GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 2

CODE: IECC / IRC SECTION: R402 / N1102

PROPONENT: David Goulding, Ensign Building Solutions; Joel Rodriguez, Gwinnett County; Lucas Lauritzen, Meritage Homes; Randy Nicklas, Icynene-Lapolla; Mike Barcik, Southface Institute; Phil Brown, Compton Sales DATE: 12/14/2020

EMAIL: David@ensignbuildingsolutions.com; Joel.Rodriguez@gwinnettcounty.com; Lucas.Lauritzen@meritagehomes.com; rnicklas@icynene-lapolla.com; mikeb@southface.org; pbrown@comptonsales.com

ADDRESS: 1479 Ventura Dr. Ste A, Cumming, GA 30040

TELEPHONE NUMBER: (770) 205-9891 FAX NUMBER: ( ) -

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☐ Approve ☐ Approve as amended (DCA STAFF ONLY) ☐ Disapprove ☐ Withdrawn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

Add new Section R402.1.2.1

R402.1.2.1 (N1102.1.2.1) Semi-conditioned attics. Where table N1102.1.2 (R402.1.2) requires R-38 or Table N1102.1.4 (R402.1.4) requires a U-factor of 0.030, an air impermeable insulation installed to the underside of the roof deck with a U-factor of 0.05 or R-value of R-20 shall be deemed equivalent to the provisions in N1102.2.1 (R402.2.1), with the following requirements:

1. The house shall attain a blower door test result < 3 ACH50

2. The house shall require a whole house mechanical ventilation system that does not solely rely on a negative pressure strategy (must be positive, balanced or hybrid)

3. If not already covered by the R-20 depth of the air-impermeable insulation (foam), the exposed portion of the roof rafters shall be wrapped (covered) by minimum R-3 foam (~1" of open cell foam or ½" of closed cell foam) unless directly covered by drywall / finished ceiling.

REASON/INTENT:

This new section will allow easier compliance for designers and builders to provide a cost- and performance-effective assembly. The tighter blower door requirement (< 3ACH50) and whole house mechanical ventilation, along with wrapping rafters to reduce thermal bridging will provide energy savings and assure code compliant indoor air quality. This proposed amendment will eliminate the additional expense for builders of running a computer simulation program to allow for R-value trade-offs for the roof assembly. Note: The R-20 roof (air impermeable) insulation has a long record of successful performance in Georgia.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
This will reduce the overall cost of design and construction for Georgia homeowners and provide effective optimal insulation values.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

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Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: 2018 IRC SECTION: M1502.3.1

PROPONENT: Anthony Drake DATE: 11/20/2020

EMAIL: tdrake@valdostacity.com

ADDRESS: City Hall Annex 300 N. Lee St. Valdosta, GA 31603

TELEPHONE NUMBER: (229)460-2263 FAX NUMBER: ( ) -

CHECK ONE:
- [X] 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:
Dryer duct termination shall be 2 inches above the finished grade and 10 feet away from condenser unit.

REASON/INTENT:
Dryer duct below finished grade fill with water and create dryer lint traps. This will increases drying time and the potential for dryer fires. Moving the dryer cap termination 10 feet from condenser will help prevent lint build up in coils and the 10 foot separation will prevent added heat from being circulated in unit.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
This change will not affect the cost to the contractor, it will require planning on their part for separation from ground and condenser unit.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 1305 (prohibited placement of A/C equipment SECTION: 1.1, 1.2

PROPONENT: Tim Coombs DATE: 12/14/20

EMAIL: coombs.hvac@yahoo.com

ADDRESS: 307 W. Lawson Street Hahira GA 31632

TELEPHONE NUMBER: 229 794 1712 FAX NUMBER: 229 794 3256

CHECK ONE: ☐ Revise section to read as follows: ☐ Add new section to read as follows:

☐ Delete section and substitute the following: ☐ Delete without substitution:

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

DESCRIPTION:

Code change or amendment to prohibit installation of air handling equipment in unconditioned spaces, i.e ATTICS specifically in South Georgia where attic tempatures reach 150°

REASON/INTENT:

By making this change equipment efficiency will increase an estimated 10% saving millions in electricity while costing very little if anything.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

With 3.853 million households in Ga. and the average A/C system consuming 35% of household electricity potential impact could be well into millions of dollars, this is savings directly to the consumer, not to mention a savings on equipment maintenance

- The R-Value of insulation in an air handler is R-4
- The average temperature of an attic in south ga is 145°
- The R-Value of 3" duct wrap is 10
- No air handler is designed to be installed in an attic
- They all have to be converted by some means
- They all have to have an auxillary drain pan
- Installing an air handler in a attic makes for difficult Duct Design, especially on the Return Air side
- Equipment in the attic makes for a service mans nightmare and is or can be dangerous due to high temps.

Thank you for considering this, im coming to the end of my attic days but many more are coming behind me, to increase equipment efficiency by 10%. it would cost manufacturers millions of dollars, this would be a Fre increase to everyone involved.

Jim Loombs
229-251-5994

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 2018 International Residential Code w/GA Amendments SECTION: M1402

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

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

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

DESCRIPTION:

Section M1402 Central Furnaces

M1402.1 General

Oil-fired central furnaces shall conform to ANSI/UL 727. Electric furnaces shall conform to UL 1995 or UL/CSA 60335-2-40.

REASON/INTENT:

Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

The code change proposal will not increase or decrease the cost of construction. As a result, there is no impact to cost.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

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GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 2018 International Residential Code w/GA Amendments SECTION: M1403

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

CHECK ONE: [X] Revise section to read as follows; [ ] Add new section to read as follows; [ ] Delete section and substitute the following; [ ] Delete without substitution:

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[ ] Approve [ ] Approve as amended (DCA STAFF ONLY) [ ] Disapprove [ ] Withdrawn

DESCRIPTION:

Section M1403 Heat Pump Equipment

M1403.1 Heat pumps

Electric heat pumps shall be listed and labeled in accordance with UL 1995 or UL/CSA~~/ANCE~~ 60335-2-40.

REASON/INTENT:

Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

The references to ANCE as a sponsor of this UL/CSA 60335-2-40 standard has been removed as ANCE in Mexico withdrew from the 3rd Edition is no longer associated with this standard after the 2nd Edition.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
The code change proposal will not increase or decrease the cost of construction. As a result, there is no impact to cost.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

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CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 2018 International Residential Code w/GA Amendments SECTION: M1412

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

CHECK ONE: [X] Revise section to read as follows; [ ] Add new section to read as follows; [ ] Delete section and substitute the following; [ ] Delete without substitution:

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[ ] Approve [ ] Approve as amended (DCA STAFF ONLY) [ ] Disapprove [ ] Withdrawn

DESCRIPTION:

Section M1412 Absorption Cooling Equipment

M1412.1 Approval of equipment

Absorption systems shall be installed in accordance with the manufacturer's instructions. Absorption equipment shall comply with UL 1995 or UL/CSA~~/ANCE~~ 60335-2-40.

REASON/INTENT:

Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

The references to ANCE as a sponsor of this UL/CSA 60335-2-40 standard has been removed as ANCE in Mexico withdrew from the 3rd Edition is no longer associated with this standard after the 2nd Edition.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
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CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 2018 International Residential Code w/GA Amendments SECTION: M1413

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

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DESCRIPTION:

Section M1413 Evaporative Cooling Equipment

M1413.1 General

Evaporative cooling equipment and appliances shall comply with UL 1995 or UL/CSA~~/ANCE~~ 60335-2-40 and shall be installed:

REASON/INTENT:

Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

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CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 3

CODE: 2018 International Residential Code w/GA Amendments SECTION: M2006

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

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[ ] Approve [ ] Approve as amended (DCA STAFF ONLY) [ ] Disapprove [ ] Withdrawn

DESCRIPTION:

Section M2006 Pool Heaters

M2006.1 General

Pool and spa heaters shall be installed in accordance with the manufacturer's installation instructions. Oil-fired pool heaters shall comply with UL726. Electric pool & spa heaters shall comply with UL 1261. Pool and spa heat pump water heaters shall comply with UL 1995, ~~or~~ CSA C22.2 No. 236 or UL/CSA 60335-2-40.

REASON/INTENT:

Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

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GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 4

CODE: 2018 International residential Code w/GA Amendments SECTION: Chapter 44

PROPONENT: Robert Glass DATE: 10/5/2020

EMAIL: Robert.Glass@goodmanmfg.com

ADDRESS: 12680 Lock 15 Road, Tuscaloosa, AL 35406

TELEPHONE NUMBER: (205)759-9638 FAX NUMBER: ( ) -

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DESCRIPTION:

~~ANCE~~		~~Association of the Electric Sector Av. Lázaro Cardenas No. 869 Col. Nueva Industrial Vallejo C.P. 07700 México D.F.~~
~~NMX-J-521/2-40-ANCE—2014/ CAN/CSA-22.2 No. 60335-2-40—12/ UL 60335-2-40:~~	~~Safety of Household and Similar Electric Appliances, Part 2-40: Particular Requirements for Heat Pumps, Air-Conditioners and Dehumidifiers~~	~~M1403.1, M1412.1, M1413.1~~
ASHRAE		ASHRAE 1791 Tullie Circle NE Atlanta, GA 30329
34—~~2016~~ 2019:	Designation and Safety Classification of Refrigerants	M1411.1
CSA		CSA Group 8501 East Pleasant Valley Road Cleveland, OH 44131-5516

CAN/CSA/C22.2 No. 60335-2-40—~~2012~~2019	Safety of Household and Similar Electrical~~al~~ Appliances, Part 2-40: Particular Requirements for Electrical~~al~~ Heat Pumps, Air-Conditioners and Dehumidifiers	M1402.1, M1403.1, M1412.1, M1413.1, M2006.1
UL		UL LLC 333 Pfingsten Road Northbrook, IL 60062
1995—~~2011~~2015	Heating and Cooling Equipment ~~– with revisions through July 2015~~	M1402.1, M1403.1, M1407.1, M1412.1, M1413.1, M2006.1
UL/CSA~~/ANCE~~ 60335-2-40—~~2012~~2019	Standard for Household and Similar Electrical Appliances – Safety ~~–~~ Part 2-40: Particular Requirements for ~~Motor compressors~~ Electrical Heat Pumps, Air-Conditioners and Dehumidifiers	M1402.1, M1403.1, M1412.1, M1413.1, M2006.1

REASON/INTENT:
Many manufacturers will be transitioning away from UL 1995 to UL 60335-2-40 for most new products over the next few years, because UL 1995 will be obsoleted effective 1/1/2024 (see the attached notification from UL concerning this transition from UL 1995 to UL/CSA 60335-2-40). The newest 3rd edition of UL 60335-2-40, published November 2019, has many new requirements for electrical and refrigerant safety. The 3rd edition includes requirements for UV-C germicidal lamp systems, CO_2 systems, photovoltaic systems, new marking requirements, water ingress rating system as well as allowances for Low Global Warming Potential (GWP) Group A2L refrigerants. Certification laboratories will use the latest version of the UL 60335-2-40 safety standard for certification testing.

The references to ANCE as a sponsor of this UL/CSA 60335-2-40 standard has been removed as ANCE in Mexico withdrew from the 3rd Edition is no longer associated with this standard after the 2nd Edition.

ASHRAE 34-2019 includes many new Low GWP refrigerants that do not appear in previous editions of the standard. It should be noted that the 2021 ICC International Residential Code references the 2019 edition of ASHRAE 34.

The titles shown in Chapter 44 – Referenced Standards for UL/CSA 60335-2-40 have been updated to reflect the current title of the standards.

The normal code cycle for Georgia will not be addressed again until 2025 (using the 2024 ICC codes). Before that date, products using Low GWP, Group A2L refrigerants will need to be sold to meet market requirements. As such, this proposal needs to be addressed on an off-cycle basis to update the code to make allowance for Low GWP, A2L refrigerant products which will be used in the future.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

The code change proposal will not increase or decrease the cost of construction. As a result, there is no impact to cost.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM INSTRUCTION SHEET

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The Department of Community Affairs
Codes and Industrialized Buildings Section
60 Executive Park South, NE
Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 2

CODE: 2018 IEBC SECTION: All

PROPONENT: American Institute of Architects, Georgia Association DATE: 12|15|2020

EMAIL: Davis Southerland dsoutherland@aiaga.org; Dee Leclair dleclair@stevens-wilkinson.com

ADDRESS: 50 Hurt Plaza SE; Suite 109; Atlanta, Georgia 30303

TELEPHONE NUMBER: (678) 553-0500 FAX NUMBER: _____

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

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

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

DESCRIPTION:

The 2018 International Existing Building Code (IEBC) with Georgia amendments has been adopted by the Georgia DCA as a permissive code. We propose adopting the 2018 IEBC with Georgia amendments as a mandatory code.

REASON/INTENT:

Georgia's state minimum code governing existing buildings is Chapter 34 in the 2012 International Building Code (IBC). Georgia has also adopted the 2018 IBC with amendments as its minimum code. Chapter 34 in the 2018 IBC does not contain language addressing existing buildings. It is one page which reads, "Action taken during the International Code Council's (ICC) 2012 code development process removed Chapter 34, Existing Structures, from the IBC. The provisions of this chapter are contained in the International Existing Building Code.".

The 2018 IEBC with Georgia amendments should be adopted as mandatory in lieu of Georgia's current reference to Chapter 34 in the 2012 IBC for the following reasons:

1. Chapter 34 of the 2012 IBC is prescriptive and lacks the flexibility building code officials need to address issues found in existing buildings of varying ages. The 2018 IEBC encourages the use and reuse of existing buildings while requiring reasonable upgrades using prescriptive and performance-based provisions. The 2018 IEBC helps avoid trapping building officials between reasonable solutions for the use of an existing building the letter of the prescriptive requirements in Chapter 34 of the 2012 IBC that can be onerous enough as to cause the building owner to demolish the building. This is an important distinction that will help building owners, building officials and jurisdictions keep and use culturally and architecturally significant buildings.

** PLEASE SEE SECOND PAGE OF PROPOSED AMENDMENT **

2. The 2018 IEBC gives building officials more tools and helps clarify requirements for building officials and design professionals. This is important for design professionals because it encourages preservation – the design professional needs to meet with the building official to discuss what is possible through the performance-based provisions. This is different from our current condition where a design professional can review the prescriptive requirements of Georgia's code and determine the code is inflexible on enough issues that the owner should tear down a building. The current condition doesn't offer as much encouragement to preserve our existing buildings.
3. The 2018 versions of the IBC and IEBC are harmonized and complimentary – they have been through the ICC's code development process together. The 2012 IBC language remains static so conflicts must be discovered and amended by Georgia for the old language to remain current and relevant.
4. Many of Georgia jurisdictions are already using the IEBC so there is significant experience in our state that can be shared among jurisdictions.
5. The DCA has already reviewed the 2018 IEBC through a task force and adopted amendments tailored for Georgia. No additional work is required.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

We anticipate a significantly positive financial impact if the Georgia's current mandatory code governing existing buildings is replaced by the 2018 IEBC with Georgia amendments for the following reasons:

1. Reuse of existing buildings protects the cultural and architectural heritage of Georgia's cities and counties. The history of existing buildings and the creativity needed to reuse them often makes them interesting and valuable elements in our communities. They can enrich our communities.
2. Existing buildings may provide a significantly lower first cost for business owners when compared to new development. Thus, existing buildings can encourage the development and expansion of business in our communities.
3. The additional flexibility provided by the IEBC will help encourage reuse of existing buildings to meet our affordable housing needs. The lack of affordable housing is a critical issue for Georgia.
4. The additional flexibility provided by the IEBC will help unlock the potential of historic tax credits. The combination of reasonable and performance-based solutions through the IEBC and tax credits will encourage property owners and investors to reuse existing buildings.
5. Existing buildings are often in urban areas of our cities. It can be a challenge to keep these buildings occupied so the community around them thrives. The flexibility of the 2018 IEBC can help cities establish and protect the fabric of neighborhoods by encouraging the use of existing buildings, especially in our downtown areas.
6. Reused buildings are significantly more sustainable than new buildings in that they have less embodied energy compared to tearing down a building and replacing it with new development. Existing buildings can often be retrofitted with sustainable systems such as insulation and sustainable technology such as on-site renewable energy generation. Existing buildings offer many of the same opportunities as new construction, yet existing buildings may realize a much smaller carbon footprint than new construction.

** end **

Submitted to:

The Department of Community Affairs
Codes and Industrialized Buildings Section
60 Executive Park South, NE
Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: IBC SECTION: Table 1705.3

PROPONENT: Jimmy Cotty, Georgia Ready Mixed Concrete Association DATE: 12/14/20

EMAIL: jcotty@gaconcrete.org

ADDRESS: 9810A Medlock Bridge Road, Suite 202 Johns Creek, Georgia 30097

TELEPHONE NUMBER: (770)621-9324 FAX NUMBER: ( ) -

CHECK ONE: X 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:
The GRMCA has proposed a revised table to 1705.3 that emphasizes proper quality control for concrete testing and reporting. Test data is critical in order for ready mix producers to ensure continuous improvement of concrete mix designs as well as trouble shoot problems in the field. A revised table is attached.

REASON/INTENT:
Poor testing and poor reporting of test data can often cause delays on jobs as well as time and money spent on investigative testing. Concrete producers often find that if data had been reported and tests run properly that trouble shooting on job sites would be much more efficient. The required tests and data should already be done according to ACI 318.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
There should be minimal financial impact. By running a density test and calculating the data would add possibly an additional 10-15 minutes of time for the testing technician already on site. There would be some costs potentially in investing in curing equipment, however, the proper curing environment should already have been provided.

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE
1. Inspect reinforcement, including prestressing tendons, and verify placement.	—	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706; b. Inspect single-pass fillet welds, maximum $^5/_{16}$"; and c. Inspect all other welds.	— X	X X 	AWS D1.4 ACI 318: 26.6.4	—
3. Inspect anchors cast in concrete.	—	X	ACI 318: 17.8.2	—
4. Inspect anchors post-installed in hardened concrete members.[b] a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. b. Mechanical anchors and adhesive anchors not defined in 4.a.	X	 X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	—
5. Verify use of required design mix.	—	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6a. Prior to concrete placement, fabricate specimens for strength tests, perform slump or slump flow, ~~and~~ air content tests, density and determine the temperature of the concrete with all results included in the test reports.	X	—	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
6b. Verify that concrete specimens for strength tests are maintained in the required initial curing and laboratory curing environment, and that the maximum and minimum temperatures during the initial curing period are reported.	X	-	ACI 318 26.12 ASTM C31	-
7. Inspect concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	—	X	ACI 318: 26.5.3-26.5.5	1908.9
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons.	X X	— —	ACI 318: 26.10	—
10. Inspect erection of precast concrete members.	—	X	ACI 318: 26.9	—
11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 26.11.2	—
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	—	X	ACI 318: 26.11.1.2(b)	—

For SI: 1 inch = 25.4 mm.

a. Where applicable, see Section 1705.12, Special inspections for seismic resistance.

b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of work.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: IBC SECTION: 1705.3

PROPONENT: Jimmy Cotty, Georgia Ready Mixed Concrete Association DATE: 12/14/2020

EMAIL: jcotty@gaconcrete.org

ADDRESS: 9810A Medlock Bridge Road, Suite 202 Johns Creek, Georgia 30097

TELEPHONE NUMBER: (770)621-9324 FAX NUMBER: ( ) -

CHECK ONE: ☐ Revise section to read as follows: X Add new section to read as follows:

☐ Delete section and substitute the following: ☐ Delete without substitution:

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

DESCRIPTION:
The GRMCA proposes to add the following language in 1705.3 to read as follows:

1705.3.3 Testing Agency
The testing agency performing acceptance testing shall comply with ASTM C1077.

REASON/INTENT:
State agencies such as GSFIC and GDOT require that testing labs meet certain approval requirements in order to work on state jobs. ASTM C1077 is the Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation. It is important that testing agencies and testing technicians to be consistent in how they perform tests and the environments under which the tests are performed. This is critical in yielding accurate concrete test data.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
Many testing agencies currently contract with the state and thus meeting the threshold for compliance with ASTM C1077 should not be difficult or overly burdensome.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

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Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: IBC SECTION: Chapter 17 Special Inspections

PROPONENT: Georgia Ready Mix Concrete Assoc DATE: 12/14/20

EMAIL: jcotty@gaconcrete.org

ADDRESS: 9810A Medlock Bridge Road, Suite 202 Johns Creek, Georgia 30097

TELEPHONE NUMBER: (770)621-9324 FAX NUMBER: ( ) -

CHECK ONE: [X] Revise section to read as follows: [ ] Add new section to read as follows:
[ ] Delete section and substitute the following: [ ] Delete without substitution:

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[ ] Approve [ ] Approve as amended (DCA STAFF ONLY) [ ] Disapprove [ ] Withdrawn

DESCRIPTION:
In Table 1704.2, Minimum Special Inspector Qualifications, it would require anyone sampling and field testing concrete to have an ACI Field Testing Technician Level 1 certification. A revised table is attached.

REASON/INTENT:
This change was previously proposed and accepted in 2017. The ACI program is reviewed and revised to keep up with concrete technology. Technicians have to recertify every 5 years to stay abreast of any changes. This certification is an industry standard. Concrete sampling and testing is critical to a successful project and ensuring of strong, durable and competent structures. Most importantly, concrete producers rely on accurate data provided in test reports to determine quality and performance of mix design as well as troubleshooting problems in the field.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:
The financial impact is negligible. Current costs for certification are $530. Many testing labs already send their technicians through certification. When testing is done correctly, it mitigates the need for additional investigation and keeps projects moving on time.

*Add new Table 1704.2 'Minimum Special Inspector Qualifications' to read as follows:

TABLE 1704.2 MINIMUM SPECIAL INSPECTOR QUALIFICATIONS			
Category of Testing and Inspection	**Minimum Qualifications (refer to key at end of Table)**		
	Shop Testing or Inspection	**Field Testing or Inspection**	**Review Testing, Certification& Lab Reports**
1704.2.5 Inspection of Fabricators			
Pre-cast concrete	A, C, E		
Structural steel construction	C, F, G		
Wood construction	A		
Cold formed metal construction	A		
1705.2, 1705.10, 1705.11& 1705.12 Steel Construction			
Verification of welding consumables, filler metals, procedure specifications, procedure qualification records and personnel performance qualification records			C, F
Nondestructive testing of welding	G	G	
Inspection of welding	C, F	C, F	
Verification of fabricator and erector documents as listed in AISC 360, chapter N, paragraph 3.2			A, C
Material verification of weld filler materials			C, F
Inspection of high strength bolting and steel frame joint details		A, C	
Inspection of embedment		A, C, F	
Inspection of steel elements of composite construction		A, C, F	
Verification of reinforcing steel, cold formed steel deck and truss materials			A, C, F
Inspection of reinforcing steel, cold formed steel deck and trusses		A, C	
1705.3 & 1705.12 Concrete Construction			
Reinforcing placement, cast-in-place bolts, post installed anchors concrete and shotcrete placement and curing operations. Inspection of formwork for shape, location and dimensions		A, C, H	
Pre-stressing steel installation		A, C, D, E	
Erection of pre-cast concrete members		A, C, H	
Concrete field sampling and field testing		~~A,~~ J	
Concrete strength testing		P	
Review certified mill reports			A, C
Verify use of required design mix		A, I, J, H, C	
Pre-stressed (pre-tensioned) concrete force application	A, C, E		
Post-tensioned concrete force application		A, C, D	
Review of in-situ concrete strength, prior to stressing of			

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: IBC SECTION: 903

PROPONENT: **Jimmy Cotty** DATE: 12/1/20

EMAIL: jcotty@gaconcrete.org

ADDRESS: 9810-A Medlock Bridge Road, Suite 202 Johns Creek, GA 30097

TELEPHONE NUMBER: (404)291-4161 FAX NUMBER: ( ) -

CHECK ONE: ☒ Revise section to read as follows: ☐ Add new section to read as follows:
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☐ Approve ☐ Approve as amended (DCA STAFF ONLY) ☐ Disapprove ☐ Withdrawn

DESCRIPTION:

903.3.1.2 NFPA 13R Sprinkler Systems

Automatic sprinkler systems in Group R occupancies ~~up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane~~ shall be permitted to be installed throughout in accordance with NFPA 13R where the Group R occupancy meets all of the following conditions:

1. Four stories or less above grade plane.
2. The floor level of the highest story is 30 feet (9114 mm) or less above the lowest level of fire department vehicle access.
3. The floor level of the lowest story is 30 feet (9114 mm) or less below the lowest level of fire department vehicle access.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from ~~the horizontal assembly creating separate buildings~~ grade plane.

REASON/INTENT:

Similar to proposed amendment to Section 503 from same proponent. The ICC Hearings in 2018 adopted this proposal and clarified that when using NFPA 13R in Group R Occupancies, that the number of stories should be counted from Grade Plane and not the top of the podium. (F117-18).

There is a big difference in the protection provided between NFPA 13R and NFPA 13 systems, in the required design density and areas covered by fire sprinklers. Allowing the NFPA 13R sprinkler system for these taller podium style

buildings leads to a significant decrease in the protection being provided by automatic fire sprinklers, versus what was required prior to the code changes referenced above. The NFPA 13R sprinkler systems in Georgia State Minimum Standard Building Code and allowed in R-Occupancies, up to four stories in height and limited to buildings that are 60 ft. or less in height above grade plane. The number of stories used in determining the minimum type of construction for buildings, including "pedestal" or "podium" construction should be measured from the "grade plane" to meet the intent of the NFPA sprinkler system designed per 903.3.1.2 for R Occupancies.

The issue is not whether a noncombustible podium has the appropriate fire rating, but that placing combustible framing higher above the grade plane significantly increases the difficulty for firefighters, and significantly increases the risk for occupants (workers or residents) who must evacuate a structure that is engulfed in fire.

Table 504.3 Allowable Building Heights and Areas,

- R-Occupancies built with Type V-A construction is allowed to be built as high as 70 feet (50+20). With parking "podiums", the height becomes in excess of this.

The current language measuring from podium clearly conflict with the stated Scope 1.1 "residential occupancies up to and including four stories in height that are located in buildings not exceeding 60ft (18m) in height above grade plane" with NFPA 13R fire sprinkler system.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

This proposal will increase construction costs by requiring NFPA 13 sprinkler systems in some situations where NFPA13R sprinkler systems are currently permitted. There is no doubt that, due to the difference in water flow required, additional sprinkler requirements, and other requirements in the NFPA standards, that the cost of NFPA 13 sprinkler systems is higher than the cost of NFPA 13R sprinkler systems. Some of this cost is mitigated by aligning the new requirement to the requirement for installing a standpipe system, which already would represent greater flow capacity for the building, ostensibly requiring larger diameter mains already; however, even with this mitigating factor, there is little doubt that this code change would represent an increase in overall construction costs.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

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Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

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

CODE: IBC SECTION: 510

PROPONENT: **Jimmy Cotty** DATE: 12/1/20

EMAIL: jcotty@gaconcrete.org

ADDRESS: 9810-A Medlock Bridge Road, Suite 202 Johns Creek, GA 30097

TELEPHONE NUMBER: (404)291-4161 FAX NUMBER: ( ) -

CHECK ONE: ☒ Revise section to read as follows: ☐ Add new section to read as follows:

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

DESCRIPTION:

510.4 Parking Beneath Group R

Where a maximum one story above grade plane Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of stories to be used in determining the minimum type of construction shall be measured from ~~the floor above such a parking area~~ grade plane. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a fire-resistance rating not less than the mixed occupancy separation required in Section 508.4.

REASON/INTENT:

Similar to proposed amendment to Section 903 from same proponent. The ICC Hearings in 2018 adopted this proposal and clarified that when using NFPA 13R in Group R Occupancies, that the number of stories should be counted from Grade Plane and not the top of the podium. (F117-18).

There is a big difference in the protection provided between NFPA 13R and NFPA 13 systems, in the required design density and areas covered by fire sprinklers. Allowing the NFPA 13R sprinkler system for these taller podium style buildings leads to a significant decrease in the protection being provided by automatic fire sprinklers, versus what was required prior to the code changes referenced above. The NFPA 13R sprinkler systems in Georgia State Minimum Standard Building Code and allowed in R-Occupancies, up to four stories in height and limited to buildings that are 60 ft. or less in height above grade plane. The number of stories used in determining the minimum type of construction

for buildings, including "pedestal" or "podium" construction should be measured from the "grade plane" to meet the intent of the NFPA sprinkler system designed per 903.3.1.2 for R Occupancies.

The issue is not whether a noncombustible podium has the appropriate fire rating, but that placing combustible framing higher above the grade plane significantly increases the difficulty for firefighters, and significantly increases the risk for occupants (workers or residents) who must evacuate a structure that is engulfed in fire.

Table 504.3 Allowable Building Heights and Areas,

- R-Occupancies built with Type V-A construction is allowed to be built as high as 70 feet (50+20). With parking "podiums", the height becomes in excess of this.

The current language measuring from podium clearly conflict with the stated Scope 1.1 "residential occupancies up to and including four stories in height that are located in buildings not exceeding 60ft (18m) in height above grade plane" with NFPA 13R fire sprinkler system.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

This proposal will increase construction costs by requiring NFPA 13 sprinkler systems in some situations where NFPA13R sprinkler systems are currently permitted. There is no doubt that, due to the difference in water flow required, additional sprinkler requirements, and other requirements in the NFPA standards, that the cost of NFPA 13 sprinkler systems is higher than the cost of NFPA 13R sprinkler systems. Some of this cost is mitigated by aligning the new requirement to the requirement for installing a standpipe system, which already would represent greater flow capacity for the building, ostensibly requiring larger diameter mains already; however, even with this mitigating factor, there is little doubt that this code change would represent an increase in overall construction costs.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM INSTRUCTION SHEET

1. Do not complete the line entitled "Item No._____".
2. Use a separate form for each proposed code amendment.
3. "Sheet ____ of _____" indicates the number of sheets for each individual proposed code amendment, not the number of sheets for all the amendments submitted.
4. Identify the code and code section that is the subject of the proposed amendment.
5. The proponent's name, address, telephone number and fax number must be filled out completely.
6. Be sure to indicate the type of recommended action in the space referred to as "Check One".
7. If the proposed amendment revises the language of the code section, deletes the entire code section, or deletes the entire code section and offers substitute language, include the language of the present code section and line through the language to be deleted and underline the language of the proposed amendment.
8. Under the "Reason" section, provide the reasoning behind the proposed code amendment. The reason should be clear and concise. Test reports, standards or other supporting information and documentation may be submitted with the proposed amendment and must be attached to the amendment form.
9. **A Statement of Financial Impact must accompany all proposed code amendments.** The statement should be clear and concise. Test reports, standards or other supporting information and documentation may be submitted with the proposed amendment and must be attached to the amendment form.
10. **All proposed amendments must be typed and completed in full and the original submitted to the Codes and Industrialized Buildings Section of the Department of Community Affairs NO LATER THAN DECEMBER 15TH.** The proposed code change shall be submitted for review to the State Codes Advisory Committee at their quarterly meeting in January. An incomplete form will be sent back to the proponent for completion. An amendment submitted after the submittal deadline date will be returned to the proponent.
11. The proponent will be notified when the proposed amendment will be considered by the State Codes Advisory Committee.
12. Information concerning submittal of code amendments, including deadline dates for submittal, can be obtained by contacting the Codes and Industrialized Buildings Section at (404) 679-3118. All proposed code amendments should be submitted to:

The Department of Community Affairs
Codes and Industrialized Buildings Section
60 Executive Park South, NE
Atlanta, Georgia 30329-2231

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 2

CODE: IECC SECTION: R402.2.9

PROPONENT: Georgia Structural Pest Control Commission DATE: 10/1/2020

EMAIL: Structural Pest Control Commission <SPCC@agr.georgia.gov>

ADDRESS: 19 Martin Luther King, Jr. Dr., S.W. Atlanta, Georgia 30334

TELEPHONE NUMBER: (404)656-3641 FAX NUMBER: 404)656-6761

CHECK ONE: [x] 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:

R402.2.9 Crawl space and Basement walls.

As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space and basement wall insulation shall be permanently fastened to the foundation wall. and extend downward from the floor to within 9 inches (229 mm) of the finished interior grade adjacent to the foundation wall. A 3-inch (76 mm) inspection/view strip immediately below the floor joists shall be provided to permit inspections for termites. The framing / foundation interface (band joist and mudsill area) shall be air sealed then insulated with a removable insulation product to provide for pest control inspection of the wood framing members.

Exposed earth in unvented crawl space foundations shall be covered with a continuous Class 1 vapor retarder in accordance with the International Building Code. All joints of the vapor retarder shall overlap by 6 inches (152 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (228 mm) up the stem wall and shall be attached and sealed to the stem wall.

REASON/INTENT:

The Georgia building code requires termite inspection / view strips at the top and bottom of the foundation wall but allow the framing / foundation interface (band joist and mudsill area) to be covered with permanently fastened insulation, such as spray polyurethane foam, (SPF). However, the installation of SPF on the framing / foundation interface (band joist and mudsill) covers the critical areas that the pest management companies need to visually inspect for termite infestations. The mudsill, band joist and joist ends are the first points at which termites can be detected as they enter the wood structure. Subterranean termites can pass through small - 1/64" cracks and gain access to structural lumber by constructing shelter tubes and climbing up the inside or outside of the foundation wall. Termites can also enter buildings

through cracks in the footing and travel through voids in concrete masonry units. Inspection opportunities from the exterior of the building are often obstructed by brick or landscaping features, so inspection from inside the crawlspace is the only option. There are currently no alternative "viable" inspection methods or tools available to perform the inspections through SPF. This amendment will provide for termite inspections, insulation, and air sealing in the band joist area.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

This amendment will take some extra time but will allow for the periodic inspections required to maintain termite warranties/bonds. Additionally, Georgia consumers will be able to take advantage of both valuable services, SPF, and termite control.

GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS

CODE AMENDMENT FORM

ITEM NO: _____ (DCA USE ONLY) PAGE 1 OF 7

CODE: International Residential Code 2018 Edition with Georgia Amendments SECTION: R318

PROPONENT: American Chemistry Council-Center for the Polyurethanes Industry Spray Foam Coalition DATE: December 15, 2020

EMAIL: stephen_wieroniey@americanchemistry.com

ADDRESS: 700 2nd Street, NE, Washington, DC 20002

TELEPHONE NUMBER: (202) 249-6617 FAX NUMBER: (202)379-9741

CHECK ONE: [X] 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:

Existing Language:

SECTION R318
PROTECTION AGAINST SUBTERRANEAN TERMITES

R318.1 Subterranean termite control methods. In areas subject to damage from termites as indicated by Table R301.2(1), methods of protection against termites shall be provided in accordance with Table R318.1(1), protection shall be by one or a combination of the following methods:

1. Chemical termiticide treatment in accordance with Section R318.2.
2. Termite baiting system installed and maintained in accordance with the *label*.
3. Pressure-preservative-treated wood in accordance with the provisions of Section R317.1.
4. Naturally durable termite-resistant wood.
5. Physical barriers in accordance with Section R318.3 and used in locations as specified in Section R317.1
6. Cold-formed steel framing in accordance with Section R505.2.1 and R603.2.1.

R318.1.1 Quality mark. Lumber and plywood required to be pressure-preservative treated in accordance with section R318.1 shall bear the quality *mark* of an *approved* inspection agency that maintains continuing supervision, testing and inspection over the quality of the product and that has been *approved* by an accreditation body that complies with the requirements of the American Lumber Standard Committee treated wood program.
R318.1.2 Field treatment. Field cut ends, notches and drilled holes of pressure-preservative-treated wood shall be retreated in the field in accordance with AWPA M4.

R318.2 Chemical termiticide treatment. Chemical termiticide treatment shall include soil treatment or field-applied wood treatment. The concentration, rate of application and method of treatment of the chemical termiticide shall be in strict accordance with the termiticide *label*.

R318.3 Barriers. *Approved* physical barriers and shields, such as metal or plastic sheeting or collars specifically designed for termite prevention, shall be located below the lowest point of untreated wood materials in the structure.

Such materials shall be installed in a manner that provides a continuous barrier to prevent termites from entering the structure without exposure to detection by visual inspection. Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection.

R318.4 Foam plastic protection. In areas where the probability of termite infestation is "very heavy" as indicated in Figure R301.2(6), extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior and exterior foundation walls or slab foundations located below grade. The clearance between unprotected foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm).

Exceptions:

1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or pressure-preservative-treated wood.
2. When in *addition* to the requirements of Section R318.1, an *approved* method of protecting the foam plastic and structure from subterranean termite damage is used.
3. On the interior side of *basement walls*.

Georgia State Amendments (2020)

R402.2.11 Crawl space walls. As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to within 9 inches (229 mm) of the finished interior grade adjacent to the foundation wall. A 3-inch (76 mm) inspection/view strip immediately below the floor joists shall be provided to permit inspections for termites. Exposed earth in unvented crawl space foundations shall be covered with a continuous Class 1 vapor retarder in accordance with the International Building Code. All joints of the vapor retarder shall overlap by 6 inches (152 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall.

Proposed Revisions:

SECTION R318
PROTECTION AGAINST SUBTERRANEAN TERMITES

R318.1 Subterranean termite control methods. In areas subject to 'very heavy' termite infestation probability ~~damage from termites~~ as indicated by Table R301.2(1), ~~methods of~~ protection against termites shall be provided by Method 3 in combination with Methods 1 or 2 as described in Table R318.1. Foundation insulation requirements shall comply with Section R318.2. ~~include one of the following:~~

Exceptions:

1. Any building structure constructed entirely of pressure-preservative-treated wood in accordance with Section R317 shall not require termite protection in accordance with Section R318.
2. Any building structure constructed entirely with cold-formed steel framing in accordance with Sections R505.2 and R603.2 shall not require termite protection in accordance with Section R318.
3. Any building structure constructed of masonry, or concrete structural materials shall not require termite protection in accordance with Section R318.

TABLE R318.1
SUBTERRANEAN TERMITE PROTECTION METHODS
FOR BUILDINGS WITH UNTREATED WOOD FRAMING

METHOD	DESCRIPTION
1	Chemical termiticide soil treatment in accordance with Section R318.1.1 .
2	Termite baiting system installed and maintained in accordance with the *label*.
3	Physical barriers specified, located, and installed in accordance with Section R318.1.2 .

~~**R318.1.1 Quality mark.** Lumber and plywood required to be pressure-preservative treated in accordance with section R318.1 shall bear the quality *mark* of an *approved* inspection agency that maintains continuing supervision, testing and inspection over the quality of the product and that has been *approved* by an accreditation body that complies with the requirements of the American Lumber Standard Committee treated wood program.~~

~~**R318.1.2 Field treatment.** Field cut ends, notches and drilled holes of pressure-preservative-treated wood shall be retreated in the field in accordance with AWPA M4.~~

R318.1.1 ~~**318.2**~~ **Chemical termiticide treatment.** Chemical termiticide treatment shall include soil treatment or field-applied wood treatment. The concentration, rate of application and method of treatment of the chemical termiticide shall be in strict accordance with the termiticide *label* and manufacturer's instructions.

R318.1.2 ~~**R318.3**~~ **Termite shields and ~~B~~barriers.** *Approved* physical barriers and shields, such as metal or plastic or composite sheeting or collars specifically designed for termite prevention, shall be located below the lowest point of untreated wood materials in the structure. Such materials shall be installed in a manner that provides a continuous barrier, extending through all layers of the wall, to force termites to pass around the barrier or shield thereby becoming visible to prevent termites from entering the structure without detection by visual inspection. ~~Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection.~~

R318.2 ~~**R318.4**~~ **Foundation insulation requirements for 'very heavy' termite infestation probability** ~~**Foam plastic protection.**~~ In areas where the probability of termite infestation is "very heavy" as indicated in Figure R301.2(6), the termite barrier or shield required by Section R318.1 shall extend continuously through the insulation installed on the interior or exterior face of the foundation in accordance with Section R318.1.2. ~~extruded and expanded polystyrene, polyisocyanurate, and other foam plastics shall not be installed on the exterior face or under interior and exterior foundation walls or slab foundations located below grade.~~ Where insulation is used below grade or is concealed underneath the foundation or slab on grade floor, the insulation material shall be protected against termite damage by treating the adjacent soil in accordance with R318.1.1 or by use of an approved termite-resistant insulation material. The clearance between unprotected foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm). The sill plate and rim/header joist shall be preservative treated in accordance with Section R317 or shall have a field-applied treatment in accordance with R318.1.1. The interior edge of the sill plate shall remain exposed for visual inspection.

Exceptions:

1. Where treated sills and rims/headers are not provided in accordance with R317 or R318.1.1., the rim/header shall be provided with removable insulation for inspection purposes.
2. Where the termite barrier or shield required by Section R318.1 does not extend through the thickness of foundation insulation or where it is not present (e.g. in existing construction) a minimum 3-inch (76 mm) wide horizontal inspection strip without insulation or with removable insulation shall be provided continuously at or near the top of the foundation to expose the surface of the foundation wall for visual inspection.

~~1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or pressure-preservative-treated wood.~~
~~2. When in *addition* to the requirements of Section R318.1, an *approved* method of protecting the foam plastic and structure from subterranean termite damage is used.~~
~~3. On the interior side of *basement walls*.~~

Georgia State Amendments (2020)

~~R402.2.11 Crawl space walls. As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to within 9 inches (229 mm) of the finished interior grade adjacent to the foundation wall. A 3-inch (76 mm) inspection/view strip immediately below the floor joists shall be provided to permit inspections for termites. Exposed earth in unvented crawl space foundations shall be covered with a continuous Class 1 vapor retarder in accordance with the International Building Code. All joints of the vapor retarder shall overlap by 6 inches (152 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall.~~

REASON/INTENT:

The proposal has three key objectives: (1) improve the formatting of termite protection requirements for clarity, (2) enhance the basic termite protection requirements for new construction in 'very heavy' termite regions by requiring use of a termite shield or barrier in combination with soil treatment or termite bait systems, and (3) improve and expand requirements for foundation insulation installation in areas with 'very heavy' termite infestation probability.

First, the format of the provisions is improved by including a "look-up" table process to identify required termite protection methods and to define the various methods for providing protection against termite infestation.

Second, the basic provisions for consumer protection against termite damage in 'very heavy' regions are restored to an effective traditional practice of requiring a combination of termite treatment *and* termite shields or barriers during construction. These two proactive measures are needed to protect consumers and to maximize the effectiveness of termite inspections that occur over the life of a structure and signal the need for re-treatment. This combined practice is supported by the available research and literature and was at one time a code-required practice in the U.S. (ABTG, 2017).[1] The revisions are based on a thorough review of literature and experience addressing termite infestation hazards and the efficacy of protective methods and visual inspection.

Third, provisions for protection of foam plastic insulation which applied to 'very heavy' regions has been significantly revised and expanded to address foundation insulation installation requirements in general, while retaining and adding to requirements already existing for use of foam plastics. These measures more effectively address installation requirements to ensure protection of the insulation materials themselves (where needed) and to ensure that a means for visual inspection is achieved for all types of insulation materials and methods of installation (even for cases of existing construction where termite shields or barriers have often not been provided in 'very heavy' areas as this proposal would now require for all new construction). This provision provides an option to use removable insulation at the framing foundation interface, to allow for visual termite inspection.

To streamline the provisions, existing Sections R318.1.1 and R318.1.2 have been deleted because wood preservative treatment requirements are addressed in Section R317. Including them in Section R318 is redundant. Finally, structuring the termite treatment according to this proposal will eliminate the need for section R402.2.11 of the Georgia Energy Code.

Background:
Foam plastics, such as spray foam, are versatile, durable, and high-performance insulation and air barrier products. Spray foam is mixed and applied onsite as two liquid chemicals that form polyurethane foam during the application process. This unique application process allows the foam to conform to the shape of the building to insulate and seal key air leaks in a home – like the framing foundation interface (FFI).[2] SPF outperforms other insulation products because it is the only product that can effectively insulate and air seal a home without the use of additional products. This is the key value proposition for SPF, which is driving the increased demand for sealed crawlspaces in Georgia. Sealing a crawlspace improves the overall energy performance of a house. Sealing the crawlspace effectively stops stack effect – the natural process of cool, moisture laden air being pulled through a home through the FFI and exiting through the roof vents. The U.S. Department of Energy estimates that 56% of the energy used in a home goes to heating and cooling,[3] however, as much as 40% of a building's HVAC energy is lost due to uncontrolled air leakage.[4] Stopping stack effect, with products like SPF, effectively reduces the loss of conditioned air. Fully air sealing with controlled ventilation of a home can save homeowners up to 30% from their HVAC energy bill per year.[5]
In addition to energy savings, reducing air infiltration at the FFI is important for moisture control, especially in hot-humid climates. During the cooling season, the stack-effect drives exfiltration of conditioned air through openings in the upper level of the building and drives infiltration of warm, moist air through the FFI. Infiltration of hot humid air can condense on cold framing and subfloor materials during the summer cooling season, resulting in mold, mildew, and rot. These conditions are ideal for termites, other wood-destroying organisms, and structural deterioration. Homeowners must have the tools, like spray foam, available to protect their homes.

Improperly installed spray foam in crawlspaces and spray foam covering the FFI limits the ability for pest management professionals (PMPs) to conduct visual termite inspections.[6] Currently, the Georgia Construction Code for residential buildings (2018 IRC with 2020 GA amendments) requires SPF applicators to leave a 3 inch gap at the top and bottom of the foundation wall to allow for termite inspection. PMPs have raised concerns with the current requirements and have suggested that visual inspections need to be conducted on the entire inside surface of the FFI, in addition the foundation wall. This proposal seeks to provide increased clarity and options for builders to protect consumers from energy loss, termites, and moisture – all while complying with the Georgia Construction Code's air tightness requirements.

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[1] ABTG Research Report No. 1703-09
[2] Framing-Foundation Interface includes the rim joist, mudsill (sill plate) and top surface of the foundation.
[3] https://www.energy.gov/energysaver/heat-and-cool
[4] https://www.energystar.gov/ia/home_improvement/home_sealing/AirSealingFS_2005.pdf
[5] https://www.energy.gov/eere/why-energy-efficiency-upgrades
[6] http://agr.georgia.gov/improperly-installed-spray-foam-insulation-could-impact-ability-to-protect-from-termites.aspx

***Consumer Protection**:*
Homes are generally the most valuable asset a person can own. Ensuring homes are protected is one of the major responsibilities of the building and construction sector. Building homes that are durable, comfortable, and energy-efficient is complicated. Using principles of building science, achieving these goals requires a complicated balance of several attributes. In the context of sealing the framing foundation interface, there are three key protections: 1) structural features of the home, 2) energy performance, and 3) indoor air quality and occupant comfort.
In terms of consumer protection, the reduction of costly damage from subterranean termites is obviously important. Preventing moisture damage, which improves energy performance and indoor air quality, is equally important. Any changes to the Georgia Construction Code must balance

Termite Damage and Prevention
Georgia homeowners want to ensure that their largest single investment will not be destroyed by wood-destroying organisms such as subterranean termites. The annual cost for termite damage repair in the US is approximately $1B[7] to $5B[8] and the average repair cost per house is $600[9] to $3,000,[2] according to various pest management contractors in Georgia.

Termite damage can range from aesthetic damage to walls, carpeting or furniture, up to structural damage to wall, floor, roof, and ceiling assemblies. While structural damage in nearly all cases will be detected before collapse of the building, repairs can be significant. Structural repair costs from termite damage are typically not covered by homeowner's insurance policies.
There are three major factors that PMPs use to protect homeowners: Inspection, Preventive Treatment, and Passive or Reactive Treatment:

- **Inspections** for subterranean termite infestation starts with an inspection of the foundation walls for mud tubes and entry points and the onset of termite damage to the sill plate. Some PMPs augment visual inspection with other non-visual inspections that include infrared cameras to search for heat generated by active termites, motion detection/acoustic emission to audibly detect termite activity and moisture meters to search for construction materials with high moisture content conducive to termite activity. A recent study by the University of Georgia demonstrated that motion detection/acoustic emission devices effectively detected termite activity.[10]
- **Preventive treatment** for subterranean termites typically uses regular application of termiticide into the soil adjacent to the foundation and/or application of termiticide into the foundation wall or on the wood in contact with the foundation. Termiticides kill termites on contact, including foraging termites and termites living inside the underground colony. Termiticide treatments need to be regularly refreshed to ensure efficacy.
- **Passive or Reactive treatment** for subterranean termites uses bait stations installed in the ground around the perimeter of the foundation. These bait stations contain termiticide-treated food sources which are carried back to the underground colony by foraging termites.

Some PMPs use a preventive approach that relies heavily on regular application of termiticide adjacent to or inside the foundation. These PMPs inject termiticide into the ground or foundation every few years. The efficacy of this generally more costly approach is high and is less reliant on regular visual inspections.

Other PMPs use a passive/reactive approach that relies on more frequent and thorough visual inspections performed every 6 to 12 months. If a termite infestation is detected, they then treat the home with less costly installation of bait stations and, in some cases, with termiticide treatment.

According to the *Termite Control Services: Information for the Georgia Property* Owner by Dr. Brian Forschler, visual inspection is a limited tool. Forschler states:

> "*Since much of the wood in a structure is hidden from view, visual inspections for subterranean termites are cursory at best. Many construction types provide only a limited view of the multitude of areas termites might use to gain entry into a structure.*"

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[7] https://secure.caes.uga.edu/extension/publications/files/pdf/B%201241_5.PDF UGA Extension report 2017 (Forschler)
[8] https://www.orkin.com/termites/facts/statistics
[9] https://www.bredapest.com/news/the-cost-of-repairing-termite-damage-ga
[10] http://agr.georgia.gov/Data/Sites/1/media/ag_plantindustry/structural_pest_control/structural_pest_control_commission/files/Spray-Polyurethane-Foam-Termite-Detection-Demo-Project.pdf

Moisture Damage and Prevention

Properly insulated and sealed homes with controlled ventilation not only save energy, but dramatically reduce the infiltration of hot, humid air during summer months. Infiltration of hot, humid air at the foundation can condense on wood framing, providing ideal conditions for a range of wood-destroying organisms, such as: (1) potentially toxic mold and mildew that negatively impact indoor air quality and occupant health, and (2) added moisture to structural wood framing that actually attract subterranean termites and reduce building durability.

Air impermeable insulations, like closed cell spray foam (ccSPF) or rigid foam board, retard the flow of vapor. At 1.5" ccSPF has an R-Value of 10 and is listed as a class II vapor retarder. In a basement or crawlspace wall or band joist, this is a huge advantage in the winter. A relative humidity of 25% at 70 degrees results in a dew point of 35 degrees. The warmer air is, the more moisture it can hold. To quote Bill Rose, an internationally recognized expert on Building Science, "Cold wet, hot dry."

In winter, condensation will occur on cold surfaces. Keeping surfaces temperature above the dew point prevents condensation. When ccSPF is applied to a band joist, the condensing surface is no longer the wood. It is now the interior surface of the ccSPF. Water vapor cannot permeate through ccSPF easily. In a conditioned crawlspace or basement, the interior temperature and all interior surface temperatures will be greater than 30 degrees above the interior dew point eliminating condensation potential.

Energy Performance

Insulation and air barriers protect consumers by saving on energy usage and controlling the flow of moisture laden air, promoting the durability of the building. High performance insulation, like SPF, allows consumers to insulate and air seal their homes without additional products. According to 2009 data from the Energy Information Administration (EIA), the average annual energy cost is $2,067 for Georgia homes, where 41% of this energy is used for heating and cooling using mostly electricity and natural gas. This includes mostly existing homes with a HERS score of about 140. Estimated energy costs for a new home built to the 2018 IECC standard (HERS/ERI of 100) will be about $1,476, and an energy-efficient home with a HERS/ERI of 60 will have annual energy costs of $885. The net annual savings from an energy-efficient new home to a home built to 2018 IECC standards is about $591.[11] It is worth noting that Georgia relaxed the air tightness requirements to 5.0 ACH_{50} when adopting the 2018 IECC. However, using SPF, homes can often exceed the prescriptive air tightness requirements and see additional savings. The U.S. Department of Energy estimates that 56% of the energy used in a home goes to heating and cooling.[12] As much as 40% of a building's energy is lost due to air infiltration.[13] Gaps, holes and air leakage can make energy bills unnecessarily high and let valuable resources go to waste. The potential energy savings from air sealing a home ranges from 5% to 30% per year.[14]

Most energy efficient homes require improved enclosures, using increased levels of high-performance insulation and fenestration coupled with reduced air leakage on the order of 1.0-1.5 ACH50, nearly five times lower than that required by the current Georgia energy code. Improved enclosures can account for a significant reduction in HVAC energy costs and are a key component of energy-efficient homes.

Two of the most critical areas for air sealing a home is at the ceiling or roof assembly of the top floor and where the framing meets the foundation. This is because of the stack effect, which occurs in all buildings regardless of climate, location or orientation. Hot air rises and applies an outward pressure to the assemblies on the top of the building enclosure. This results in unwanted air exfiltration through penetrations in the ceiling or roof assembly (e.g., ceiling light fixtures). With this exfiltration, there must also be infiltration. Cooler air sinks to the lower part of the enclosure (first floor or basement) exerting an inward pressure on the enclosure. This inward pressure results in unwanted air infiltration, most notably through cracks and gaps where the framing meets the foundation or through the floor itself. Sealing the FFI, as well as the ceiling and roof penetrations, effectively eliminates stack effect and can significantly reduce energy usage.

Additionally, building codes also need to ensure that new homes will be energy efficient to reduce use of non-renewable fossil fuels and to minimize carbon impact on the environment. Current energy codes require energy efficient enclosures that are sufficiently insulated and properly sealed against unwanted air leakage.

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[11] https://www.eia.gov/consumption/residential/reports/2009/state_briefs/pdf/ga.pdf

[12] https://www.energy.gov/energysaver/heat-and-cool

[13] https://www.energystar.gov/ia/home_improvement/home_sealing/AirSealingFS_2005.pdf

[14] https://www.energy.gov/eere/why-energy-efficiency-upgrades

Indoor air quality and occupant comfort

SPF is versatile and can seal wall cavities, exterior walls, crawlspaces, attics, and small gaps and cracks throughout a house. SPF products can limit air infiltration and air movement throughout the home, which reduces drafts, limits intrusion of pollutants and allergens, and improves indoor air quality, making the home more comfortable.

***Developing a Solution**:*

In order to maximize the ability to conduct visual inspections at the FFI, the Georgia Structural Pest Control Commission (GSPCC) had previously proposed the complete elimination of spray foam (and other permanently-installed foam plastic insulations) on the FFI. Eliminating the use of spray foam on the FFI could undermine a key tool for Georgia citizens to use to lower their energy bills and could lead to additional moisture intrusion that will attract termites and other wood-destroying organisms. The Georgia Building Code should not limit consumer choice – especially when the products that may be eliminated provide significant consumer benefit. Fully eliminating the use of spray foam on the FFI will not provide a solution that protects Georgia homeowners.

Over the past year, the spray foam industry has been meeting with the GSPCC to discuss how to address concerns related to termite inspection of the FFI. The spray foam industry position has evolved over time to help address concerns raised by GSPCC.

To date, the pest management industry has not been able to provide data demonstrating the current code is failing to protect consumers in Georgia. To the extent of our knowledge, no data exists stating the use of spray foam in crawlspaces has limited the ability to identify a termite infestation that would have been detected without the use of SPF. Accordingly, fully eliminating the use of spray foam and other permanently-installed insulations at the FFI is not an appropriate response.

The spray foam industry believes the application of spray foam at specific locations on the FFI can accommodate visual inspection of the key areas of the framing foundation interface. The SPF industry has developed a solution that combines the previous GSPCC proposal and new concepts developed by the spray foam industry. This solution will balance energy efficiency with the needs of PMPs, while protecting consumers in Georgia from termites and moisture intrusion.

FINANCIAL IMPACT OF PROPOSED AMENDMENT:

Georgia homeowners want to ensure that their largest single investment will not be destroyed by wood-destroying organisms such as subterranean termites. The annual cost for termite damage repair in the US is approximately $1B[15] to $5B[16] and the average repair cost per house is $600[17] to $3,000,[2] according to various pest management contractors in Georgia.

Visual inspection of areas behind removable insulation is the key practice being used in foundation inspections currently and the current Code allows for this. The current Georgia state amendments (2020) to the IRC 2018 are contained in the exceptions to Section R318.2 of the proposal above. So there is no incremental cost to this proposal.

However, this proposal integrates the Georgia Amendments into the proper section of the Code (i.e. the measures for Protection against Subterranean Termites should be consolidated in Section 318 of the IRC) while providing proper guidance on how foam plastics can be used in applications below grade in areas of heavy termite infestation.

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[15] https://secure.caes.uga.edu/extension/publications/files/pdf/B%201241_5.PDF UGA Extension report 2017 (Forschler)

[16] https://www.orkin.com/termites/facts/statistics

[17] https://www.bredapest.com/news/the-cost-of-repairing-termite-damage-ga