

FORMAL PUBLIC COMMENT

Proposed Chapter 465-X-10 - Alabama Residential Building Code

September 30, 2026

Via Email: information@hblb.alabama.gov

J. Seth Gowan, Executive Director

Alabama Home Builders Licensure Board

445 Herron Street

Montgomery, Alabama 36104

RE: Public Comment - Proposed Chapter 465-X-10, Alabama Residential Building Code

Dear Mr. Gowan and Members of the Board:

I am submitting these comments regarding proposed Chapter 465-X-10, Alabama Residential Building Code.

I am an Alabama licensed residential home builder with more than 30 years of experience in construction, engineering, land development, and real estate. I support reasonable building standards that protect homeowners, promote safe construction, and provide builders and consumers with understandable minimum requirements.

My concern is not simply that Alabama is proposing a residential building code. Model codes are routinely modified for legitimate regional conditions, and some Alabama-specific amendments may be appropriate. The larger question is whether the additional requirements, administrative structure, testing, and Alabama-specific modifications contained in this proposal provide sufficient additional consumer benefit to justify their cost and complexity.

My concern also extends beyond any single provision in this proposal. Residential construction has accumulated layers of code requirements, inspections, permitting, testing, and administrative compliance over many years. Individually, each change may appear modest and may be adopted with good intentions. Collectively, however, those requirements can increase construction cost, extend project schedules, and reduce housing affordability. When new requirements are proposed, I believe it is equally important to ask whether existing requirements can be simplified, consolidated, or removed without reducing legitimate consumer or public-safety protections.

The Board's Notice of Intended Action makes several significant conclusions. It states that absence of the proposed rule would significantly harm or endanger public health, welfare, or safety; that no less restrictive method would adequately protect the public; that the proposed rule would not directly or indirectly increase costs; and that the rule has no economic impact. Those conclusions raise questions that I believe should be answered before final adoption.

1. Demonstrated Need and Consumer Protection

What specific deficiencies, documented construction failures, consumer complaints, safety problems, or other harms under the existing regulatory system demonstrate that failure to adopt this proposed rule would significantly harm or endanger public health, welfare, or safety?

Which specific provisions of the proposed Alabama Residential Building Code address those identified problems?

What measurable improvement in consumer protection, structural safety, durability, energy performance, or public welfare is expected from those provisions?

Alabama builders are not presently operating in the absence of construction standards. International model codes, existing Alabama requirements, locally adopted codes, professional licensing requirements, and local inspection programs where adopted already provide substantial regulation. Accordingly, I respectfully request that the Board identify the specific problems for which this additional statewide regulatory structure is the proposed solution.

2. Less Restrictive Alternatives

The transmittal sheet states that no less restrictive method of regulation is available that could adequately protect the public.

What alternatives were considered before reaching that conclusion?

For example, did the Board or Advisory Council consider:

- Continued reliance on the nationally recognized IRC and IECC with only narrowly tailored Alabama amendments where an identifiable regional need exists;
- Retaining enhanced energy-efficiency or durability measures as voluntary consumer options rather than mandatory minimums where life safety is not implicated;
- Incentives for higher-performance construction rather than mandates;
- Consolidation or elimination of existing requirements that become redundant under the proposed code; or
- Other approaches that would provide substantially the same consumer protection with less cost or administrative burden?

If these alternatives were evaluated, I respectfully request that the supporting analysis be made publicly available.

3. Economic Impact and Housing Affordability

The proposal states that it will neither directly nor indirectly increase the cost of goods or services and that it will have no economic impact.

That conclusion requires further explanation.

Construction requirements have economic consequences when they require additional materials, labor, testing, inspections, documentation, professional services, administrative time, scheduling, or delays. Those costs ultimately become part of the price paid by the homeowner.

What economic analysis was performed before determining that the proposed rule has no economic impact?

Did that analysis consider:

- Additional testing costs;
- HVAC and mechanical-system testing and verification;
- Material and labor associated with amended energy requirements;
- Roof-construction requirements;
- Additional administrative and documentation requirements;
- Effects on project scheduling;
- Differences between jurisdictions that already operate inspection programs and areas that do not;
- Impacts on remodeling and additions; and
- Effects on housing affordability?

The proposed rule also establishes and administers the Alabama Residential Building Code Division and Fund. What are the anticipated staffing, administrative, implementation, and local-assistance costs associated with that structure, and what funding sources are expected to support those costs?

If an economic-impact study, cost analysis, or similar document was prepared by the Board, Advisory Council, consultants, or another state agency, I respectfully request that it be made available to the public. If no such analysis was prepared, I respectfully ask how the conclusion of "No Economic Impact" was reached.

Housing affordability should be considered part of the consumer-impact analysis. A requirement that improves performance may still impose a meaningful cost, and those costs should be identified and weighed openly rather than assumed to be negligible.

4. Specific Technical Provisions

Several provisions deserve further explanation regarding their technical basis and economic effect.

Ductwork in Unconditioned Attics

Proposed Section R403.3.5 requires ductwork in unconditioned attic spaces to be supported at least one inch above attic insulation.

What Alabama-specific construction problem is this amendment intended to solve? What technical data supports this particular requirement, and what additional installation cost was anticipated?

Duct Leakage Testing

The proposal states that all ducts, regardless of whether they are inside or outside the building thermal envelope, must be tested.

What additional consumer benefit results from testing systems located entirely within conditioned space, and what cost was attributed to that requirement?

Mechanical Ventilation Testing

The proposed rule requires mechanical ventilation systems to be tested and verified for required airflow, with written reporting and third-party testing when required by the code official.

What is the anticipated cost of this testing and reporting, and what evidence supports the need for the additional compliance requirement?

5. Appendix RG - 2024 IECC Stretch Code

Near the end of the proposal, the rule states: "Appendix RG is hereby adopted. APPENDIX RG - 2024 STRETCH CODE."

Appendix RG is the 2024 IECC's stretch-code appendix - a higher-efficiency standard beyond the base energy code when a jurisdiction chooses to adopt it.

Please clarify whether adoption of Appendix RG is intended to make the full stretch-code requirements mandatory for residential construction subject to the Alabama Residential Building Code.

If so:

- Why was the stretch code selected instead of the base 2024 IECC?
- What additional construction cost is expected?
- What estimated energy savings and consumer payback were calculated?
- What Alabama-specific analysis supports adoption of the higher standard?

The proposal also contains provisions allowing off-site renewable-energy arrangements, including certain contracts lasting at least 15 years and surviving a transfer of ownership when that compliance option is used.

Because these provisions are difficult for a typical builder or homeowner to understand without extensive cross-referencing, I respectfully request a plain-language explanation of how Appendix RG is intended to operate under the Alabama code.

6. Development of the Technical Amendments

The proposed rule identifies J. Seth Gowan, Lauren Kloess Latham, and Lannie Smith as authors.

Please clarify the process by which the individual technical amendments were developed.

Specifically:

- Who proposed the individual technical changes?
- What role did the listed authors have in drafting the technical provisions versus preparing the administrative rule?
- What technical qualifications and construction, engineering, architectural, code-enforcement, or building-science experience were represented in the drafting and review of the technical provisions?
- Which Advisory Council members or technical committees reviewed them?
- What votes were taken?
- What engineering, building-science, economic, insurance-loss, or other studies were relied upon?
- Are Advisory Council meeting minutes, recommendations, committee reports, and supporting materials publicly available?
- Was a side-by-side comparison prepared showing current Alabama requirements versus the proposed requirements?

If such a comparison exists, I respectfully request that it be published. If one does not exist, I strongly encourage the Board to prepare one before final adoption.

7. Plain-Language Public Information and Participation

This proposal contains 47 pages of administrative provisions, amendments, code references, tables, appendices, and cross-references. Technical precision is necessary in an enforceable building code. However,

affected builders and consumers should not be required to reconstruct the practical effect of a statewide regulatory change by cross-referencing numerous code editions and appendices.

The statewide code was mentioned in the Board's Spring 2026 newsletter, but the detailed proposal and public-comment process are difficult for a working licensee to identify and evaluate quickly. Future major rulemaking of this scope would benefit from a direct, plain-language notice to licensees identifying the material changes, the comment deadline, and the exact method for submitting comments.

For this proposal, I respectfully request that the Board publish a concise document identifying:

Current Requirement -> Proposed Requirement -> Reason for Change -> Expected Consumer Benefit -> Estimated Cost

That would substantially improve public understanding and allow meaningful participation in the rulemaking process.

Conclusion

Again, these comments are not based on opposition to reasonable building codes or appropriate consumer protection.

The question is whether each additional mandatory requirement provides sufficient benefit to justify its cost and whether the same protection could be achieved through a simpler or less restrictive approach.

Housing affordability is already a substantial concern for Alabama families. Every additional construction and compliance cost ultimately becomes part of the price of housing.

Before adopting this proposal, I respectfully request that the Board provide the supporting information necessary for builders, consumers, and the public to understand:

What problem are we solving? What additional protection are we receiving? What will it cost? And is there a simpler way to accomplish the same objective?

Thank you for considering these comments. I respectfully request confirmation that they have been received, included in the official rulemaking record for proposed Chapter 465-X-10, and presented to the Board at its October 20 meeting.

Respectfully,



John Farley

X3 Construction, LLC

Alabama Licensed Home Builder

License #27519

APA-1

TRANSMITTAL SHEET FOR NOTICE
OF INTENDED ACTION

Control: 465

Department or Agency: Home Builders Licensure Board

Rule No.: Chapter 465-X-10

Rule Title: Alabama Residential Building Code

Intended Action New

Would the absence of the proposed rule significantly harm or endanger the public health, welfare, or safety? Yes

Is there a reasonable relationship between the state's police power and the protection of the public health, safety, or welfare? Yes

Is there another, less restrictive method of regulation available that could adequately protect the public? No

Does the proposed rule have the effect of directly or indirectly increasing the costs of any goods or services involved? No

To what degree?: N/A

Is the increase in cost more harmful to the public than the harm that might result from the absence of the proposed rule? NA

Are all facets of the rule-making process designed solely for the purpose of, and so they have, as their primary effect, the protection of the public? Yes

Does the proposed action relate to or affect in any manner any litigation which the agency is a party to concerning the subject matter of the proposed rule? No

.....

Does the proposed rule have an economic impact? No

If the proposed rule has an economic impact, the proposed rule is required to be accompanied by a fiscal note prepared in accordance with subsection (f) of Section 41-22-23, Code of Alabama 1975.

.....

Certification of Authorized Official

I certify that the attached proposed rule has been proposed in full compliance with the requirements of Chapter 22, Title 41, Code of Alabama 1975, and that it conforms to all applicable filing requirements of the Administrative Procedure Division of the Legislative Services Agency.

Signature of certifying officer

J. Seth Gowan
Seth Gowan

Date

Thursday, August 20, 2026

REC'D & FILED

AUG 20, 2026

LEGISLATIVE SVC AGENCY

HOME BUILDERS LICENSURE BOARD

NOTICE OF INTENDED ACTION

AGENCY NAME: Home Builders Licensure Board

RULE NO. & TITLE: Chapter 465-X-10 Alabama Residential Building Code

INTENDED ACTION: New

SUBSTANCE OF PROPOSED ACTION:

For the establishment and implementation of the Alabama Residential Building and Energy codes as recommended by the Alabama Residential Building Code Advisory Council; The Alabama Residential Building Code Division and Fund.

TIME, PLACE AND MANNER OF PRESENTING VIEWS:

Home Builders Licensure Board, 445 Herron Street, Montgomery, Alabama 36104, 7:30 a.m.-4:30 p.m.

FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE:

Monday, October 5, 2026

CONTACT PERSON AT AGENCY:

J. Seth Gowan
(334) 242-2230
information@hblb.alabama.gov

J. Seth Gowan

Seth Gowan

(Signature of officer authorized
to promulgate and adopt
rules or his or her deputy)

**HOME BUILDERS LICENSURE BOARD
ADMINISTRATIVE CODE**

**CHAPTER 465-X-10
ALABAMA RESIDENTIAL BUILDING CODE**

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465-X-10-.01 Purpose.

The Alabama Residential Building Code Division is established within the Alabama Home Builders Licensure Board and to be responsible for the implementation and action upon recommendations made by the Alabama Residential Building Code Advisory Council and ratified by the Board.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith.

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

465-X-10-.02 Alabama Residential Building Code Fund.

1. The Board Executive Director may employ staff as necessary to carry out the responsibilities of the division as recommended

- by the council and ratified by the Board for the administration and implementation of the code.
2. Staff may include a division administrator, programs support personnel, and any other personnel necessary.
 3. The division shall take action upon recommendations made by the Alabama Residential Building Code Advisory Council and ratified by the Board.
 4. The Board, through the division may coordinate with the State Energy Office to identify and apply for funds from federal grant programs and other applicable funding sources authorized by law; or may also assist local jurisdictions in participation of programs and obtaining funding related to the residential building and energy code.
 5. The division shall use funds distributed to the Alabama Residential Building Code Fund as established pursuant to Code of Ala. 1975 § 34-14A-44 for the purpose of administering the Alabama Residential Building Code.
 6. Subject to availability of funds and upon request from a local jurisdiction, the division may provide matching funds to local jurisdictions that have applied for federal funds from federal grant programs and other applicable funding sources authorized by law to support local adoption and implementation of the Alabama Residential Building Code.
 7. The division shall work with the State Energy Office to ensure that all applicable federal regulations regarding the residential energy code are met.
 8. The division shall be responsible for the administration of council recommendations conditioned upon Board adoption.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

465-X-10-.03

Alabama Residential Building Code Fund.

1. The Alabama Residential Building Code Fund is established for the purpose of the administration of the Residential Building Code division, to include implementation and administration of the Alabama Residential Building Code as recommended by the Council and ratified by the Board.
2. The fund may be used for personnel costs related to division responsibilities for the administration, implementation and promotion of the Alabama Residential Building Code and subject to the availability of funds.
3. Any unencumbered balance of up to 25 percent appropriated for a fiscal year shall carryover to the next fiscal year within

the fund, and any unencumbered balance over 25 percent at the end of a fiscal year shall revert to the State General Fund.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

465-X-10-.04

**Alabama Residential Building Code Advisory
Council Membership, Meetings, Responsibilities
and Authority..**

1. The council membership shall consist of members pursuant Ala. Code § 34-14A-80.
2. The council shall conduct the first meeting by March 1, 2025, to elect a chair, vice-chair and any other officers it deems necessary.
3. The administrator of the division shall serve as ex-officio secretary of the council to keep record of the proceedings and perform other duties as directed by the council.
4. The council shall submit to the Board for adoption, the proposed Alabama Residential Building Code by October 1, 2025, to be either accepted or rejected by the Board.
5. The council shall set the published edition(s) of the International Residential Code (hereinafter the "IRC") and International Energy Conservation Code, (hereinafter the "IECC") with any amendments, deletions, or modifications for establishing the Alabama Residential Building Code and thereafter publish through administrative rules the amendments, deletions, or modifications the Alabama Residential Building Code.
6. The council shall publish through administrative rules the amendments, deletions, or modifications of provisions for roof construction standards from either the coastal Construction Code Supplement or the Inland Construction Code Supplement.
7. The council shall publish through administrative rules the amendments, deletions or modifications of provisions and standards related to energy efficiency in residential construction.
8. After Board final adoption of the first established Alabama Residential Building Code, the council may meet as necessary at the call of the chair or request of the Board through its executive director.
9. The council may be authorized to meet for the following:
 - a. Considerations of amendments to the Alabama Residential Building Code.

- b. Adoption of rules, procedures and functions of the council and division.
- c. Evaluation, studies and assessment at the request of the Board and for the division on the needs and impact of the Alabama Residential Building Code.
- d. Develop a public information plan for communication with local governments, residential home builders and residents of the state on the importance of the Alabama Residential Building Code.
- e. The council may create committees for these tasks.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith.

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

465-X-10-.05 Alabama Residential Building Code.

1. The Alabama Residential Building Code (hereinafter the "ARBC") shall consist of the 2024 International Residential Code, (hereinafter the "IRC"), the 2024 International Energy Conservation Code, (hereinafter the "IECC") with amendments, deletions, and modifications as adopted for application and enforcement in the state of Alabama, inclusive of provisions from the Coastal Construction Code Supplement, the Inland Construction Code Supplement for sealed roof deck and construction, as well as other source standards for related energy efficiency pertaining to residential construction.
2. The ARBC, inclusive of the 2024 IRC and 2024 IECC with adopted amendments, deletions, and modifications shall apply to all residential construction and improvement.
3. Beginning January 1, 2027, the ARBC inclusive of the 2024 IRC and 2024 IECC with modifications shall apply to all residential construction., or if applicable, a local jurisdiction's residential building code shall apply.
4. The ARBC, inclusive of the 2024 IRC with adopted amendments, deletions, and modifications, may not supersede local residential building codes adopted and enforce prior to January 1, 2027, provided however, any adoptions, amendments or modifications, made by a local jurisdiction, thereafter, shall meet at least the current ARBC and AREC.
5. The AREC shall be enforced by local jurisdictions that have adopted energy code provisions for residential construction and improvements.
6. Energy code provisions adopted by local jurisdictions may not exceed the AREC.
7. Local jurisdictions may amend local standards of the building code as local conditions require, but adoption or amendment

of energy code provisions may not exceed the AREC unless local conditions or compliance with federal mandate requires such.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith.

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

**465-X-10-.06 The 2024 International Residential Code (IRC)
with the following amendments, deletions and
modifications pursuant to Code of Ala. 1975
§§34-14A-12, 34-14A-12.1 and 34-14A-12.2.**

1. R202: Definitions

- a. **[RB] AIR-PERMEABLE INSULATION.** Insulation material that permits the passage of air through its structure and is not intended to function as an air barrier material. Air-permeable insulation includes, but is not limited to, fiberglass (batts or loose-fill), cellulose, and mineral wool insulation. Materials that achieve air impermeability through testing and listing in accordance with recognized standards shall not be classified as air-permeable insulation.

- b. **[RB] FIRE SEPARATION DISTANCE.** The distance measured from the building face to one of the following:
 - 1. To the closest interior lot line.
 - 2. To the centerline of a street, an alley or public way.
 - 3. To an imaginary line between two buildings on the lot.

The distance shall be measured at a right angle from the face of the wall.

- c. **[RB] WINDBORNE DEBRIS REGION.** Areas within hurricane-prone regions located in accordance with one of the following:

1. Within 1 mile (1.61 km) of the coastal mean high-water line where the ultimate design wind speed, V , is 130 mph (58 m/s) or greater.
 2. In areas where the ultimate design wind speed, V , is 140 mph (63.6 m/s) or greater; or Hawaii.
2. **R302.1 Exterior walls.** Construction, projections, openings, and penetrations of exterior walls of *dwelling*s, and accessory buildings shall comply with Table R302.1(1); or *dwelling*s equipped throughout with an automatic sprinkler system installed in accordance with Section P2904 shall comply with Table R302.1(2).
- a. For the purposes of determining fire separation distance, dwellings on the same lot shall be assumed to have an imaginary line between them. Where a new dwelling is to be erected on the same lot as an existing dwelling, the location of the assumed imaginary line with relation to the existing dwelling shall be such that the existing dwelling meets requirements of this section.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.
 2. Walls of individual dwelling units and their accessory buildings located on the same lot.
 3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
 4. Detached garages accessory to a dwelling unit located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
 5. Foundation vents installed in compliance with this code are permitted.
- b. **Delete Tables R302.1(1) and R302.1(2) and replace with new table.**

Exterior Wall Element		Minimum Fire Resistance Ratings	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1-hour-tested in accordance with ASTM E119, UL 263, or Section 703.3 of the International Building Code with exposure from both sides.	0-feet
	Not Fire-resistance rated	0-hours	3-feet ^a
Projections	Not allowed	N/A	< 2-feet
	Fire-resistance rated	1-hour on the underside, or heavy timber, or fire-retardant treated wood. ^{b, c}	2-feet ^a
	Not fire-resistance rated	0-hours	3-feet
Openings in Walls	Not allowed	N/A	<3-feet
	Unlimited	0-hours	3-feet ^a
Penetrations	All	Comply with R302.4.	< 3-feet
		None required	3-feet ^a

Table R302.1 Exterior Walls

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

- a. For residential subdivisions and townhouses where all *dwellings* are equipped throughout with an automatic sprinkler

system installed in accordance with Section P2904, the *fire separation distance* for exterior walls not fire-resistance rated and for fire-resistance-rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

- b. The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where vent openings that communicate with the attic are not installed in the overhang or gable wall.

- 3. **R302.5.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick, or 20- minute fire-rated doors.
- 4. **Delete Section R306.3.6.1 entirely.**
- 5. **Delete Section R309 entirely.**
- 6. **R316.1 General.** Habitable attics shall comply with Sections R316.2 and R316.3.
- 7. **R316.2 Minimum dimensions.** A habitable attic shall have a floor area in accordance with Section R312 and a ceiling height in accordance with Section R313.
- 8. **R316.3 Story above grade plane.** A habitable attic shall be considered a story above *grade plane*.

Exceptions: A habitable attic shall not be considered to be a story above *grade plane* provided that the habitable attic meets all the following:

1. The aggregate area of the *habitable attic* is not greater than one-third of the floor area of the story below.
 2. The occupiable space is enclosed by the roof assembly above, knee walls, if applicable, on the sides and the floor ceiling assembly below.
 3. The floor of the habitable attic does not extend beyond the exterior walls of the story below.
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9. **R316.4 Means of egress.** The means of egress for habitable attics shall comply with the applicable provisions of Section R318.
 10. **R318.7.5 Stair treads and risers.** Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.
 11. **R321.1.1 Where required.** *Guards* shall be provided for those portions of open-sided walking surfaces, including floors, *stairs*, *ramps* and landings that are located more than 30 inches measured vertically to the floor or *grade* below at any point within 18 inches horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.
 12. **R403.1.6 Foundation anchorage.** Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section. Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation. Anchorage of cold-formed steel framing and sill plates supporting cold-formed steel framing shall be in accordance with this section and Section R505.3.1 or R603.3.1.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of *braced wall panels* at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum 1/2-inch diameter (12.7 mm) anchor bolts spaced a maximum of 6 feet (1829 mm) on center or *approved* anchors or anchor straps spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts. Bolts shall extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundations that are not part of a *braced wall panel* shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections R304 and R305. Anchor bolts shall be permitted to be located while concrete is still plastic and before it has set. Where anchor bolts resist placement or the consolidation of concrete around anchor bolts is impeded, the concrete shall be vibrated to ensure full contact between the anchor bolts and concrete.

Exceptions:

1. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).
2. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).
3. Where the basic wind speed in accordance with Figure R301.2(4)A does not exceed 115 miles per hour (51 m/s), the seismic design category is A or B and Method GB in accordance with Section R602.10 is used for a *braced wall line* on the interior of the dwelling, anchor bolts shall not be required for the wood sole plates of the *braced wall panels*. Positive anchorage with approved fasteners shall be provided.

13. **M1301.3.1 A2L Refrigerant Systems.** Equipment utilizing A2L refrigerants shall comply with Section M1401.7.

14. **M1401.7 A2L Refrigerant Systems.** Mechanical systems utilizing A2L refrigerants shall be designed, installed, and maintained in accordance with this section, ASHRAE 15, ASHRAE 34, the equipment manufacturer's listing, and applicable provisions of this code.

15. **M1401.7.1 Applicability.** This section shall apply to all direct refrigeration and comfort cooling systems utilizing A2L refrigerants serving dwelling units or accessory spaces in residential occupancies regulated by the IRC.

16. **M1401.7.2 Shaft and Enclosure Requirements** Refrigerant piping for direct systems utilizing A2L refrigerants shall not be required to be installed within a fire-resistance-rated shaft or enclosure where all of the following conditions are met:

1. The system complies with the maximum refrigerant charge limits of ASHRAE 15.
2. The piping system is listed and installed in accordance with the manufacturer's instructions.
3. The system serves dwelling units or accessory spaces regulated by this code.

17. **M1401.7.3 Shaft Ventilation Exception.** Where refrigerant piping utilizing A2L refrigerants is installed in a vertical shaft, ventilation of the shaft shall not be required where all of the following conditions are met:

1. The piping system is continuous through the shaft.
2. No joints, fittings, valves, or mechanical connections are located within the shaft.
3. The piping is protected from physical damage.

18. **M1401.7.4 Refrigerant Charge Limits.** The maximum refrigerant charge permitted in occupied spaces shall comply with ASHRAE 15 and the equipment manufacturer's listing.

19. **M1401.7.5 Leak Detection and Mitigation.** Where required by ASHRAE 15 or the equipment listing, A2L systems shall be provided with approved refrigerant detection and mitigation measures, including automatic shutdown, ventilation, or alarms.

20. **M1401.7.6 Prohibited Locations.** A2L refrigerant equipment shall not be installed in locations prohibited by the manufacturer's listing or ASHRAE 15.

21. **M1401.7.7 Listing and Labeling.** Equipment utilizing A2L refrigerants shall be listed and labeled in accordance with UL, ETL, or other approved standards and installed in accordance with the listing.

22. **E3901.4.2 Island and peninsular countertops and work surfaces.**

1. At least one receptacle outlet shall be installed at each island countertop space with a long dimension of 24 inches (610 mm) or greater and a short dimension of 12 inches (305 mm) or greater. [210.52(C)(2)]
2. Not less than one receptacle outlet shall be installed at each peninsular countertop long dimension space having a long dimension of 24 inches (610 mm) or greater and a short dimension of 12 inches (305 mm) or greater. A peninsular countertop is measured from the connected perpendicular wall. [210.52(C)(3)]

23. **E3901.4.3 Receptacle outlet location.** Receptacle outlets shall be located not more than 20 inches (508 mm) above the countertop or work surface. Receptacle outlet assemblies installed in countertops and work surfaces shall be listed for use in countertops or work surfaces. Receptacle outlets rendered not readily accessible by appliances fastened in place, appliance garages, sinks or range tops as addressed in the exception to Section E3901.4.1, or appliances occupying dedicated space shall not be considered as these required outlets. [210.52(C)(5)]

Exception: Receptacle outlets shall be permitted to be mounted not more than 12 inches (305 mm) below the countertop or work surface in construction designed for the physically impaired and for island and peninsular countertops or work surface where the surface is flat across its entire surface and there are no means to mount a receptacle within 20 inches (508 mm) above the countertop, such as in an overhead cabinet. Receptacles mounted below the countertop or work surface in accordance with this exception shall not be located where the countertop or work surface extends more than 6 inches (152 mm) beyond its support base. [210.52(C) (5) Exception]

24. **Delete Section E3902.12 entirely.**

25. **AMEND IRC CHAPTER 44 (REFERENCED STANDARDS)**

a. **ASHRAE 15** - Safety Standard for Refrigeration Systems

26. **Appendix BB is hereby adopted.**

Appendix BB Tiny Houses.

a. **Section BB101 General**

BB101.1 Scope. This appendix shall be applicable to *tiny houses* used as single *dwelling units*. *Tiny houses* shall comply with this code except as otherwise stated in this appendix.

b. **Section BB102 Definitions**

- i. **BB102.1 General.** The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of this code for general definitions.
- ii. **EGRESS ROOF ACCESS WINDOW.** A *skylight* or roof window designed and installed to satisfy the *emergency escape and rescue opening* requirements of Section R319.2.
- iii. **LANDING PLATFORM.** A landing provided as the top step of a *stairway* accessing a *loft*.

- iv. **LOFT.** A floor level located more than 30 inches (762 mm) above the main floor, open to the main floor on one or more sides with a *ceiling height* of less than 6 feet 8 inches (2032 mm) and used as a living or sleeping space.
- v. **TINY HOUSE.** A *dwelling* that is 400 square feet (37 m²) or less in floor area excluding *lofts*.

c. **Section BB103 Ceiling Height**

- i. **BB103.1 Minimum ceiling height.** *Habitable space* and hallways in *tiny houses* shall have a *ceiling height* of not less than 6 feet 8 inches (2032 mm). Bathrooms, toilet rooms and *kitchens* shall have a *ceiling height* of not less than 6 feet 4 inches (1930 mm). Obstructions including, but not limited to, beams, girders, ducts and lighting, shall not extend below these minimum *ceiling heights*.
- ii. **Exception:** *Ceiling heights* in *lofts* are permitted to be less than 6 feet 8 inches (2032 mm).

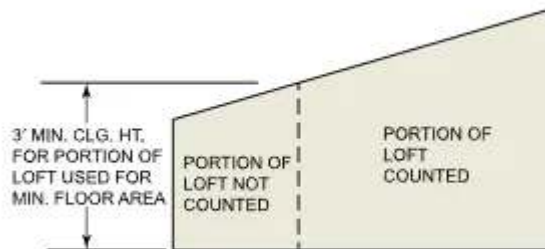
d. **Section BB104 Lofts**

- i. **BB104.1 Minimum loft area and dimensions.** *Lofts* used as a sleeping or *living space* shall meet the minimum area and dimension requirements of Sections BB104.1.1 through BB104.1.3.
- ii. **BB104.1.1 Minimum area.** *Lofts* shall have a floor area of not less than 35 square feet (3.25 m²).
- iii. **BB104.1.2 Minimum horizontal dimensions.** *Lofts* shall be not less than 5 feet (1524 mm) in any horizontal dimension.
- iv. **BB104.1.3 Height effect on loft area.** Portions of a *loft* with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft. See Figure BB104.1.3.

Exception: Under gable roofs with a minimum slope of 6 units vertical in 12 units horizontal (50 percent slope), portions of a *loft* with a sloped ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling shall not be

considered as contributing to the minimum required area for the *loft*.

FIGURE BB104.1.3 HEIGHT EFFECT ON LOFT



AREA

For SI: 1 foot = 304.8 mm.

- v. **BB104.2 Loft access and egress.** The access to and primary egress from *lofts* shall be of any type described in Sections BB104.2.1 through BB104.2.5. The *loft* access and egress element along its required minimum width shall meet the *loft* where its *ceiling height* is not less than 3 feet (914 mm).
- vi. **BB104.2.1 Stairways.** *Stairways* accessing *lofts* shall comply with this code or with Sections BB104.2.1.1 through BB104.2.1.7.
- vii. **BB104.2.1.1 Width.** *Stairways* accessing a *loft* shall not be less than 17 inches (432 mm) in clear width at or above the *handrail*. The width below the *handrail* shall be not less than 20 inches (508 mm).
- viii. **BB104.2.1.2 Headroom.** The headroom above *stairways* accessing a *loft* shall be not less than 6 feet 2 inches (1880 mm), as measured vertically, from a sloped line connecting the tread, landing or *landing platform nosings* in the center of their width and vertically from the *landing platform* along the center of its width.
- ix. **BB104.2.1.3 Treads and risers.** *Risers* for *stairs* accessing a *loft* shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:
 - 1. The tread depth shall be 20 inches (508 mm) minus four-thirds of the riser height.

2. The riser height shall be 15 inches (381 mm) minus three-fourths of the tread depth.
- x. **BB104.2.1.4 Landings.** Intermediate landings and landings at the bottom of *stairways* shall comply with Section R318.7.6, except that the depth in the direction of travel shall be not less than 24 inches (610 mm).
- xi. **BB104.2.1.4 Landing platforms.** The top tread and *riser* of *stairways* accessing *lofts* shall be constructed as a *landing platform* where the *loft ceiling height* is less than 6 feet 2 inches (1880 mm) where the *stairway* meets the *loft*. The *landing platform* shall be not less than 20 inches (508 mm) in width and in depth measured horizontally from and perpendicular to the *nosing* of the *landing platform*. The *landing platform* riser height to the loft floor shall be not less than 16 inches (406 mm) and not greater than 18 inches (457 mm).
- xii. **BB104.2.1.6 Handrails.** *Handrails* shall comply with Section R318.7.8.
- xiii. **BB104.2.1.7 Stairway guards.** Guards at open sides of *stairways*, landings and *landing platform* shall comply with Section R321.1.
- xiv. **BB104.2.2 Ladders.** Ladders accessing *lofts* shall comply with Sections BB104.2.1 and BB104.2.2.2.
- xv. **BB104.2.2.1 Size and capacity.** Ladders accessing *lofts* shall have a rung width of not less than 12 inches (305 mm), and 10-inch (254 mm) to 14-inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 300-pound (136 kg) load on any rung. Rung spacing shall be uniform within 3/8 inch (9.5 mm).
- xvi. **BB104.2.2.2 Incline.** Ladders shall be installed at 70 to 80 degrees from horizontal.
- xvii. **BB104.2.3 Alternating tread devices.** *Alternating tread devices* accessing *lofts* shall comply with Sections R318.7.12.1 and R318.7.12.2. The clear width at and below the *handrails* shall be not less than 20 inches (508 mm).
- xviii. **BB104.2.4 Ship's ladders.** Ship's ladders accessing *lofts* shall comply with Sections R318.7.13.1 and R318.7.13.2. The clear width at and below *handrails* shall be not less than 20 inches (508 mm).
- xix. **BB104.2.5 Loft guards.** *Loft guards* shall be located along the open sides of *lofts*. *Loft guards* shall be not less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less. *Loft guards* shall comply with Section R321.1.3 and Table R301.5 for their components.

e. Section BB105 Emergency Escape and Rescue Openings

- i. **BB105.1 General.** *Tiny houses* shall meet the requirements of Section R319 for *emergency escape and rescue openings*.
- ii. **Exception:** *Egress roof access windows* in *lofts* used as sleeping rooms shall be deemed to meet the requirements of Section R319 where installed such that the bottom of the opening is not more than 44 inches (1118 mm) above the *loft floor*, provided the *egress roof access window* complies with the minimum opening area requirements of Section R319.2.1.

f. Section BB106 Energy Conservation deleted.

27. **Appendix BO is hereby adopted.**

Appendix BO Existing Buildings and Structures

a. Section BO101 Purpose and Intent

BO101.1 General. The purpose of these provisions is to encourage the continued use or reuse of legally existing buildings and structures. Structural elements and systems shall comply with Section R102.6.1 and the provisions of this appendix. *Repairs, alterations, additions* and relocation of existing buildings and structures shall comply with the provisions of this code for new construction, except as modified by this appendix.

b. Section BO102 Compliance

- i. **BO102.1 General.** The work shall not cause the *building* or *structure* to become unsafe or adversely affect the performance of the *building*; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the *building* any less compliant with this code or to any previously *approved* alternative arrangements than it was before the work was undertaken.

- ii. **B0102.2 Identification of work.** The work shall be clearly identified on the *permits* issued under these provisions.
- iii. **B0102.3 Structural.** Structural elements and systems that are altered, repaired or replaced shall comply with Section R102.6.1 and the structural provisions of this appendix. The work performed shall not cause the structure to become less compliant with this code than it was before the work was undertaken.
- iv. **B0102.3.1 Design loads.** The minimum design loads for the structure shall be the loads applicable at the time the *building* was constructed. The minimum design loads for new structural components shall comply with this code. Structural elements that are uncovered during the course of the *alteration* and that are found to be unsafe shall be repaired in accordance with Section R102.6.1.
- v. **B0102.4 Smoke alarms.** Smoke alarms shall be provided where required by Section R310.2.2.
- vi. **B0102.5 Carbon monoxide alarms.** Carbon monoxide alarms shall be provided where required by Section R311.2.2.
- vii. **B0102.6 Replacement windows.** Where an existing window, including the sash and glazed portion, or safety glazing is replaced, the replacement window or safety glazing shall comply with the requirements of Sections B0102.6.1 through B0102.6.3, as applicable.
- viii. **B0102.6.1 Energy efficiency.** Replacement windows shall comply with the requirements of Chapter 11.
- ix. **B0102.6.2 Safety glazing.** Replacement glazing in *hazardous locations* shall comply with the safety glazing requirements of Section R324.
- x. **B0102.6.3 Window fall protection.** Window fall protection shall be installed in accordance with Section R321.2.
- xi. **B0102.7 Flood hazard areas.** Work performed in existing buildings located in a flood hazard area as established by Table R301.2 shall be subject to the provisions of Section R104.3.1.
- xii. **B0102.8 Equivalent alternatives.** Work performed in accordance with the International Existing Building Code shall be deemed to comply with the provisions of this appendix. These provisions are not intended to prevent the use of any alternative material, alternative design or alternative method of construction not specifically prescribed herein, provided that any alternative has been deemed to be equivalent and its use authorized by the *building official*.
- xiii. **B0102.9 More restrictive requirements.** *Buildings* or systems in compliance with the requirements of this code for new construction shall not be required to comply with any more restrictive requirement of these provisions.

c. **Section BO103 Definitions**

- i. **BO103.1 General.** The terms used in this appendix, and not provided in Chapter 2, are defined as follows:

DANGEROUS. Any *building*, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under permanent, routine or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake aftershock or other environmental loads when such loads are imminent.

d. **Section BO104 Repairs**

- i. **BO104.1 General.** *Repairs* shall comply with the applicable provisions of this code for new construction or as permitted by this appendix.
- ii. **BO104.2 Materials.** Materials used during *repairs* shall comply with this section.
- iii. **BO104.2.1 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by this code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided that unsafe conditions are not created. Hazardous materials shall not be used where this code would not permit their use in *buildings* of similar occupancy, purpose and location.
- iv. **BO104.2.2 Existing materials.** Materials already in use in a *building* in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *building official* to be unsafe.
- v. **BO104.2.3 Plumbing materials and supplies.** The following plumbing materials and supplies shall not be used:
 1. All-purpose solvent cement, unless *listed* for the specific application.
 2. Flexible traps and tailpieces, unless *listed* for the specific application.

- 3. Solder having more than 0.2 percent lead in the repair of potable water systems.
- vi. **B0104.3 Water closets.** Where any water closet is replaced with a newly manufactured water closet, the replacement water closet shall comply with the requirements of Section P2903.2.
- vii. **B0104.4 Electrical.** Repair or replacement of existing electrical wiring and equipment shall comply with Chapters 34 through 43.
- viii. **B0104.5 Structural.** Repaired structural elements and systems shall comply with Section R102.6.1 and the structural provisions of this appendix.

e. **Section B0105 Alterations**

- i. **B0105.1 General.** *Alterations* to existing buildings shall comply with the provisions of this code for new construction, except as permitted by Sections B0105.2 through B0105.8. Engineered design in accordance with Section R301.1.3 shall be permitted to meet the requirements of this section. *Alterations* shall not cause the existing building to become less compliant with the provisions of this code for new construction than the existing building was prior to the work.
- ii. **B0105.2 Newly constructed elements.** Newly constructed elements, components and systems shall comply with the requirements of this code.

Exceptions:

- 1. Added openable windows are not required to comply with the light and *ventilation* requirements of Section R325.
- 2. Newly installed electrical equipment shall comply with the requirements of Section B0105.5.
- iii. **B0105.3 Nonconformities.** The work shall not increase the extent of noncompliance or create nonconformity to those requirements that did not previously exist.
- iv. **B0105.4 Structural.** Altered structural elements and systems shall comply with Section R102.6.1 and the structural provisions of this appendix.
- v. **B0105.4.1 Decreased structural capacity.** Where an *alteration* causes a decrease in capacity in any structural component, that structural component shall be shown to comply or shall be altered to comply with the applicable provisions of Chapters 3, 4, 5, 6 and 8.
- vi. **B0105.4.2 Increased design loads.** Where an *alteration* causes an increase in loads as described in this section, the existing structural components that support the increased

load, including the foundation, shall be shown to comply or shall be altered to comply with the applicable provisions of Chapters 3, 4, 5, 6 and 8. Existing structural components that do not provide support for the increased loads shall not be required to comply with this section.

- vii. **B0105.4.2.1 Dead load increase.** *Dead load* shall be considered to be increased for purposes of this section when the weight of materials used for the *alteration* exceeds the weight of the materials replaced, or when new materials or elements are added.

Exceptions:

1. *Buildings* in which the increase in *dead load* is due entirely to the *addition* of a second layer of *roof covering* weighing 3 pounds per square foot (psf) (0.1437 kN/m^2) or less over an existing single layer of *roof covering*.
2. Installation of rooftop-mounted photovoltaic (PV) panel systems weighing 4 psf (0.1915 kN/m^2) or less over an existing single layer of *roof covering*.

These exceptions shall not be applied simultaneously.

- viii. **B0105.4.2.2 Live load increase.** An increase in *live load* shall be determined based on Table R301.5.
- ix. **B0105.4.2.3 Snow load increase.** Snow load shall be considered to be increased for purposes of this section when *alteration* of the roof configuration creates new areas that accumulate drifted snow.
- x. **B0105.4.2.4 Wind load increase.** Wind load shall be considered to be increased for purposes of this section when the exposed surface area of any exterior elevation subject to wind pressure is increased by more than 5 percent.
- xi. **B0105.4.2.5 Seismic load increase.** Seismic load shall be considered to be increased for purposes of this section in existing buildings assigned to *Seismic Design Category C, D₀, D₁ or D₂* where new materials replace lighter-weight materials in one of the following conditions:
1. Concrete tile or tile *roof covering* of similar weight is installed on more than 50 percent of the total roof area.
 2. Brick veneer or *cladding* of similar weight is installed on walls above the second *story*.
- xii. **B0105.4.3 Unreinforced masonry parapets.** Unreinforced masonry parapets located in *Seismic Design Category D2* shall have

wall anchors installed at the roofline and additional bracing installed above the roofline whenever a *reroofing permit* is issued and work involves removal of roofing materials from more than 25 percent of the roof area. Such masonry bracing and wall anchors shall be of an *approved* design, unless an evaluation demonstrates compliance of the existing bracing and anchorage.

Exception: Bracing above the roofline shall not be required where the maximum height of unbraced unreinforced masonry does not exceed a height-to-width ratio of 2.5. Height shall be measured from the top of the parapet down to the highest existing brace or anchor point attached to the structure.

- xiii. **B0105.5 Electrical equipment and wiring.** Electrical equipment and wiring shall comply with this section.
- xiv. **B0105.5.1 Materials and methods.** Newly installed electrical equipment and wiring relating to work done in any work area, including in newly installed partitions and ceilings, shall comply with the materials and methods requirements of Chapters 34 through 43.
- xv. **B0105.5.2 Electrical service.** Service to the *dwelling unit* shall be not less than 100 ampere, three-wire capacity, and service *equipment* shall be dead front having no live parts exposed that could allow accidental contact. Type "S" fuses shall be installed where fused equipment is used.

Exception: Existing service of 60 ampere, three-wire capacity, and feeders of 30 ampere or larger two- or three-wire capacity shall be accepted if adequate for the electrical load being served.

- xvi. **B0105.5.3 Additional electrical requirements.** Where the work area includes any of the following areas within a dwelling unit, the requirements of Sections B0105.5.3.1 through B0105.5.3.5 shall apply.
- xvii. **B0105.5.3.1 Enclosed areas.** Enclosed areas other than closets, *kitchens*, *basements*, garages, hallways, laundry areas and bathrooms shall have not fewer than two duplex receptacle outlets, or one duplex receptacle outlet and one ceiling- or walltype lighting outlet.
- xviii. **B0105.5.3.2 Kitchen and laundry areas.** *Kitchen* areas shall have not fewer than two duplex receptacle outlets. Laundry areas shall have not fewer than one duplex receptacle outlet located near the laundry equipment and installed on an independent branch circuit.
- xix. **B0105.5.3.3 Ground-fault circuit interruption.** Ground-fault circuit interruption shall be provided on newly installed receptacle outlets if required by Chapters 34 through 43.

- xx. **B0105.5.3.4 Lighting outlets.** Not less than one lighting outlet controlled by a *listed* wall-mounted device shall be provided in every bathroom, hallway, *stairway*, attached garage and detached garage with electric power to illuminate outdoor entrances and exits, and in utility rooms and *basements* where these spaces are used for storage or contain equipment requiring service. The wall-mounted control device shall be located near an entrance to the room.
- xxi. **B0105.5.3.5 Clearance.** Clearance for electrical service equipment shall be provided in accordance with Chapters 34 through 43.
- xxii. **B0105.6 Ventilation.** Reconfigured spaces intended for occupancy and spaces converted to habitable or occupiable space in any work area shall be provided with *ventilation* in accordance with Section R325.
- xxiii. **B0105.7 Ceiling height.** Where a *habitable attic* or *habitable space* is created in an existing building, ceiling heights shall be not less than 6 feet 8 inches (2032 mm). Bathrooms, toilet rooms and laundry rooms shall have a *ceiling height* of not less than 6 feet 4 inches (1930 mm).

Exceptions:

- 1. For rooms with sloped ceilings, the required floor area of the room shall have a *ceiling height* of not less than 5 feet (1524 mm), and not less than 50 percent of the required floor area shall have a *ceiling height* of not less than 6 feet 8 inches (2134 mm).
 - 2. At beams, girders, ducts or other obstructions, the ceiling height shall be not less than 6 feet 4 inches (1930 mm) from the finished floor.
- xxiv. **B0105.8 Stairs, handrails and guards.** *Stairs, handrails* and guards shall comply with this section.
 - xxv. **B0105.8.1 Stair width.** Existing *basement stairs* and *handrails* not otherwise being altered or modified shall be permitted to maintain their current clear width at, above and below existing *handrails*.
 - xxvi. **B0105.8.2 Stair headroom.** Headroom height on existing *basement stairs* being altered or modified shall not be reduced below the existing *stairway* finished headroom. Existing *basement stairs* not otherwise being altered shall be permitted to maintain the current finished headroom.
 - xxvii. **B0105.8.3 Stair landing.** Landings serving existing *basement stairs* being altered or modified shall not be reduced below the existing *stairway* landing depth and width. Existing *basement stairs* not otherwise being altered shall be permitted to maintain the current landing depth and width.

- xxviii. **B0105.8.4 Stair treads and risers.** An existing *stairway* shall not be required to comply with Section R318.7.5 where the existing space and construction does not allow a reduction in pitch or slope. Where risers are added to an existing *stair*, the tread and *riser* dimension of the added risers shall match the existing *stair*.
- xxix. **B0105.8.5 Stairway illumination.** *Stairways* within the work area shall be provided with illumination in accordance with Section R325.7.
- xxx. **B0105.8.6 Handrails and guards.** If a *stair* or any portion of a *stair* is altered, a *handrail* and guard, where required, shall be provided in accordance with Sections R318 and R320.

f. Section B0106 Addition

- i. **B0106.1 General.** Where existing buildings with the *addition* are within the scope of this code, *additions* shall comply with this section and other applicable provisions of this code for new construction or as permitted by this appendix. Engineered design in accordance with Section R301.1.3 shall be permitted to meet the requirements of this section.
- ii. **B0106.2 Structure for horizontal additions.** Where an *addition* involves new construction attached to an existing building, the new construction shall meet all of the structural requirements of this code for new construction. *Alterations* to the existing building shall comply with the requirements governing *alterations* within this code. In wood light-frame *additions*, connection of the structural components shall be permitted to be provided using wall top plates and *addition* studs that abut the existing building. Wall top plates shall be lapped and spliced in accordance with Section R602.3.2. Abutting studs shall be fastened in accordance with Table R602.3(1).

Exception: The *addition* structure shall be permitted to be connected to the existing building in accordance with accepted engineering practice.

- iii. **B0106.3 Structure for vertical additions.** Where an *addition* involves new construction that adds a *story* to any part of the existing building or vertically increases the height of any part of the existing building, the new construction and the existing building together shall be shown to comply with, or altered to comply with, all of the structural requirements of this code for new construction.

Exception: Where the new structure and the existing structure together are evaluated in accordance with accepted engineering practice and are shown to be sufficient to

support the combined loads from the new structure and existing structure, no structural *alterations* are required.

g. Section BO107 Relocated Buildings

i. BO107.1 General. Residential buildings or structures moved into or within the *jurisdiction* are not required to comply with the requirements for new construction under this code, provided they comply with all of the following conditions:

1. The *building* shall be safe for human occupancy as determined by the *International Fire Code* and the *International Property Maintenance Code*.
2. Any *repair, alteration* or change of use undertaken within the relocated structure shall comply with the requirements of this code applicable to the work being performed.
3. Any field fabricated elements shall comply with the applicable requirements of this code.

h. Section BO108 Referenced Standards

i. BO108.1 General. See Table BO108.1 for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, the standard title and the section or sections of this appendix that reference the standard. TABLE

ii. BO108.1 REFERENCED STANDARDS

STANDARD ACRONYM	STANDARD NAME	SECTION HEREIN REFERENCED
IEBC-24	<i>International Existing Building Code</i> ®	<u>BO102.8</u>
IFC-24	<i>International Fire Code</i> ®	<u>BO107.1</u>
IPMC-24	<i>International Property Maintenance Code</i> ®	<u>BO107.1</u>

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith
Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-12.1, 34-14A-12.2, 34-14A-12.3, 34-14A-41, 34-14A-42, and 34-14A-43.
History: New Rule: Published _____; effective _____.

465-X-10-.07 The 2024 International Energy Conservation Code (IECC) with the following amendments, deletions and modifications pursuant to Code of Ala. 1975, Sections 34-14A-12, 34-14A-12.1 and 34-14A-12.2.

(1) **SECTION R202 DEFINITIONS**

- a. **COMMUNITY RENEWABLE ENERGY FACILITY (CREF).** A facility that produces energy from *renewable energy resources* and that is qualified as a community energy facility under applicable jurisdictional statutes and rules.
- b. **FINANCIAL RENEWABLE ENERGY POWER PURCHASE AGREEMENT (FPPA).** A financial arrangement between a renewable electricity generator and a purchaser wherein the purchaser pays or guarantees a price to the generator for the project's renewable generation. Also known as a "financial power purchase agreement" and "virtual power purchase agreement."
- c. **PHYSICAL RENEWABLE ENERGY POWER PURCHASE AGREEMENT (PPPA).** A contract for the purchase of renewable electricity from a specific renewable electricity generator by a purchaser of renewable electricity.

2. R104.1.1 Above code programs. The *code official* or other AHJ shall be permitted to deem a national, state or local energy-efficiency program to exceed the energy efficiency required by this code. *Buildings* approved in writing by such an energy-efficiency program shall be considered to be in compliance with this code where such buildings also meet the requirements identified in Table R405.2 and the proposed total *building thermal envelope* thermal conductance (TC) shall be less than or

equal to the total building thermal envelope TC using the prescriptive U-factors and F-factors from Table R402.1.2 multiplied by 1.08 in Climate Zones 0, 1 and 2, and by 1.15 in Climate Zones 3 through 8, in accordance with Equation 1-1. The area-weighted maximum fenestration solar heat gain coefficients (SHGC) permitted in Climate Zones 0 through 3 shall be 0.30.

For Climate Zones 0-2: $TC_{\text{Proposed design}} \leq 1.08 \times TC_{\text{Prescriptive reference design}}$

R104.1.1.1 National Green Building Standard. Buildings complying with ICC 700 National Green Building Standard and achieving an equivalent energy performance as demonstrated by a third-party certification organization shall be deemed to exceed the energy efficiency required by this code.

(3) TABLE R402.1.2 MAXIMUM ASSEMBLY U-FACTORS^a AND FENESTARTION REQUIREMENTS

Portions of table not shown remain unchanged.

CLIMATE ZONE	0	1	2	3	4 except Marine	5 and Marine 4	6	7 and 8
UNHEATED SLAB F-FACTOR ^h	0.73	0.73	0.73	0.54	0.54	0.54	0.48	0.48

For SI: 1 foot - 304.8mm.

h. A maximum F-factor of 0.73 shall apply in jurisdictions designated by the code official as having a very heavy termite infestation.

(4) R402.1.3 INSULATION TABLE MINIMUM R-VALUES AND FENESTARTION REQUIREMENTS

Portions of table not shown remain unchanged.

CLIMATE ZONE	0	1	2	3	4 except Marine	5 and Marine 4	6	7 and 8
SLAB ^{d,e} f R-VALUE & DEPTH	0	0	0	10ci, 2 ft	10ci, 4 ft	10ci, 4 ft	10ci, 4 ft	10ci, 4ft

For SI: 1 foot - 304.8mm.

f. Slab edge insulation is not required in jurisdictions designated by the code officials as having very heavy termite infestation.

(5) Delete Section R402.2.1 entirely.

(6) Delete Section R402.2.2 entirely.

(7) R402.2.3 Attic knee wall. Wood attic *knee wall* assemblies that separate *conditioned space* from unconditioned attic spaces shall comply with Table R402.1.3 for wood frame walls. Steel attic *knee wall* assemblies shall comply with Section R402.2.7. Such knee walls shall have an *air barrier* between conditioned and unconditioned space.

Exception: Where construction constraints prevent achieving a properly constructed knee wall assembly that meets the requirements of this section, the knee wall may be treated as part of the ceiling insulation system when all of the following conditions are met:

1. **Insulation Alignment:** The knee wall cavity is insulated to an R-value not less than the adjacent attic insulation and is aligned with the surrounding ceiling thermal envelope.
2. **Insulation Installation:** Batt insulation shall be installed so that it fully fills the cavity, maintains continuous contact with the air barrier on the conditioned side, and is fully supported on the attic side using approved netting, sheathing, or other support material to prevent displacement and air gaps.
3. **Air Barrier:** A continuous air barrier is installed on the conditioned side of the knee wall and is sealed to adjoining framing or sheathing to limit airflow between conditioned and unconditioned spaces.
4. **Thermal Envelope Classification:** For energy compliance purposes, knee walls treated under this alternative shall be considered part of the ceiling assembly rather than a vertical wall assembly. This reduction shall not apply to the insulation criteria in Section R402.1.2 and the component performance alternative in Section R402.1.5.

8. R402.2.3.1 Roof truss framing separating conditioned and unconditioned space. Where wood vertical roof truss framing members are used to separate *conditioned space* and unconditioned space, they shall comply with Table R402.1.3 for wood frame walls. Steel frame vertical roof truss framing members used to

separate conditioned space and unconditioned space shall comply with Section R402.2.7.

Exception: Attic knee walls and roof truss framing that comply with all of the following:

1. The attic knee wall or roof truss framing assembly is provided with an air barrier and is insulated to not less than R-15 in Climate Zone 3 and not less than R-20 in Climate Zones 4-6.
2. The attic knee wall or roof truss framing assembly is not more than 5 feet in height.
3. One additional credit is achieved above the minimum number of credits required by Section R408.

9. 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 the finished grade level and then vertically and/or horizontally for at least an additional 24 inches (610 mm). Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder in accordance with the International Building Code or International Residential Code, as applicable. All joints of the vapor retarder shall overlap by 6 inches (153 mm) and be sealed or taped. The edges of the vapor retarder shall extend not less than 6 inches (153 mm) up the stem wall and shall be attached to the stem wall.

10. TABLE R402.5.1.1 AIR BARRIER, AIR SEALING AND INSULATION INSTALLATION^a

COMPONENT	AIR BARRIER, AIR SEALING CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building thermal envelope. Breaks or joints in the air barrier shall be sealed. Air- permeable insulation requires an	Air-permeable insulation shall not be used as a sealing material. Air-permeable insulation must fill entire cavity and be enclosed in an air barrier assembly. c

	air barrier on all sides. b	
Ceiling/attic	An air barrier shall be installed in any dropped ceiling or soffit to separate it from unconditioned space. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed with gasketing materials that allow for repeated entrance over time.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier. Access hatches and doors shall be installed and insulated in accordance with <u>Section R402.2.5</u> . Eave baffles shall be installed in accordance with <u>Section R402.2.4</u> .
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance, R-value, of not less than R-3 per inch. Exterior building thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Knee wall	Knee walls shall have an air barrier between conditioned and unconditioned space.	Insulation installed in a knee wall assembly shall be installed in accordance with <u>Section R402.2.3</u> . Air-permeable insulation shall be enclosed inside an air barrier assembly.
Windows, skylights and doors	The rough opening gap between framing and the frames of skylights, windows and doors, shall be sealed in accordance with	Insulation shall not be required in the rough opening gap except as required by the fenestration

	fenestration manufacturer's instructions.	manufacturer's instructions.
Rim joists	Rim joists shall include an air barrier. The junctions of the rim board to the sill plate and the rim board and the subfloor shall be air sealed.	Rim joists shall be insulated so that the insulation maintains permanent contact with the exterior rim board. ^b
Floors, including cantilevered floors and floors above garages	Floor framing members that are part of the building thermal envelope shall be air sealed to maintain a continuous air barrier. Air permeable floor cavity insulation shall be enclosed.	Floor insulation shall be installed in accordance with the requirements of <u>Section R402.2.8.</u>
Basement, crawl space and slab foundations	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder/ air barrier in accordance with <u>Section R402.2.11.</u> Penetrations through concrete foundation walls and slabs shall be air sealed. Class 1 vapor retarders shall not be used as an air barrier on below-grade walls and shall be installed in accordance with <u>Section R702.7</u> of the <i>International Residential Code</i> .	Crawl space insulation, where provided instead of floor insulation, shall be installed in accordance with <u>Section R402.2.11.</u> Conditioned basement foundation wall insulation shall be installed in accordance with <u>Section R402.2.9.1.</u> Slab-on-grade floor insulation shall be installed in accordance with <u>Section R402.2.10.</u>
Shafts, penetrations	Duct and flue shafts to exterior or unconditioned space shall be sealed. Utility penetrations of the air barrier shall be caulked, gasketed or	Insulation shall be fitted tightly around utilities passing through shafts and penetrations in the building thermal

	otherwise sealed and shall allow for expansion, contraction of materials and mechanical vibration.	envelope to maintain required R-value.
Narrow cavities	Narrow cavities of 1 inch or less that are not able to be insulated shall be air sealed.	Batts to be installed in narrow cavities shall be cut to fit or narrow cavities shall be filled with insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	Insulated portions of the garage separation assembly shall be installed in accordance with <u>Sections R303 and R402.2.8.</u>
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air sealed in accordance with <u>Section R402.5.4.</u>	Recessed light fixtures installed in the building thermal envelope shall be airtight and IC rated, and shall be buried in or surrounded with insulation.
Plumbing, wiring or other obstructions	All holes created by wiring, plumbing or other obstructions in the air barrier assembly shall be air sealed.	Insulation shall be installed to fill the available space and surround wiring, plumbing, or other obstructions, unless the required R-value can be met by installing insulation and air barrier systems completely to the exterior side of the obstructions.
Showers, tubs and fireplaces adjacent to the building	An air barrier shall separate insulation in the building thermal envelope from the	Exterior framed walls adjacent to showers, tubs and fireplaces shall

thermal envelope	shower, tub or fireplace assemblies.	be insulated.
Electrical, communication and other equipment boxes, housings and enclosures	Boxes, housing and enclosures that penetrate the air barrier shall be caulked, taped, gasketed or otherwise sealed to the air barrier element being penetrated. All concealed openings into the box, housing or enclosure shall be sealed. Alternatively, air-sealed boxes shall be installed in accordance with Section R402.5.5.	Boxes, housing and enclosures shall be buried in or surrounded by insulation.
HVAC register boots	HVAC supply and return register boots shall be sealed to the subfloor, wall covering or ceiling penetrated by the boot.	HVAC supply and return register boots located within a building thermal envelope assembly shall be buried in or surrounded by insulation.
Concealed sprinklers	Where required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	—

Common walls or double walls separating attached single-family dwellings or townhouses	An interior air barrier shall be provided. Air sealing at the intersections with building thermal envelope shall be provided. Where installed in a fire-resistance-rated wall assembly, air sealing materials shall comply with one of the following: 1. Be in accordance with an approved design for the fire-resistance-rated assembly. 2. Be supported by approved data that shows the assembly as installed complies with the required fire-resistance rating.	Insulation materials recognized in the approved common wall or double-wall design and installed in accordance with the approved design shall be permitted to be used.
Stairs	Full uncompressed insulation value per Table R402.1.3 Floor R-Value	Insulation not required to fill top of cavity, when air sealed on conditioned side and in contact with air barrier on ambient side.

a. Inspection of log walls shall be in accordance with the provisions of ICC 400.

b. Insulation full enclosure is not required in unconditioned/ventilated attic spaces and at rim joists. Insulation full enclosure is not required on conditioned side of rim joist insulation in an enclosed floor when permanently secured against air barrier without compression.

c. Insulation full enclosure is not required on ceiling insulation in unconditioned ventilated attic on unconditioned side parallel to the ceiling plane.

11. Delete R402.5.1.2.1 Unit sampling

12. R402.5.1.3 Maximum air leakage rate. When complying with Section R401.2.1, the building or dwelling unit shall have an air leakage rate not exceeding **7.0 air changes per hour** when tested in accordance with Section R402.5.1.2.

Where blower door testing demonstrates an air leakage rate of **5.0 air changes per hour or less**, mechanical ventilation shall be provided in accordance with IRC Section M1505 or IMC Section 403 as applicable.

Mechanical ventilation systems required under this section shall be a **balanced system which provides equal amounts of supply and exhaust air**. Such systems shall be installed per manufacturer's installation instructions.

13. Delete Section R403.1.1 entirely.

14. R403.3.5 Ductwork location in non-conditioned attics. Ductwork located in unconditioned attic space shall be supported a minimum of 1 inch above attic insulation.

15. R403.3.7 Duct system testing. Each duct system shall be tested for air leakage in accordance with ANSI/RESNET/ICC 380 or ASTM E1554. Total leakage shall be measured with a pressure differential of 0.1 inch water gauge (25 Pa) across the duct system and shall include the measured leakage from the supply and return ductwork. A written report of the test results shall be signed by the party conducting the test and provided to the code official. Duct system leakage testing at either rough-in or post construction shall be permitted with or without the installation of registers or grilles. Where installed, registers and grilles shall be sealed during the test. Where registers and grilles are not installed, the face of the register boots shall be sealed during the test.

16. R403.3.8 Duct system leakage. The total measured *duct system* leakage shall not be greater than the values in Section R403.3.8.1 For *buildings* complying with Section R405 or R406, where *duct system* leakage to outside is tested in accordance with ANSI/RESNET/ICC 380 or ASTM E1554, the leakage to outside value shall not be used for compliance with this section, but shall be permitted to be used in the calculation procedures of Section R405 and R406.

a. **Delete Table R403.3.8 entirely.**

17. R403.3.8.1 Maximum Total Duct System Leakage. The Total leakage of the ducts, where measured in accordance with Section R403.3.7, shall be as follows:

1. Rough -in Test-The total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 square feet (9.29m²) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3 cubic feet per minute (85L/min) per 100 square feet (9.29m²) of conditioned floor area.
2. Post Construction Test - Total leakage to the outside shall be less than or equal to 4 cubic feet per minute (113.3L/min) per 100 square feet (9.29m²) of conditioned floor area.

All ducts, regardless of their location, inside or outside the building thermal envelope shall be tested in accordance with section R403.3.8.1

18. R403.3.9 Unit sampling. When approved by the Building Official for buildings with eight or more *dwelling units* or *sleeping units*, the *duct systems* in the greater of seven or 20 percent of the *dwelling units* or *sleeping units* shall be tested, including a top floor unit, a ground floor unit, a middle floor unit and the unit with the largest *conditioned floor area*. Where buildings have fewer than eight *dwelling units* or *sleeping units*, the *duct systems* in each unit shall be tested. Where the leakage of a duct system is greater than the maximum permitted duct system leakage, corrective actions shall be made to the duct system and the duct system shall be system retested until it passes. For each tested dwelling unit or sleeping unit that has a greater total duct system leakage than the maximum permitted duct system leakage, an additional three dwelling units or sleeping units, including the corrected unit, shall be tested.

19. R403.6.3 Testing. Mechanical *ventilation* systems shall be tested and verified to provide the minimum *ventilation* flow rates required by Section R403.6, in accordance with ANSI/RESNET/ICC 380. Where required by the *Code Official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be permanently posted with the Certificate required by R401.3.

Exceptions:

Kitchen range hoods that are ducted to the outside with ducting having a diameter of 6 inches (152 mm) or larger, a length of 10

feet (3028 mm) or less, and not more than two 90-degree (1.57 rad) elbows or equivalent shall not require testing.

A third-party test shall not be required where the ventilation system has an integrated diagnostic tool used for airflow measurement, and a user interface that communicates the installed airflow rate.

Where tested in accordance with Section R403.6.4, testing of each mechanical ventilation system is not required.

20. R404.1 Lighting equipment. Not less than 95 percent of permanently installed luminaires shall be capable of operation with an efficacy of not less than 45 lumens per watt or shall contain lamps capable of operation with an efficacy of not less than 65 lumens per watt.

Exceptions:

Appliance lamps.

Antimicrobial lighting used for the sole purpose of disinfecting.

General service lamps complying with DOE 10 CFR, Part 430.32.

Luminaires with a rated electric input of not greater than 3.0 watts.

21. Delete Section R404.2.1 entirely.

22. TABLE R406.5 MAXIMUM ENERGY RATING INDEX

CLIMATE ZONE	ENERGY RATING INDEX NOT INCLUDING OPP	ENERGY RATING INDEX WITH OPP
0-1	51	35
2	55	38
3	55	38
4	53	40
5	54	43
6	53	43

7	52	46
8	52	46

23.Delete R404.4 Renewable energy certificate (REC) documentation

24.Delete R406.7.3 Renewable energy certificate (REC) documentation

**25.TABLE R408.2 CREDITS FOR ADDITIONAL ENERGY EFFICIENCY –
REPLACE existing Table with the following:**

MEASURE NUMBER	MEASURE DESCRIPTION	CLIMATE ZONE 2	CLIMATE ZONE 3
R408.2.1.1 (2)	≥ 5% reduction in total TC	1	1
R408.2.1 (3)	> 7.5% reduction in total TC	1	2
R408.2.1.1 (4)	> 10% reduction in total TC	1	2
R408.2.1.1 (5)	> 15% reduction in total TC	2	2
R408.2.1.1 (6)	> 20% reduction in total TC	4	4
R408.2.1.1 (7)	> 30% reduction in total TC	6	6
R408.2.1.2 (1)	U-factor and SHGC for vertical fenestration per Table R408.2.1.2	1	1
R408.2.1.3 (2)	Roof solar reflectance index (roof is above an unconditioned space that contains a duct system)	1	0
R408.2.1.4	Reduced air leakage	1	1
R408.2.2. (1)b	Ground source heat pump	14	14
R408.2.2. (2)b	High Performance Cooling (Option 1)	4	3
R408.2.2. (3)b	High Performance Cooling (Option 2)	4	3

R408.2.2.(4)b	High Performance Gas furnace (Option 1)	1	2
R408.2.2.(5)b	High Performance Gas furnace (Option 2)	1	2
R408.2.2.(6)b	High Performance Gas furnace (Option 3)	1	1
R408.2.2.(7)b	High Performance Gas furnace and cooling (Option 1)	5	4
R408.2.2.(8)b	High Performance Gas furnace and cooling (Option 2)	5	5
R408.2.2.(9)b	High Performance Gas furnace and heat pump (Option 1)	13	11
R408.2.2. (10)b	High Performance Heat pump with electric resistance backup (Option 1)	12	11
R408.2.3(1) (a)d	Gas-fired storage water heaters (Option 1)	7	7
R408.2.3(1) (b)d	Gas-fired storage water heaters (Option 2)	8	8
R408.2.3(2) (a)d	Gas-fired instantaneous water heaters (Option 1)	9	9
R408.2.3(2) (b)d	Gas-fired instantaneous water heaters (Option 2)	10	9
R408.2.3(3)d	Electric water heaters (Option 1)	9	9
R408.2.3(4)d	Electric water heaters (Option 2)	8	8
R408.2.3(5) (a)d	Electric water heaters (Option 3)	8	8
R408.2.3(5) (b)d	Electric water heaters (Option 4)	8	9
R408.2.3(6)d	Electric water heaters (Option 5)	9	9
		13	13

R408.2.3 (7) (a) d	Solar hot water heating system (Option 1)		
R408.2.3 (7) (b) c	Solar hot water heating system (Option 2)	9	9
R408.2.3 (8) c	Compact hot water distribution	2	2
R408.2.4 (1) c	Ductless or hydronic thermal distribution	4	5
R408.2.4 (2) c	100% of <i>duct systems</i> in conditioned space	3	4
R408.2.4 (3) c	≥ 80% of ductwork inside <i>conditioned space</i>	3	3
R408.2.4 (4) c	Reduced total duct system leakage	1	1
R408.2.5 (5) c	≤ 1.0 ACH50 with ERV or HRV installed	0	1
R408.2.6a	Energy efficient appliances	1	1
R408.2.7	On-site renewable energy measures	16	17
R408.2.8c	Demand responsive thermostat	1	1
R408.2.8.3c	Programable thermostat	1	1
R408.2.10	<i>Whole-home</i> lighting control	1	1
R408.2.12	Efficiency Group A: Encapsulated Attic	10	10
R408.2.13	Efficiency Group B: Vented Attic	10	10
R408.2.14	Dehumidifier	5	5

26. R408.2.2 More efficient HVAC equipment performance options.

- a. Heating and cooling *equipment* shall meet one of the following measures as applicable for the *climate zone* where heating and cooling efficiencies are represented by Annual Fuel Utilization Efficiency (AFUE), Coefficient of Performance

(COP), Energy Efficiency Ratio (EER and EER2), Heating Season Performance Factor (HSPF2) and Seasonal Energy Efficiency Ratio (SEER2). Where multiple heating or cooling systems are installed serving different zones, credits shall be earned based on the weighted average of square footage of the zone served by the system.

b. HVAC options applicable to all *climate zones*:

1. Ground source heat pump: Greater than or equal to 16.1 EER and 3.1 COP ground source heat pump.
2. Cooling (Option 1): Greater than or equal to 15.2 SEER2 and 12.0 EER2 air conditioner.
3. Cooling (Option 2): Greater than or equal to 16.0 SEER2 and 12.0 EER2 air conditioner.
4. Gas furnace (Option 1): Greater than or equal to 97 percent AFUE *fuel gas furnace*.
5. Gas furnace (Option 2): Greater than or equal to 95 percent AFUE *fuel gas furnace*.

c. HVAC options applicable to Climate Zones 0, 1, 2 and 3:

1. Gas furnace (Option 3): Greater than or equal to 90 percent AFUE *fuel gas furnace*.
2. Gas furnace and cooling (Option 1): Greater than or equal to 90 percent AFUE *fuel gas furnace* and 15.2 SEER2 and 10.0 EER2 air conditioner.
3. Gas furnace and cooling (Option 2): Greater than or equal to 95 percent AFUE *fuel gas furnace* and 16.0 SEER2 and 10.0 EER2 air conditioner.
4. Gas furnace and heat pump (Option 1): Greater than or equal to 90 percent AFUE *fuel gas furnace* and 7.8 HSPF2, 15.2 SEER2 and 10.0 EER2 air source heat pump.
5. Heat pump (Option 1): Greater than or equal to 8.0 HSPF2, 17.0 SEER2, and 11.7 EER2 air source heat pump.

27. **R408.2.7 Renewable energy.** *Renewable energy resources shall meet the requirements of R408.2.7.1 or R408.2.7.2.*

28. **R408.2.7.1 On-site Renewable energy.** *Renewable energy resources shall be permanently installed on- site that have the rated capacity to produce not less than 1.0 watt of on-site renewable energy per square foot of conditioned floor area.*

29. **R408.2.7.1 On-site Renewable energy.** *Renewable energy resources shall be permanently installed on- site that have the rated capacity to produce not less than 1.0 watt*

of on-site renewable energy per square foot of conditioned floor area.

30. **R408.2.7.2 Off-site Renewable energy.** *Renewable energy resources* whether provided from a *community renewable energy facility (CREF)* or contracted from a physical or financial renewable energy power purchase agreement for not less than 1.0kWh per square foot of *conditioned floor area* on an annual basis.

31. **R408.2.7.2.1 Renewable energy contract.** The renewable energy shall be delivered or credited to the building site under an energy contract with a duration of not less than 15 years. The contract shall be structured to survive a partial or full transfer of ownership of the building property.

32. **R408.2.8.3 Programmable thermostat.** The *thermostat* controlling the primary heating or cooling system of the *dwelling unit* shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of day and different days of the week. This *thermostat* shall include the capability to set back or temporarily operate the system to maintain zone temperatures of not less than 55°F (13°C) to not greater than 85°F (29°C). The *thermostat* shall be programmed initially by the manufacturer with a heating temperature setpoint of not greater than 70°F (21°C) and a cooling temperature setpoint of not less than 78°F (26°C).

33. **R408.2.12 Efficiency Group A: Encapsulated Attic**

All measures in this group must be met to qualify.

1. An air impermeable insulation installed to the underside or directly above the roof deck with a maximum U-factor of 0.035 or R-25.

- a. Where installed below the roof deck the rafters on the insulated plane shall be wrapped (covered) by minimum R-3 unless directly covered by drywall /finished ceiling.
- b. Roof rafters are not required to be covered by minimum R-3 if continuous insulation is installed above the roof deck.

2. Infiltration rate <2.5 ACH50

3. 100% of ducts shall be inside the building thermal envelope.

4. Indoor heating, cooling and ventilation equipment shall be inside the building thermal envelope.

(34)R408.2.13 Efficiency Group B: Vented Attic

1. Duct leakage 2% rough in total or 3% post construction total
2. Radiant barrier decking
3. WiFi enabled programmable thermostat
4. Sealed combustion appliances when located inside conditioned space
5. Higher efficiency equipment
 - a. Furnace: 92% AFUE
 - b. Heat Pump: 15.2 Seer2, 7.8 HSPF2, 11.7 EER2

(35) R408.2.14 Dehumidifier. Independently controlled Energy Star qualified dehumidifier directly ducted to living space with minimum 8" duct and accessible controls. May be combined with or used as part of required ventilation system.

(36) R502.2 Prescriptive compliance. Additions shall comply with Sections R502.2.1 through R502.2.5.

R502.2.1 Building thermal envelope. New building thermal envelope assemblies that are part of the addition shall comply with **Sections R402.1, R402.2, R402.4.1 through R402.4.5, and R402.5.**

Exceptions:

1. New building thermal envelope assemblies are exempt from the requirements of **Section R402.5.1.2.**
2. For buildings in climate zones 4 and 5, the maximum U-factor of 0.060 shall be permitted to be used for wood frame walls for compliance with Table R402.1.2 where complying with one or more of the following:
 1. Primary space heating serving the addition is provided by a heat pump that meets one of the efficiencies in R408.2.2.
 2. All installed water heaters serving the addition are heat pumps that meet one of the efficiencies in R408.2.3.
 3. In addition to the number of credits required by Section R502.2.5, two additional credits from R408 are achieved.
 4. *Renewable energy resources* are permanently installed that have the rated capacity to produce a minimum of 1.0 watt of *on-site renewable energy* per square foot of the *addition's conditioned floor area.*

(37)R502.2.5 Additional energy efficiency credit requirements for additions. *Additions* shall comply with sufficient measures from Table R408.2 to achieve not less than five credits or all measures from R408.2.12, or R408.2.13. *Alterations* to the *existing building* that are not part of the *addition* but are

permitted with an *addition* shall be permitted to be used to achieve this requirement.

Exceptions:

1. Additions that increase the *building's* total *conditioned floor area* by less than 25 percent.
2. Additions that do not include the addition or replacement of equipment covered in Section R403.5 or R403.7.
3. Additions that do not increase conditioned space.
4. Where the *addition* alone or the *existing building* and *addition* together comply with Section R405 or R406.

Appendix RG is hereby adopted.

APPENDIX RG – 2024 STRETCH CODE

RG101.3.1 Off-site Renewable energy. This section shall be permitted to be used to meet the requirements for one of the two measures for compliance with Section RG101.3. *Renewable energy resources* whether provided from a *community renewable energy facility (CREF)* or contracted from a physical or financial renewable energy power purchase agreement for not less than 1.0kWh per square foot of *conditioned floor area* on an annual basis.

RG101.3.1.1 Renewable energy contract. The renewable energy shall be delivered or credited to the building site under an energy contract with a duration of not less than 15 years. The contract shall be structured to survive a partial or full transfer of ownership of the building property.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-12.1, 34-14A-12.2, 34-14A-12.3, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.

465-X-10-.08 Roof Construction Standards.

1. The 2024 Coastal Construction Code Supplement shall be adopted with following modifications for application and enforcement in the state of Alabama pursuant to Ala. Code Sec 34-14A-12, 12.1, and 12.2.

- a. Compliance with the Coastal Construction Code Supplement is mandatory for roofing and re-roofing of residential structures located within the Counties of Baldwin and Mobile.

2. The 2024 Construction Code Supplement shall be adopted with following modifications for application and enforcement in the state of Alabama pursuant to Ala. Code Sec 34-14A-12, 12.1, and 12.2.

- a. Compliance with the Construction Code Supplement is mandatory for roofing and re-roofing of residential structures located within all counties of the State other than the Counties of Baldwin and Mobile.

Author: J. Seth Gowan, Lauren Kloess Latham, Lannie Smith

Statutory Authority: Code of Ala. 1975. §§ 34-14A-11, 34-14A-12.1, 34-14A-12.2, 34-14A-12.3, 34-14A-41, 34-14A-42, and 34-14A-43.

History: New Rule: Published _____; effective _____.