

Board of Appeals

January 2, 2025

Members Present: Clay Dietrich, Brian Berg, Kevin Bartram

Members Absent: Mark Lundberg, Justin Schoenberg, David Vig

Others Present: Shawn Ouradnik, Chris Rose, Joseph Girdner, Bill Thompson, Dillon Riemann, Jon Woltmann, Ryan Erickson, Alissa Farol, John Gunkelman, Elizabeth Kosel, Isaiah Bodensteiner, Michelle Lemar

Chairperson Clay Dietrich called the meeting to order at 9:30am.

Kevin Bartram made a motion to approve the minutes from November 7, 2024, seconded by Brian Berg. No one was in opposition and the motion was declared carried.

Unfinished Business

a) Code Review

- i. IBC 1805.5 Frost Protection
- ii. IRC Chapters 1-24 and Appendix BE

2024 IBC 1809.5 presented by Shawn Ouradnik

It has some exceptions for frost protection of some buildings and we wanted to make a modification to it for some storage buildings; unoccupied storage/cold storage type buildings that we are seeing quite often. If they are just bringing in electricity and not water, we feel we wouldn't need the frost protection. If they were to add to that or change it in the future, they could update it then.

1809.5 Frost protection. – pg. 502

Except where otherwise protected from frost, foundations and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extending below the frost line of the locality.
2. Constructing in accordance with ASCE 32.
3. Erecting on solid rock.

Exception: Free-standing unheated buildings used as Group U or S occupancies for the storage of private or pleasure-type motor vehicles constructed in accordance with Sections 406.1 and 406.3 meeting all of the following conditions shall not be required to be protected:

1. Assigned to Risk Category I.
2. ~~Area of 600 square feet (56 m²) or less for light frame construction or 400 square feet (37 m²) or less for other than light frame construction.~~
2. Eave height of 20 feet (3048 mm) or less.
3. Building is not normally occupied.

2024 IRC Chapters 1-3 presented by Shawn Ouradnik

The information we are presenting is an overview of the significant changes we have identified and local amendments to the code. The code has undergone restructuring and reformatting that has moved and added new sections. Some of the new sections are using the same language and intent of the previous code; it is just broken down in a different way for clarification purposes. We are also presenting previously adopted code amendments and recommending passing previous amendments.

CHAPTER 1

SCOPE AND ADMINISTRATION

101.1 Title – pg. 26

Previous local amendment: These provisions shall be known as the Residential Code for One- and Two-Family Dwellings of the city of Fargo, and shall be cited as such and will be referred to herein as "this code."

R103.1 Creation of enforcement agency. – pg. 27

Amend to read as follows:

The department of building safety of the city of Fargo is hereby created and the official in charge thereof shall be known as the building official. The function of the agency shall be the implementation, administration and enforcement of the provisions of this code

R104.2.1 Listed compliance. – pg. 27

Where this code or a referenced standard requires equipment, materials, products or services to be listed and a listing standard is specified, the listing shall be based on the specified standard. Where a listing standard is not specified, the listing shall be based on an approved listing criteria. Listings shall be germane to the provision requiring the listing. Installation shall be in accordance with the listing and the manufacturer's instructions, and where required to verify compliance, the listing standard and manufacturer's instructions shall be made available to the building official.

R104.2.2.1 Approval authority. – pg. 27

An alternative material, design or method of construction shall be approved where the *building official* finds that the proposed alternative is satisfactory and complies with Sections R104.2.2 through R104.2.2.6.2, as applicable.

R104.2.2.2 Application and disposition. – pg. 27

Where required, a request to use an alternative material, design or method of construction shall be submitted in writing to the *building official* for approval. Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not approved.

R104.2.2.3 Compliance with code intent. – pg. 27

An alternative material, design or method of construction shall comply with the intent of the provisions of this code.

R104.2.2.4 Equivalency criteria. – pg. 27

An alternative material, design or method of construction shall, for the purpose intended, be not less than the equivalent of that prescribed in this code with respect to all the following, as applicable:

1. Quality.
2. Strength.
3. Effectiveness.
4. Durability.
5. Safety, other than fire safety.
6. Fire safety.

R104.2.2.5 Tests. – pg. 28

Tests conducted to demonstrate equivalency in support of an alternative material, design or method of construction application shall be of a scale that is sufficient to predict performance of the end use configuration. Such tests shall be performed by a party acceptable to the *building official*.

R104.2.2.6 Reports. – pg. 28

Supporting documentation, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall comply with Sections R104.2.2.6.1 and R104.2.2.6.2.

R104.2.2.6.1 Evaluation reports. – pg. 28

Evaluation reports shall be issued by an *approved agency* and use of the evaluation report shall require approval by the *building official* for the installation. The alternate material, design or method of construction and product evaluated shall be within the scope of the *building official's* recognition of the *approved agency*. Criteria used for the evaluation shall be identified within the report and, where required, provided to the *building official*.

R104.2.2.6.2 Other reports. – pg. 28

Reports not complying with Section R104.2.2.6.1 shall describe criteria, including but not limited to any referenced testing or analysis, used to determine compliance with code intent and justify code equivalence. The report shall be prepared by a qualified engineer, specialist, laboratory or specialty organization acceptable to the building official. The *building official* is authorized to require design submittals to be prepared by, and bear the stamp of, a *registered design professional*.

R104.2.3.1 Flood hazard areas. – pg. 28

Is hereby deleted in its entirety.

R104.4.1 Warrant. – pg. 28

Where the building code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent, occupant or person having charge, care or control of the structure or premises shall not fail or neglect, after a proper request is made as herein provided, to permit entry therein by the building code official for the purposes of inspection and examination pursuant to this code.

R104.7 Official records. – pg. 29

The building official shall keep official records as required in Sections R104.7.1 through R104.7.5. Such official records shall be retained for not less than 5 years or for as long as the building or structure to which such records relate remains in existence, unless otherwise provided by other regulations.

R104.7.1 Approvals. – pg. 29

A record of approvals shall be maintained by the *building official* and shall be available for public inspection during business hours in accordance with applicable laws.

R104.7.3 Code alternatives and modifications. – pg. 29

Application for alternative materials, design and methods of construction and equipment in accordance with Section R104.2.2; modifications in accordance with Section R104.2.3; and documentation of the final decision of the *building official* for either shall be in writing and shall be retained in the official records.

R104.7.4 Tests. – pg. 29

Tests. The *building official* shall keep a record of tests conducted to comply with Section R104.2.2.5.

Section R104.8 – pg. 29

Is hereby amended to read as follows:

R104.8. Liability. The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or the city be held as assuming any such liability by reason of the inspection authorized by this code or any permits or certificates issued under this code.

Section R105.2 – pg. 29 - 30

Is hereby amended to read as follows:

R105.2 Work exempt from permit.

Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

1. Other than storm shelters, one-story detached accessory structures, provided the floor area does not exceed 120 square feet.
2. Fences not over 8.5 feet high.
* * * *
7. Swimming pools that are less than 24 inches (610 mm) deep.
* * * *
10. Decks not exceeding 120 square feet in area, that are not more than 7 inches above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R318.4.

Section R106.1.4 – pg. 31

Is hereby deleted in its entirety.

Section R108.3 – pg. 32

Is hereby amended to read as follows:

R108.3 Building permit valuations. Building permit valuation shall include total value of the work for which a permit is being issued, such as electrical, gas, mechanical, plumbing equipment and other permanent systems, including materials and labor. If, in the opinion of the building official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the building official. Final building permit valuation shall be set by the building official.

CHAPTER 2

DEFINITIONS

Some new definitions were added but most were for new products brought into the code and others were changed for clarification of previous definitions. No new noteworthy definitions were added nor was the intent to previous definitions changed.

We would like to add a definition for landing to read as follows:

Landing. A constructed platform at the top or bottom of a staircase or between one flight of stairs and another. A landing may not consist of soil, gravel, or sand.

Section R201.3 Terms defined in other codes. - pg. 36

Is hereby amended to read as follows:

Where terms are not defined in this code such terms shall have the meanings ascribed in other code publications of the International Code Council. Wherever the term 'International Plumbing Code' or 'International Private Sewage Disposal Code' is used in the International Residential Code, it shall mean the North Dakota State Plumbing Code. Wherever the term 'ICC Electrical Code' is used in the International Residential Code, it shall mean the National Electrical Code together with the North Dakota State Wiring Standards. Wherever reference is made to flood plain requirements, it shall mean the Fargo Flood Plain Management Ordinance together with the Fargo Flood Proofing Code.

CHAPTER 3

BUILDING PLANNING

Table R301.2 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA – pg. 59 is hereby amended to read as follows:

**Table 301.2(1)
Climactic and Geographic Design Criteria**

Ground Snow Load	Wind Design				Seismic Design Category	Subject to Damage From			Winter Design Temp	Ice Barrier Underlayment Required	Flood Hazards	Air Freezing Index	Mean Annual Temp
	Speed (mph)	Topographic Effects	Special Wind Region	Windborne Debris Zone		Weathering	Frost Line Depth	Termite					
50	115	No	No	No	Zone A	Severe	4.5'	None	-18°	Yes	1978	4000	41.5°
Manual J Design Criteria													
Elevation	Latitude	Winter Heating	Summer Cooling	Altitude Correction Factor	Indoor Temperature	Design Cooling	Design Temperature	Heating Temperature Difference					
869	46	-17°	88°	None	70°	75°	87°						
Cooling Temperature Difference	Wind Velocity Heating	Wind Velocity Cooling	Coincident Wet Bulb	Daily Range	Winter Humidity	Summer Humidity							
13°	15 mph	7.5 mph	70	M	30%	50%							

FIGURE R301.2(2) Ultimate design wind speeds – pg. 60

Notes:

1. Values are 3-second gust wind speeds in miles per hour (m/s) at 33 feet (10 m) above ground for Exposure Category C.
2. Linear interpolation is permitted between contours. Point values are provided to aid with interpolation.
3. Islands, coastal areas and land boundaries outside the last contour shall use the last wind speed contour.
4. Location-specific basic wind speeds shall be permitted to be determined using the ASCE Wind Design Geodatabase.
5. Wind speeds for Hawaii, US Virgin Islands and Puerto Rico shall be determined from the ASCE Wind Design Geodatabase.
6. Mountainous terrain, gorges, ocean promontories and special wind regions shall be examined for unusual wind conditions. Site specific values for selected special wind regions shall be permitted to be determined using the ASCE Wind Design Geodatabase.
7. Wind speeds correspond to approximately a 7-percent probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 years).
8. The ASCE Wind Design Geodatabase can be accessed at the ASCE 7 Hazard Tool (<https://asce7hazardtool.online>) or approved equivalent.

FIGURE R301.2(3) ALLOWABLE STRESS DESIGN GROUND SNOW LOADS, FOR THE UNITED STATES – pg. 61

Notes:

1. Location-specific ground snow load values are provided in the Ground Snow Load Geodatabase of geocoded design ground snow load values, which can be accessed at the ASCE 7 Hazard Tool at <https://asce7hazardtool.online/> or an approved equivalent.
2. Lines shown on the figure are contours separated by a constant ratio 1.18 with values of 10, 12, 14, 16, 19, 23, 27, 32, 38, 44, 52, 62, 73, 86, 101, 119 and 140 psf.
3. Values denoted with a “+” symbol indicate design ground snow loads at state capitals or other high-population locations.
4. Areas shown in gray represent areas with ground snow loads exceeding 140 psf. Ground snow load values for these locations can be determined from the Geodatabase.

Clay asked if they had increased snow loads at all. Shawn replied that they had not noticed any changes. It is basically the same information. They made some notes and most of it pertains to two areas that are not around here; seismic areas and coastal areas so it will not affect us at all.

Clay also asked about the landing thing: if you are bringing a stairway down from a patio deck, putting it on the yard, maybe supporting the stairway but a lot of those get done where they come out right on the grass. Is that permissible with this? Shawn replied that it's not and that is why we are clarifying the definition of landing. There has not been a great definition of landing in the code, ever, and we wanted to make it clear. We have started seeing issues with decks where they come down and they are resting on the ground. We are starting to see those sink. Sometimes there is final grade and something there is not. We are starting to see them sink and pull away at the top so we need to see them supported in some way and then also have a landing at the bottom. We just want to be consistent with the code.

Section R301.2.4 Floodplain construction. and R301.2.4.1 Alternative provisions. – pg. 78

Is hereby deleted in its entirety.

R302.1 Exterior walls. – pg. 80

Construction, projections, openings and penetrations of exterior walls of *dwelling*, *townhouse* and accessory buildings shall comply with Table R302.1(1) based on *fire separation distance* ; or *dwelling* and *townhouses* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2) based on *fire separation distance* .

For the purposes of determining *fire separation distance*, *dwelling* and *townhouses* on the same *lot* shall be assumed to have an imaginary line between them. Where a new *dwelling* or *townhouse* is to be erected on the same lot as an existing *dwelling* or *townhouse*, the location of the assumed imaginary line with relation to the existing *dwelling* or *townhouse* shall be such that the existing *dwelling* or *townhouse* meets requirements of this section. Where a *lot line* exists between adjacent *townhouse units*, *fire separation distance* of exterior walls shall be measured to the *lot line*. Where a lot line does not exist between adjacent *townhouse units*, an imaginary line shall be assumed between the adjacent *townhouse units* and *fire separation distance* of exterior walls shall be measured to the imaginary line. *Fire separation distance* and requirements of Section R302.1 shall not apply to walls separating *townhouse units* that are required by Section R302.2.

Table R302.1(1) Exterior Walls. – pg. 81

The fourth column is hereby amended as follows:

**TABLE R302.1(1)
EXTERIOR WALLS**

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the <i>International Building Code</i> with exposure from both sides	0 feet
	Not fire-resistance rated	0 hours	≥ 3 feet
Projections	Not allowed	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood ^{a, b}	≥ 2 feet to < 3 feet
	Not fire-resistance rated	0 hours	≥ 3 feet
Openings in walls	Not allowed	NA	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

R302.3 Two-family dwellings. – pg. 82

Dwelling units in two-family dwellings shall be separated from each other in accordance with Sections 302.3.1 through 302.3.5, regardless of whether a lot line exists between two dwelling units.

R302.3.1 Dwelling unit separation. – pg. 82

The two *dwelling units* shall be separated by fire resistance rated assemblies that are vertical, horizontal, or a combination thereof.

R302.3.2 Fire-resistance rating. – pg. 82

Vertical and horizontal assemblies separating *dwelling units* shall have a fire-resistance rating of 1 hour, or a fire-resistance rating of one-half hour in buildings equipped throughout with an automatic sprinkler system installed in accordance with **Section P2904**. Fire-resistance ratings shall be based on testing in accordance with **ASTM E119** or **UL 263**, or an analytical method in accordance with Section 703.2.2 of the *International Building Code*.

R302.3.3 Continuity. – pg. 82

Vertical and horizontal assemblies separating *dwelling units* shall be constructed in a manner that provides continuity of the fire-resistance rating between the *dwelling units*.

R302.3.3.1 Horizontal assemblies. – pg. 82

Horizontal assemblies separating *dwelling units* shall extend to and be tight against exterior walls or vertical separation assemblies complying with **Section 302.3.2. R302.3.3.2 Vertical assemblies.** Vertical assemblies separating *dwelling units* shall extend to and be tight against any combination of the following:

1. The foundation.
2. A horizontal assembly complying with **Section R302.3.3.**
3. The underside of roof sheathing.
4. The ceiling beneath an uninhabitable *attic*, provided that the ceiling is constructed using not less than 5/8-inch (15.9 mm) *Type X gypsum board*, an *attic draft stop* constructed as specified in **Section R302.12.1** is provided above and along the vertical assembly terminating at the ceiling, and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.

R302.3.4 Supporting construction. – pg. 83

Vertical and horizontal assemblies separating *dwelling units* shall be supported by construction having an equal or greater fire-resistance rating.

R302.3.5 Vertically stacked dwelling units. – pg. 83

Where one *dwelling unit* in a two-family dwelling is located above the other and an automatic sprinkler system complying with **Section P2904** is not provided in both *dwelling units*, both of the following shall apply:

1. Horizontal and vertical assemblies separating the *dwelling units*, including an interior *stairway* serving as the means of egress for the upper *dwelling unit*, shall be constructed in a manner that limits the transfer of smoke.
2. A notification appliance connected to smoke alarms in the other *dwelling unit* shall be provided in each *dwelling unit*.
- 3.

R302.3.6 Shared accessory rooms. – pg. 83

Shared accessory rooms shall be separated from each individual *dwelling unit* in accordance with **Table R302.3.6.** Openings between the shared accessory room and *dwelling unit* shall comply with **Section R302.3.6.1.** Attachment of *gypsum board* shall comply with **Table R702.3.5.**

TABLE R302.3.6 Dwelling-shared accessory room separation – pg. 83

SEPARATION	MATERIAL
From the dwelling units and attics	Not less than 1/2-inch gypsum board or equivalent applied to the accessory room side wall
From habitable rooms above or below the shared accessory room	Not less than 5/8-inch Type X gypsum board or equivalent
Structures supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent

For SI: 1 inch = 25.4 mm.

R302.3.6.1 Opening protection. – pg. 83

Openings from a shared accessory room or area directly into a room used for sleeping purposes shall not be permitted. Other openings between the shared accessory room or area and dwelling units shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 13/8 inches (35 mm) in thickness, or a fire door assembly with a 20-minute fire-protection rating, equipped with a self-closing or automatic-closing device.

R302.3.6.2 Duct penetration. – pg. 83

Ducts penetrating the walls or ceilings separating the dwelling from the shared accessory room shall be constructed of sheet steel not less than No. 26 gage (0.48 mm) or other approved material and shall not have openings into the shared accessory room.

R302.3.6.3 Other penetrations. – pg. 83

Penetrations through the walls, ceiling and floor-level separation required in **Section R302.3.6** shall be protected as required by **Section R302.11**, Item 4.

R302.5.1 Opening Protection. – pg. 84

Is hereby amended to read as follows:

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.

Sections R802.1.5 – 802.1.5.10 moved to R302.15-302.15.10 – pg. 87-88

No change other than move.

Section R306 – pg. 93

Is hereby deleted in its entirety.

R307.2 Construction. – pg. 97

Storm shelters shall be constructed in accordance with this code and ICC 500.

R309.1 Townhouse automatic sprinkler systems. – pg. 98

Is hereby amended to read as follows:

R309.1 Townhouse automatic sprinkler systems. An automatic residential sprinkler system shall be installed in townhouses which are located on a private street or private fire department access road that is required to be greater than 150 feet in length as required by Section 503 of the International Fire Code.

R309.2 One- and two-family dwellings automatic sprinkler systems. – pg. 98

Is hereby deleted in its entirety.

R313.1.2 Habitable attics and basements in existing buildings. – pg. 100

Where a *habitable attic* or habitable space in a *basement* is created in an *existing building*, *ceiling height* shall not be 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 (2032 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.

R315.1 Sleeping lofts. – pg. 101

Where provided in *dwelling units* or *sleeping units*, *sleeping lofts* shall comply with this code as modified by **Sections R315.2** through **R315.5**. *Sleeping lofts* constructed in compliance with this section shall be considered a portion of the *story* below. Such *sleeping lofts* shall not contribute to the number of *stories* as regulated by this code.

Exceptions: *Sleeping lofts* need not comply with **Section R315** where they meet any of the following conditions:

1. The *sleeping loft* has a depth of less than 3 feet (914 mm).
2. The *sleeping loft* has a floor area of less than 35 square feet (3.3 m²).
3. The *sleeping loft* is not provided with a permanent means of egress.

R315.2 Sleeping loft limitations. – pg. 101

Sleeping lofts shall comply with the following conditions:

1. The sleeping loft floor area shall be less than 70 square feet (6.5 m²).
2. The sleeping loft *ceiling height* shall not exceed 7 feet (2134 mm) for more than one-half of the sleeping loft floor area.

R315.3 Sleeping loft ceiling height. – pg. 101

The clear height below the sleeping loft floor construction shall not be less than 7 feet (2134 mm). The *ceiling height* above the finished floor of the *sleeping loft* shall not be less than 3 feet (914 mm). Spaces adjacent to the *sleeping loft* with a sloped ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not contribute to the sleeping loft floor area.

R315.4 Sleeping loft area. – pg. 101

The aggregate area of all *sleeping lofts* and *mezzanines* within a room shall comply with **Section R314.3**.

Exception: The area of a single *sleeping loft* located within a *dwelling unit* or *sleeping unit* equipped with an automatic sprinkler system in accordance with **Section P2904** shall not be greater than two-thirds of the area of the room in which it is located, provided that no other *sleeping lofts* or *mezzanines* are open to the room in which the *sleeping loft* is located.

R315.5 Permanent egress for sleeping lofts. – pg.101

A permanent means of egress shall be provided for *sleeping lofts*. The means of egress shall comply with **Section R318** as modified by **Sections R315.5.1** through **R315.5.3**.

R315.5.1 Ceiling height at sleeping loft means of egress. – pg. 101

A *ceiling height* of not less than 3 feet (914 mm) shall be provided for the entire width of the means of egress from the *sleeping loft*.

R315.5.2 Stairways. - pg. 101

Stairways providing egress from *sleeping lofts* shall be permitted to comply with **Sections R315.5.2.1** through **R315.5.2.3**.

R315.5.2.1 Width. – pg. 101

Stairways providing egress from a *sleeping 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).

R315.5.2.2 Treads and risers. – pg. 101

Risers for *stairs* providing egress from a *sleeping 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.

R315.5.2.3 Landings. – pg. 102

Landings at *stairways* providing egress from *sleeping lofts* shall comply with **Section R318.7.6**, except that the depth of landings in the direction of travel shall be not less than 24 inches (610 mm).

R315.5.3 Ladders. – pg. 102

Ladders used as a means of egress from sleeping lofts shall comply with **Sections R315.5.3.1** and **R315.5.3.2**.

R315.5.3.1 Size and capacity. – pg. 102

Ladders providing egress from *sleeping 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).

R315.5.3.2 Incline. – pg. 102

Ladders shall be inclined at 70 to 80 degrees from horizontal.

The previous sections all pertain to sleeping lofts and it is something new that they threw in there. A lot of it was done previously but they are just clarifying things. Clay asked if it has to do with small homes? Shawn replied with he believes that is where it is coming from. With the small homes, some of those spaces can get pretty tight and he believes that is why they are clarifying a lot of those things.

R317.3 Flood hazard areas. – pg. 102

Is hereby deleted in its entirety.

R318.3 Floors and landings at exterior doors. – pg. 103

Exceptions are hereby amended to read as follows:

Exceptions:

1. Exterior balconies less than 60 square feet (5.6 m²) and only accessed from a door are permitted to have a landing that is less than 36 inches (914 mm) measured in the direction of travel.
2. A landing is not required on the outside of exterior doors other than the required egress door, where a stairway with a total rise of less than 30 inches (762 mm) is located on the exterior side of the door, provided the door does not swing over the stairway.

R318.3.1 Floor elevations at the required egress doors. – pg. 103

Exception is hereby amended to read as follows:

Exception: The landing or floor on the exterior side shall not be more than 8 inches below the top of the threshold provided the door does not swing over the landing or floor.

Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R318.8 or a stairway in accordance with Section R318.7.

R318.3.2 Floor elevations at other exterior doors. – pg. 103

Is hereby amended to read as follows:

R318.3.2 Floor elevations at other exterior doors. Doors other than the required egress door shall be provided with landings or floors not more than 8 inches below the top of the threshold.

Exception: A top landing is not required where a stairway with a total rise of less than 30 inches (762 mm) is located on the exterior side of the door, provided that the door does not swing over the stairway.

R318.7.5.1 Stairs. – pg. 104

Is hereby amended to read as follows:

R318.7.5.1 Risers. The riser height shall be not more than 8 inches.

* * * *

R318.7.5.2 Treads – pg. 104

Is hereby amended to add the following exception:

Exception: Where a landing is not provided or required by sections R318.3, R318.3.2, or R318.7.6, the top tread of a stair serving exterior doors other than the required exit door, and in-swinging doors opening into an attached garage, shall be permitted to exceed the smallest

tread by more than 3/8 inch (9.5mm). Such a tread shall be at least 18 inches (457mm) measured in the direction of travel.

R318.7.5.2.1 Winder treads. – pg. 104

Is hereby amended to read as follows:

R318.7.5.2.1 Winder treads. Winder treads shall have a tread depth of not less than 9 inches measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walk line.

* * * *

R318.7.6 Landings for stairways. – pg. 104

Exceptions:

1. The top landing of an interior *stairway*, including those in an enclosed garage, shall be permitted to be on the other side of a door located at the top of the *stairway* provided that the door does not swing over the stairs.
2. At an enclosed garage, the top landing at the *stair* shall be permitted to be not more than 73/4 inches (197 mm) below the top of the threshold.
3. At exterior doors, a top landing is not required for an exterior stairway of not more than two risers, provided that the door does not swing over the *stairway*.
4. Exterior *stairways* to grade with three or fewer *risers* serving a deck, porch or patio shall have a bottom landing width of not less than 36 inches (914 mm), provided that the stairway is not the required access to grade serving the required egress door.

R319.2.3 Maximum height from floor. – pg. 106

Is hereby amended to add the following exception:

Exception: Below grade emergency escape and rescue windows shall have a maximum sill height of 48 inches.

R319.4.2 Ladder and steps. – pg. 106

Is hereby amended to read as follows:

R319.4.2 Ladder and steps. Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with an approved, permanently affixed ladder or steps usable with the window in the fully open position or shall be equipped with a permanently-attached platform at least 30 inches by 16 inches. The maximum distance between the top of the window well and a platform shall be 42 inches and shall not impede the operation of the window. The ladder or steps shall not be obstructed by the emergency escape and rescue opening where the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section R318.7.

R319.4.2.1 Ladders – pg. 106

Is hereby amended to add the following exception:

Exception: Terraced window wells with a maximum of 24 inches per vertical rise and minimum of 12 inches per horizontal projection on each level shall also be allowed.

R321.1.1 Guards. – pg. 108

Is hereby amended to read as follows:

Section 321.1.1 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 (762mm) measured vertically to the floor or grade below or to the bottom of any window well within 36 inches (914mm) horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

R325.1.1 Natural light. – pg. 112

Habitable rooms shall have an aggregate area of glazed openings not less than 8 percent of the floor area of such rooms. Required glazed openings shall face directly onto a street, alley or *public way*, or a yard or *court* located on the same *lot* as the *building*.

Exceptions:

1. Required glazed openings shall be permitted to face into a roofed porch, deck or patio adjacent to a street, alley, *public way*, yard or *court*, where there the longer side of the roofed area is not less than 65 percent unobstructed and the *ceiling height* is not less than 7 feet (2134 mm).
2. Required glazed openings shall be permitted to face into a *sunroom* adjacent to a street, alley, *public way*, yard or *court*.
3. Glazed openings are not required where artificial light is provided that is capable of producing an average illumination of 6 foot candles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.
4. Eave projections shall not be considered as obstructing the clear open space of a *yard* or *court*.

R325.1.2 Natural ventilation. – pg. 112

Habitable rooms shall have an aggregate area openable to the outdoors not less than 4 percent of the floor area of such rooms. Openings shall be through windows, *skylights*, doors, louvers or other *approved* openings to the outdoor air. Such openings shall be provided with *ready access* or shall otherwise be readily controllable by the building occupants.

Exceptions:

1. Natural *ventilation* shall not be required in habitable rooms other than *kitchens* where a whole-house mechanical *ventilation* system or a mechanical *ventilation* system capable of producing 0.35 air changes per hour in the habitable rooms is installed in accordance with **Section M1505**.
2. Natural *ventilation* shall not be required in *kitchens* where a *local exhaust* system is installed in accordance with **Section M1505**.
3. Required *ventilation* openings shall be permitted to open into a thermally isolated *sunroom* or roofed porch, deck, or patio where not less than 40 percent of the roofed area perimeter is open to the outdoor air.
4. Required *ventilation* openings shall be permitted to open into a thermally isolated *sunroom* provided there is an openable area between the adjoining room and the sunroom of not less

than one-tenth of the floor area of the interior room and not less than 20 square feet (1.9 m²). The minimum openable area of the *sunroom* to outdoor air shall be based on the total floor area of the adjoining room and the *sunroom*.

R327.1 Space required. – pg. 114

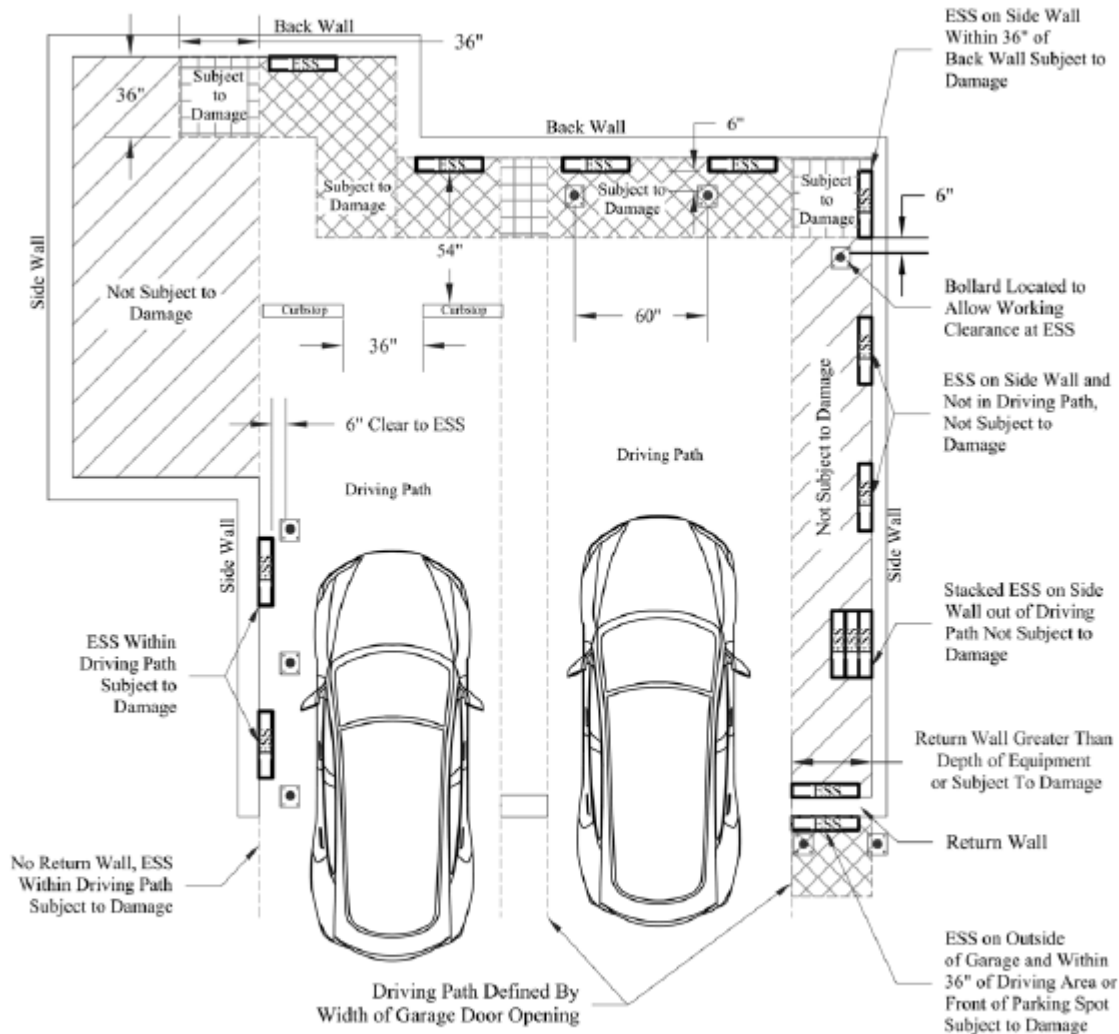
Is hereby amended to read as follows:

Fixtures shall be spaced in accordance with the requirements of the North Dakota State Plumbing Code and Figure R307.1, with the exception of the clearance in front of the water closets and bidets which shall be at least 24 inches.

R328 Swimming Pools, Spas and Hot Tubs – pg. 114

Is hereby deleted in its entirety.

FIGURE R330.8.1 ESS Vehicle impact protection. – pg. 118



**FIGURE R330.8.1
ESS VEHICLE IMPACT PROTECTION**

R330.8.2 Other locations subject to vehicle impact. – pg. 118

Where an ESS is installed in a location other than as defined in **Section R330.8.1** and is subject to vehicle damage, impact protection shall be provided in accordance with **Section R330.8.3**.

R330.8.3 Impact protection options. – pg. 118

ESS protection shall comply with one of the following:

1. Bollards constructed in accordance with one of the following:
 - 1.1. Minimum 48 inches (1219 mm) in length by 3 inches (76 mm) in diameter Schedule 80 steel pipe embedded in a concrete pier not less than 12 inches (305 mm) deep and 6 inches (152 mm) in diameter, with not less than 36 inches (914 mm) of pipe exposed, filled with concrete and spaced at a maximum interval of 5 feet (1524 mm). Each bollard shall be located not less than 6 inches (152 mm) from an ESS.
 - 1.2. Minimum 36 inches (914 mm) in height by 3 inches (76 mm) in diameter Schedule 80 steel pipe fully welded to a steel plate not less than 8 inches (203 mm) in length by 1/4 inch (6.4 mm) in thickness and bolted to a concrete floor by means of 4 1/2-inch (114 mm) concrete anchors imbedded not less than 3 inches (76 mm). Spacing shall be not greater than 60 inches (1524 mm), and each bollard shall be located not less than 6 inches (152 mm) from the ESS.
 - 1.3. Premanufactured steel pipe bollards filled with concrete and anchored in accordance with the manufacturer's installation instructions, with spacing not greater than 60 inches (1524 mm). Each bollard shall be located not less than 6 inches (152 mm) from the ESS.
2. Wheel barriers constructed in accordance with one of the following:
 - 2.1. Concrete or polymer 4 inches (102 mm) in height by 5 inches (127 mm) in width by 70 inches (1778 mm) in length, anchored to the concrete floor not less than every 36 inches (914 mm) and located not less than 54 inches (1372 mm) from the ESS. Concrete anchors not less than 3 1/2 inches (89 mm) in diameter with 3-inch (76 mm) embedment per barrier shall be used. Spacing between barriers shall be not greater than 36 inches (914 mm).
 - 2.2. Premanufactured wheel barriers shall be anchored in accordance with the manufacturer's installation instructions.
3. An *approved* method designed to resist an impact of 2,000 pounds per square foot (95 760 N/m²) in the direction of travel at 24 inches (610 mm) above *grade*.

2024 IRC Chapters 4-6 presented by Joseph Girdner

Chapter 4

Foundations

Table R401.4.1(1) Presumptive Load-Bearing Values of Foundation Materials – pg. 120

Table was split, was R404.4.1

Table R401.4.1(2) Properties of Soils Classified According to the Unified Soil Classification System – pg. 121

Table was R404.1

Added USDA Textural Soil Classification

Added Footnote C. Unsuitable as backfill material

Joseph noted that the following sections are for cast in place concrete. In this area, you are not going to have very many non-retaining, cast in place because we are required to be four feet down. Basically, we could use it for garages or something else that would only require that one foot base but anything larger, it is not going to be feasible for our area.

R403.5 Crushed Stone Footing for Cast in Place Concrete Foundation – pg. 144

Crushed stone footings in accordance with Section R403.4.1 shall be permitted for non-retaining cast-in-place concrete foundations complying with Section R404.1.3 and this section. The footing and foundation wall shall be installed in accordance with Figure R403.5(1), or Figure R403.5(2) and Table R403.5, or Figure R403.5(3). Crushed stone footings for cast-in-place concrete foundations shall be permitted for townhouses in Seismic Design Categories A and B and one-and-two family dwellings in Seismic Design Categories A, B and C.

Figure R403.5(1) Crushed Stone Footings for Cast-in-Place Concrete Foundations in Seismic Design Categories A, B and C and Wind Exposure Categories B, C and D: Cast-in-Place Concrete Foundation Wall with Wood Cripple Wall – pg. 145

Figure R403.5(2) Crushed Stone Footings for Cast-in-Place Concrete Foundations in Seismic Design Categories A, B and C and Wind Exposure Categories B, C and D: Concrete Slab-on-Ground with Turned Down Foundation Cast-in-Place Concrete Foundation Wall with No Cripple Wall Above – pg. 145

Figure R403.5(3) Crushed Stone Foundations for Cast-in-Place Concrete Foundations in Seismic Design Categories A, B and C and Wind Exposure Categories B, C and D: Concrete Slab-on-Ground with Turned Down Foundation – pg. 146

Table R403.5 Minimum Cast-in-Place Concrete Foundation Wall Dimensions, Reinforcement and Maximum Braced Wall Line Spacing – pg. 146

Chapter 5

Floors

R502.3.3 Floor Cantilevers – pg. 174

Floor cantilever spans shall not exceed the nominal depth of the wood floor joist. Floor cantilevers constructed in accordance with Table R502.3.3(1) shall be permitted where supporting a light-framed bearing wall and roof only. Floor cantilevers constructed in accordance with Table R502.3.3(2) shall be permitted where supporting an exterior balcony. A full-depth rim joist shall be provided at the unsupported end of the cantilever joist. Solid blocking shall be provided at the support for the cantilever. Where the cantilever length is 24 inches (610 mm) or less and the building is assigned to Seismic Design Category A, B or C, solid blocking at the support for the cantilever shall not be required.

Summary: Any cantilever over 24" is required to have solid blocking at the support of the cantilever.

R502.11 Floor Framing Supporting Guards – pg. 177

The framing at the open edge of the floor supporting a required guard assembly shall be constructed in accordance with Section R502.11.1 or R502.11.2 for guard for guard assemblies not exceeding 44" (1118 mm) in height, or shall be designed in accordance with accepted engineering practice to support the guard assembly. Where trusses and I-joist are used as edge framing members supporting guards, the effect of the guard loads shall be specifically considered in the design of the edge member.

Summary: Open end framing with floor trusses must meet engineered truss design for a required guard assembly.

R502.11.1 Conventional Edge Framing – pg. 177

Where a roll brace is aligned with each guard post, the framing at the edge of the floor shall consist of a solid or built-up member of lumbar, structural glued-laminated timber or structural composite lumber having a net width of not less than 3 inches (76 mm) and a net depth of not less than 9 ¼ inches (235 mm), and shall be braced to resist rotation by roll bracing as described in Section R502.11.3.

Summary: Joist cavity space must be blocked at guard post.

R502.11.2 Timber Edge Framing – pg. 177

Where a roll brace is not aligned with each guard post, the framing at the edge of the floor shall consist of a minimum 6-inch by 10-inch sawn timber or a minimum 5 1/8-inch by 9 ¼-inch (130 mm x 235 mm) structural glued-laminated timber and shall be braced to resist rotation by roll bracing as described in Section R502.11.3 at intervals of 48 inches (1219 mm) or less.

Summary: Where bracing is not aligned with guard post, bracing shall be 6"x10" at 4' or less intervals.

R502.11.3 Roll Bracing – pg.177

Each roll brace shall be a joist or blocking matching the depth of the edge member and extending perpendicular to the edge member not less than 16 inches (406 mm) from the edge. Blocking shall have end connections with not fewer than six 16d common nails. Floor sheathing shall be continuous for not less than 24 inches (610 mm) from the edge and shall be fastened to each roll brace with not fewer than 12 (twelve) 10d common nails and shall be fastened to the edge member with a minimum with a minimum of 12 (twelve) 10d common nails within 12 inches (305 mm) of the roll brace.

Summary: Each brace shall be the depth of the member being braced and not be less than 16".

Concrete Floors (On Ground)

R506.2 Post-tensioned Slab-on-Ground Floors – pg. 192

Post-tension concrete slabs-on-ground floors placed on expansive or stable soils shall be designed in accordance with PTI DC10.5.

R506.3.3 Vapor Retarder – pg. 192

A minimum of ~~10 mil~~ 6 mil (0.006 inch; 152 um) polyethylene or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.

Summary: They went back to the way it was previously, unless they are in the flood area.

Also, on page 192 is exterior decks and we would like to keep that as is. There have been a lot of charts and things added that are just confusing to normal people. We have a good system worked out and we would like to keep that as is.

Chapter 6

Wall Construction

R602.10.2.2 Locations of Braced Wall Panels – pg. 233

A The nearest edge of a braced wall panel shall begin be located within 10 feet (3810 mm) from each end of a braced wall line as determined in Section R602.10.1.1.

R602.10.3 (2) Wind Adjustment Factors to the Required Length of Wall Bracing – pg. 238

Item 2 ~~Story Height (Section R301.2)~~ Wall Height (Section R602.10.3.1)

R602.10.3.1 Wall Height for Wood Framing – pg. 242

For determination of braced wall and panel adjustment factors in accordance with Section R602.10, wall height shall be the vertical distance from the lower edge of the bottom plate to the upper edge of the upper top plate determined in accordance with Figure R602.10.3.1.

Figure R602.10.3.1 – pg. 242

New Figure.

Table R602.10.5 Minimum Length of Braced Wall Panels – pg. 246

Addition to Footnote b: Use the actual length where it is greater than or equal to the minimum length. The actual length of Methods CS-G, CS-WSP, CS-SFB, PFH, PFG and CS-PF is the length of the full height sheathed section.

Figure R602.10.6.2 Method PFH – Portal Frame with Hold-Downs – pg. 248

Added note: Header shall not extend over more than one opening.

Figure R602.10.6.3 Method PFG - Portal Frame at Garage Door Openings in Seismic Design Categories A, B and C – pg. 248

Added note: Header shall not extend over more than one opening.

Figure R602.10.6.4 Method CS-PF – Continuously Sheathed Portal Frame Panel – pg. 250

Added note: Header shall not extend over more than one opening.

Summary: If you have a single opening with two garage doors in it, you are going to have to break that up. In the center panel, instead of having a cripple wall in the center you are going to need to add a king on each header to break that up.

R609.1 General – pg. 380

This section prescribes performance and construction requirements for exterior windows, ~~and~~ doors and garage doors installed in walls. Windows and doors shall be installed in accordance with the fenestration manufacturer's written instructions. Window and door openings shall be flashed in accordance with Section R703.4. Written installation instructions shall be provided by the fenestration manufacturer for each window and door.

R609.4.1 Garage Doors Labeling – pg. 380

Garage doors shall be labeled with a permanent label provided by the garage door manufacturer. The label shall identify the garage door manufacturer, the garage door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard. Garage doors shall be installed in accordance with the manufacturer's installation instructions.

2024 IRC Chapters 7-10 presented by Dillon Riemann and Bill Thompson

Chapter 7

Wall Covering

R702.7 Vapor retarders. – pg. 397

Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder shall be provided in the interior side of frame walls of the class indicated in Table R702.7(2), including compliance with Table R702.7(3) or R702.7(4) where applicable. An approved design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. Vapor retarders shall be installed in accordance with Section R702.7.2.

Exception added:

5. In Climate Zones 4 through 8, a vapor retarder shall not be required where the assembly complies with Table R702.7(5).

Table 702.7(2) Vapor Retarder Options. – pg. 397

New notes.

**TABLE R702.7(2)
VAPOR RETARDER OPTIONS**

CLIMATE ZONE	VAPOR RETARDER CLASS		
	CLASS I ^a	CLASS II ^a	CLASS III
1, 2	Not Permitted	Not Permitted	Permitted
3, 4 (except Marine 4)	Not Permitted	Permitted ^c	Permitted
Marine 4, 5, 6, 7, 8	Permitted ^{b, c}	Permitted ^c	See Table R702.7(3)

- a. ~~Class I and II vapor retarders with vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).~~ A responsive vapor retarder shall be allowed on the interior side of any frame wall in all climate zones.
- b. ~~In frame walls, use of a Class I vapor retarder that is not a responsive vapor retarder in frame walls on the interior side~~ with a Class I vapor retarder on the exterior side shall require an approved design.
- c. Where a Class I or II vapor retarder is used in combination with foam plastic insulating sheathing or insulated siding installed as continuous insulation on the exterior side of frame walls, the continuous insulation shall comply with Table R702.7(4) and the Class I or II vapor retarder shall be a responsive vapor retarder. Have a vapor permeance greater than 1 perm when measured by ASTM E96 water method (Procedure B).

Table 702.7(3) Class III Vapor Retarders. – pg. 398

Verbiage change.

- a. Vented cladding shall include vinyl, polypropylene, or horizontal aluminum siding, brick veneer with a clear airspace as specified in Table R703.8.4(1), rainscreen systems and other approved vented claddings.

Table R702.7(4) Continuous Insulation with Class I or II Responsive Vapor Retarder. – pg. 398

Title within table changed: ~~Class II Vapor Retarders Permitted~~ Conditions

Table R702.7(5) Continuous Insulation on Walls without a Class I, II, or III Interior Vapor Retarder. – pg. 398

**TABLE R702.7(5)
CONTINUOUS INSULATION ON WALLS WITHOUT A CLASS I, II OR III INTERIOR VAPOR
RETARDER^a**

CLIMATE ZONE	PERMITTED CONDITIONS^{b, c}
4	Continuous insulation with R -value ≥ 4.5
5	Continuous insulation with R -value ≥ 6.5
6	Continuous insulation with R -value ≥ 8.5
7	Continuous insulation with R -value ≥ 11.5
8	Continuous insulation with R -value ≥ 14

- a. The total insulating value of materials to the interior side of the exterior continuous insulation, including any cavity insulation, shall not exceed R -5. Where the R -value of materials to the interior side of the exterior continuous insulation exceeds R -5, an approved design shall be required.
- b. A water vapor control material layer having a permeance not greater than 1 perm in accordance with **ASTM E96** Procedure A (dry cup) shall be placed on the exterior side of the wall and to the interior side of the exterior continuous insulation. The exterior continuous insulation shall be permitted to serve as the vapor control layer where, at its installed thickness or with a facer on its interior face, the exterior continuous insulation is a Class I or II vapor retarder.
- c. The requirements in this table apply only to insulation used to control moisture in order to allow walls without a Class I, II or III interior vapor retarder. The insulation materials used to satisfy this option also contribute to but do not supersede the thermal envelope requirements of the *International Energy Conservation Code*.

R702.7.2 Vapor retarder installation. – pg. 399

New Section

Vapor retarders shall be installed in accordance with the manufacturer's instructions, accepted installation methods or an approved design. Where a vapor retarder also functions as a component of a continuous air barrier, the vapor retarder shall be installed as an air barrier in accordance with Section N1102.5.1.1

R703.2 Water-Resistive Barrier. – pg. 399

Not fewer than one layer of water-resistive barrier shall be applied over studs or sheathing of all exterior walls with flashing as indicated in Section R703.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer and behind deck ledgers. The water-resistive barrier material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Where the water-resistive barrier also functions as a component of a continuous air barrier, the water-resistive barrier shall be installed as an air barrier in accordance with Section N1102.5.1.1. Water resistive barrier materials shall comply with one of the following:

1. No. 15 felt complying with ASTM D226, Type 1.
2. ASTM E2556, Type 1 or 2.

3. Foam plastic insulating sheathing water-resistive barrier systems complying with Section R703.1.1 and installed in accordance with the manufacturer's installation instructions.
4. ASTM E331 in accordance with Section R703.1.1.
5. Other approved materials in accordance with the manufacturer's installation instructions.

Exception: A water-resistive barrier shall not be required in unconditioned detached tool sheds, storage sheds, playhouses, and other similar accessory structures provided all of the following requirements are met:

1. Exterior wall covering is limited to siding that is attached direct to studs.
2. Exterior walls are uninsulated.
3. Interior side of exterior walls has no wall covering or wall finishes.

Table R703.3(1) Siding minimum attachment and minimum thickness. – pg. 400

On Fiber Cement Siding, 5/16 thickness direct to studs changed to 0.120" diameter (11 gage)

On Insulated Vinyl Siding changed wood or wood structural panel sheathing into stud staples with 3/8" to 1/2". Fiberboard sheathing into stud staples 3/8" to 1/2". Gypsum sheathing into stud staples with 3/8" to 1/2".

R703.3.1 Siding clearance at wall and adjacent surfaces. – pg. 402

New Section:

Unless otherwise specified by the cladding manufacturer or this code, polypropylene, insulated vinyl and vinyl claddings shall have clearance of not less than 6 inches (152 mm) from the ground and not less than 1/2 inch (13 mm) from other adjacent surfaces (decks, roofs, slabs).

R703.3.2 Wind limitations. – pg. 402

Where the design wind pressure exceeds 30 psf or where the limits of Table 703.3.2 are exceeded, the attachment of wall coverings ~~and soffits~~ shall be designed to resist the component and cladding loads specified in Table R301.2.1(1) for walls, adjusted for height and exposure in accordance with Table R301.2.1(2). For the determination of wall covering, ~~and soffit attachment~~, component and cladding loads shall be determined using an effective wind area of 10 square feet (0.93 m²).

R703.3.3 Fasteners. – pg. 402

Exterior wall coverings and roof overhang soffits shall be securely fastened with aluminum, galvanized, stainless steel or rust-preventative coated nails or staples in accordance with **Table R703.3(1)** or with other *approved* corrosion-resistant fasteners in accordance with the wall covering manufacturer's installation instructions. Nails and staples shall comply with **ASTM F1667**. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire. Where fiberboard, gypsum, or foam plastic sheathing backing is used, nails or staples shall be driven into the studs. Where wood or *wood structural panel* sheathing is used, fasteners shall be driven into studs unless otherwise permitted to be driven into sheathing in accordance with either the siding manufacturer's installation instructions or **Table R703.3.3**.

R703.3.4 Minimum Fastener length and penetration. – pg. 402

3. Fasteners for vinyl siding and insulated vinyl siding shall be installed in accordance with Section R703.11 or R703.13. ~~over wood or wood structural panel sheathing shall penetrate not less than 1 ¾ inches (32 mm) into sheathing and framing combined. Vinyl siding and insulated vinyl siding shall be permitted to be installed with fasteners penetrating into or through wood or wood structural sheathing of minimum thickness as specified by the manufacturer's instructions or test report, with or without penetration into the framing. Where the fastener penetrates fully through the sheathing, the end of the fastener shall extend not less than 1/4 inch (6.4 mm) beyond the opposite face of the sheathing. Fasteners for vinyl siding and insulated vinyl siding installed over foam plastic sheathing shall be in accordance with Section R703.11.2. Fasteners for vinyl siding and insulated vinyl siding installed over fiberboard or gypsum sheathing shall penetrate not less than 1 ¼ inches (32 mm) into framing.~~
4. Fasteners for polypropylene siding shall be installed in accordance with Section R703.14.

R703.4 Flashing. – pg. 403

Approved corrosion-resistant flashing shall be applied ~~shingle fashion~~ in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Overlapping flashing shall be applied in shingle fashion. Self-adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. Flashing shall be installed above deck ledgers in accordance with Section R507.9.1.5.

R703.4.1 Flashing installation at exterior window and door openings. – pg. 403

1. The fenestration manufacturer's installation and flashing instructions, or for applications not addressed in the fenestration manufacturer's instructions, in accordance with the flashing or water-resistive barrier manufacturer's instructions. Where flashing instructions or details are not provided, *pan flashing* shall be installed at the sill of exterior window and door openings. *Pan flashing* shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the *water-resistive barrier* for subsequent drainage. Openings using *pan flashing* shall incorporate flashing or protection at the head and sides.

R703.6.1 Application. – pg. 403

Wood Shakes or shingles shall be applied either single course or double course over nominal ½ inch (12.7 mm) wood-based sheathing or to furring strips over ½ inch (12.7 mm) nominal nonwood sheathing. A water-resistive barrier shall be provided ~~over all sheathing, with horizontal overlaps in the membrane of not less than 2 inches (51 mm) and vertical overlaps of not less than 6 inches (152 mm) in~~ accordance with Section R703.2. Where horizontal furring strips are used, they shall be 1 inch by 3 inches or 1 inch by 4 inches (25 mm by 76 mm or 25 mm by 102 mm) and shall be fastened to the studs with minimum 7d or 8d box nails and shall be spaced a distance on center equal to the actual weather exposure of the shakes or shingles, not to exceed the maximum exposure specified in Table R703.6.1. When installing shakes or shingles over a nonpermeable water-resistive barrier, furring strips shall be placed first vertically over the water-resistive barrier and in addition, horizontal furring strips shall be fastened to the vertical furring strips prior to attaching the shakes or shingles to the horizontal furring strips. Alternatively, horizontal furring shall be gapped not less than 3/16 inch from the surface of the water-resistive barrier without the requirement for a vertical furring strip. Where installed over foam plastic insulating sheathing, furring attachments shall comply with Section R703.15, R703.16 or R703.17.

The spacing between adjacent shingles to allow for expansion shall be 1/8 inch (3.2 mm) to ¼ inch (6.4) apart, and between adjacent shakes shall be 3/8 inch (9.5 mm) to ½ inch (12.7 mm) apart. The offset spacing between joints in adjacent courses shall be not less than 1 ½ inches (38 mm).

R703.6.3 Attachment. – pg. 404

Added Class D or ASTM A641 Class 3S

R703.7.1 Lath. – pg. 405

Added 0.120-inch diameter (3 mm) showing diameter of nail that's 1 ½ inch long (38 mm)

R703.7.3 Water-resistive barriers. – pg. 406

Water-resistive barriers shall be install as required in Section R703.2 and where applied over wood-based sheathing, shall comply with Section R703.7.3.1 or R704.7.3.2.

Exception: Sections R703.7.3.1 and R703.7.3.2 shall not apply to construction where accumulations, condensations or freezing of moisture will not damage the material.

R703.7.3.1 Dry Climates. – pg. 406

2. The water-resistive barrier shall be 60-minute Grade D paper or have a water resistance equal to or greater than one later of a water-resistive barrier complying with ASTM E2556, Type II. The water-resistive barrier shall be separated from the stucco by a later of foam plastic insulating sheathing, or other non-water absorbing layer, or a designed drainage space or means of drainage complying with Section 703.4 and intended to drain to the water-resistive barrier shall be directed to the exterior side of the water-resistive barrier.

R703.8.2.2 Support by ledger or roof construction. – pg. 410

Added ledger to this for masonry veneer support. Steel angle shall be placed directly on top of the ledger or roof construction.

The maximum slope ~~of the roof construction~~ a steel angle installed without stops shall be 7:12. ~~Roof construction~~ A steel angle installed with a slope greater than 7:12 but not more than 12:12 shall have stops of a minimum 3-inch by 3-inch by ¼ inch (76 mm x 76 mm x 6.4 mm) steel plate welded to the angle at 24 inches (610 mm) on center along the angle or as approved by the building official.

Figure R703.8.2.2(2) Exterior Masonry Veneer Support by Ledger. – pg. 411
 New Figure.

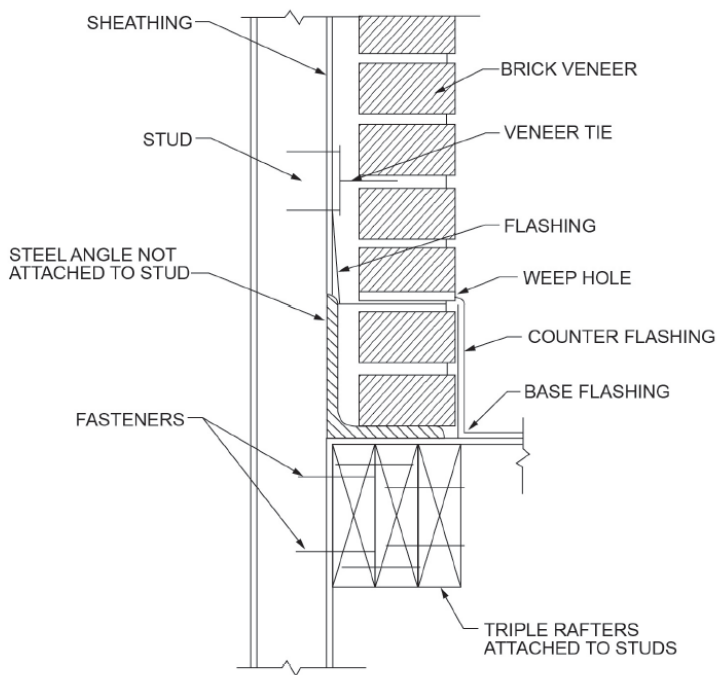


Table R703.8.3.1 Allowable spans for lintels supporting masonry veneer – pg. 412

Changed sizes of steel angle 5 x 3 x 5/16. Also changed 5 x 3 x 5/16 with two 9-gauge wires between first and second course.

Changed note D. to say: Use either steel angle or reinforced lintel ~~shall~~ to span opening.

703.11.1 Installation. – pg. 415

Vinyl siding, ~~soffit~~ insulated vinyl siding and compatible accessories shall be installed in accordance with the manufacturer's installation instructions.

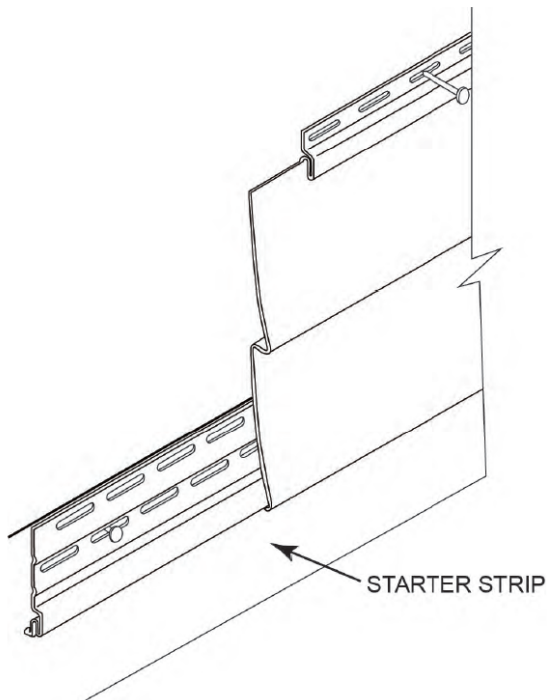
R703.11.1.1 Starter strip. – pg. 416

New Section

The first course of horizontal siding shall be secured using a starter strip as specified in the manufacturer's installation instructions. See Figure R703.11.1.1(1). Where the first course of siding has to be cut or trimmed, the bottom edge shall be secured with utility trim and snap locks as specified by the manufacturer's installation instructions.

R703.11.1.1(1) Typical Starter Strip. – pg. 416

New figure.



a. This figure illustrates typical installation details. See the manufacturer's installation instructions for actual installation details.

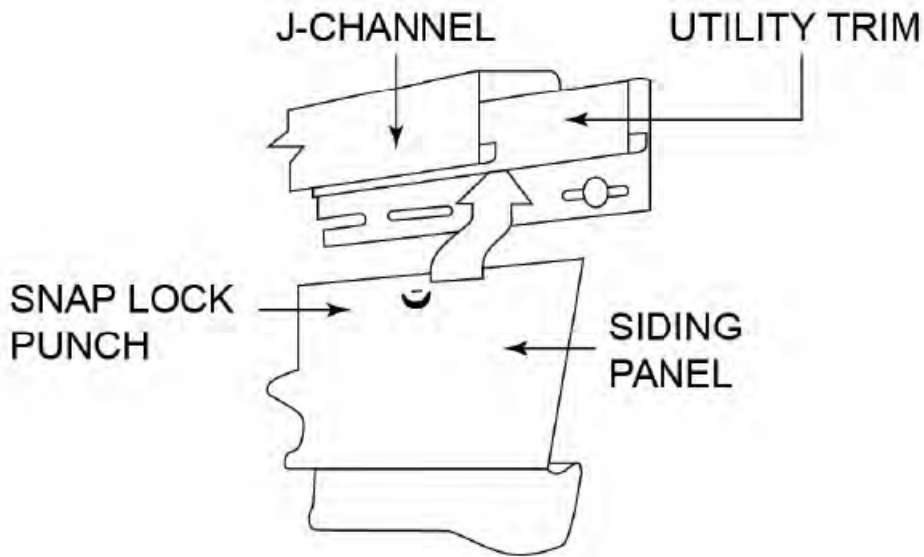
b.

R703.11.1.2 Utility Trim. – pg. 416

New Section.

Where horizontal siding has to be cut or trimmed below windows and at the top of walls, the top edge of the siding shall be secured with utility trim and snap locks or as specified by the manufacturer's installation instructions. See Figures R703.11.1.2(1) and R703.11.1.2(2).

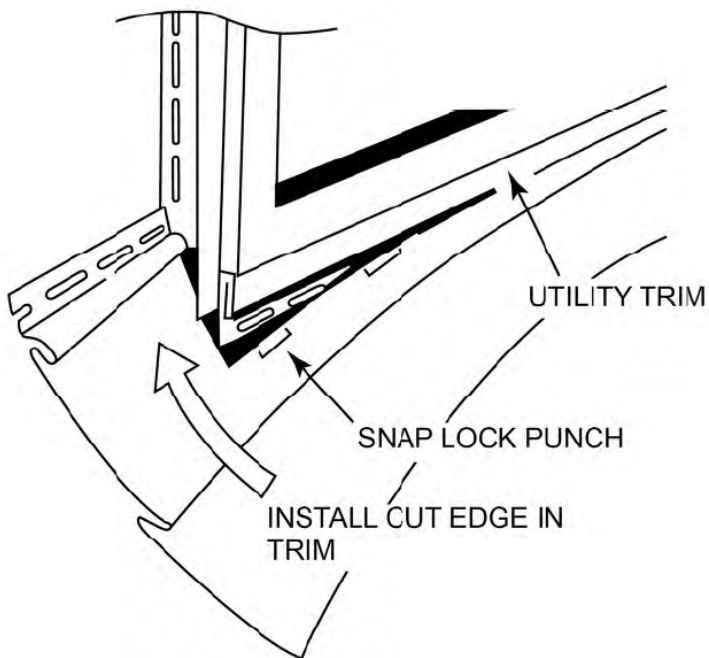
Figure R703.11.1.2 (1) Typical Snap Lock and Utility Trim. – pg. 416
New Figure.



- a. This figure illustrates typical installation details. See the manufacturer’s installation instructions for actual installation details.

R703.11.1.2(2) Typical Snap lock and Utility Trim Under Window. – pg. 417

New Figure.



- a. This figure illustrates typical installation details. See the manufacturer's installation instructions for actual installation details.

R703.11.1.4 Penetration depth. – pg. 417

Deleted the following:

~~Where specified by the manufacturer's instructions and supported by a test report, fasteners are permitted to penetrate into or fully through nailable sheathing or other nailable substrate of minimum thickness specified by the instructions or test report without penetrating into framing. Where the fastener penetrates fully through the sheathing, the end of the fastener shall extend a minimum of 1/4 inch (6.4 mm) beyond the opposite face of the sheathing or nailable substrate.~~

R703.11.1.5 Spacing. – pg. 417

Unless specified otherwise by the manufacturer's instructions, the maximum spacing between fasteners shall be 16 inches (406 mm) for ~~horizontally~~ horizontal siding and 12 inches (305 mm) for ~~vertically~~ vertical siding. Where specified by the manufacturer's instructions and supported by a test report, ~~greater fastener spacing~~ alternative fastener spacing such as 24 inches (610 mm) is permitted.

R703.13 Insulated vinyl siding. – pg. 418

Insulated vinyl siding shall be certified and labeled as conforming to the requirements of ASTM D7793 by an approved ~~quality control~~ agency.

R703.13.1 Insulated vinyl siding and accessories. – pg. 418

Insulated vinyl siding and compatible accessories shall be installed in accordance with Sections R703.11.1 and R703.11.2 and the manufacturer's installation instructions.

R703.14.1.1 Installation. – pg. 418

Unless otherwise specified in the manufacturer's installation instructions, polypropylene siding shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch (11.1 mm), or other nail able substrate composed of wood or wood-based material and fasteners having equivalent withdrawal resistance. Accessories shall be installed in accordance with the manufacturer's installation instructions.

R703.14.1.1.1 Starter strip. – pg. 418

New section.

Horizontal siding shall be installed with a starter strip at the initial course at any location. Where the installation of a starter strip is not possible, other approved equivalents shall be permitted.

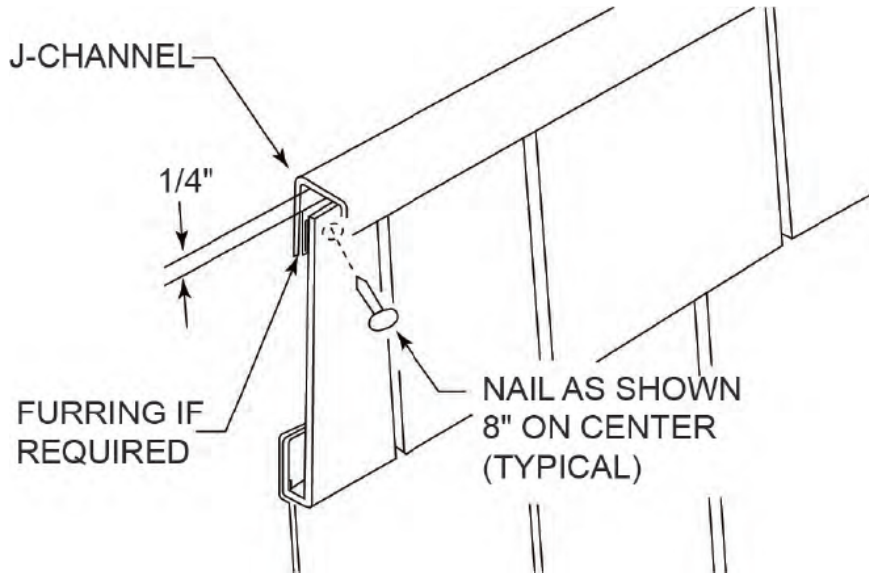
R703.14.1.1.2 Under windows and top of walls. – pg. 418

New section.

Where the nail hem is removed, such as under windows and at the top of walls, nail slot punch or predrilled holes shall be constructed as shown in Figure R703.14.1.1.2 (1).

Figure 703.14.1.1.2(1) Typical polypropylene siding trim under windows and at the top of walls. – pg. 419

New figure.



For SI: 1 inch = 25.4 mm.

Clay asked if we may need to make steel siding contractors aware of these changes. Dillon shared that it is not really a change in the code but more of just showing descriptions/figures. Not anything different than what they are doing currently.

Then there was some discussion in the group about the Inspections Department and John working together to share these changes through Home Builders.

R703.14.1.2 Fastener requirements. – pg. 419

Unless otherwise specified in the manufacturer's installation instructions, nails shall be corrosion resistant, with a minimum 0.120-inch (3 mm) shank and minimum 0.313-inch (8 mm) head diameter. Nails shall be a minimum of 1 ¼ inches (32 mm) long or as necessary to penetrate sheathing or nailable substrate not less than ¾ inch (19.1 mm). Where the nail fully penetrates the sheathing or nailable substrate, the end of the fastener shall extend not less than ¼ inch (6.4 mm) beyond the opposite face of the sheathing or nailable substrate. ~~Staples are not permitted.~~ Spacing of fasteners shall be installed in accordance with the manufacturer's installation instructions.

Table R703.15.1 Cladding minimum fastening requirements for direct attachment over foam plastic sheathing to support cladding weight. – pg. 420

Renamed header to Cladding Fastener Minimum Penetration into Wood Wall Framing through foam sheathing

New notes:

- d. Fastener vertical spacing is an average spacing associated with the following nail count per foot: 6-inch spacing is associated with two nails per foot, 8-inch spacing is associated with 1.5 nails per foot, and 12-inch spacing is associated with one nail per foot.
- f. Cladding weight is the maximum weight of cladding materials in pounds per square foot of wall area. The 3 psf category typically applies to panel and lap siding materials; the 11 psf category typically applies to conventional three-coat stucco of 7/8-inch thickness; and 15 psf to 25 psf categories typically apply to adhered masonry veneers.

R703.18 Fiber-mat reinforced cementitious backer units. – pg. 423

New Section

Fiber-mat reinforced cementitious backer units used on exterior walls as a substrate for the application of exterior finish materials shall comply with ASTM C1325. Installation shall be in accordance with the manufacturer's installation instructions. Backer units shall be installed using corrosion-resistant fasteners. Finish materials shall be installed in accordance with the manufacturer's instructions.

Table R704.3.4 Prescriptive alternative for wood structural panel exterior soffit. – pg. 425

New note

- e. ~~Fastener spacing applies where wood structural panels shall be attached to exterior soffit framing members with specific gravity of at least is 0.42 or larger.~~ Where the specific gravity of exterior soffit framing members is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, the fastener spacing shall be multiplied by 0.67 or the same fastener spacing as prescribed for galvanized steel nails shall be permitted to be used where RSRS-01 (2-inch by 0.099-inch by 0.266-inch head) nails replace 6d box nails and RSRS-03 (2 1/2-inch × 0.131-inch × 0.281-inch head) nails replace 8d common nails or 10d box nails. RSRS is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667. Framing members shall be minimum 2 x 3 nominal with the larger dimension in the cross section aligning with the length of fasteners to provide sufficient embedment depths.

R704.4 Fascia. – pg. 426

New Section

Fascia shall be installed in accordance with the manufacturer's installation instructions.

R704.4.1 Aluminum fascia. – pg. 426

New Section

Aluminum fascia shall be installed in accordance with the manufacturer's installation instructions and comply with Section R704.4.1.1 or R704.4.1.2.

R704.4.1.1 Fascia installation where the design wind pressure is 30 psf or less. – pg. 426

New Section

Where the design wind pressure is 30 pounds per square foot (1.44 kPa) or less, aluminum fascia shall be attached with one finish nail [1 1/4 inches by 0.57 inch by 0.177 inch head diameter (32 mm × 14.5 mm × 4.5 mm)] in the return leg spaced a maximum of 24 inches (610 mm) on center, and the fascia shall be inserted under the drip edge with at least 1 inch (305 mm) of fascia material covered by the drip edge. Where the fascia can not be inserted under the drip edge, the top edge of the fascia shall be secured using one finish nail [1 1/4 inches by 0.57 inch by 0.177 inch head diameter (32 mm × 14.5 mm

× 4.5 mm)] located not more than 1 inch (25 mm) below the drip edge and spaced a maximum of 24 inches (610 mm) on center.

R704.4.1.2 Fascia installation where the design wind pressure exceeds 30 psf. – pg. 426

New Section

Where the design wind pressure is greater than 30 pounds per square foot (1.44 kPa), aluminum fascia shall be attached with one finish nail [1 1/4 inches by 0.57 inch by 0.177 inch head diameter (32 mm × 14.5 mm × 4.5 mm)] in the return leg spaced a maximum of 16 inches (406 mm) on center and one finish nail located not more than 1 inch (25 mm) below the drip edge spaced a maximum of 16 inches (406 mm) on center. As an alternative, the top edge of the fascia is permitted to be secured using utility trim installed beneath the drip edge with snap locks punched into the fascia spaced not more than 6 inches (152 mm) on center.

R705.1 Listing required. – pg. 426

New Section

In addition to complying with other provisions of this code, building integrated photovoltaic (BIPV) systems used as exterior wall coverings or fenestration shall be listed and labeled in accordance with UL 1703 or both UL 61730-1 and UL 61730-2.

Chapter 8

Roof-Ceiling Construction

R801.3 Roof drainage - pg. 427

In areas where expansive soils or collapsible soils are known to exist, all dwellings and townhomes shall have a controlled method of water disposal from roofs that will collect and discharge roof drainage to the ground surface not less than 5 feet (1524 mm) from foundation walls or to an approved drainage system.

TABLE R802.5.2 (1) Rafter/Ceiling Joist Heel Joint Connections - pg. 449

Verbiage change: Required number of 16D common nails per heel joint splice connection

R802.11 Roof tie uplift resistance – pg. 452

Exceptions:

2. Where the specific gravity of the wood species used for wall framing is greater than or equal to 0.42 in accordance with AWC NDS and the uplift force per rafter or truss does not exceed 200 pounds (90.8 kg) as determined by **Table R802.11**.

R807.1 Attic access - pg.470

Buildings with ~~combustible ceiling or roof construction~~ attics shall have an access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m²). The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members.

The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other location with *ready access*. Where located in a wall, the opening shall be not less than 22 inches wide by 30 inches high (559 mm wide by 762 mm high). Where the access is located in a ceiling, minimum unobstructed headroom in the

attic space above the access shall be not less than 30 inches (762 mm) along one side or more at some point above the access measured vertically from the bottom of ceiling framing members. See **Section M1305.1.2** for access requirements where mechanical *equipment* is located in *attics*.

Chapter 9

Roof Assemblies

R902.1 Roof assemblies – pg. 471

Roof decks shall be covered with materials as set forth in Sections R904 or with roof coverings as set forth in Sections R905. Class A, B or C roof assemblies roofing shall be installed in jurisdictions designed by law as requiring their use or where the edge of the roof deck is less than 3 feet (914 mm) from a lot line. Where Class A, B or C roof assemblies are required, they shall be tested in accordance with ASTM E108 or UL 790. Where required, the roof assembly shall be listed and identified as to class by an approved testing agency.

1. Class A roof assemblies include those with coverings of brick, masonry and exposed concrete roof deck.
2. Class A roof assemblies include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible roof decks.
3. Class A roof assemblies include minimum 16 ounces per square foot (4.882 kg/m²) cooper sheets installed over combustible roof decks.
4. Class A roof assemblies include slate installed over underlayment over combustible roof decks.

R902.2 Fire-retardant-treated shingles and shakes. – pg. 471

Fire-retardant-treated wood shakes and shingles shall be treated by impregnation with chemicals by the full-cell vacuum-pressure process, in accordance with AWPAC1. Each bundle shall be marked to identify the manufactured unit and the manufacturer, shall be labeled to identify the classification of the material in accordance with the testing required in Section R902.1, the treating company and ~~a quality control~~ an approved agency.

R902.3 Building-integrated photovoltaic (BIPV) product systems – pg. 471

Building-integrated photovoltaic (BIPV) products systems installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with UL 7103. Class A, B or C BIPV products shall be installed where the edge of the roof is less than 3 feet (914) from the lot line.

R905.1.1 Underlayment – pg. 472

Underlayment in accordance with this section is required for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and ~~photovoltaic shingles~~ building-integrated photovoltaic (BIPV) roof coverings shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226; D1970; D2626; D4869; D6380, Class M; D6757; or D8257 shall bear a label indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). Underlayment shall be applied in accordance with Table R905.1.1(2). Underlayment shall be ~~attached~~ fastened in accordance with Table R905.1.1(3).

Exception: Structural metal panels that do not require a substrate or underlayment.

2 other exemptions deleted

Tables R905.1.1(1) Underlayment Types, R905.1.1(2) Underlayment Application, and R905.1.1(3) Underlayment Attachment – pg. 472-475

Changes were ASTM numbers and columns addressing solar panels on roofs.

R905.2.1 Sheathing requirements – pg. 475

Asphalt shingles shall be fastened to wood structural panels or structural solid lumber sheathing.

R905.2.8.2 Valleys – pg. 476

3. For closed valleys (valleys covered with shingles), valley lining of one ply smooth roll roofing complying with ASTM D6380 and not less than 36 inches wide (914 mm) or valley lining as described in item 1 or 2 shall be permitted. Self-adhering polymer-modified bitumen underlayment complying with ASTM D1970 and not less than 36 inches (914 mm) wide shall be permitted in lieu of the lining material.

R905.2.8.4 Other flashing – pg. 477

Flashing against a vertical front wall, as well as soil stack, vent pipe and chimney flashing shall be applied in accordance with the asphalt shingle ~~printed~~manufacturer's instructions.

R905.4.1 Sheathing requirements – pg. 478

Metal roof shingles shall be fastened to wood structural panels, solid lumber sheathing or closely fitted lumber sheathing, except where the roof covering is especially designed to be applied to spaced lumber sheathing.

R905.4.4.1 Wind resistance of metal roof shingles – pg. 478

Metal roof shingles fastened to wood structural panels, solid lumber sheathing or closely fitted lumbar sheathing shall be tested in accordance with ASTM D3161, FM 4474, UL 580 or UL 1897. Metal roof shingles tested in accordance with ASTM D3161 shall meet the classification requirements to Table R905.4.4.1 for the appropriate maximum basic wind speed and the metal shingle packaging shall bear a label to indicate compliance with ASTM D3161 and the required classification in Table R905.2.4.1.

R905.5.1 Sheathing requirements – pg. 479

Mineral-surfaced roll roofing shall be fastened to wood structural panels or solid lumber sheathing.

R905.5.6 Wind resistance of mineral-surfaced roll roofing – pg. 479

New Section

Mineral-surfaced roll roofing shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

R905.6.1 Sheathing requirements – pg. 479

Slate shingles shall be fastened to ~~solidly sheathed roofs~~wood structural panels or solid lumber sheathing.

R905.6.5 Wind resistance of slate shingles – pg. 479

New Section

Slate shingles shall be tested in accordance with ASTM D3161. Slate shingle packaging shall bear a label indicating compliance with ASTM D3161 and the required classification in Table R905.6.5

Table R905.6.5 Classification of Slate Shingles Tested in Accordance with ASTM D3161 – pg. 479

New Table

**TABLE R905.6.5
CLASSIFICATION OF SLATE SHINGLES TESTED IN ACCORDANCE WITH ASTM D3161**

MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}, FROM FIGURE R301.2(2) (mph)	MAXIMUM BASIC WIND SPEED, V_{asd}, FROM TABLE R301.2.1.3 (mph)	ASTM D3161 CLASSIFICATION
110	85	A, D or F
116	90	A, D or F
129	100	A, D or F
142	110	F
155	120	F
168	130	F
181	140	F
194	150	F

For SI: 1 mph=0.447 m/s

R905.7.1 Sheathing requirements – pg. 480

Wood shingles shall be installed on a solid or spaced sheathing fastened to wood structural panels, solid lumber sheathing or spaced lumber sheathing. Where spaced lumber sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch by 4-inch (25 mm by 102 mm) spaced sheathing is installed at 10 inches (254 mm) or greater, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards. Where wood shingles are installed over spaced sheathing and the underside of the shingles are exposed to the attic space, the attic shall be ventilated in accordance with Sections R806.1, R806.2, R806.3 and R806.4. The shingles shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.

R705.7.1.1 Solid sheathing required. – pg. 480

In areas where the average daily temperature in January is 25°F (-4°C) or less, wood structural panels or solid lumber sheathing is required on that portion of the roof deck requiring the application of an ice barrier.

R905.7.5 Wind resistance of wood shingles – pg. 480

New Section

In regions where wind design is required in accordance with Figure R301.2.1.1, wood shingles shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height

and exposure in accordance with **Table R301.2.1(2)**. In regions where wind design is not required in accordance with **Figure R301.2.1.1**, wood shingles are permitted to be attached in accordance with **Section R905.7.6**.

R905.8.1 Sheathing requirements. – pg. 481

Wood shakes shall be ~~used only on solid or spaced~~ fastened to wood structural panels, solid lumber sheathing or spaced lumber sheathing. Where spaced lumber is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch by 4-inch (25 mm by 102 mm) spaced lumber sheathing is installed at 10 inches (254 mm) on center, additional 1-inch by 4-inch (25 mm by 102 mm) boards shall be installed between the sheathing boards. Where wood shakes are installed over spaced sheathing and the underside of the shakes are exposed to the attic space, the attic shall be ventilated in accordance with Sections R806.1, R806.2, R806.3 and R806.4. The shakes shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.

R905.8.1.1 Solid sheathing required. – pg. 481

In areas where the average daily temperature in January is 25°F (-4°C) or less, wood structural panels or solid lumber sheathing is required on that portion of the roof deck requiring an ice barrier.

R905.8.6 Wind resistance of wood shakes – pg. 482

New Section

In regions where wind design is required in accordance with **Figure R301.2.1.1**, Wood shakes shall be installed to resist the component and cladding loads specified in **Table R301.2.1(1)**, adjusted for height and exposure in accordance with **Table R301.2.1(2)**. In regions where wind design is not required in accordance with **Figure R301.2.1.1**, wood shakes are permitted to be attached in accordance with **Section R905.8.8**.

R905.9.4 Wind resistance of built-up roofs – pg. 483

New Section

Built-up roof coverings shall be tested in accordance with **FM 4474, UL 580 or UL 1897** and installed to resist the component and cladding loads specified in **Table R301.2.1(1)**, adjusted for height and exposure in accordance with **Table R301.2.1(2)**.

R905.10.1 Sheathing requirements. – pg. 483

Metal roof panel roof coverings shall be fastened to wood structural panels, solid lumber sheathing or applied to solid or spaced lumber sheathing, except where the roof covering is specifically designed to be applied to spaced supports.

R905.10.5 Wind resistance of metal roof panels. – pg. 484

New Section

Metal roof panels shall be installed to resist the component and cladding loads specified in **Table R301.2.1(1)**, adjusted for height and exposure in accordance with **Table R301.2.1(2)**. Metal roof panels applied to a solid or closely fitted deck shall be tested for wind resistance in accordance with FM 4474, UL580, or UL 1897. Structural standing seam metal panel roof systems shall be tested for wind

resistance in accordance with **ASTM E1592** or **FM 4474**. Structural through-fastened metal panel roof systems shall be tested for wind resistance in accordance with **ASTM E1592**, **FM 4474** or **UL 580**.

Exceptions:

1. Metal roofs constructed of cold-formed steel shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2208.1 of the International Building Code.
2. Metal roofs constructed of aluminum shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2002.1 of the International Building Code.

R905.11.4 Wind resistance of modified bitumen roofing – pg. 485

New Section

Modified bitumen roofing shall be tested in accordance with **FM 4474**, **UL 580** or **UL 1897** and installed to resist the component and cladding loads specified in **Table R301.2.1(1)**, adjusted for height and exposure in accordance with **Table R301.2.1(2)**.

R905.12 Single-ply roofing. – pg. 485

The installation of ~~thermoset~~ single-ply membrane roof coverings shall comply with the provisions of this section.

Table R905.12 Single-Ply Roofing Material Standards – pg. 485

New Table

**TABLE R905.12
SINGLE-PLY ROOFING MATERIAL STANDARDS**

MATERIAL	STANDARD
Chlorosulfanated polyethylene (CSPE) or polyisobutylene (PIB)	ASTM D5019
Ethylene propylene diene monomer (EPDM)	ASTM D4637
Ketone Ethylene Ester (KEE)	ASTM D6754
Polyvinyl chloride (PVC) or (PVC/KEE)	ASTM D4434
Thermoplastic polyolefin (TPO)	ASTM D6878

R905.12.1 Slope. – pg. 485

~~Thermoset~~ Single-ply membrane roof coverings shall have a design slope of not less than ¼ unit vertical in 12 units horizontal (2-percent slope) for drainage.

R905.12.2 Material standards. – pg. 485

~~Thermoset~~ Single-ply membrane roof coverings shall comply with ~~ASTM D4637~~ or ~~ASTM D5019~~ the material standards in Table R905.12.

R905.12.3 Application – pg. 485

~~Thermoplastic Single-ply roofs~~ membrane roof coverings shall be installed in accordance with this chapter and the manufacturer's installation instructions.

R905.12.4 Wind resistance of single-ply roofing – pg. 485

New Section

Single-ply roofing shall be tested in accordance with FM 4474, UL 580 or UL 1897 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

R905.13.4 Wind resistance of sprayed polyurethane foam roofing – pg. 486

New Section

Sprayed polyurethane foam roofing shall be tested in accordance with FM 4474, UL 580 or UL 1897 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

R905.14.4 Wind resistance of liquid-applied roofing. – pg. 486

New Section

Liquid-applied roofing shall be tested in accordance with FM 4474, UL 580 or UL 1897 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

R905.15.1 Sheathing requirements. – pg. 486

~~Photovoltaic BIPV shingles shall be applied to a solid or closely fitted deck~~ fastened to wood structural panels, solid lumber sheathing or closely fitted lumber sheathing, except where the roof covering is specifically designed to be applied over spaced lumber sheathing.

R905.15.2 Slope. – pg. 486

~~Photovoltaic BIPV shingles shall be used only on roof slopes of 2 units vertical in 12 units horizontal (2:12) or greater.~~

R905.15.4 Material standards. – pg. 486

~~Photovoltaic BIPV shingles shall be listed and labeled in accordance with UL 7103 or with both UL 61730.1 and UL 61730.2.~~

R905.15.5 Attachment. – pg. 486

~~Photovoltaic BIPV shingles shall be attached in accordance with the manufacturer's installation instructions.~~

R905.15.6 Wind resistance. – pg. 486

~~Photovoltaic BIPV shingles shall comply with the classification requirements of Table R905.15.6 for the appropriate maximum basic wind speed.~~

Table R905.15.6 Classification of ~~Photovoltaic~~ BIPV Shingles. – pg. 486

Changed title name.

R905.16.1 Sheathing requirements. – pg. 486

BIPV roof panels shall be applied to a solid or closely fitted deck, fastened to wood structural panels, solid lumber sheathing or closely-fitted lumber sheathing, except where the roof covering is specifically designed to be applied over spaced lumber sheathing.

R905.16.7 Wind resistance of BIPV roof panels. – pg. 487

BIPV roof panels shall be tested in accordance with UL 7103 and installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

Table R906.2 Material Standards for Roof Insulation. – pg. 487

Added: ASTM C1902

R908.3 Roof replacement. – pg. 487

Exceptions:

1. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck and the existing sheathing is not water soaked or deteriorated to the point that is not adequate as a base for additional roofing, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section R905 where permitted by the roof covering manufacturer and new ice barrier underlayment manufacturer.
2. Where the existing roof includes a self-adhered underlayment and the existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing self-adhered underlayment shall be permitted to remain in place and covered with underlayment complying with Table R905.1.1(1), Table R905.1.1(2) and Table R905.1.1(3).
3. Where the existing roof included one later of self-adhered underlayment and then existing layer cannot be removed without damaging the rood deck, a second layer of self-adhered underlayment is permitted to be installed over the existing self-adhered underlayment provided that the following conditions are met:
 - 3.1 It is permitted by the roof covering manufacturer and new self-adhered underlayment manufacturer.
 - 3.2 The existing sheathing is not water soaked or deteriorated to the point that it is not adequate as a base for additional roofing.
 - 3.3 The second layer of self-adhered underlayment is installed such that buildup of material at walls, valleys, roof edges, end laps, and side laps does not exceed two layers.

R908.4 Roof coverings. – pg. 488

Exceptions: A roof recover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for the additional roofing.
2. Where the existing roof covering is slate, clay, cement or asbestos-cement title.
3. Where the existing roof has two or more applications of any type of roof covering.

R908.4.1 Roof recovering over wood shingles or shakes. – pg. 488

Section title change.

R909 Roof Coatings. – pg. 488

New Section

R909.1 General. – pg. 488

New Section

The installation of a roof coating in a roof covering shall comply with the requirements of Section R902, Section R904 and this section. Roof Coatings shall be installed in accordance with the manufacturer’s installation instructions.

R909.2 Material standards. – pg. 488

Roof coating materials shall comply with one of the standards in Table R909.2.

Table R909.2 Roof Coating Material Standards. – pg. 488

New Table

**TABLE R909.2
ROOF COATING MATERIAL STANDARDS**

COATING MATERIAL	STANDARD
Acrylic coating	ASTM D6083
Asphaltic emulsion coating	ASTM D1227
Asphalt coating	ASTM D2823
Asphalt roof coating	ASTM D4479
Aluminum-pigmented asphalt coating	ASTM D2824
Silicone coating	ASTM D6694
Moisture-cured polyurethane coating	ASTM D6947

Chapter 10

Chimneys and Fireplaces

R1001.11 Fireplace clearance. – pg. 492

Wood beams, joists, studs and other combustible material shall have a clearance of not less than 2 inches (51 mm) from the front faces and sides of masonry fireplaces and not less than 4 inches (102 mm) from the back faces of masonry fireplaces. The airspace shall not be filled, except for noncombustible material or to provide fireblocking in accordance with Section R1001.12.

Exceptions:

3. Exposed combustible trim and the edges of sheathing materials such as wood siding, flooring and gypsum board shall be permitted to abut the masonry fireplace sidewalls and hearth extension in accordance with Figure R1001.11, provided such combustible trim or sheathing is not less than ~~12 inches (305 mm)~~ 8 inches (203 mm) from the inside surface of the nearest firebox lining. Where the fireplace opening is 6 square feet (0.6 m²) or larger, such combustible trim or sheathing shall be permitted to abut the masonry fireplace sidewalls and hearth extension provided that such combustible trim or sheathing is not less than 12 inches (305 mm) from the inside surface of the nearest firebox lining.

R1003.18 Chimney clearances. – pg. 497

Exceptions:

2. Where masonry chimneys are constructed as part of masonry or concrete walls, combustible materials shall not be in contact with masonry or concrete wall less than ~~12 inches (305)~~ 8 inches (203 mm) from the inside surface of the nearest flue lining.
3. ~~Exposed combustible trim and the edges of sheathing materials, such as wood siding and flooring.~~ Combustible materials shall be permitted to abut the masonry chimney side walls, in accordance with Figure R1003.18, provided such combustible material is not less than 8 inches (203 mm) from the inside surface of the nearest flue lining.

R1004.4 Unvented gas log heaters. – pg. 498

An unvented gas log heater or a fireplace insert shall not be installed in a factory-built fireplace unless the fireplace system has been specifically tested, listed and labeled for such use in accordance with UL 127.

R1005.9 Factory-built chimney offsets. – pg. 499

New Section

Where a fireplace manufacturer's instructions do not address factory-built chimney offsets, no part of the chimney shall be at an angle of more than 30 degrees (0.52 rad) from vertical at any point in the assembly and the chimney assembly shall not include more than four elbows.

R1006.2 Exterior air intake. – pg. 499

The exterior air intake shall be capable of supplying all *combustion air* from the exterior of the dwelling unit or from spaces within the dwelling unit ventilated with outdoor air such as nonmechanically ventilated crawl or *attic* spaces. The exterior air intake shall not be located within the garage or *basement* of the dwelling unit. The exterior air intake, for other than *listed* factory-built fireplaces, shall not be located at an elevation higher than the firebox. The exterior air intake shall be covered with a corrosion-resistant screen of 1/4-inch (6.4 mm) mesh.

2024 IRC Chapters 12-24 presented by Jon Woltmann

Chapter 12

Mechanical Administration

No new changes.

Chapter 13

Existing amendment

General Mechanical System Requirements

M1301.1.1 Flood-resistant installation. – pg. 578

Is hereby deleted in its entirety.

Chapter 14

Heating and Cooling Equipment and Appliances

M1401.5 Flood hazard. – pg. 584

Is hereby deleted in its entirety.

M1411 Heating and Cooling Equipment – pg. 587

New Section

M 1411.1 Approved refrigerants. – pg. 587

Refrigerants used in direct refrigerating systems shall conform to the applicable provisions of ANSI/ASHRAE 34.

M1411.2 Refrigeration system listing. – pg. 587

Refrigeration systems using Group A2L refrigerants shall be listed and labeled to UL/CSA 60335-2-40. Refrigeration systems using Group A1 refrigerants shall be listed to UL/CSA 60335-2-40 or UL 1995. The equipment shall be installed in accordance with the listing.

M1411.3 Refrigeration system installation. – pg. 587

Refrigeration systems shall be installed in accordance with the manufacturer's installation instructions. After installation, the manufacturer's installation instructions, owner's manuals, service manuals and any other product literature provided with the equipment shall be attached to the indoor unit or left with the homeowner.

M1411.4 Field-installed accessories. – pg. 587

Field-installed accessories shall be installed in accordance with the accessory and equipment manufacturer's installation instructions. Accessories installed in the ductwork of Group A2L refrigeration systems shall not contain electric heating elements, open flames, or devices switching electrical loads greater than 2.5 kVA.

M1411.5 Signs and identification. – pg. 587

Each refrigeration system using Group A2L refrigerant shall have the following information legibly and permanently indicated on a markable label provided by the equipment manufacturer. 1. Contact

information of the responsible company that installed the refrigeration system. 2. The system refrigerant charge and the refrigerant number.

M1411.6 Refrigerant charge. – pg. 587

Refrigeration systems shall have refrigerant charge in compliance with the equipment manufacturer's installation instructions and the requirements of the listing. Group A2L refrigerant charge for an individual refrigeration system shall not exceed 34.5 pounds (15.7 kg).

M1411.7 Group A2L refrigerant piping testing. – pg. 587

The piping system containing Group A2L refrigerant shall be tested in accordance with the manufacturer's installation instructions and the requirements of the listing.

Chapter 15

Existing amendment

Exhaust Systems

M1502.4.2 Duct installation. – pg. 590

Exhaust ducts shall be supported at intervals not to exceed ~~12~~ 4 feet (3658 mm) and shall be secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Exhaust duct joints shall be sealed in accordance with Section M1601.4.1 and shall be mechanically fastened. Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation

Existing amendment

1503.6 Makeup air required. – pg. 592

Exception is hereby deleted in its entirety.

~~Exception: Makeup air is not required for exhaust systems installed for the exclusive purpose of space cooling and intended to be operated only when windows or other air inlets are open.~~

Existing amendment

1504.4.1 Joints, seams and connections. – 597

Is hereby amended to read as follows:

Exception:

3. For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional closure systems shall not be required for continuously welded joints and seams and locking-type joints and seams. ~~This exception shall not apply to snap-lock and button-lock type joints and seams that are located outside of conditioned spaces.~~

Chapter 16

Duct Systems

Existing amendment, flood section and we have our local ordinance – pg. 597

M1601.4.10 Flood hazard areas. – pg. 597

Is hereby deleted in its entirety.

M1602.2 Return air openings. – pg. 598

New Section

Return air openings for heating, ventilation and air-conditioning systems shall comply with all of the following:

1. Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space.
2. The amount of return air taken from any room or space except mechanical rooms, boiler rooms or furnace rooms shall be not greater than the flow rate of supply air delivered to such room or space. Return air taken from mechanical rooms, boiler rooms or furnace rooms shall serve only the mechanical room and shall be permitted to be taken from mechanical rooms that have no dedicated supply duct.
3. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturer's installation instructions, Manual D or the design of the registered design professional.
4. Where return air is taken from a mechanical room, boiler room or furnace room with combustion appliances only sealed combustion appliances shall be permitted within the mechanical room.
5. Where return air is taken from a mechanical room, boiler room or furnace room, the pressure differential across the mechanical room, boiler room or furnace room door shall be limited to 0.01 inch wc (2.5 pascals) or less by undercutting the door, or installing a louvered door or transfer grille, or by some other means.
6. Where return air is taken from a closet, the return air shall be not more than 30 cubic feet per minute (15 l/s), shall serve only the closet and shall not require a dedicated supply duct, and the closet door shall be undercut not less than 1.5 inches (38 mm) or the closet shall include a louvered door or transfer grille with a net free area of not less than 30 square inches (194 cm²).
7. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, mechanical room, boiler room, furnace room or unconditioned attic.

Exceptions:

1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen only, and are located not less than 10 feet (3048 mm) from the cooking appliances.
2. Dedicated forced-air systems serving only the garage shall not be prohibited from obtaining return air from the garage.
3. Return air taken from closets shall serve only the closet and shall be permitted to be taken from closets that have no dedicated supply duct.

Chapter 17

Existing amendment

Combustion Air

M1701.2 Opening location. – pg. 599

Is hereby deleted in its entirety.

Chapter 18

Chimneys and Vents

No new changes.

Chapter 19

Special Appliances, Equipment and Systems

No new changes.

Chapter 20

Boilers and Water Heaters

Existing amendment

2001.4 Flood-resistant installation. – pg. 605

Is hereby deleted in its entirety.

Existing amendment

M2005.1 General. – pg. 606

Water heaters shall be installed in accordance with the North Dakota State Plumbing Code, Chapter 28, the manufacturer's instructions and the requirements of this code.

Chapter 21

Hydronic Piping

Existing amendment

M2101.3 Protection of potable water. – pg. 609

The potable water system shall be protected from backflow in accordance with the provisions listed in ~~Section P2902~~ the North Dakota State Plumbing Code.

Existing amendment

M2101.10 Tests. – pg. 610

New hydronic piping systems shall be tested hydrostatically at a pressure of one and one-half times the maximum system design pressure, but not less than 100 pounds per square inch (689 kPa). The duration of each test shall be not less than 15 minutes. Hydronic piping to be embedded in concrete shall be pressure tested and inspected prior to pouring concrete.

Existing amendment

M2103.3 Piping joints. – pg. 612

2. Copper tubing shall be joined by brazing complying with ~~Section 3003.1~~ the North Dakota State Plumbing Code.

Chapter 22

Special Piping and Storage Systems

Existing amendment

M2201.6 Flood-resistant installation. – pg. 616

Is hereby deleted in its entirety.

Chapter 23

Solar Thermal Energy Systems

No new changes.

Chapter 24

Fuel Gas

Existing amendment

G2404.7 (301.11) Flood hazard. – pg. 627

Is hereby deleted in its entirety.

Existing amendment

FIGURE G2407.6.1(1) [304.6.1(1)] All Air From Outdoors-Inlet Air From Ventilated Crawl Space and Outlet Air to Ventilated Attic – pg. 630

Is hereby deleted in its entirety.

Existing amendment

FIGURE G2407.6.1(2) [304.6.1(2)] All Air From Outdoors Through Ventilated Attic – pg. 630

Is hereby deleted in its entirety.

Existing amendment

G2407.11 (304.11) Combustion air ducts. – pg. 632

Combustion air ducts shall comply with all of the following:

5. Ducts shall not be screened where terminating in an attic space.

Existing amendment

G2413.6 (402.6) Allowable pressure drop. – pg. 664

The design pressure loss in any piping system under maximum demand, from the point of delivery to the inlet connection of all appliances served, shall be such that the supply pressure at each appliance inlet is greater than or equal to the minimum pressure required by the appliance but such pressure loss shall not be greater than .5 inch water column for gas pipe systems operating at less than 2psi.

Existing amendment

G2417.4.1 (406.4.1) Test pressure. – pg. 670

The test pressure to be used shall be not less than 1 1/2 times the proposed maximum working pressure, but not less than 25 ± psig (20 kPa gauge), irrespective of design pressure. Where the test

pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

Existing amendment

G2425.12 (501.12) Residential and low-heat appliances flue lining systems. – pg. 676

Flue lining systems for use with residential-type and low-heat appliances shall be limited to the following:

1. Clay flue lining complying with the requirements of ASTM C315 or equivalent when each appliance connected into the masonry chimney has a minimum input rating greater than 400,000 Btu/h. Clay flue lining shall be installed in accordance with Chapter 10.
2. Listed chimney lining systems complying with UL 1777.
3. Other approved materials that will resist, without cracking, softening or corrosion, flue gases and condensate at temperatures up to 1,800°F (982°C).

a. Aluminum (1100 or 3003 alloy or equivalent) not less than 0.032 inches thick up to 8 inches in diameter.

b. Stainless steel (304 or 430 alloy or equivalent) not less than 26 gauge (0.018 inches thick) to 8 inches in diameter or not less than 24 gauge (0.024 inches thick) 8 inches in diameter and larger

When a metal liner other than a listed chimney liner is used, a condensation drip tee shall be installed and supported in an approved manner.

Existing amendment

G2427.5.2 (503.5.3) Masonry chimneys. – pg. 678

Masonry chimneys shall be built and installed in accordance with NFPA 211 and shall be lined in accordance with G2425.12 with an approved clay flue lining, a chimney lining system listed and labeled in accordance with UL 1777 or other approved material that will resist corrosion, erosion, softening or cracking from vent gases at temperatures up to 1,800°F (982°C).

Existing amendment

G2439.7.2 (614.9.2) Duct installation. – pg. 705

Exhaust ducts shall be supported at 4-foot (1219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude more than 1/8 inch (3.2 mm) into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

Existing amendment

G2442.4 (618.4) Screen. – pg. 707

Required outdoor air inlets shall be covered with a screen having 1/4-inch (6.4 mm) openings. Required outdoor air inlets serving a nonresidential portion of a building shall be covered with screen having openings larger than ¼ inch (6.4mm) and not larger than ½ inch.

Chapters 25-43

Are hereby deleted in their entirety.

Appendix BE presented by Shawn Ouradnik

Appendix BE Radon Control Methods.

Is hereby amended to read as follows:

BE101 Scope – pg. 941

BE101.1 General. – pg. 941

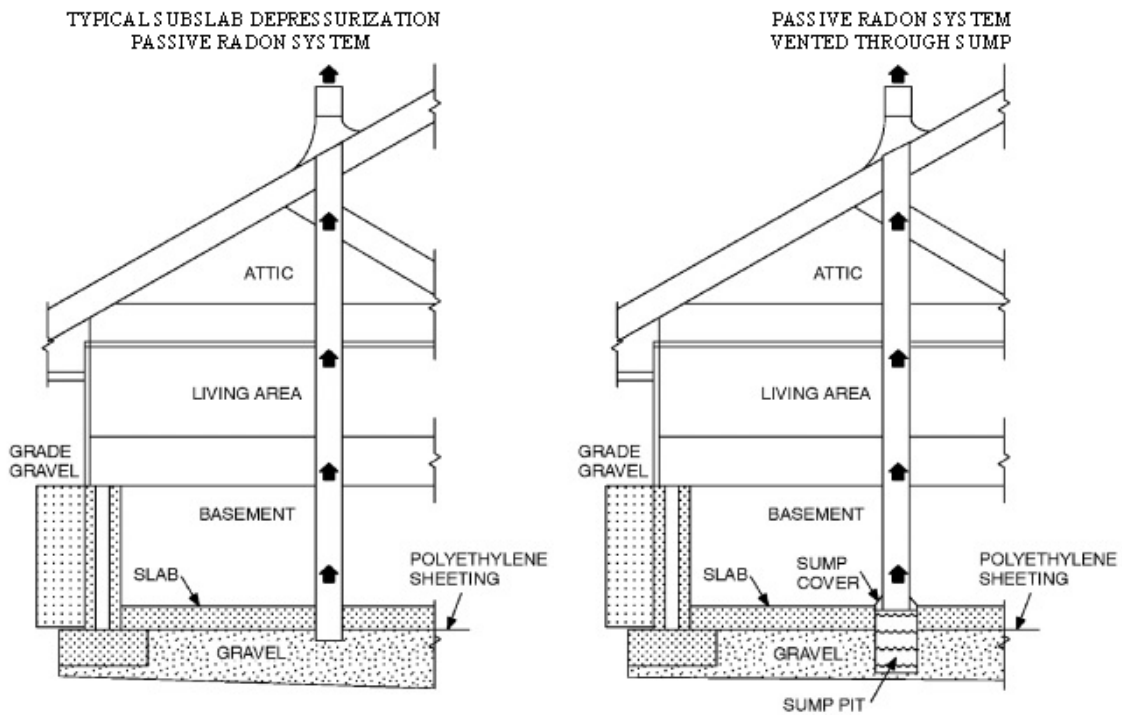
This appendix contains requirements for new construction in *jurisdictions* where radon-resistant construction is required.

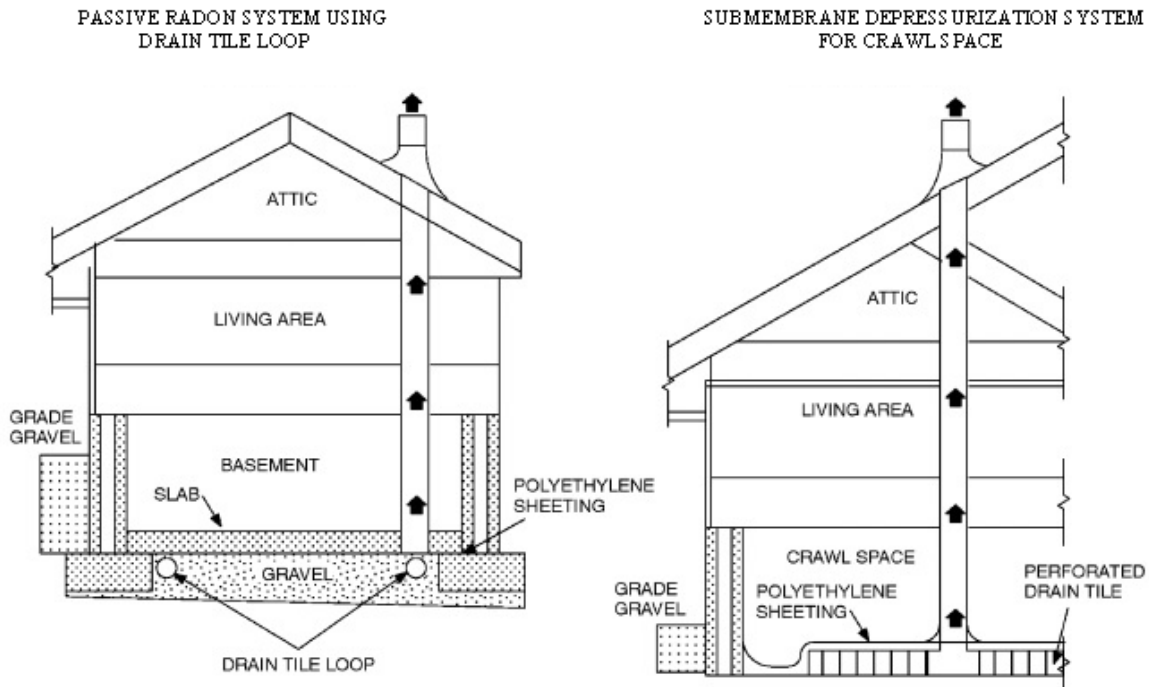
BE102 Definitions – pg. 946

BE102.1 General. – pg. 946

The following construction techniques are intended to resist radon entry and prepare the building for post-construction radon mitigation, if necessary (see Figure BE 103.1). These techniques are required in areas where designated by the jurisdiction. All potential entry routes, including but not limited to joints, penetrations, gaps, cracks, and openings, shall be cleared of debris and sealed.

Figure BE103.1 Radon-Resistant Construction Details for Four Foundation Types. – pg. 947





BE103.2 Subfloor preparation. – pg. 947

A layer of gas-permeable material shall be placed under all concrete slabs and other floor systems that directly contact the ground and are within the walls of the living spaces of the building, to facilitate future installation of a subslab depressurization system, if needed. The gas-permeable layer shall consist of one of the following:

1. A uniform layer of clean aggregate, not less than 4 inches (102 mm) thick. The aggregate shall consist of material that will pass through a 2-inch (51 mm) sieve and be retained by a ¼-inch (6.4 mm) sieve.
2. A uniform layer of sand (native or fill), not less than 4 inches (102 mm) thick, overlain by a layer or strips of geotextile drainage matting designed to allow the lateral flow of soil gases.
3. Other materials, systems or floor designs with demonstrated capability to permit depressurization across the entire subfloor area.

BE103.5 Passive submembrane depressurization system. – pg. 948

In buildings with crawl space foundations, the following components of a passive submembrane depressurization system shall be installed during construction.

Exception: Buildings in which an approved mechanical crawl space ventilation system or other equivalent system is installed.

BE103.5.1 Ventilation. – pg. 948

Crawl spaces shall be provided with vents to the exterior of the building. The minimum net area of ventilation openings shall comply with Section R408.1.

BE103.5.2 Soil-gas-retarder. – pg. 948

The soil in crawl spaces shall be covered with a continuous layer of minimum 6-mil (0.15 mm) polyethylene soil-gas-retarder. The ground cover shall be lapped not less than 12 inches (305 mm) at joints and shall extend to all foundation walls enclosing the crawl space area.

BE103.5.3 Vent pipe. Pg. 948

A plumbing tee or other approved connection shall be inserted horizontally beneath the sheeting and connected to a 3- or 4-inch-diameter (76 or 102 mm) fitting with a vertical vent pipe installed through the sheeting. The vent pipe shall be extended up through the building floors, and terminate not less than 12 inches (305 mm) above the roof in a location not less than 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point, and 10 feet (3048 mm) from any window or other opening in adjoining or adjacent buildings.

BE103.6 Passive subslab depressurization system. – pg. 948

In basement or slab-on-grade buildings, the following components of a passive subslab depressurization system shall be installed during construction.

BE103.6.1 Vent pipe. - pg. 948

A minimum 3-inch-diameter (76 mm) ABS, PVC or equivalent gastight pipe shall be embedded vertically into the subslab aggregate or other permeable material before the slab is cast. A "T" fitting or equivalent method shall be used to ensure that the pipe opening remains within the subslab permeable material. Alternatively, the 3-inch (76 mm) pipe shall be inserted directly into an interior perimeter drain tile loop or through a sealed sump cover where the sump is exposed to the subslab aggregate or connected to it through a drainage system.

The pipe shall be extended up through the building floors, and terminate not less than 12 inches (305 mm) above the surface of the roof in a location not less than 10 feet (3048 mm) away from any window or other opening into the conditioned spaces of the building that is less than 2 feet (610 mm) below the exhaust point, and 10 feet (3048 mm) from any window or other opening in adjoining or adjacent buildings.

BE103.6.2 Multiple vent pipes. – pg. 948

In buildings where interior footings or other barriers separate the subslab aggregate or other gas-permeable material, each area shall be fitted with an individual vent pipe. Vent pipes shall connect to a single vent that terminates above the roof or each individual vent pipe shall terminate separately above the roof.

BE103.7 Vent pipe drainage. – pg. 948

Components of the radon vent pipe system shall be installed to provide positive drain-age to the ground beneath the slab or soil-gas-retarder.

BE103.8 Vent pipe accessibility. – pg. 949

Radon vent pipes shall be accessible for future fan installation through an attic or other area outside the habitable space.

Exception: The radon vent pipe need not be accessible in an attic space where an approved roof-top electrical supply is provided for future use.

BE103.9 Vent pipe identification. – pg. 949

Exposed and visible interior radon vent pipes shall be identified with not less than one label on each floor and in accessible attics. The label shall read: "Radon Reduction System."

BE103.10 Combination foundations. – pg. 949

Combination basement/crawl space or slab-on-grade/crawl space foundations shall have separate radon vent pipes installed in each type of foundation area. Each radon vent pipe shall terminate above the roof or shall be connected to a single vent that terminates above the roof.

BE103.11 Building depressurization. – pg. 949

Joints in air ducts and plenums in unconditioned spaces shall meet the requirements of Section M1601. Thermal envelope air infiltration requirements shall comply with the energy conservation provisions in Chapter 11. Fire blocking shall meet the requirements contained in Section R302.11.

BE103.12 Power source. – pg. 949

To provide for future installation of an active submembrane or subslab depressurization system, an electrical circuit terminated in an approved box shall be installed during construction in the attic or other anticipated location of vent pipe fans. An electrical supply shall be accessible in anticipated locations of system failure alarms.

Shawn shared that radon info moved to appendix BE and recommended to keep it as it has been in the past with no changes.

Clay asked about if it talked about wiring going up to the attic. Shawn says it doesn't have to be in the attic, it just has to be available to put the active system in. It can be in the basement or it can be in the attic, you just need one of the provisions.

New Business

No new Business.

Announcements

No announcements.

Clay Dietrich called for a motion to adjourn the meeting. Brian Berg motioned to adjourn the meeting, seconded by Kevin Bartram. No one was in opposition and the motion was declared carried.

Meeting adjourned at 10:48 am.

Respectfully submitted



Shawn Ouradnik
Board Secretary