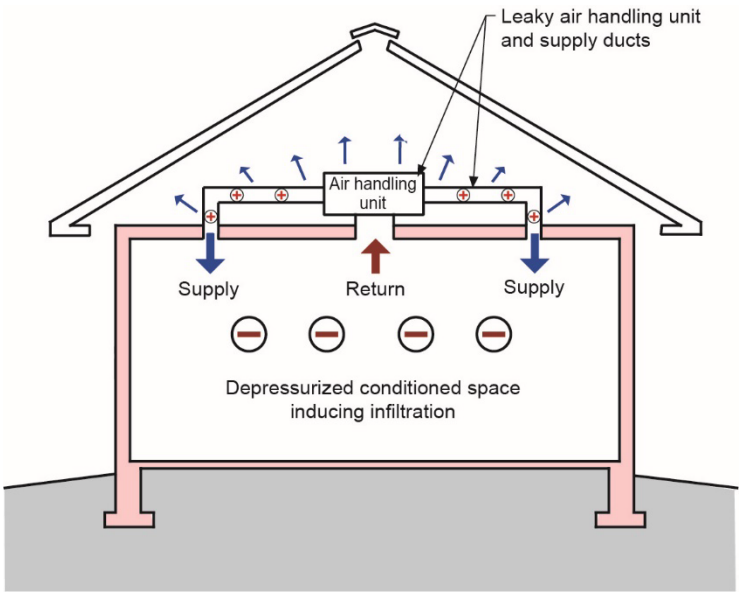

Figure 1. (Lstiburek, J.W.)

- **Fire Protection.** Unvented attics can provide other benefits as well including helping to reduce the spread of fires. This is particularly true for areas where buildings are close to one another, typically fires start in neighboring buildings due to debris getting sucked into the house via attics vents, if there are no vents it can significantly reduce the fire risk.
- **Wind Uplift.** Other benefits come in areas of the country where there is a high wind potential, mostly the coastal areas. High wind events can cause the soffit vents to breakdown and create significant uplift on the roof assemblies which can cause damage to the roof assembly and rest of the dwelling.
- **Moisture Control in Humid Climates.** The traditional way of thinking is that vented attics help to alleviate moisture issues and this may be true in certain climate zones. In a hot humid climate having a vented attic will cause moisture problems, it will bring the hot humid air from outside the home into the attic which causes ductwork to sweat which in turn can cause moisture and mold growth on sheathing and framing. The alternative is unvented attics, these attics have shown to have some moisture concerns as well near the ridge, however, the introduction of vapor diffusion ports has shown to significantly reduce the moisture build up in these area to help to alleviate moisture build up. The difference in moisture is shown below.

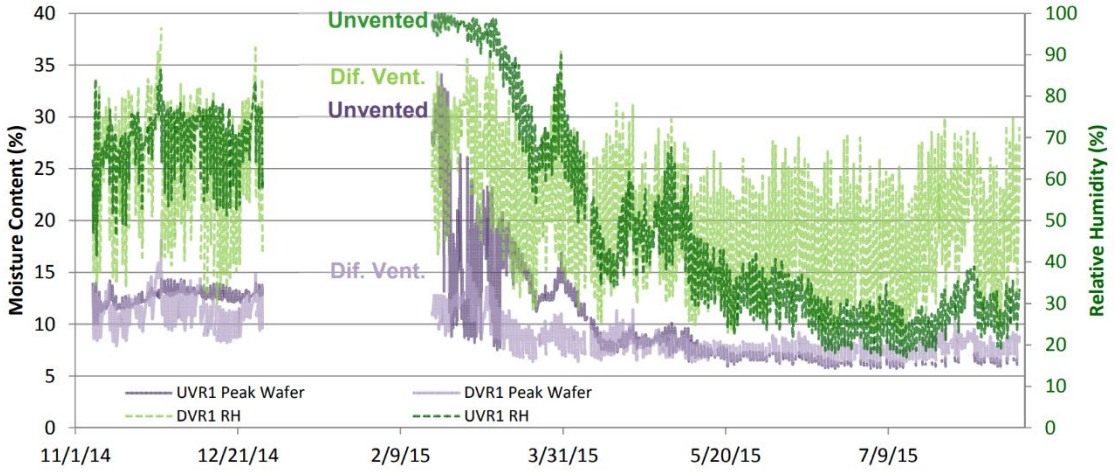

Figure 2. (Ueno, K and Lstiburek, J.W)

- **Cost Effectiveness.** *Description on how using air-permeable insulation to construct a home with a conditioned attic is a low cost pathway for builders*

References:

1. Lstiburek, J.W.; Venting vapor, ASHRAE Journal, July 2015.
2. Ueno, K and Lstiburek, J.W.; Building America Report: Field testing of an unvented roof with fibrous insulation, tiles, and vapor diffusion venting, Building Science Corporation, November 2015.

Regards,
Shawn Mullins
Sr. Sales Lead: Technical Sales & Government Affairs
North American Building Insulation | Sales
M: 623-695-5694
shawn.mullins@owenscorning.com