



North Carolina Building Code Council

Staffed by the NC Department of Insurance

Mike Causey, Commissioner of Insurance
Carl Martin, RA, Secretary

(919) 647-0001
(919) 662-4414 Fax

1202 Mail Service Center
Raleigh, NC 27699-1202

325 N. Salisbury Street
Raleigh, NC 27603

Building Code Council

Chair:

Bridget Herring - 23
(Public Representative)

Vice Chairman:

Daniel S. Priest, RA - 22
(Architect)

Members:

Michael Ali, PE - 23
(State Agency)

Robert Axford - 25
(Electrical Contractor)

Chris Berg, PE - 27
(Structural Engineer)

Charles A. Conner, AIA - 22
(Architect)

Gary Embler - 23
(Home Builder)

Ralph Euchner - 25
(Gas Industry)

David Gieser, RA - 27
(Building Inspector)

Mary Humiston, PE - 25
(Electrical Engineer)

Natalie MacDonald, PE - 27
(Mechanical Engineer)

Gloria Shealey - 27
(General Contractor)

Deborah Shearin - 25
(Plumbing & Heating Contractor)

Jason B. Shepherd - 27
(Fire Services)

David L. Smith - 22
(Coastal Contractor)

Victoria Watlington, PE - 22
(Municipal Government Rep)

Robert Zapple - 22
(County Gov't Rep)

November 15, 2021

Bridget Herring
P.O. Box 7148
Asheville, NC 28802

RE: Agenda for the December 14, 2021 NC Building Code Council Meeting

Ms. Herring:

This is officially to notify you and other interested parties of a regularly scheduled meeting of the NC Building Code Council. Persons requiring auxiliary services should notify the Council at least ten business days prior to the meeting.

1. The NC Building Code Council Meeting will begin at 9:00AM on Tuesday, December 14, 2021 (Albemarle Building). The meeting can be accessed remotely via Facebook Live (<https://www.facebook.com/NCOSFMEngineering>) Remote access does not provide capability to address the council.
2. Standing Committees will meet in the afternoon on Monday, December 13. Schedule to be set by Chairman.
3. The Agenda is printed as follows:
A-Items- Administrative items that require Council action but are not subject to Rule-Making.
B-Items- New amendment petitions introduced at this meeting.
C-Items- Amendments that have been granted by the Council and advertised in the NC Register for public hearing.
D-Items- Adoption of amendments by the Council prior to approval by the Rules Review Commission.
E-Items- Reports from Committees and Staff.
F-Items- Notice of Appeal Hearings.

Part A – Administrative Items

- Item A – 1 Ethics Statement: Inquire upon conflicts of interest or appearance of conflicts that exist within the Council.**
- Item A – 2 Approval of minutes of the September 14, 2021 NC Building Code Council Meetings.**
- Item A – 3 Approval of 2022 Building Code Council meeting dates.**
- Item A – 4 Request from Randolph County Inspection Department for approval to perform local plan review.**
- Item A – 5 Request for approval of amendments to the Hickory Code of Ordinances amending Chapter 11 to adopt the current edition of the NC Fire Code, Appendices B, C, and D.**
- Item A – 6 Request for approval of amendments to the Waxhaw Code of Ordinances repealing three existing sections and creating Chapter 16 – Fire Prevention Code.**
- Item A – 7 Request from Cody Campbell with Community Concierge Services to delay the adoption effective date of 2018 Fire Code Section 304.4 until January 1, 2024 to align with the International Code Council cycle.
This will allow time for the market to find an affordable solution in providing containers that meet the 300kW/m2 when tested in accordance with ASTM E 1354. Currently, there are no affordable containers in the market that meet these requirements. In addition, as a result of COVID-19, there are on-going supply chain issues including logistics and resin sourcing resulting in even higher cost.**
- Item A – 8 At the September 2021 meeting, the Council requested DOI investigate the impact of the 6-year code cycle versus the 3-year code cycle on the citizens of North Carolina. Chief Deputy Commissioner, Rob Roegner, will be presenting those findings.**
- Item A – 9 Rules Review Commission Meeting Report**
- Item A – 10 Public Comments**

Part B – New Petition for Rulemaking

The following Petitions for Rulemaking have been received since the last Council meeting. The Council will vote either to deny or grant these Petitions. The Council will give no further consideration to Petitions that are denied. Petitions that are granted may proceed through the Rulemaking process. The council may send any Petition to the appropriate committee. The hearing will take place during or after the December 14, 2021 meeting.

There will be no B items received from the floor.

Item B – 1 Request by Phillip Ray Gibson representing the NC Radiation Protection Section, NC Radon Program, and NC DHHS to add 2018 NC Building Code, Section 1203.6 and amend Chapter 35 as follows:

**Chapter 12
Interior Environment
Section 1203 Ventilation**

1203.6 Soil gas control systems.

1203.6.1 New buildings.

Where a soil gas control system is provided for new construction, soil gas control systems shall comply with ANSI-AARST CC1000.

Exception: Soil gas control systems in new one and two-family home construction shall comply with ANSI-AARST CCAH.

1203.6.2 Existing apartment buildings.

Where a soil gas control system is provided in an existing multi-family residential structure, the system shall comply with ANSI-AARST RMS-MF.

**Chapter 35
Referenced Standards**

AARST

AARST Consortium on National Radon
Standards
527 N. Justice Street
Hendersonville NC 28739
USA

ANSI/AARST RMS-CC1000 Soil Gas Control Systems in New Construction of Buildings

ANSI-AARST CCAH Reducing Radon in New Construction (Homes)

ANSI/AARST RMS-MFRadon Mitigation Standards for Multifamily Buildings

Item B – 2 Request by Phillip Ray Gibson representing the NC Radiation Protection Section, NC Radon Program, and NC DHHS to add 2018 NC Residential Code, Sections R328 and P3115 as follows:

R328 Soil Gas Control Systems. Where a soil gas control system is installed, the system shall comply with ASNI-AARST CCAH.

Exception: Where a soil gas control system is installed in an existing residential structure, the system shall comply with ANSI-AARST SGM-SF.

P3115 Soil Gas Control Systems: Where a soil gas control system is installed, the system shall comply with ANSI-AARST SGM-SF.

Exception: Where a soil gas control system is installed in a new residential construction, the system will comply with ANSI-AARST CCAH.

Item B - 3 Request by Phillip Ray Gibson representing the NC Radiation Protection Section, NC Radon Program, and NC DHHS to amend 2018 NC Mechanical Code, Section 512 as follows:

512.1 General

The construction of soil gas control systems shall be in accordance with this section.

512.2 New Construction

Where a soil gas control system is provided for new construction, the system shall conform to the requirements of ANSI-AARST CC1000

Exception: Soil gas control systems in new one and two-family home construction shall comply with ANSI-AARST CCAH

512.3 Existing apartment buildings.

Where a soil gas control system is provided in an existing building, the system shall conform to the requirement of ANSI-AARST RMS-MF

Item B – 4 Request by Kevin Haynie to amend 2018 NC Fuel Gas Code, Chapter 4, Section 403.5.3 as follows:

NCFGC 2018 Chapter 4

Section 403.5.3 Aluminum tubing. Aluminum-alloy tubing shall comply with ASTM B210 or ASTM B241. Aluminum-alloy shall be coated to protect against external corrosion where it is in contact with masonry, plaster, or insulation, or is subject to repeated wettings by such liquids as water, detergent or sewage. Aluminum coextruded seamlessly in polyethylene (PE) is considered an aluminum-alloy tubing.

Aluminum-alloy tubing shall not be used in exterior locations or underground.

Exception: Aluminum alloy designed for exterior or underground locations with manufacturer applied corrosion coatings and installed per the manufacturer's installation instructions.

Item B - 5 Request by Kevin Brinkman representing the National Elevator Industry, Inc. (NEII) to amend 2018 NC Plumbing Code, Section 1003.4 as follows:

1003.4 Oil Separators required.

At repair garages where floor or trench drains are provided, car washing facilities, factories where oily and flammable liquid wastes are produced and hydraulic elevator pits, oil separators shall be installed into which oil-bearing, grease-bearing or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal.

Exception: An oil separator is not required in hydraulic elevator pits where an *approved* alarm system is installed. ~~Elevator sump pits with oil minder pumps shall discharge the oil into a temporary storage tank.~~ Such alarm systems shall not terminate the operation of pumps utilized to maintain emergency operation of the elevator by fire fighters.

Item B - 6 Request by Jamieson Stapleton representing Southern Energy Management to amend 2018 NC Energy Code, Table 405.5.2(1) as follows:

Change Footnote h of Table 405.5.2 in the North Carolina Energy Conservation Code as follows:

^h For residences with conditioned basements, R-2 and R-4 residences and townhouses, ~~the following formula shall be used to determine glazing area:~~ the revised reference design total glazing area shall be the lesser of:

- (1) Proposed glazing area
- (2) The revised reference design total glazing area calculated using the following formula: $AF = A_s \times FA \times F$ where:

$AF = \frac{\text{Total glazing area}}{\text{Revised reference design total glazing area}}$

$A_s = \frac{\text{Standard reference design total glazing area}}{\text{Area}} = 0.15 \times \text{Conditioned Floor Area}$

$FA = \frac{\text{Above-grade thermal boundary gross wall area}}{\text{above-grade boundary wall area} + 0.5 \times \text{below-grade boundary wall area}}$.

$F = \frac{\text{Above-grade thermal boundary wall area}}{\text{above-grade thermal boundary wall area} + \text{common wall area}}$ or 0.56, whichever is greater.

and where:

Thermal boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions. Above-grade thermal boundary wall is any thermal boundary wall component not in contact with soil. Below-grade boundary wall is any thermal boundary wall in soil contact. Common wall area is the area of walls shared with an adjoining dwelling unit. ~~↳~~ AF, A_s and CFA are in the same units.

Part C – Notice of Rulemaking Proceedings and Public Hearing

The following Petitions for Rulemaking have been granted by the Council. Notice of Rulemaking proceedings has been made. The Public Hearing will be held on December 14, 2021 and the Final Adoption meeting may take place on or after March 15, 2021. The written public comment period expires on January 14, 2022.

Item C – 1 Request by David Smith representing the NC BCC Residential Ad Hoc Committee to amend the 2018 NC Residential Building Code, Section R404.4 as follows (210914 Item B-1):

R404.4 Retaining Walls. Retaining walls that meet the following shall be designed by a *registered design professional*.

1. Any retaining wall ~~systems~~ on a residential site that cross over adjacent property lines regardless of vertical height, or
2. Retaining walls that support buildings and their accessory structures, undercutting footings 10' or less per R403.1.9 and Figure 403.1.9, or
3. ~~Retaining~~ Individual retaining walls supporting unbalanced backfill exceeding 4 feet (1219mm) 5 feet (1524 mm) of unbalanced backfill in height within a horizontal distance of 15 feet (4572 mm) or less, or
4. ~~Retaining~~ Multiple retaining walls systems providing a cumulative vertical relief of unbalanced backfill heights greater than 5 Feet (1524 mm) in height within a horizontal ~~separation~~ distance of ~~50 feet (15M)~~ 15 feet (4572 mm) or less.

Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

Item C – 2 Request by Carl Martin representing the Department of Insurance to amend the 2018 NC Building Code, Section 116 as follows (210914 Item B-2):

SECTION 116 UNSAFE STRUCTURES AND EQUIPMENT

~~Deleted. See the North Carolina Administrative Code and Policies~~

116.1 General. Unsafe structures and equipment must comply with the NC Administrative Code and Policies, Section 204.2.8.

116.2 Public access. The structure owner or his representative shall secure the unsafe structure by a method *approved* by the local *building official* to prevent public access. The *approved* method shall be in place within the time limit specified in writing by the *building official* in the notice of unsafe building.

Item C – 3 Request by Carl Martin representing the Department of Insurance to amend the 2018 Building Code, Section 3006.2 as follows (210914 Item B-3):

3006.2 Hoistway opening protection required. Elevator hoistway door openings for occupied and unoccupied stories shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three stories, is required to be enclosed within a *shaft enclosure* in accordance with Section 712.1.1 and any of the following conditions apply:

1. The building is not protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The building contains a Group I-1, Condition 2 occupancy.
3. The building contains a Group I-2 occupancy.
4. The building contains a Group I-3 occupancy.
5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the *lowest floor* to the highest floor of the floors served by the hoistway.

Exceptions:

1. Protection of elevator hoistway door openings is not required where the elevator serves only *open parking garages* in accordance with Section 406.5.
2. Protection of elevator hoistway door openings is not required at the level(s) of exit discharge, provided that the level(s) of exit discharge is equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. Enclosed elevator lobbies and protection of elevator hoistway door openings are not required on levels where the elevator hoistway opens to the exterior.

Item C – 4 Request by Carl Martin representing the Department of Insurance to amend the 2018 NC Building Code, Section 3006.3 as follows (210914 Item B-4):

3006.3 Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by fire partitions in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.5.3 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by smoke partitions in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall

comply with Sections 710.5.2.2, 710.5.2.3 and 716.5.9. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.

3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door shall comply with the smoke and draft control door assembly requirements in Section 716.5.3.1 when tested in accordance with UL 1784 without an artificial bottom seal and contain a vision panel as allowed by Table 716.5. The door shall not be installed in a way that affects the fire-resistance-rating or operation of the normal elevator shaft doors.

4. The elevator hoistway shall be pressurized in accordance with Section 909.21.

Item C – 5 Request by Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 NC Fire Code, Section 304.4.2.3 as follows (210914 Item B-5):

304.4.2.3. Containers used for valet trash collection shall not exceed a capacity of 2.0 cubic feet (15 gallons, 0.06 cubic meters) and shall be provided with tight-fitting or self-closing lids. Containers and lids shall ~~comply with either:~~

~~1. Containers and lids located in an area that is protected by fire sprinklers shall be constructed entirely of noncombustible materials or materials that meet a peak rate of heat release not exceeding 300 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation. Containers and lids shall be listed or bear the label of an approved agency that validates compliance with this requirement.~~

~~2. Containers and lids located in an area that is not protected by fire sprinklers shall be constructed entirely of noncombustible materials or materials that meet a peak rate of heat release not exceeding 150 kW/m² when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m² in the horizontal orientation. Containers and lids shall be listed or bear the label of an approved agency that validates compliance with this requirement~~

Part D – Final Adoption

The following Petitions for Rulemaking have been granted by the Council. Notice of Rulemaking proceedings and Public Hearing has been made. The Public Hearings were held on September 14, 2021. The Final Adoption meeting will take place on December 14, 2021. The Council will give no further consideration to Petitions that are disapproved. Petitions that are approved will proceed through the Rulemaking process. The effective date is January 1, 2022 unless otherwise noted.

Item D – 1 Request by Carl Martin representing the Department of Insurance to amend the NC Administrative Code, Section 204.3.5 as follows (210608 Item B-1):

204.3.5 Design professional seal required. Where the General Statutes require, no permit shall be issued unless the construction documents (drawings and specifications), bear the North Carolina seal of a registered design professional. Construction documents shall include the name and address of the business entity (individual, corporation or partnership) with whom the registered design professional is affiliated. Questions concerning this section should be directed to the North Carolina Board of Architecture or the North Carolina Board of Examiners for Engineers and Land Surveyors.

Exceptions: For permitting purposes, the seal of a registered design professional is not required when the building, structure or project involved is in one of the categories listed below, unless otherwise required pursuant to the provisions of the General Statutes or the technical codes:

1. A family residence, up to eight units attached with grade-level exit, which is not a part of or physically connected with any other buildings or residential units;
2. A building upon any farm that is for the use of any farmer, unless the building is of such nature and intended for such use as to substantially involve the health or safety of the public;
3. An institutional or commercial building if it does not have a total cost of construction exceeding ~~\$90,000~~ \$200,000;
4. An institutional or commercial building if the total building area does not exceed ~~2,500~~ 3,000 square feet (2.32 m²) in gross floor area;
5. Alteration, remodeling or renovation of an existing building that is exempt under this section, or alteration, remodeling or renovation of an existing building or building site that does not alter or affect the structural system of the building; change the building's access or exit pattern; or change the live or dead load on the building's structural system. This subdivision shall not limit or change any other exemptions to this chapter or to the practice of engineering under Chapter 89C of the General Statutes.
6. The preparation and use of details and shop drawings, assembly or erection drawings, or graphic descriptions utilized to detail or illustrate a portion of the work required to construct the project in accordance with the plans and specifications prepared or to be prepared under the requirements or exemptions of this chapter.

7. Nothing in this ~~chapter~~ section shall be construed to prevent any individual from making plans or data for buildings for himself or herself. This exemption does not apply to plans for places of religious worship.

(General Statute 83A-13)

Item D – 2 Request by Carl Martin representing the Department of Insurance to amend the NC Administrative Code, Sections 106.3.1 and 106.3.2 as follows (210608 Item B-2):

106.3.1 Information required. A permit application shall be filed with the Inspection Department on a form (see Appendix A) furnished for that purpose. The Inspection Department shall make available a list of information which must be submitted with the building permit application, including a complete ~~building code summary~~ Building Code Summary (see ~~Appendix A of the Administrative Code and Policies~~ Appendix B) complying with 106.3.2.
Exception: A Building Code Summary is not required if the AHJ determines plan review can be performed without the Building Code Summary.

106.3.2 Building Code Summary. ~~The Inspection Department's building code summary~~ Building Code Summary used by an AHJ shall be in the exact format as, and contain only the information in, Appendix B of the Administrative Code and Policies. ~~The Inspection Department~~ An AHJ shall only modify its ~~the building code summary~~ Building Code Summary as set forth in Section 103.5 Modifications, or as necessary to reflect any changes by the Office of State Fire Marshal to Appendix B which have been approved by the Building Code Council.

Item D – 3 Request from Jeff Griffin and Bob Haynes representing the NC Building Inspector's Association to amend the 2018 NC Residential Building Code, Sections R302.2, R313.1, and R202 as follows (210608 Item B-7):

R302.2 Townhouses. Each *townhouse* shall be considered a separate building and shall be separated by fire-resistance rated wall assemblies meeting the requirements of Section ~~R302.1 for exterior walls.~~ R302.2.1 or R302.2.2.

Exception: ~~If an automatic residential fire sprinkler is installed, a common 1-hour fire resistance rated wall assembly tested in accordance with ASTM E119 or UL263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior wall sheathing and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Section R302.4.~~

R302.2.1 Double walls. Each townhouse shall be separated by two 1-hour fire resistance-rated wall assemblies tested in accordance with ASTM E11, UL263 or Section 703.3 of the 2018 NC Building Code.

R302.2.2 Common Walls. Common walls separating townhouses shall be assigned a fire-resistance rating in accordance with Item #1 or 2. The common wall shared by two townhouses shall be constructed without plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be in accordance with Chapter 34 through 43. Penetrations of the membrane of common walls for electrical outlet boxes shall be in accordance with Section R302. 4.

1. Where a fire sprinkler system in accordance with Section P2904 is provided, the common wall shall be not less than a 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the NC Building Code.

2. Where a fire sprinkle in accordance with Section P2904 is not provided, the common wall shall be not less than a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the NC Building Code.

R302.2.5 Townhouse eave protection. In townhouse construction (~~with three or more attached dwellings~~) projections extending into the fire separation distance shall have not less than 1-hour fire resistive construction on the underside. Soffit material beyond the fire separation distance shall be securely attached to framing members and shall be constructed using either noncombustible soffit material; fire-retardant-treated soffit material; vinyl soffit installed over 3/4-inch (19 mm) wood sheathing or 5/8-inch (15.9 mm) gypsum board; or aluminum soffit installed over 3/4-inch (19 mm) wood sheathing or 5/8-inch (15.9mm) gypsum board. Venting requirements shall be provided in both soffit and underlayment's. Vents shall be either nominal 2-inch (51 mm) continuous or equivalent intermittent and shall not exceed the minimum net free air requirements established in Section R806.2 by more than 50 percent. Vents in soffit are not allowed within 4 feet (1219 mm) of fire walls or property lines.

R313.1 Townhouse automatic fire sprinkler systems. (~~Deleted~~)
~~An automatic residential fire sprinkler system shall be installed in townhouses.~~

Exceptions:

~~1. Townhouses constructed with a common 2 hour fire resistance rated wall assembly tested in accordance with ASTM E119 or UL 263, provided such~~

walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior wall sheathing and the underside of the roof sheathing. Electrical installations shall be installed in accordance with the *North Carolina Electrical Code*. Penetrations for electrical outlet boxes shall be in accordance with Section R302.4.

2. An automatic residential fire sprinkler system shall not be required where *additions or alterations* are made to existing *townhouses* that do not have an automatic residential fire sprinkler system installed

R202 Definitions.

[RB] DWELLING. Any building that contains one or two dwelling units (duplex) on the same parcel of land, used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes.

[RB] DWELLING UNIT. A single unit providing complete independent living facilities for *a single family* ~~one or more persons~~, including permanent provisions for living, sleeping, eating, cooking and sanitation.

[RB] TOWNHOUSE. A single-family dwelling unit constructed in a group of ~~two~~ three or more attached units separated by property lines in which each unit extends from foundation to roof and with a yard or public way on not less than two sides.

Item D - 4 Request from Bob Haynes & Jeff Griffin representing the NC Building Inspectors Association to add the 2018 NC Residential Building Code, Appendix Q, delete Section R328, and amend Sections R202 and R305.1 as follows (210608 Item B-8):

APPENDIX Q **TINY HOUSES**

The provisions contained in this appendix are adopted as part of this code.

SECTION AQ101 **GENERAL**

AQ101.1 Scope. This appendix shall be applicable to *tiny houses* used as *single dwelling unit*. *Tiny houses* shall comply with this code except as otherwise stated in this appendix.

SECTION AQ102 **DEFINITIONS**

AQ102.1 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.

LANDING PLATFORM. A landing provided as the top step of a stairway accessing a *loft*.

HABITABLE LOFT. A floor level located more than 30 inches above the main floor and open to the main floor on one or more sides with a ceiling height of less than 6 feet 8 inches and used as a living or sleeping space.

TINY HOUSE. A *dwelling* that is 400 square feet or less in floor area excluding *lofts*.

SECTION AQ103 **LOFTS**

AQ103.1 General. *Lofts* used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections AQ103.1.1 through AQ103.1.4.

AQ103.1.1 Minimum area. *Lofts* shall have a floor area of not less than 35 square feet.

AQ103.1.2 Minimum dimensions. *Lofts* shall be not less than 5 feet in any horizontal dimension.

AQ103.1.3 Minimum ceiling height. *Habitable space* and hallways in *tiny houses* shall have a ceiling height of not less than 6 feet 8 inches. Bathrooms, toilet rooms and kitchens shall have a ceiling height of not less than 6 feet 4 inches. Obstructions including, but not limited to, beams, girders, ducts and lighting, shall not extend below these minimum ceiling heights.

Exception: Ceiling heights in *lofts* are permitted to be less than 6 feet 8 inches.

AQ104.1.4 Height effect on loft area. Portions of a *loft* with a sloped ceiling measuring less than 3 feet from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the *loft*.

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 from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the *loft*.

SECTION AQ104 **MEANS OF EGRESS**

AQ104.1 Loft access. The access to and primary egress from *lofts* shall be of any type described in Sections AQ104.2.1 through AQ104.2.4.

AQ104.2.1 Stairways. Stairways accessing *lofts* shall comply with this code or with Sections AQ104.2.1.1 through AQ104.2.1.5.

AQ104.2.1.1 Width. Stairways accessing a *loft* shall not be less than 20 inches in clear width including handrail.

AQ104.2.1.2 Headroom. The headroom in stairways accessing a *loft* shall be not less than 6 feet 2 inches, as measured vertically, from a sloped line connecting the tread or landing platform nosing in the middle of their width.

AQ104.2.1.3 Treads and risers. Risers for stairs accessing a *loft* shall be a maximum of 12 inches in height and every riser shall be uniform within a tolerance of $\frac{3}{4}$ ". Tread depth shall be a minimum 12" with all treads uniform within a tolerance $\frac{3}{4}$ ".

AQ104.2.1.4 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 where the stairway meets the *loft*. The *landing platform* shall be the width of the stairs with a minimum depth of 18” inches measured from the nosing of the landing platform to the edge of the *loft*, and 16 to 18 inches in height measured from the *landing platform* to the *loft* floor.

AQ104.2.1.5 Handrails. Handrails shall comply with Section R311.7.8.

AQ104.2.1.6 Stairway guards. Guards at open sides of stairways shall comply with Section R312.1.

AQ104.2.2 Ladders. Non-removable ladders accessing *lofts* shall comply with Sections AQ104.2.2.1.

Exception: Ladders that slide out of away from the loft opening that are with reach of the loft occupant.

AQ104.2.2.1 Size and capacity. Ladders accessing *lofts* shall have a rung width of not less than 12 inches, and no more than 18-inches spacing between rungs. Ladders shall be capable of supporting a 200-pound load on any rung. Rung spacing shall be uniform within 3/8 inch.

AQ104.2.3 Ship’s ladders. Ship’s ladders accessing *lofts* shall be installed at 70 to 80 degrees from horizontal are permitted to be used as an element of a means of egress from lofts. *Ship ladders* shall comply with Sections R311.7.12.

AQ104.2.4 Loft Guards. *Loft* guards complying with R312.1 shall be located along the open side of *lofts*. *Loft* guards shall be not less than 36 inches in height or one-half of the clear height to the ceiling, whichever is less.

SECTION AQ105

EMERGENCY ESCAPE AND RESCUE

AS105.1 Emergency Escape and Rescue. Tiny houses and their lofts shall meet the requirements of Section R310 for emergency escape and rescue openings.

SECTION AQ106

SMOKE AND CARBON MONOXIDE DETECTORS

AQ106.1 Smoke and Carbon monoxide detectors. Smoke and carbon monoxide detectors shall be installed as required in Sections R314 and R315 and just below the highest point of any loft.

SECTION AQ107

FOUNDATION

AQ107.1 Foundation options. *Tiny Houses* are permitted to be constructed without a masonry or concrete foundation per Section AQ107.1.1 and AQ107.1.2, except in *coastal high hazard, ocean hazard and flood hazard areas*.

AQ107.1.1 Wood Foundation. The building is supported on a wood foundation of minimum 4-inch by 4-inch or 6-inch by 6-inch mudsill or runner of approved wood in accordance with Section R317. Structural floor system which include joists and subfloor material shall also comply with Section R317, item #1.

AQ107.1.2. Anchorage. Tiny houses with wood foundations per AQ107 shall be designed and anchored to resist overturning and sliding.

Exception: Tiny houses with no more than 12' vertical mean roof height shall be anchored to resist overturning and sliding by installing a minimum of one ground anchor at each corner of the building. The total resisting force of the anchors shall be equal to 20psf (958 Pa) times the plan area of the building.

Section R202 **Definitions**

LANDING PLATFORM. A landing provided as the top step of a stairway accessing a loft.

LOFT. A floor level located more than 30 inches (762 mm) above the main floor and open to it on at least one side with a ceiling height of less than 6 feet 8 inches (2032 mm), used as a living or sleeping space.

R305.1 Minimum height. *Habitable space*, hallways and portions of *basements* containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm). Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches (2032 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 7 feet (2134 mm).
2. The ceiling height above bathroom and toilet room fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a ceiling height of not less than 6 feet 8 inches (2032 mm) above an area of not less than 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.
3. Beams, girders, ducts or other obstructions in *habitable space* shall be permitted to project to within 6 feet 4 inches (1931 mm) of the finished floor.
4. ~~Ceiling heights in lofts are permitted to be less than 6 feet 8 inches.~~

Section R328 **Lofts**

R328.1 Minimum loft area and dimensions. ~~Lofts used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections R328.1.1 through R328.1.4.~~

R328.1.1 Minimum area. *Lofts shall have floor area of not less than 35 square feet (3.25 m²).*

R328.1.2 Maximum area. *Lofts shall have a floor area not greater than 70 square feet (6.50 m²).*

R328.1.3 Minimum dimensions. *Lofts shall not be less than 5 feet (1524 mm) in any horizontal dimension.*

R328.1.4 Height effect on loft area. *Portions of a loft with a sloping 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.*

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.*

R328.2 Loft access. *The access to and primary egress from lofts shall be any type described in Sections R328.2.1 through R328.2.4.*

R328.2.1 Stairways. *Stairways accessing lofts shall comply with this code or with Sections R328.2.1.1 through R328.2.1.5.*

R328.2.1.1 Width. *Stairways accessing a loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The minimum below the handrail shall be not less than 20 inches (508 mm).*

R328.2.1.2 Headroom. *The headroom in 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 or landing platform nosings in the middle of their width.*

R328.2.1.3 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 4/3 of the riser height;
or

2. The riser height shall be 15 inches (381 mm) minus 3/4 of the tread depth.

R328.2.1.4 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 18 inches to 22 inches (457 to 559 mm) in depth measured from the nosing of the landing platform to the edge of the loft, and 16 to 18 inches (406 to 457 mm) in height measured from the landing platform to the loft floor.*

R328.2.1.5 Handrails. *Handrails shall comply with Section R311.7.8.*

R328.2.1.6 Stairway guards. *Guards at open sides of stairways shall comply with Section R312.1.*

R328.2.2 Ladders. *Ladders accessing lofts shall comply with Sections R328.2.2.1 and R328.2.2.2.*

~~**R328.2.2.1 Size and capacity.** Ladders accessing *lofts* shall have a rung width of not less than 12 inches (305 mm) and 10 inches (254 mm) to 14 inches (356 mm) spacing between rungs. Ladders shall be capable of supporting a 200 pound (75 kg) load on any rung. Rung spacing shall be uniform within 3/8-inch (9.5 mm).~~

~~**R328.2.2.2 Incline.** Ladders shall be installed at 70 to 80 degrees from horizontal.~~

~~**R328.2.4 Ships ladders.** Ships ladders accessing *lofts* shall comply with Sections R311.7.12.1 and R311.7.12.2. The clear width at and below handrails shall be not less than 20 inches (508 mm).~~

~~**R328.2.5 Loft Guards.** *Loft* guards shall be located along the open side of *lofts*. *Loft* guards shall not be less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less.~~

Item D – 5 Request from Drew Crawford representing DIYtiny, INC to add to the 2018 NC Building Code, Sections 101.2.6 and amend Section 202 as follows (210309 Item B-6):

101.2.6 A *Tiny House* shall be constructed in accordance with the *International Residential Code* and shall be separated in accordance with Table 602.

Section 202 Definitions

TINY HOUSE. A detached single-family dwelling that is 400 square feet (37 m²) or less in floor area, excluding lofts.

NOTE: This item was previously D-4 at the September 14, 2021 Building Code Council meeting. The proponent of this item requested it be tabled until the December 14, 2021 meeting and it was approved through the voting process.

Item D – 6 Request from Drew Crawford representing DIYtiny, INC to amend the 2018 NC Residential Building Code, Sections R202, R305.1, R328 as follows (210309 Item B-7):

Section R202 Definitions

TINY HOUSE A detached single-family *dwelling* that is 400 square feet (37 m²) or less in floor area excluding lofts.

R305.1 Minimum height. *Habitable space*, hallways and portions of *basements* containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm). Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches (2032 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 7 feet (2134 mm).

2. The ceiling height above bathroom and toilet room fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a ceiling height of not less than 6 feet 8 inches (2032 mm) above an area of not less than 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.

3. Beams, girders, ducts or other obstructions in *habitable space* shall be permitted to project to within 6 feet 4 inches (1931 mm) of the finished floor.

4. Ceiling heights in lofts are permitted to be less than 6 feet 8 inches.

5. Kitchens shall have a ceiling height of not less than 6 feet 8 inches in a tiny house.

R328.1.2 Maximum area. *Lofts* shall have a floor area not greater than ~~70~~ 100 square feet (~~6.50~~ 9.29 m²).

R328.1.3 Minimum horizontal dimensions. *Lofts* shall not be less than 5 feet (1524 mm) in any horizontal dimension.

R328.2 Loft access and egress. The access to and primary egress from *lofts* shall be any type described in Sections R328.2.1 through R328.2.4. The loft access and egress elements along its required minimum width, shall meet the loft where its ceiling height is not less than 3 feet (914mm).

R328.2.1.2 Headroom. The headroom ~~is~~ 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, ~~or~~ landing, or landing platform nosings in the middle center of their width, and vertically from the landing platform along the center of its width.

R328.2.1.4 Landings. Intermediate landings and landings at the bottom of stairways shall comply with Section R311.7.6, except that the depth in the direction of travel shall be not less than 24 inches (610 mm).

R328.2.1.4 R328.2.1.5 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 ~~18 inches to 22 inches (457 to 559)~~ 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 edge of the loft, and 16 to floor shall be not less than 16 inches (406 mm) and not greater than 18 inches (406 to 457 mm) in height measured from the landing platform to the loft floor.

R328.2.1.5 R328.2.1.6 Handrails. *Handrails* shall comply with Section R311.7.8.

R328.2.1.6 R328.2.1.7 Stairway guards. *Guards* at open sides of *stairways, landings and landing platforms* shall comply with Section R312.1.

R328.2.2.1 Size and capacity. Ladders accessing lofts shall have a rung width of not less than 12 inches (305 mm) and 10 inches (254 mm) to 14 inches (356 mm) spacing between rungs. Ladders shall be capable of supporting a ~~200~~ 300 pound (~~75~~ 136 kg) load on any rung. Rung spacing shall be uniform within 3/8-inch (9.5 mm).

R328.2.5 Loft Guards. *Loft guards* shall be located along the open ~~side~~ sides of *lofts*. *Loft guards* shall not be 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 R312.1.3 and Table R301.5 for their components.

NOTE: This item was previously D-5 at the September 14, 2021 Building Code Council meeting. The proponent of this item requested it be tabled until the December 14, 2021 meeting and it was approved through the voting process.

Item D – 7 Request from Barry Gupton representing the NC Manufactured Building Division to amend the 2018 NC Residential Code, Sections 4602, and 4605.5 as follows (210608 Item B-9):

SECTION R4602 DEFINITIONS

COASTAL HIGH HAZARD AREA. ~~An area subject to coastal flooding and high velocity waters including storm wave wash, as shown by Federal Emergency Management Agency Maps and subject to the approval of the Building Code Council.~~

COASTAL HIGH HAZARD AREA. An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The coastal high hazard area is identified as either V Zone or Coastal A Zone on Flood Insurance Rate Maps (FIRMs).

CORROSION RESISTANCE AREA. Areas within hurricane prone regions defined as that area east of the Intracoastal Waterway from the NC/SC state line north to Beaufort Inlet and from that point to include the barrier islands to the NC/VA state line.

OCEAN HAZARD AREA. An area, as identified by the North Carolina Coastal Resources Commission, and subject to approval by the Building Code Council, near the shoreline of the Atlantic Ocean that has been identified as subject to at least one of the following hazards: (A) Historical or predicted future trends of long-term erosion, (B) erosion expected to occur during a coastal storm reaching the base flood elevation, or (C) shoreline fluctuations due to tidal inlets.

SECTION R4606
FASTENER CORROSION RESISTANCE

R4605.5 R4606. Fastener corrosion resistance.

In the Coastal High Hazard Area, the Corrosion Resistance Area and the Ocean Hazard Area, all metal connectors and fasteners outside of conditioned spaces shall be hot-dip galvanized steel after fabrication and meet ASTM A 153. Exposed metal connectors, such as tie-down straps on porches, decks, and areas under the structure, shall be a minimum 3/16-inch (5 mm) thick, and shall be hot-dip galvanized after fabrication and meet ASTM A 123 or ASTM A 153. Stainless steel light-gage metal connectors shall be permitted in exposed or partially exposed locations. Metal connectors of approved equivalent corrosion-resistant material are permitted to be accepted. See Table R4605.5 R4606.

TABLE R4605.5^a R4606^a
CORROSION RESISTANCE

	OPEN (exterior, porches, under house)	EXPOSURE LEVEL VENTED/ENCLOSED (attic, floor trusses, enclosed crawl spaces and stud cavity)	CONDITIONED (heated/cooled living areas)
Nails, staples, screws	Hot-dip galvanized	Hot-dip galvanized	-
Nuts, bolts, washers, tie rods	Hot-dip galvanized	Hot-dip galvanized	-
Steel connection plates & straps (3/16" minimum thickness)	Hot-dip galvanized after fabrication	Hot-dip galvanized	-
Sheet metal connectors, wind anchors, joists hangers, steel joists and beams	Stainless steel or hot- dipped galvanized after fabrication	Hot-dip galvanized after plate fabrication or triple galvanized ^b	Hot-dip galvanized or triple galvanized ^b
Truss plates	Stainless steel or hot- dipped galvanized after fabrication	Hot-dip galvanized after fabrication, stainless steel, triple galvanized ^b or in accordance with TPI-1 of the Truss Plate Institute within 6'-0" of a gable louver, ridge or soffit vent. Otherwise, standard galvanized ^b	Standard galvanized

- a. Applies only to structures located in Coastal High Hazard Area, Corrosion Resistance Area and Ocean High Hazard Area.
- b. Triple galvanizing – G185, standard galvanizing – G60, both per ASTM A 653 / A 653M.

(RENUMBER THE REMAINDER OF R4605.6 – R4605.8)

Part E – Reports

- ❖ **Ad-Hoc Committee Reports**
- ❖ **Standing Committee Reports**
- ❖ **Staff Reports**
- ❖ **Chairman’s Report**

Part F – Appeals

Jenkins Consulting Engineers, P.A. appeal is scheduled for January 26, 2022 at 10:00 AM at the Albemarle Building (325 N. Salisbury Street, Raleigh NC).

Sincerely,



Carl Martin, RA. Secretary,
NC Building Code Council