Update 2021 to 2024 IRC Changes, Chpt 1-10 As We Know It

Instructor: Russell Thornburg

Introduction

INSTRUCTOR:

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Background:

Building Contractor - 1984 to present
Building Inspector Technician - 1997 - 2 years
Field Inspector – 1997 - 2020
Residential Plans Examiner – 1997 – to present
Code Development Committee – started 2001
Instructor – 1998 - present
Code Consultant – 2005 to present
Program Manager – Short Stint
Willdan – Residential Plans Examiner – 2023
Field Inspector

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Identifying Changes within the Codes

Scan for Changes 9caa2e2

- The 2024 I-Code print editions replace the marginal markings with QR codes to identify code changes more precisely.
- A QR code is placed at the beginning of any section that has undergone technical revision.
- If there is no QR code, there are no technical changes to that section.

Recourses

Recourses Available

ICC Digital Code

2024 International Residential Code without Energy (IRC)

Introduction Revision History

2024_revision_history_updated_with_iecc_and_irc.pdf

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Thornburg Code Services

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Who, What and . . .

INTERNATIONAL RESIDENTIAL CODE TABLE OF CHANGES

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Thornburg Code Services

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Actual Proposal

Proponent

S241-22 Part II

Original Proposal

IRC: R703.7.3, R703.7.3.1

Proponents: Theresa Weston, The Holt Weston Consultancy, Rainscreen Association in North America (RAINA) (holtweston88@gmail.com)

2021 International Residential Code

Revise as follows:

R703.7.3 Water-resistive barriers. Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall comply with Section R703.7.3.1 or R703.7.3.2.

R703.7.3.1 Dry climates . In Dry (B) climate zones indicated in Figure N1101.7, *water-resistive barriers* shall comply with one of the following:

1. The *water-resistive barrier* shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a *water-resistive barrier* complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the *water-resistive barrier* shall be directed between the layers.
2. The *water-resistive barrier* shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a *water-resistive barrier* complying with ASTM E2556, Type II. The*water-resistive barrier* shall be separated from the stucco by a layer of foam plastic *insulating sheathing* or other non-water-absorbing layer. ~~**or a designed drainage space**~~. A means of drainage, as prescribed in R703.1.1, shall be provided to the exterior side of the water-resistive barrier

Reason: This is a clarification of the Dry Climate Option 2 to emphasize that a means of drainage (as required in 1402.2) is included in the design of the water-resistive barrier system. It is consistent with interpretation of 1402.2 included in ICC-ES AC11 Acceptance Criteria for Cementitious Exterior Wall Coatings:

"Details shall be submitted of a drainage system based on drainage performance testing. The applicant must submit a testing proposal to ICC-ES prior to testing. Precedent for a testing procedure can be found in the ICC-ES Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (AC235), Section 4.10."

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This proposal modifies the existing compliance option to describe how the requirements from other code sections are applied when using this option. The proposal improves the alignment between existing code requirements and industry practices.

2715 / 5995

Public Hearing Results

Committee Action **As Modified**

THIS CODE CHANGE WAS HEARD BY THE IRC-B COMMITTEE.

Committee Modification: R703.7.3.1 Dry climates . In Dry (B) climate zones indicated in Figure N1101.7, water-resistive barriers shall comply with one of the following:

1. The water-resistive barrier shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a water-resistive barrier complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the water-resistive barrier shall be directed between the layers.
2. The water-resistive barrier shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a water-resistive barrier complying with ASTM E2556, Type II. The water-resistive barrier shall be separated from the stucco by a layer of foam plastic insulating sheathing, ~~or~~ other non-water-absorbing layer, ~~or a designed drainage space. A means of drainage, as prescribed in R703.1.1, shall be provided to the exterior side of the water-resistive barrier~~ or a drainage space or means of drainage complying with R703.7.3.2. Flashing installed in accordance 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.

Committee Reason: The committee decided that the modification clarifies the proposal's intent of the designed drainage space and gives a better understanding of the flashing requirements. The committee determined that the proposal as modified provides good clarification of the Dry Climate Option 2. The proposal also offers appropriate references to Section R703.7.3.2 for Moist or marine climates and Section R703.4 for Flashing (Vote:10-0).

Final Hearing Results

S241-22 Part II AM

2742 / 5995

3490 / 5995

Section R103

New Title

~~DEPARTMENT OF BUILDING SAFETY~~ CODE COMPLIANCE AGENCY

R103.1 Creation of ~~enforcement~~ agency. The ~~department of building safety~~ [INSERT NAME OF DEPARTMENT] 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.

R103.2 Appointment. The building official shall be appointed by the chief appointing authority of the *jurisdiction*.

Reason: The purpose of this proposal is consistency through the family of codes for Enforcement Agency. During the 2018-2019 code development cycle, ADM 16-19 Parts 1 and III was approved for inclusion of this language in the IBC, IFC, IEBC, IPC, IMC, IFGC, IPMC, ISPSC, IPSDC, IGCC and IWUIC. BCAC is proposing this change again to the IRC to complete uniformity and consistency of language among all codes. A survey of several departments across the country showed that jurisdictions choose many different names. ADM 16-19 proposed to change the name of this section to "Code Compliance Agency" and add a fill in the blank for the adopting agency to choose a name specific to their jurisdiction. In addition to these changes, all three sub-sections were modified to use language that is common in a majority of the codes. Specifically, a sentence was added to the section "Creation of the Agency" to state the function of the agency. In the section titled "Appointment," the term "chief appointing authority of the" was inserted before "jurisdiction." . . . .

RB10-22

Duties and Powers of the Building Official

Section R104

Section R104
Overhauled
Reviewing for code
alternate materials,
designs and methods
are evaluated

Duties and Powers of the Building Official

Section R104

R104.2 Determination of compliance. The building official shall have the authority to determine compliance with this code, to render interpretations of this code and to adopt policies~~,~~ and procedures~~, rules and regulations~~ in order to clarify the application of this code's provisions. Such interpretations, policies~~,~~ and procedures~~, rules and regulations~~:

1. Shall be in compliance with the intent and purpose of this code.

2. Shall not have the effect of waiving requirements specifically provided for in this code.

Duties and Powers of the Building Official

Section R104

New

- **R104.2.1 Listed compliance**. 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*.

Germane = relevant to a subject under consideration

Duties and Powers of the Building Official

Section R104

New

R104.2.2.1 Approval authority.

- 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.

Approved where the *building official* finds that the proposed alternative is satisfactory . . .

Duties and Powers of the Building Official

Section R104

❑ **R104.2.2.4 Equivalency criteria.**

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.

Duties and Powers of the Building Official

Section R104

❑ **R104.2.2.5 Tests.** ~~**R104.11.1**~~

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*.

This modification makes testing only required when needed.

Adding 'such' takes the ambiguity out of what testing is required.

Duties and Powers of the Building Official

Section R104

- General
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- R104.2.1 Listed compliance
- R104.2.2 ~~R104.11~~ Alternative materials, design and methods of construction and equipment
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Duties and Powers of the Building Official

Section R104

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  - R104.9.1 Materials and equipment reuse

Service Utilities

Section R111

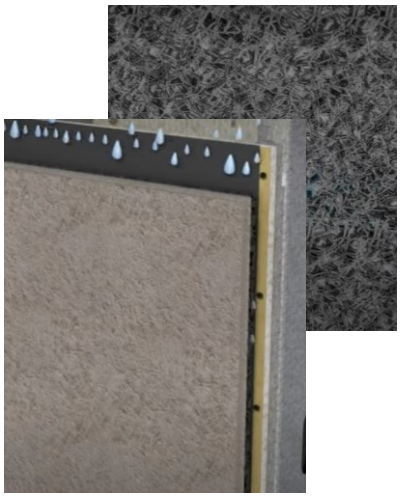
R111.1 Connection of service utilities.
A *person* shall not make connections from a utility, a source of energy, fuel or power, or **water system or sewer system** to any *building* or system that is regulated by this code for which a *permit* is required, until *approved* by the *building official*.
apps
R111.2 Temporary connection.
The *building official* shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel or power, **water system or sewer system for the purpose of testing systems for use under a temporary approval**.

Reason: ADM39-19 was a 2 part proposal. The revised text for service utilities was approved for IBC, IPC, IMC, IFGC, IEBC, IPSDC, IWUIC, ISPSC. The reason for disapproval by the IRC code development committee was "This would be in violation of the requirements of many public utilities across the country. (**Vote 6-4**)." The BCAC respectively disagrees with the IRC development committee. The code official is not making the connection or disconnection, he just has the power to approve it were warranted. This is not over riding the public utility companies. The main purpose of this proposal is coordination IRC with the other codes for the section on connection to services – including those coming from utilities or generated on-site. . . .

Definition

Section R202 (New), Table R702.7.3

- **RAINSCREEN SYSTEM.**
  An assembly applied to the exterior side of an exterior wall which consists of, at minimum, an outer layer, an inner layer, and a cavity between them sufficient for the passive removal of liquid water and water vapor.



Chapter 3 – Completely Over Hauled Number System

Building and Planning

- Section R301 -Design Criteria
- Section R302 Fire-Resistant Construction
- Section R303 ~~R316~~ Foam Plastic
- Section R304 ~~R317~~ Protection of Wood and Wood Based Products Against Decay
- Section R305 ~~R318~~ Protection Against Subterranean Termites
- Section R306 ~~R322~~ Flood-Resistant Construction
- Section R307 ~~R323~~ Strom Shelters
- Section R308 ~~R319~~ Site Address
- Section R309 ~~R313~~ Automatic Fire Sprinkles Systems

Chapter 3 – Completely Over Hauled Number System

Building and Planning

- Section R310 ~~R314~~ Smoke Alarms
- Section R311 ~~R315~~ Carbon Monoxide Alarms
- Section R312 ~~R304~~ Minimum Room Areas
- Section R313 ~~R305~~ Ceiling Height
- Section R314 ~~R325~~ Mezzanines
- Section R315 Sleeping Lofts
- Section R316 ~~R326~~ Habitable Attics
- Section R317 ~~R309~~ Garage and Carports
- Section R318 ~~R311~~ Means of Egress
- Section R319 ~~R310~~ Emergency Escape and Rescue Openings (EERO)
- Section R320 Handrails R318.7.8
- Section R321 ~~R312~~ Guards and Window Fall Protection

Building and Planning

Chapter 3 – Completely Over Hauled Number System

- Section R322 ~~R320~~ Accessibility
- Section R323 ~~R321~~ Elevator and Platform
- Section R324 ~~R308~~ Glazing
- Section R325 ~~R303~~ Light, Ventilation and Heating
- Section R326 ~~R306~~ Sanitation
- Section R327 ~~R307~~ Toilet, Bath and Shower Spaces
- Section R328 ~~R327~~ Swimming Pools, Spas and Hot Tubs
- Section R329 Solar Energy System
- Section R330 ~~R328~~ Energy Storage System
- Section R331 ~~R329~~ Stationary Engine Generators
- Section R332 ~~R330~~ Stationary Fuel Cell System

Building and Planning

Chapter 3 – The Intent of Resture

- **Reason:** There are no technical changes to the text - this is a reorganization to improve usability of the code. Over the years there have been numbers 'adds' to IRC Chapter 3 without a general look at grouping or organization. The biggest stretch are the room area (R304) and height (R305) being multiple sections away from mezzanines (R325) and habitable attics (R326). The intent of this proposal is to reorganize the requirements into areas for the following:
  - Structural (proposed R301-307)
  - Fire (proposed R308 -311)
  - Rooms and spaces (proposed R312-316)
  - Means of egress (proposed R317-R319)
  - Accessibility/Elevators (proposed R320-R321)
  - MEP (proposed R322-R326)
  - Energy (proposed R327-R330)
- **Cost Impact:** The code change proposal will not increase or decrease the cost of construction
- This proposal is only to reorganize the sections in Chapter 3 for ease of use. There are no technical changes.

Code Section

Code & Results

- ADM = Administration
- RB = IRC Building
- S = IBC - Structural
- G = IBC – General
- RM = IRC Mechanical
- M = Mechanical
- RP = IRC Plumbing
- P = Plumbing
- CCC = Code Correlation Committee
- NEC = National Electric Code

- AS = **A**pproved as **S**ubmitted
- AM = **A**pproved as **M**odified at the Committee Action Hearing
- AMPC = **A**pproved as **M**odified by **P**ublic **C**omment
- D = **D**isapproved

Code Section

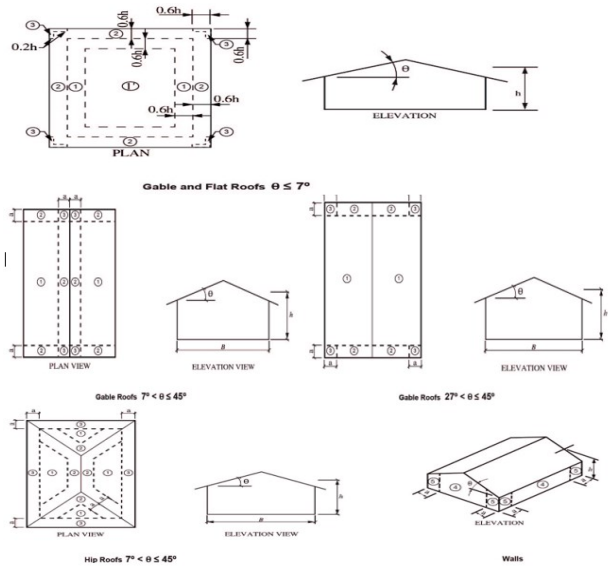
Section R202 (New), Table R702.7.3

Ch 3	Chapter 3 Reorganization	RB32-22 AS
R301.2.1 C&C	Components and Cladding	RB35-22 AS
R301.2.1.1	Wind Maps	RB35-22 AS
R301.2.2	Buildings Required to Meet Seismic Provisions	RB37 AS, RB38 AS, RB164-22 AM
R301.2.2.10	Seismic Restraint	RB39-22 AM
R301.2.3 Snow Maps	Snow Loads	RB34-22 AS
R302.1	Exterior Walls	RB48 AMPC
R302.3	Two-Family Dwellings	RB61 AMPC, RB63 AMPC3, RB14 AS, CCCIRC12-2022
R302.3.5	Stacked Dwelling Units	RB61 AMPC
R302.3.6	Shared Accessory Rooms	RB64 AMPC1,2
R302.13	Floor Protection	RB75-22 AS
~~R316~~ R303	Foam Plastic	RB127 AS, RB32 AS
~~R322.2~~ R306.2	Flood Hazard Area	RB137 AS
~~R322.3~~ R306.3	Coastal High Hazard Areas	RB137 AS, RB 139 AS, RB15 AS
~~R314~~ R310	Smoke Alarms	RB121 AS, RB122 AMPC, RB153 AMPC2,3, RB14 AS
~~R326~~ R315	Sleeping Lofts	RB153 AMPC1,2,3; RB32 AS
~~R309~~ RB317	Garages	RB87 AMPC, RB88 AS
~~R311.7.6~~ R318.7.6	Stairways Landings	R107 AS, RB108 AS, RB100 AMPC
~~R311.7.8.4~~ R318.8	Ramps	R107 AS, RB108 AS, RB100 AMPC
~~R311.7.8~~ R320	Handrails	RB110 AS, RB111 AM, RB112 AM, RB114 AM
~~R320~~ R322	Accessibility	RB134 AM, RB14 AS, RB32 AS
~~R321.1~~ R323	Elevators and Hoistways	RB 135 AS, RB32 AS
~~R308.6.5~~ RB324.6.5	Light, Ventilation and Heating	RB84-22 AM
~~R303~~ R325	Screens	RB76-22 AM
~~R324~~ R329	Photovoltaic Systems	RB149-22 AS, RB150-22 AMPC
~~R328.4~~ R330.4	Energy Storage System Locations	RB155 AS, RB157 AM
~~R328.8~~ R330.8	Impact Protection	RB161.22 AS

Component and Cladding (CC)

Wind Force and Loading

- **Figure R301.2.1 - Component and Cladding Pressure Zones**



Component and Cladding (CC)

Wind Force and Loading

- MWFRS – Main Wind-Force Resisting Systems
- C & C – Components and Cladding

- Main Wind Force Resisting Systems
  - The Wind loads act on the frame and foundation of a building
  - These loads try to tip, twist, and shake the building as a whole

The metal roof and wall panels would be considered cladding. The overhead door, walk door, and window would be considered components. Also, the roof purlins and wall girts are receiving loading from the cladding and are, therefore, also considered components.

ASCE 7 guideline is the go-to resource for wind load calculations. This guideline takes into account several factors, including wind speed, wind directionality factor, exposure category, topographic factors, ground elevation, and building enclosure. (MWFRS)

Wind Force and Loading

Component and Cladding (CC)

- **Wind pressure increases with greater height in Exposure B while negative (suction) pressure reduced on roofs**

TABLE R301.2.1(1)
Component and Cladding Loads for a Building with a mean Roof Height of 30 Feet Located in Exposure B (ASD) (psf) [a, b, c, d, e, f, g]

	ZONE	EFFECTIVE WIND AREAS (square feet)	Ultimate Design Wind Speed, V_{ult}									
			90.0		95.0		100.0		105.0		110.0	
			Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg
Gable roof 0 to 7 degrees	1 , 1'	10	3.6	-13.9	4.0	-15.5	4.4	-17.2	4.8	-19.0	5.3	-20.8
	1, 1'	20	3.3	-12.4	3.7	-13.8	4.1	-15.3	4.5	-16.8	5.0	-18.5
	1, 1'	50	3.0	-10.3	3.4	-11.5	3.8	-12.7	4.1	-14.0	4.5	-15.4
	1, 1'	100	2.8	-8.7	3.1	-9.7	3.5	-10.8	3.8	-11.9	4.2	-13.1
	2	10	3.6	-18.4	4.0	-20.5	4.4	-22.7	4.8	-25.0	5.3	-27.4
	2	20	3.3	-16.4	3.7	-18.2	4.1	-20.2	4.5	-22.3	5.0	-24.5
	2	50	3.0	-13.7	3.4	-15.3	3.8	-16.9	4.1	-18.7	4.5	-20.5
	2	100	2.8	-11.7	3.1	-13.0	3.5	-14.5	3.8	-15.9	4.2	-17.5

Wind Force and Loading

Component and Cladding (CC)

- Exposure Coefficients
- Decreased for Tall Buildings

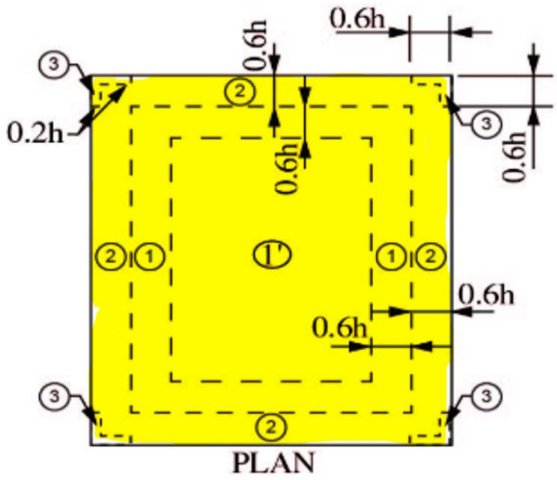
Table R301.2.1(2)

Means Roof Height	Exposure B	C	D
15	0.82	1.21	1.47
20	0.89	1.29	1.55
25	0.94	1.35	1.61
30	1	1.4	1.66
35	1.05	1.45	1.7
40	~~1.09~~ 1.06	1.49	1.74
45	~~1.12~~ 1.1	1.53	1.78
50	~~1.16~~ 1.13	1.56	1.81
55	~~1.19~~ 1.16	1.59	1.84
60	~~1.22~~ 1.19	1.62	1.87

Component and Cladding (CC)

Wind Force and Loading

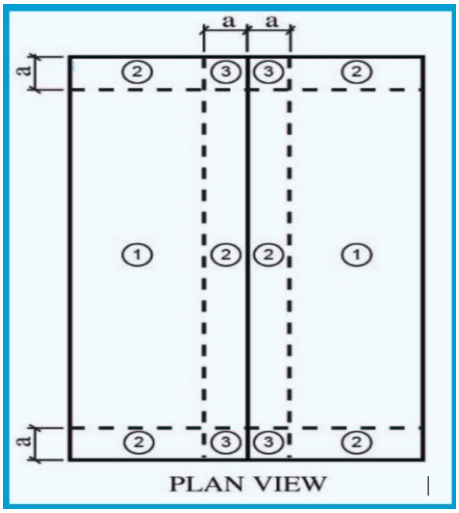
- Gable and Flat Roofs ϴ < 7°
- Flat roof zones 0 to 7 degrees
  (1.5:12 slope or less)



Component and Cladding (CC)

Wind Force and Loading

- Gable Roofs 7° < ϴ < 45°
- Gable Roof 7 to 27 degrees
  (1.5:12 to 6:12 slope)

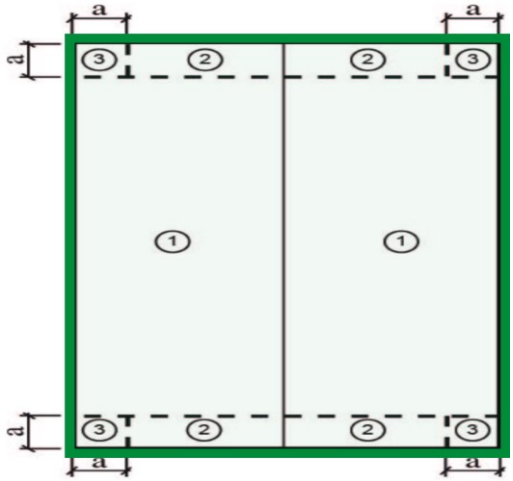


Component and Cladding (CC)

Wind Force and Loading

- Gable Roofs $27° < \theta \leq 45°$

  (6:12 to 12:12 slope)

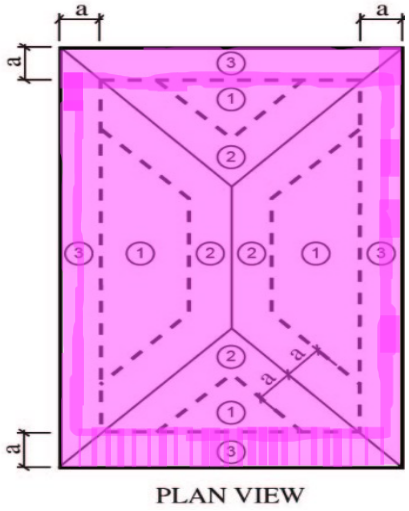


Component and Cladding (CC)

Wind Force and Loading

- Hip Roofs $7° < \theta \leq 45°$
- Hip Roof 7 to 45 degrees

  (1.5:12 to 12:12 slope)



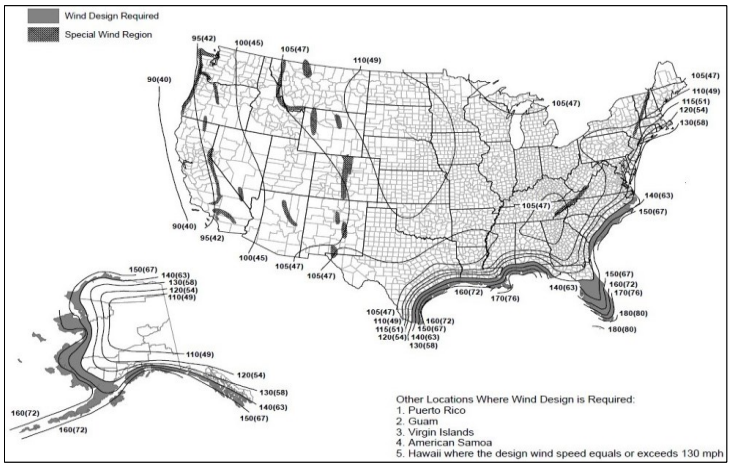
PLAN VIEW

Wind Design Required

Wind Force

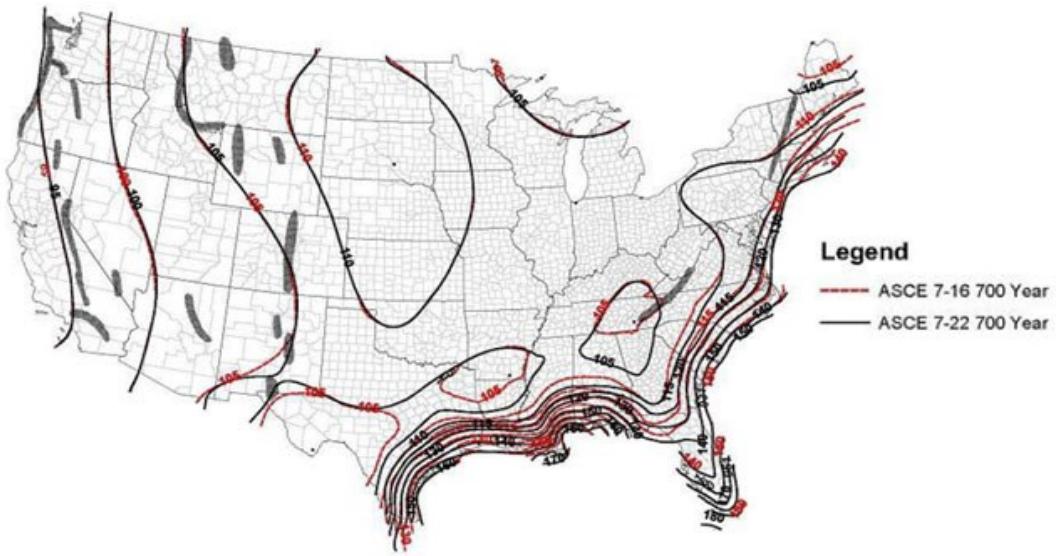
- Figure R301.2.1.1
- Areas of the Gulf Coast and Alaska that require structural design for wind loads are updated

- Figure 301.2.(2)
- Figure updated to match wind loads in the IBC and ASCE 7



Ultimate Design Wind Speed

Wind Force Change Data



Ultimate Design Wind Speed

Wind Force /Speed

- Wind speed can be found in the ASCE 7 Hazard Tool or approved equivalent.
- https://ascehazardtool.org

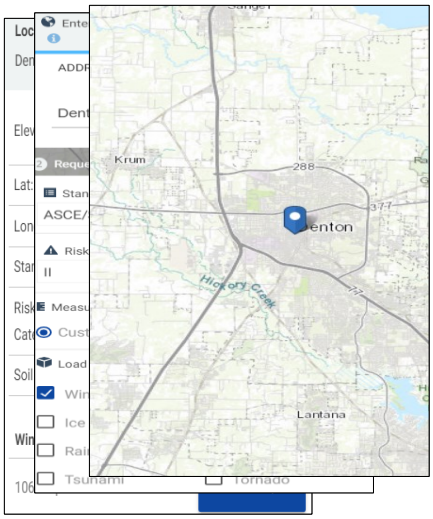
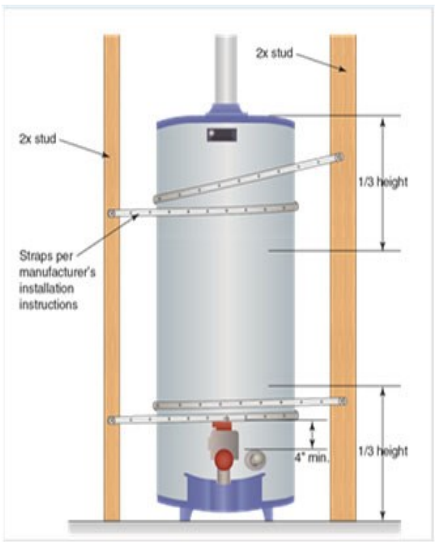


Figure R301.2(2)

Seismic Restraint

R301.2.2 - Seismic Provision

- In Seismic Design Categories D0, D1, and D2 and in townhouses in SDC C
- System components that are designed to be fixed in position shall be supported and braced or anchored to the structure in accordance with the component manufacturer's recommendations or per Section R301.2.2.10.1.
- Exceptions: 1-4

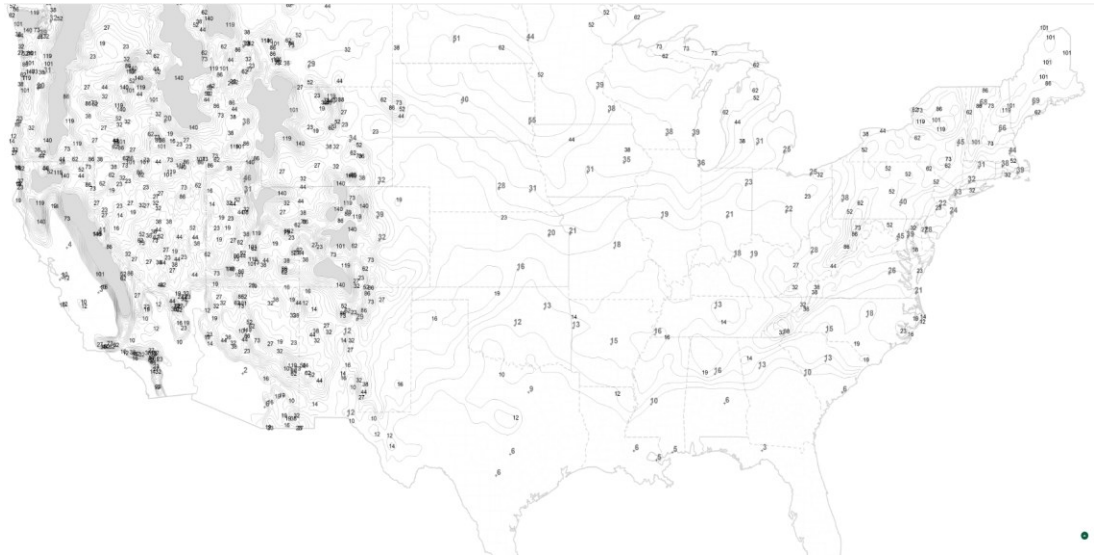


ICC

RB39-22

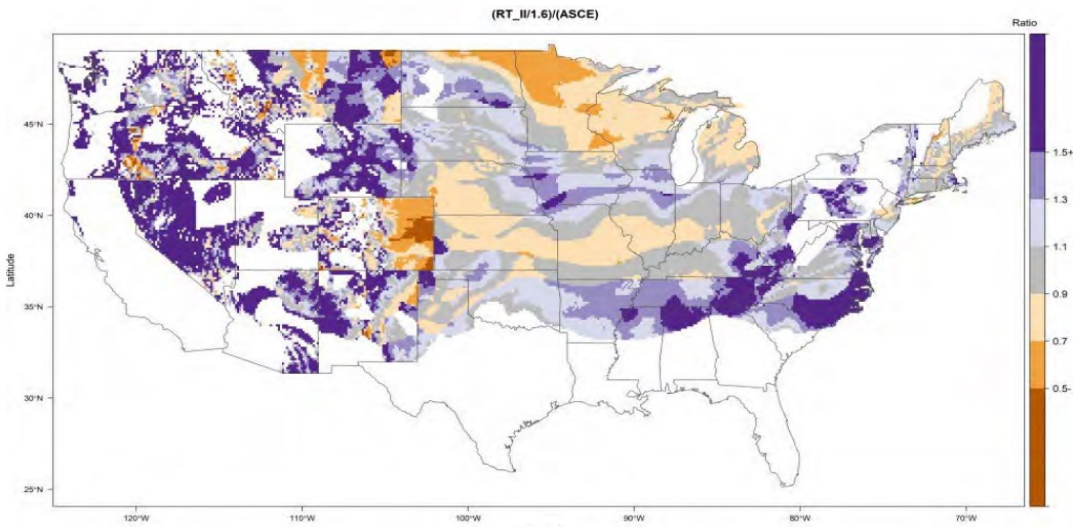
R301.2.3 -Snow Load

Adjusted



Ratio of ASCE 7-22 to ASCE 7-16 (Bean et al. 2021)

Increased/Decreased



RB34-22

2021 & 2024 IRC

Definitions – Old & New

2021 IRC Definitions

[RB] DWELLING. Any building that contains one or two *dwelling units* used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that are occupied for living purposes.

[RB] DWELLING UNIT. A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. For the definition applicable in Chapter 11, see Section N1101.6.

[RB] LOT. A measured portion or parcel of land considered as a unit having fixed boundaries.

[RB] LOT LINE. The line that bounds a plot of ground described as a lot in the title to the property.

[RB] TOWNHOUSE. A *building* that contains three or more attached *townhouse units*.

[RB] TOWNHOUSE UNIT. A single-family *dwelling unit* in a *townhouse* that extends from foundation to roof and that has a *yard* or *public way* on not less than two sides.

2024 IRC Definition

[RB] FIRE SEPARATION DISTANCE. The distance measured from the building face to one of the following:

1. To the closest interior *lot line*.
2. To the centerline of a street, an alley or public way.
3. To an imaginary line between two *buildings* or townhouse units on the *lot*.

Fire Protection

Exterior Walls - R202, R302,

R202 - Definition of: Exterior Wall

- Above-grade wall
- Defines exterior boundaries of a building.
- Includes:
  - between-floor spandrels, peripheral edges of
  - floors, roof and basement knee walls, dormer walls,
  - gable end walls, gable end roof trusses,
  - walls enclosing a mansard roof and basement walls with an average
  - below-grade wall area < 50% of the total area of that enclosing side.

Exterior Walls – R302.1

FSD

- Defining fires separation distance when there are multiple dwellings or townhouse buildings on the same lot is added
- All units have measurements distance Table R302.1(1) or Table R302.1(2)

Exterior Walls – R302.1

FSD

- For FSD, dwellings and townhouses on the same lot shall be assumed to have an imaginary line between them.
- FSD and requirements of Section R302.1 do not apply to walls separating townhouse units (party walls).

New Code - FDS

Exterior Walls – R302.1

- For the purposes of determining *fire separation distance, dwellings* 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.

New Code - FDS

Exterior Walls – R302.1

- 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.

New Code Change

Two-Family Dwelling – R302.3

- Fire-Resistance Requirements has Changed
- Separate from each other in accordance Sections R302.3.1 through Section R302.3.5, regardless of lot line between the two
- *Dwelling units* shall be separated by fire-resistance rated assemblies that are vertical, horizontal, or a combination thereof.

RB61-22 AMPC1

NEW

Vertically Stack Dwelling Units – R302.3.4

- 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*

RB63-22 AMPC3

New Code Change

Shared Accessory Rooms– R302.3.6

- 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.

New Code Change

Dwelling-Shared Accessory Room Separtion– Table R302.3.6

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

R302.3.6.1 Opening protection.
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 $1\frac{3}{8}$" in thickness, solid or honeycomb core steel doors not less than $1\frac{3}{8}$" 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.
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 or other approved material and shall not have openings into the shared accessory room.

R302.3.6.3 Other penetrations.
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.

Addition to Exceptions

Fire Protection of Floors - R302.13

Not likely TX thing

Unless

- Floor assemblies that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a $^{1}/_{2}$" *gypsum wallboard* membrane, $^{5}/_{8}$" *wood structural panel* membrane, or equivalent on the underside of the floor framing member. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

Exceptions: 1-4

5. Wood floor assemblies less than 600 sq. ft. within detached *accessory structures* with no *habitable space* above them.

Code Change

Foam Plastic R303

- **R303.1.1 Spray-applied foam plastic.**

Single- and multiple-component spray-applied *foam plastic insulation* shall comply with the provisions of Section R303 and ICC 1100.

- **R303.1.2 Insulating sheathing.**

Foam plastic materials used as insulating sheathing shall comply with the provisions of Section R303 and the material standards in Table R303.1.2.

- New Standards for Foam Plastic materials and their application are added

New Code Change

Foam Plastic Table R303.1.2

What materials can be used?

	Typical R-value per inch	Inches for R-10	Inches for R-15
Expanded Polystyrene	4.0	2.5	3.75
Extruded Polystyrene	5.0	2.0	3.0
Polyisocyanurate	6.5	1.5	2.3

Expanded Polystyrene (EPS) Extruded Polystyrene (XPS) Polyisocyanurate (ISO)

Table R3023.1.2

Material Standards for Foam Plastic Insulation Sheathing

Foam Plastic Insulation Sheathing	Material Standard
Expanded Polystyrene (EPS)	ASTM C578
Extruded Polystyrene (XPS)	ASTM C578
Polyisocyanurate	ASTM C1289

New Code Change

Smoke Alarms R310

R310.1 General.
Smoke alarms shall comply with NFPA 72, Section R310 and the manufacturer's installation instructions.

R310.1.1 Listings.
Smoke alarms shall be *listed* and *labeled* in accordance with UL 217. Combination smoke and *carbon monoxide alarms* shall be *listed* and *labeled* in accordance with UL 217 and UL 2034.

R310.1.2 Installation.
Smoke alarms and combination smoke and *carbon monoxide alarms* shall be installed in accordance with their listing and the manufacturer's instructions.

RB121 AS, RB122 AMPC, RB153 AMPC2,3, RB14 AS

Smoke Alarms R310

Code Modification

- **R310.3 Location.**

  Smoke alarms shall be installed in the following locations: 1-5

  6. Within the room to which a *sleeping loft* is open, in the immediate vicinity of the *sleeping loft*.

- **R310.3.1 Installation near cooking appliances.**

  Smoke alarms shall be installed not less than 10' horizontally from a permanently installed cooking appliance.

  Exception: Smoke alarms shall be permitted to be installed not less than 6' horizontally from a permanently installed cooking appliance where necessary to comply with Section R310.3.

RB121 AS, RB122 AMPC, RB153 AMPC2,3, RB14 AS

Sleeping Lofts R315

New Code

- Sleeping Loft Limitations requirements added for sleeping lofts along with a new definition 202

RB153 AMPC1,2,3; RB32 AS

New Code Definition

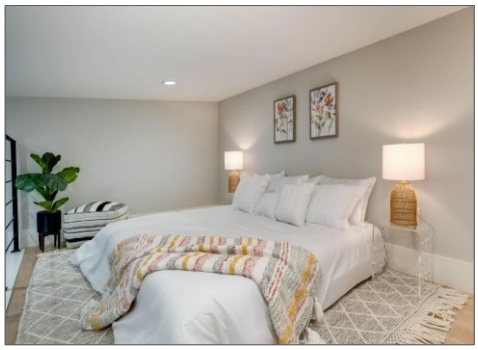
Sleeping Lofts Definition 202

SLEEPING LOFT.

- A space designated for sleeping on an intermediate level or
- Levels between the floor and ceiling of a *story*, open on one or more sides to the room in which the space is located, and in accordance with Section R315.

New Code

Sleeping Lofts Minimums R315



Minimum Requirements for a sleeping loft:

- Area < 70 ft²
- Ceiling height for < ½ of floor area shall not exceed 7 ft. tall
- Ceiling height min. 3' tall from finish floor
- Floor area limited to areas with 3 ft. tall ceiling height
- Permanent means of egress
- Floor below min. 7 ft ceiling height

New Code: Tiny/Small Loft Dims.

Sleeping Lofts – Exceptions R315

- **R315.1** . . .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 ft.
2. The *sleeping loft* has a floor area of < 35 sq. ft.
3. The *sleeping loft* is not provided with a permanent means of egress.

RB153 AMPC1,2,3; RB32 AS

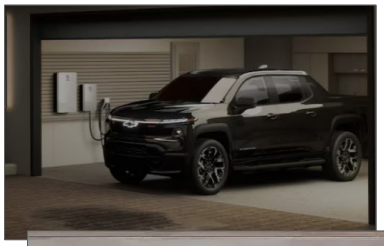
Thornburg Code Services

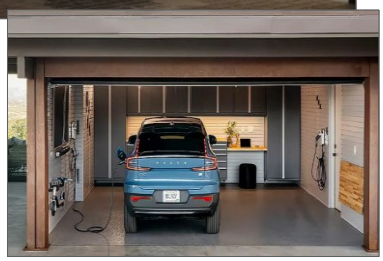
58

New Additions to the Code

Garage R317

EV Home Charging





R317.6 - Electric vehicle charging systems.

- Where provided, electric vehicle charging systems shall be installed in accordance with NFPA 70. (NEC)
- Electric vehicle charging system equipment shall be *listed and labeled* in accordance with UL 2202.
- *Electric vehicle supply equipment* shall be *listed* and *labeled* in accordance with UL 2594.

RB87 AMPC, RB88 AS

Thornburg Code Services

59

New Additions to the Code

Garage R317

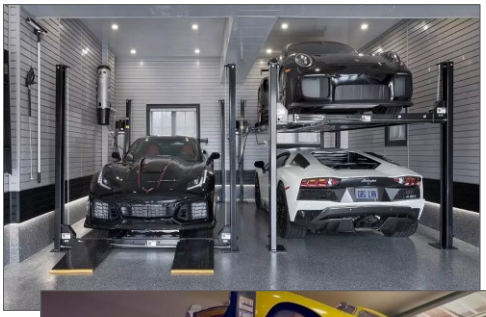
- **R317.7 Automotive Lifts**

Where provided, automotive lifts shall be *listed* and *labeled* in accordance with ANSI/ALI ALCTV.

- **R317.7.1 Installation**

Automotive lifts shall be installed in accordance with ANSI/ALI ALCTV, the listing and the lift manufacturer's installation instructions.

Automotive lifts shall not be installed within the *habitable space* of a *dwelling unit*.



Chapter 44 Referenced Standards

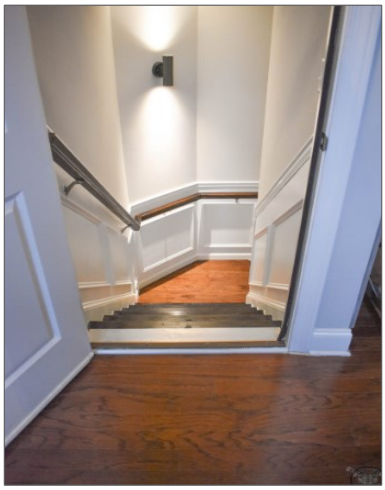
ALI	Automotive Lift Institute, Inc	PO Box 85
ALI ALCTV—2017		CortlandNY13045

Standard for Automotive Lifts—Safety Requirements for Construction, Testing and Validation (ANSI) - R317.7

RB87 AMPC, RB88 AS

Code Modification

Landings & Stairways R318



- **R318.7.6 Landings for Stairways**

There shall be a floor or landing at the top and bottom of each *flight* of stairs. . . .

Exceptions: **(1 – 4)**

1. The top landing of an interior *stairway* 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.

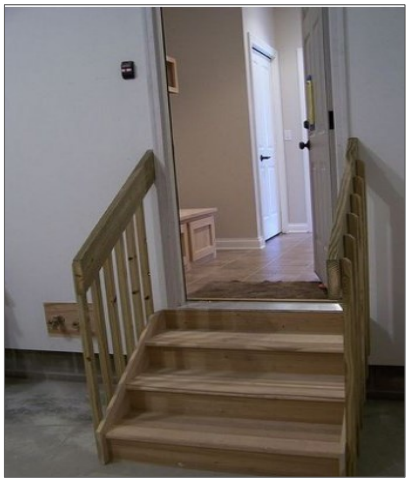
R107 AS, RB108 AS, RB100 AMPC

Code Modification

Landings & Stairways R318

- **R318.7.6 Landings for Stairways Exceptions: (1-4)**

2. At an enclosed garage, the top landing at the *stair* shall be permitted to be not more than $7\frac{3}{4}$" 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", provided that the stairway is not the required access to grade serving the required egress door.



Code Modification

Landings & Stairways R318

- **R318.7.9 Stairways in Existing Buildings.**

Alterations to existing *stairs* shall not be required to comply with the requirements of this code where the existing space and construction does not allow a reduction in pitch or slope.

Modification of Code

Ramps R318

- **R318.8.3 Handrails required**
  - *Handrails* shall be provided on not less than one side of *ramps* exceeding a slope of 1 unit vertical in 12 units horizontal and shall comply with Section R320.
- **R320.3 Handrail projection**
  - *Handrails* shall not project more than 4 1/2" on either side of the stairway or *ramp.*
- **R320.5 Continuity**
  - *Handrails* where required for *ramps* shall be continuous for the full length of the *ramp*.

R107 AS, RB108 AS, RB100 AMPC

Merge & Changed

Handrails R320

- Handrail height and continuity are placed in one single section on handrails.

Section R320 Handrails

R320.1 General.

R320.2 Height.

R320.3 Handrail Projection.

R320.4 Handrail Clearance.

R320.5 Continuity.

R320.6 Grip Size.

R320.7 Exterior Plastic Composite Handrails.

RB110 AS, RB111 AM, RB112 AM, RB114 AM

Linking IRC to IBC

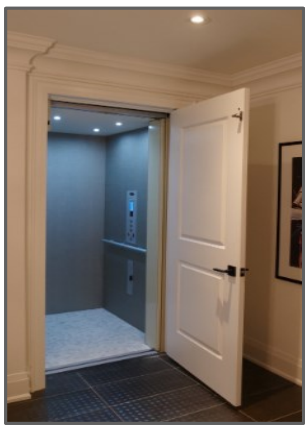
Accessibility R322

❑ R322.3 Care Facilities

Where care facilities are permitted to be constructed in accordance with Section R101.2, the portions of the *dwelling* used to *operate a business* providing care shall be accessible in accordance with Chapter 11 of the *International Building Code*.

Additions and Change

Elevators & Platform Lifts - R323



❑ R323.1.1 Private Residence Elevators

The design, construction and installation of private residence elevators installed within a residential unit or providing access to one individual *dwelling unit* shall conform to ASME A17.1/CSA B44, . . .

❑ R323.1.1.1 Hoistway Enclosures.

Hoistway enclosures for private residence elevators shall comply with ASME A17.1/CSA B44, . . .

❑ R323.1.1.2 Hoistway Opening Protection.

Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, . . .

RB 135 AS, RB32 AS

Code Changes and Additions

Light, Ventilation and Heating R325

R325.1.1 Natural light.

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'.
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 footcandles (65 lux) over the area of the room at a height of 30" above the floor level.
4. Eave projections shall not be considered as obstructing the clear open space of a *yard* or *court*.

Code Changes

Light, Ventilation and Heating R325

R325.1.2 Natural ventilation

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. 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*.

Addition to the Code

Energy Storage System – Location R330.4

- *ESS* shall be installed only in the following locations:
  1. Detached garages and detached *accessory structures*.
  2. Attached garages separated from the *dwelling unit living space* in accordance with Section R302.6.
  3. Outdoors ***or*** on the exterior side of exterior walls located not less than 3' from doors and windows directly entering the *dwelling unit*, except where smaller separation distances are permitted by the UL 9540 listing and manufacturer's installation instructions.
  4. **Enclosed** utility *closets*, *basements*, storage or utility spaces within *dwelling units* with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than $^{5}/_{8}$" - *Type X gypsum wallboard*. Openings into the dwelling 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 $1^{3}/_{8}$" in thickness, or doors with a 20-minute fire protection rating. Doors shall be self-latching and equipped with a self-closing or an automatic-closing device. Penetrations through the required *gypsum wallboard* into the dwelling shall be protected as required by Section R302.11, Item 4.
- *ESS* shall not be installed in sleeping rooms, or *closets* or spaces opening directly into sleeping rooms.

New Code

Energy Storage System - Garage R330.8.1

- Where an ESS is installed in the normal driving path of vehicle travel within a garage, impact protection complying with Section R330.8.3 shall be provided. The normal driving path is a space between the garage vehicle opening and the interior face of the back wall to a height of 48" above the finished floor. The width of the normal driving path shall be equal to the width of the garage door opening. Impact protection shall also be provided for an ESS installed at either of the following locations (see Figure R330.8.1):
  1. On the interior face of the back wall and located within 36" to the left or to the right of the normal driving path.
  2. On the interior face of a side wall and located within 24" from the back wall and 36" of the normal driving path.

  Exception: Where the clear height of the vehicle garage opening is 7' – 6" or less, ESS installed not less than 36" above finished floor are not subject to vehicle impact protection requirements.

New Code

ESS Vehicle Impact Protection - Garage R330.8.3

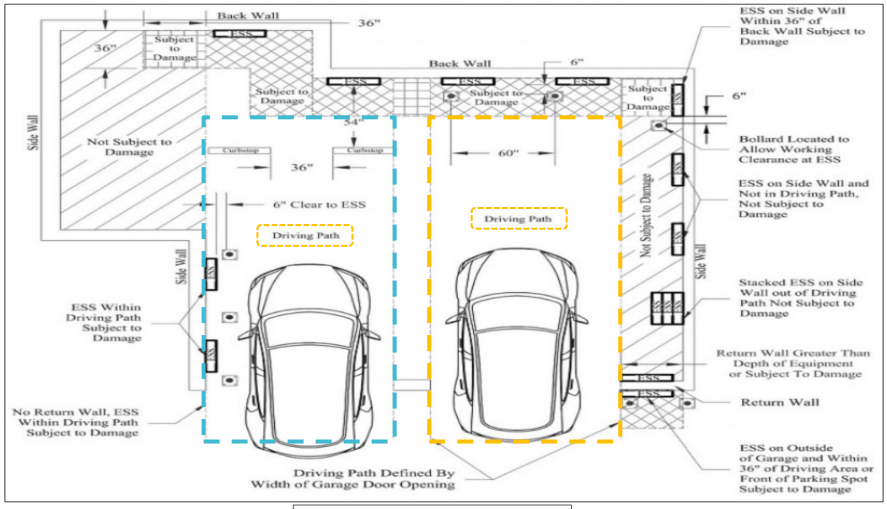


Figure R330.8.1

New Code

ESS Vehicle Impact Protection - Garage R330.8.3

Incomplete code sections

- ESS protection shall comply with one of the following:

1. Bollards constructed in accordance with one of the following:
   - 1.1. Minimum 48" in length X 3" in dia. Sch. 80 steel pipe . . .
   - 1.2. Minimum 36" in height X 3" in dia. Schedule 80 steel pipe fully welded to a steel plate not less than 8" in length by $^1/_4$" in thickness and bolted . . .
   - 1.3. Premanufactured steel pipe bollards filled with concrete and anchored in . . .
2. Wheel barriers constructed in accordance with one of the following:
   - 2.1. Concrete or polymer 4" in height by 5" in width by 70" in length, anchored to . . .
   - 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 lbs. psf in the direction of travel at 24" above *grade*.

New Requirement

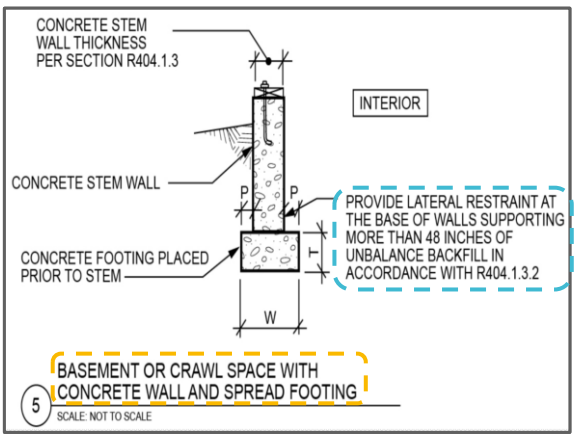
Foundation Soil Test R401.4

- Where the *seismic design category* in accordance with Section R301.2.2.1 is C or greater and where soil testing is performed, the geotechnical report shall include the determination of the site class and the *short-period spectral response acceleration*, S_{DS}, in accordance with Section 1613 of the *International Building Code*.
- The *seismic design category* shall be assigned in accordance with Table R301.2.2.1.1.

Addition ro Figure R403.1(1) #5

Foundation Lateral Support R403

- **Figure R403.1(1) Plain Concrete Footings with Masonry and Concrete Stem Walls in Seismic Design Categories A, B and C** [a, b, c, d, e,]
- **Reason:** All basement walls tables assumed the wall is laterally supported at the top and bottom. See foot notes in all concrete walls tables. Footnote g. states "Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling". R403.1.1 Minimum size for footing reference Figure R403.1(1). Figure R403.1(1) does not show any connection requirements. This proposal gives options for footing to wall connections in FIGURE R403.1(1) by adding a pointer states "Provide lateral restraint at the base of walls supporting more than 48 inches of unbalance backfill in accordance with R404.1.3.2". This lateral restraint can be provided by a keyway, footing dowels, or by a slab-on-ground poured against the base of the wall.



New Code

Continuous Footing in SDC-D - R403.1.2

- Exterior walls and required interior *braced wall panels of building* located in *Seismic Design Categories* D_0, D_1 and D_2 shall be supported by continuous solid or fully grouted masonry or concrete footings in accordance with **the NEW** Table R403.1.2.
- Other footing materials or systems shall be designed in accordance with accepted engineering practice.

New Table

Continuous Footing in SDC-D - R403.1.2

BUILDING PLAN DIMENSIONS	1-STORY						2-STORY						3-STORY	
	50 feet or less			> 50 feet			50 feet or less			> 50 feet			Any	
SDC	D_0	D_1	D_2	D_0	D_1	D_2	D_0	D_1	D_2	D_0	D_1	D_2	D_0	D_1
Continuous footings supporting exterior walls	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Continuous footings supporting required interior braced wall panels	NR	NR	NR	R[a]	R[a]	R[a]	NR	NR	R[a]	R[a]	R[a]	R[a]	R	R

For SI: 1 foot = 304.8 mm.
R = Continuous solid or fully grouted masonry or concrete footings in accordance with Section R403.1.3.4 required.
NR = Continuous footings not required.

a. Buildings shall be permitted to have interior braced wall panels supported on continuous foundations at intervals not exceeding 50 feet, provided that the following conditions are all met:
1. The height of cripple walls does not exceed 4 feet.
2. First-floor braced wall panels are supported on doubled floor joists, continuous blocking or floor beams.
3. The distance between bracing lines does not exceed twice the building width measured parallel to the braced wall line.

New Code

IRC: R502.11, R502.11.1, 502.11.2, 502.11.3

Approved NEW Code for 2024 International Residential Code

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (coderep@stairways.org); Erik Farrington, representing myself (ewfarrington@sgh.com); Renda Barr, representing Stairbuilders and Manufacturers Association (rbarr@srg-ventures.com); Robert Aulicky, representing Stairbuilders & Manufacturers Association (acitizen@reagan.com); Marvin Strzyzewski, representing Truss Engineering Company (marvins@mii.com); Thomas Zuzik Jr, representing NOMMA (coderep@railingcodes.com); Daniel Obrien, representing Universal Building Systems, Inc. (dano@stairfasteners.com) requests As Modified by Public Comment

https://stairways.org/guard-calculations

https://sma-new.s3.us-east-1.amazonaws.com/Torsion-Member-Calculations.pdf

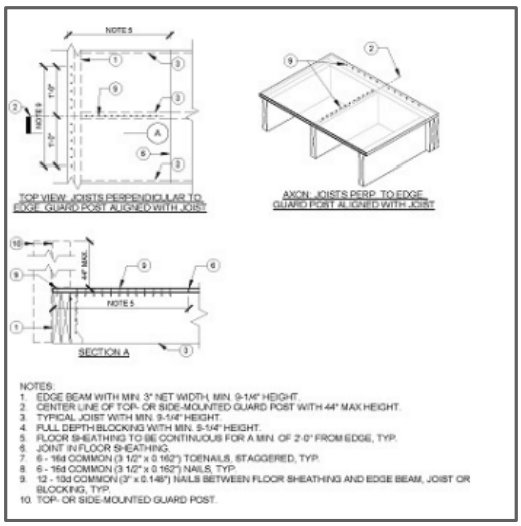
https://sma-new.s3.us-east-1.amazonaws.com/Rotation-Calculations.pdf

https://sma-new.s3.us-east-1.amazonaws.com/Floor-Edge-Bracing-Details-updated-2022.06.pdf

New Code Language

Floor Support Guard - R502.11

- R502.11 Floor Framing Supporting Guards
- R502.11.1 Conventional Edge Framing
- R502.11.2 Timber Edge Framing
- R502.11.3 Roll Bracing

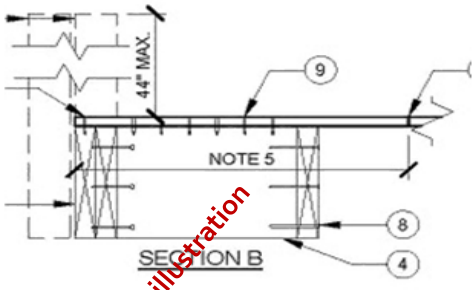


Engineering Calculations supporting this proposal can be found at this link: https://stairways.org/guard-calculations

Supporting Guard Post

Floor Supporting Guard - R502.11

- Details for bracing a floor when attaching a guard:
  - Blocking for joists perpendicular to the floor edge
  - Blocking for joists parallel to the floor edge
  - Blocking added between floor joists

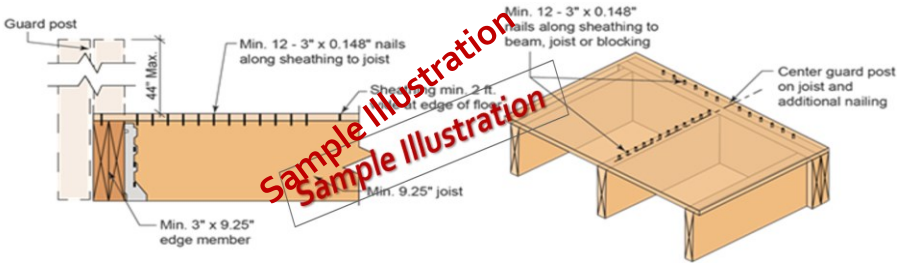


1. Edge Beam with min. 3" net width min. 9 ¼" height.
2. Center line of top-or side-mounted guard post with 44" max. height.
3. Typical joist with min. 9 ¼" height.
4. Full depth blocking with min. 9 ¼" height.
5. Floor sheathing to be continuous for a min of 2'-0" from edge. Typ.
6. Joint in floor sheathing.
7. 6 – 16d common (3 ½" x 0.162") toenails, staggered, Typ.
8. 6 – 16d common (3 ½" x 0.162") nails, Typ.
9. 12 – 10d common (3" x 0.148") nails between floor sheathing and edge beam, joist of blocking, Typ.
10. Top-or side-mounted guard post.

Supporting Guard Post

Floor Supporting Guard - R502.11

. . . brace shall be a joist or blocking matching the depth of the edge member and extending perpendicular to the edge. . .

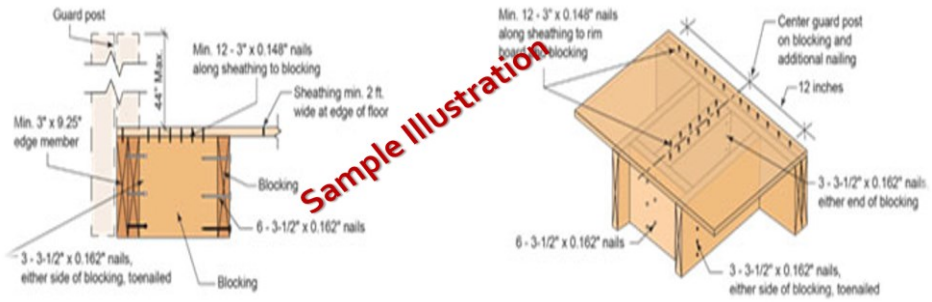


https://sma-new.s3.us-east-1.amazonaws.com/Floor-Edge-Bracing-Details-updated-2022.06.pdf

Supporting Guard Post

Floor Supporting Guard - R502.11

Where a roll brace is not aligned with each *guard* post, the framing at the edge of the floor

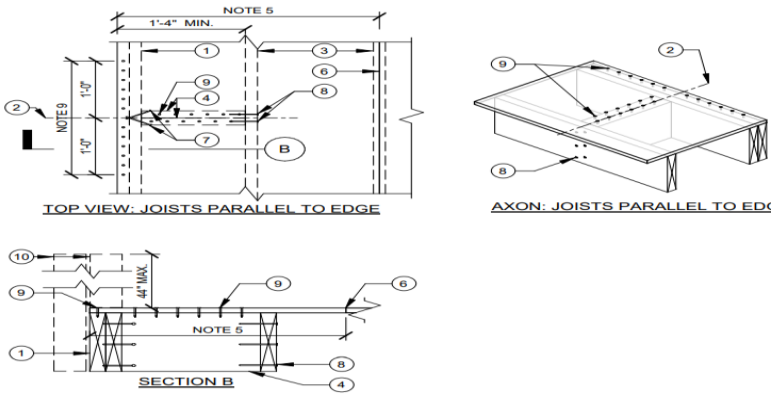


https://sma-new.s3.us-east-1.amazonaws.com/Floor-Edge-Bracing-Details-updated-2022.06.pdf

Supporting Guard Post

Floor Supporting Guard - R502.11

Roll bracing for joists parallel to the floor edge

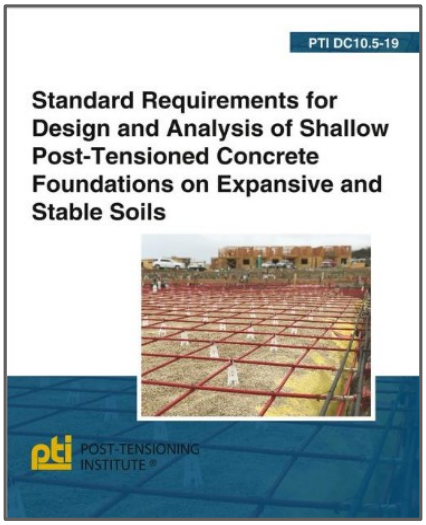


https://sma-new.s3.us-east-1.amazonaws.com/Floor-Edge-Bracing-Details-updated-2022.06.pdf

Post-Tensioned Slab-on-Ground Floors – R506.2

New Code

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



Vapor Retarder - R506.3.3

Code Change

- A minimum 6 mil polyethylene or *approved* vapor retarder with joints lapped not less than 6" shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.

Fasteners and Connectors – R507.2.3

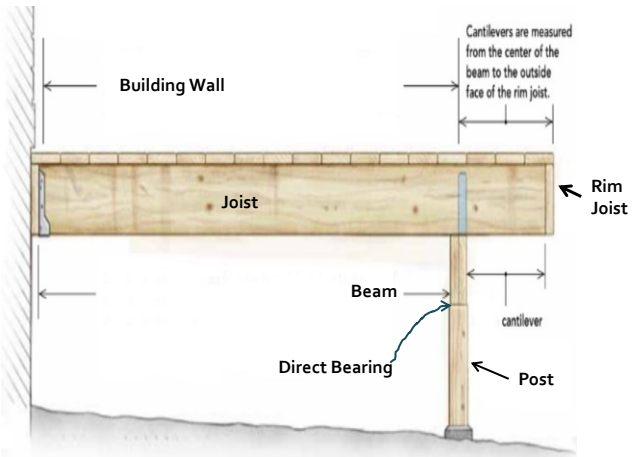
Code Change

- Metal fasteners and connectors used for all decks shall be in accordance with Section R304.3 and Table R507.2.3.
- Holes for through bolts ***shall be drilled*** to a diameter of $^1/_{32}$ inch to $^1/_{16}$ inch larger than the bolt diameter.
- Connectors shall be installed in accordance with the manufacture's *approved* instructions.

Support Deck Joist Spans and Cantilevers

Additional Language

- Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Tables R507.5(1) through R507.5(4) and based on the joist span length and cantilever length as shown in Figure R507.6.



Code Change

Support Deck Joist Spans and Cantilevers

R507.5 Deck beams. Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Tables R507.5(1) through R507.5(4) and based on the joist span length and cantilever length as shown in Figure R507.6. Beam plies shall be fastened together with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.

TABLE R507.5(1) MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD[c]

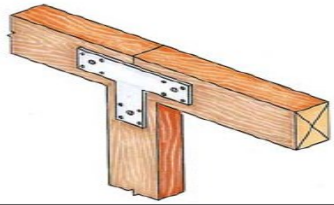
	JOIST SPAN	JOIST SPAN LENGTH & JOIST CANTILEVER LENGTH[a, i] (feet & feet)									
	6	6 & 0	6 & 1.5								
	8		8 & 0	8 & 1	8 & 2						
	10			10 & 0	10 & 1	10 & 2.5					
	12				12 & 0	12 & 1	12 & 2	12 & 3			
	14					14 & 0	14 & 1	14 & 2	14 & 3.5		
	16						16 & 0	16 & 1	16 & 2.5	16 & 4	
	18							18 & 0	18 & 1.5	18 & 3	18 & 4.5
		EFFECTIVE DECK JOIST SPAN LENGTH[a, i, j] (feet)									
		6		8		10		12	14	16	18
BEAM SPECIES[d]	BEAM SIZE[e]	MAXIMUM DECK BEAM SPAN LENGTH[a, b, i] (feet-inches)									
Southern pine	1 – 2 × 6	4-10	4-7	4-3	4-0	3-7	3-5	3-3	3-0	2-10	2-8
	1 – 2 × 8	6-4	5-11	5-6	5-1	4-7	4-4	4-2	3-10	3-7	3-5
	1 – 2 × 10	7-6	7-0	6-6	6-0	5-5	5-2	4-11	4-7	4-3	4-0
	1 – 2 × 12	8-8	8-3	7-8	7-1	6-4	6-1	5-10	5-5	5-0	4-9
	2 – 2 × 6	7-4	6-11	6-5	5-11	5-4	5-1	4-10	4-6	4-3	4-0
	2 – 2 × 8	9-4	8-9	8-2	7-7	6-9	6-5	6-2	5-9	5-4	5-0
	2 – 2 × 10	11-0	10-4	9-8	9-0	8-0	7-8	7-4	6-9	6-4	6-0
	2 – 2 × 12	13-0	12-2	11-4	10-7	9-5	9-0	8-7	8-0	7-5	7-0
	3 – 2 × 6	9-0	8-6	7-11	7-5	6-8	6-4	6-1	5-8	5-3	4-11
	3 – 2 × 8	11-7	10-11	10-3	9-6	8-6	8-1	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-11	13-0	12-1	11-2	10-0	9-7	9-2	8-6	7-11	7-6
	3 – 2 × 12	16-3	15-3	14-3	13-3	11-10	11-3	10-9	10-0	9-4	8-10

TABLE R507.5(1) MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD[c]

JOIST SPAN	JOIST SPAN LENGTH AND JOIST CANTILEVER LENGTH[a, i] (feet & feet)									
6	6 & 0	6 & 1.5	–	–	–	–	–	–	–	–
8	–	8 & 0	8 & 1	8 & 2	–	–	–	–	–	–
10	–	–	10 & 0	10 & 1	10 & 2.5	–	–	–	–	–
12	–	–	–	12 & 0	12 & 1	12 & 2	12 & 3	–	–	–
14	–	–	–	–	14 & 0	14 & 1	14 & 2	14 & 3.5	–	–
16	–	–	–	–	–	16 & 0	16 & 1	16 & 2.5	–	–
18	–	–	–	–	–	–	18 & 0	18 & 1.5	18 & 3	18 & 4.5
BEAM SPECIES[d] BEAM SIZE[e]	MAXIMUM DECK BEAM SPAN LENGTH[a, b, i] (feet-inches)									
1 – 2 × 6	4-10	4-7	4-3	4-0	3-7	3-5	3-3	3-0	2-10	2-8
1 – 2 × 8	6-4	5-11	5-6	5-1	4-7	4-4	4-2	3-10	3-7	3-5
1 – 2 × 10	7-6	7-0	6-6	6-0	5-5	5-2	4-11	4-7	4-3	4-0
1 – 2 × 12	8-8	8-3	7-8	7-1	6-4	6-1	5-10	5-5	5-0	4-9
2 – 2 × 6	7-4	6-11	6-5	5-11	5-4	5-1	4-10	4-6	4-3	4-0
2 – 2 × 8	9-4	8-9	8-2	7-7	6-9	6-5	6-2	5-9	5-4	5-0
Southern pine 2 – 2 × 10	11-0	10-4	9-8	9-0	8-0	7-8	7-4	6-9	6-4	6-0
2 – 2 × 12	13-0	12-2	11-4	10-7	9-5	9-0	8-7	8-0	7-5	7-0
3 – 2 × 6	9-0	8-6	7-11	7-5	6-8	6-4	6-1	5-8	5-3	4-11
3 – 2 × 8	11-7	10-11	10-3	9-6	8-6	8-1	7-9	7-2	6-8	6-4

Additional Language

Built-Up Beams – R507.5.1



R507.5.1 Deck beam bearing. Beams and individual beam plies of built-up beams shall be continuous between bearing locations and continuous across bearing locations supporting beam cantilevers. Beams shall be permitted to cantilever beyond bearing locations up to one fourth of the actual beam span. The ends of beams shall have not less than 1 1/2 inches (38 mm) of bearing length on wood or metal and not less than 3 inches (76 mm) of bearing length on concrete or masonry for the entire width of the beam. ~~Where multiple-span beams bear on intermediate posts, each ply must have full bearing on the post in accordance with Figures R507.5.1(1) and R507.5.1(2).~~

Reason: 1) There is still uncertainty by some code readers as to whether each end of each ply of a multi-ply ("built-up") beam must be supported on a bearing location. This is indeed the intent and is what this proposal attempts to clarify. Please note that in prescriptive wood frame construction, this has always been the rule. The 1931 edition of "Light Frame House Construction" by the Federal Board of Vocational Education" provides the following on page 40: "At the point of bearing the beam should be carefully sized, so that every piece of the built-up girder is in full contact with the support".
2) The term "length" was included to clarify the direction of the minimum bearing measurement. This term compliments the existing term "width" regarding the beam.
3) The reference to Figures R507.5.1(1) and (2) was removed in section R507.5.1 "deck beam bearing", because those figures speak to the connection of the beam to the post and not the bearing. A reference to those figures is already provided in the section on beam

New Code Language

Deck Ledger Flashing – R507.9.1.5

R507.9.1.5 Ledger flashing.

Where ledgers are attached to wood-frame construction, flashing shall be installed above the ledger to prevent the entry of water into the wall cavity or behind the ledger. Flashing shall extend vertically not less than 2 inches (51 mm) above the ledger. Flashing shall extend horizontally not less than 4 inches (102 mm) beyond the ledger face or shall extend to the ledger face and not less than 1/4 inch down the ledger face.

Exceptions:

1. Where a window or door opening is located less than 2 inches (51 mm) above the ledger, flashing shall extend to the bottom of the wall opening.
2. Flashing is not required where the ledger is spaced horizontally from the *exterior wall covering* not less than 1/4 inch (6.4 mm) to allow for drainage and ventilation behind the ledger.

New Code Language

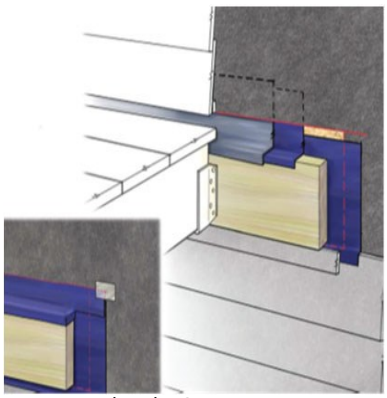
Deck Ledger Flashing

Water-Resistive Barrier - R507.9.1.6

The water-resistive barrier required by Section R703.2 shall be lapped over a vertical leg of the ledger flashing or counterflashing extending up the wall by not less than 2 inches (51 mm) or the height of the vertical flashing leg, whichever is less. The *water-resistive barrier* shall continue from the top of the ledger flashing down the wall and behind the ledger flashing and ledger.

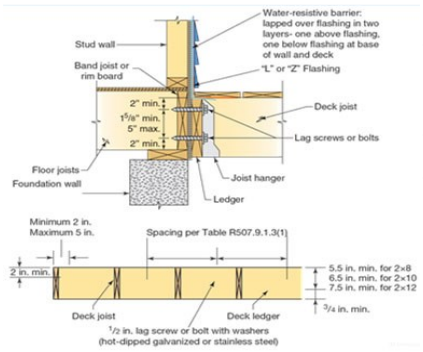
Exceptions:

1. Flashing shall be permitted to be placed against the face of the *water-resistive barrier* where a self-adhering membrane counterflashing is installed not less than 2 inches (51 mm) over the vertical leg of the flashing and not less than 2 inches (51 mm) onto the *water-resistive barrier*.
2. Flashing shall be permitted to be placed in front of the *water-resistive barrier* and behind the *exterior wall covering* where ledgers are spaced horizontally from the exterior wall not less than $^1/_4$ inch (6.4 mm) to allow for drainage and ventilation behind the ledger.



Journal Light Construction

R507.2.4 & R703.4 - Flashing



International Code Council

Predrilled holes with lag screws req'd
R507.9.1.3
Ledger to Band Joist

Deck Ledger Flashing

New Code Language

R507.9.1.7 Existing walls.
Where ledgers are attached to existing walls without water-resistive barriers, a *water-resistive barrier* shall be installed behind the ledger and ledger flashing. The *water-resistive barrier* shall extend to the top of the ledger flashing vertical leg and not less than ½″ beyond the sides and bottom of the ledger. A self-adhering membrane counterflashing shall be installed not less than 2″ over the vertical leg of the ledger flashing and not less than 2″ onto the existing sheathing.

Exceptions:

1. Where a window or door opening is located less than 2″ above the ledger, flashing shall extend to the bottom of the wall opening.
2. Flashing is not required where the ledger is spaced horizontally from the *exterior wall covering* not less than ¼″ to allow for drainage and ventilation behind the ledger.

Deck Ledger Flashing

New Code Language

R507.9.1.8 Exterior wall coverings.

Exterior wall coverings shall be terminated above the finished deck surface in accordance with the covering manufacturer's requirements and Chapter 7, as applicable to the type of covering.

Exception: *Exterior wall coverings* shall be permitted behind ledgers in accordance with Section R507.9.1.5 where capable of resisting compression forces from the ledger attachment.

Modification-of Sheathing

Chapter 6 – Walls, Fastening Schedules

Item	Description of Building Elements	Number and Type of Fastner [a, b, c]	Spacing of Fasteners	
			Edges [h] (inches)	Intermediate Support [c, e]
Wood Structural Panels, Subfloor, Roof and Interior Wall Sheathing to Framing and Particleboard Wall Sheathing to Framing [see Table R602.3(3) for Wood Structural Panel Exterior Wall Sheathing to Wall				
31	3/8" – 1/2"	6d common or deformed (2" × 0.113" × 0.266" head); or 23/8" × 0.113" × 0.266" head nail (subfloor, wall)i	6	12
		8d common (21/2" × 0.131" × 0.281" head) nail (roof); or	6 [f]	6 [f]
		RSRS-01 (23/8" × 0.113" × 0.281" head) nail (roof)b		
32	19/32" – 3/4"	8d common (21/2" × 0.131") nail (subfloor, wall)	6	12
		8d common (21/2" × 0.131" × 0.281" head) nail (roof); or	6 [f]	6 [f]
		RSRS-01; (23/8" × 0.113" × 0.281" head) nail (roof)b		
		Deformed 23/8" × 0.113 × 0.266" head (wall or subfloor)	6	12
33	7/8" – 11/4"	10d common (3" × 0.148") nail; or	6	12
		(21/2" × 0.131 × 0.281" head) deformed nail		

f. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 4 inches on center where the ultimate design wind speed is greater than 130 mph in Exposure B or greater than 110 mph in Exposure C. Fastener spacing applies where roof framing specific gravity is 0.42 or larger. Where roof framing specific gravity is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, fastening of roof sheathing shall be with (Roof Sheathing Ring Shank Nails) RSRS-03 (21/2" × 0.131" × 0.281" head) nails.

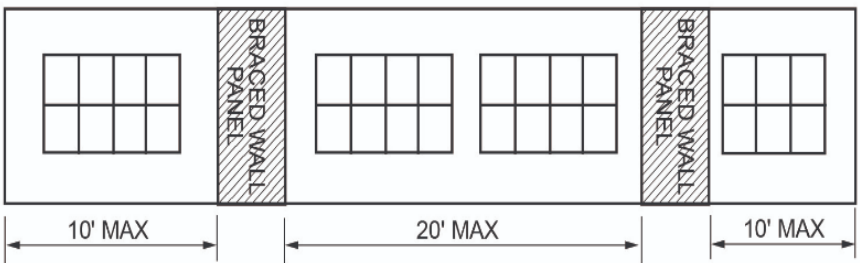
- Fastener spacing applies where roof framing Specific Gravity ≥ 0.42 or larger.
- Where roof framing specific gravity is greater than or equal to 0.35 but less than 0.42 in accordance with AWC NDS, fastening of roof sheathing **shall be** with RSRS-03 ($2^{1}/_{2}$" × 0.131" × 0.281" head) nails.

RB192 AS, RB193 AMPC, RB195 AMPC

Clarified / Modification

Locations of Braced Wall Panels – R602.10.2.2

- The nearest edge of a *braced wall panel* shall be located within 10 ft. from each end of a *braced wall line* as determined in Section R602.10.1.1.



RB199 AM, RB200 AM

Wall Height - Wood Framing – R602.10.3.1

Code Change

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**

R602.10.3.1 Wall height for wood framing

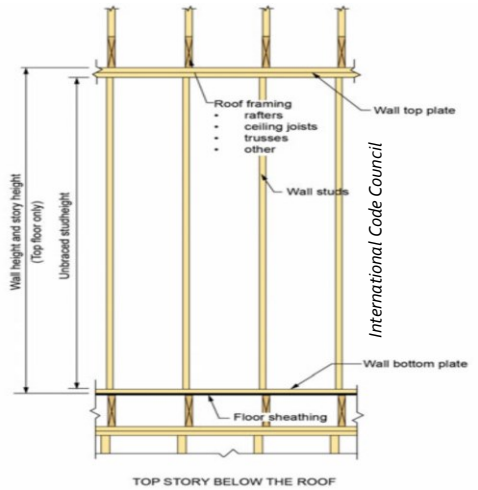


Figure R602.10.3.1

Wall Height - Wood Framing – R602.10.3.1

Modification

Table R602.10.3(2)

Wind Adjustment Factors to the Required Length of Wall Bracing

ITEM NUMBER	ADJUSTMENT BASED ON	STORY/SUPPORTING	CONDITION	ADJUSTMENT FACTOR [multiply length from Table R602.10.3(1) by this factor]
3	Wall Height (Section R602.10.3.1) ~~Story height (Section R301.3)~~	Any story	8 feet	0.90
			9 feet	0.95
			10 feet	1.00
			11 feet	1.05
			12 feet	1.10

Wall Bracing - Wood Framing – R602.10.5

Clarification

Table R602.10.5 - **Minimum Length of Braced Wall Panels**

Footnotes:

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.

R602.10.6 - Construction of Methods ABW, PFH, PFG, CS-PF and BV-WSP.

Methods ABW, PFH, PFG, CS-PF and BV-WSP shall be constructed as specified in Sections R602.10.6.1 through R602.10.6.5.

For the purposes of determining *braced wall panel* spacing *and end distance*, the edge of Methods PFH, PFG and CS-PF shall be defined as the end of the header.

Construction Methods –R602.10.6 - Alternative BWPs

Clarification

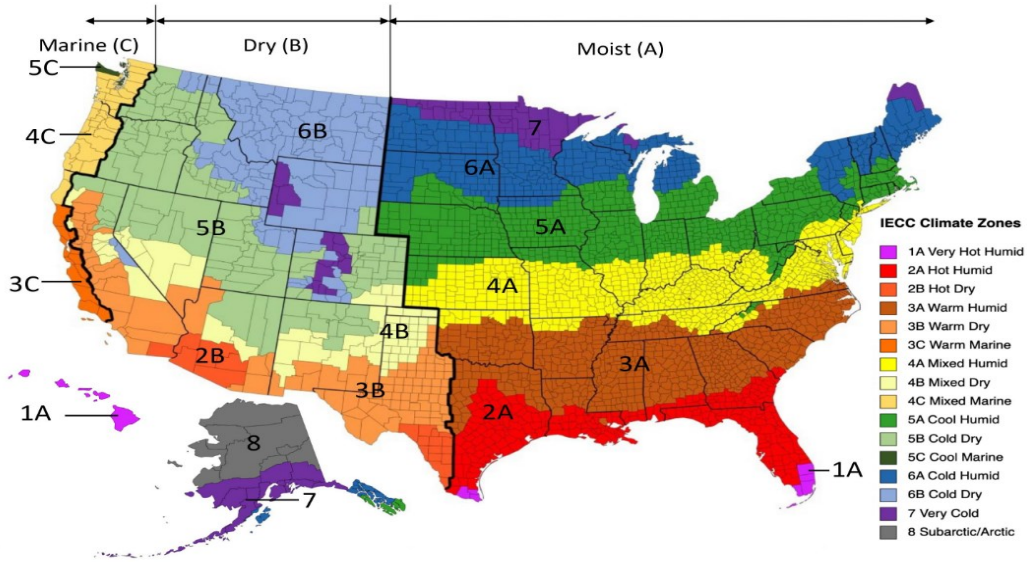
Length of Portal Frame

Note: Header shall not extend over more than one opening.

- The intent of this change proposal is to clarify the header requirement for portal frames and to limit the header to a single-span configuration, as originally tested, with double portal frames. This question has been frequently raised in the field and is worth clarification in the IRC. Portal frames first appeared in the 2009 IRC and were based on tests conducted by APA and NAHB, in which the headers were tested in a single-span configuration. While it can be argued that this is reflected in the detailed drawings of the existing Figures R602.10.6.2, R602.10.6.3, and R602.10.6.4, a careful examination is usually required to spot such a subtle difference. The addition of the clarification note as proposed will make these figures easier to follow and less prone to confusion. In practical applications, continuous headers if purchased for double portal frames can be cut into 2 single-span headers before installation into each portal frame.

Reminder

Climate Zone



Code Addition

Vapor Retarders - R702.7

- **New Definition has been added**

Responsive Vapor Retarder

A vapor retarder material complying with a *vapor retarder class* of Class I or Class II but which also has a vapor permeance of 1 perm or greater in accordance with ASTM E96, water method (Procedure B).

- Continuous insulation without a vapor retarder on the exterior side of walls is allowed in some climate zones

Exceptions: 1-4

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

Code Change & Modification

Climate Zone - Vapor Retarders - R702.7

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. 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 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.

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*.

RB208 AM, RB209 AM, RB210 AS

Code Modification & New - R703.2

R703.2 Water-resistive barrier.

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.

No.15 asphalt felt and *water-resistive barriers* complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).

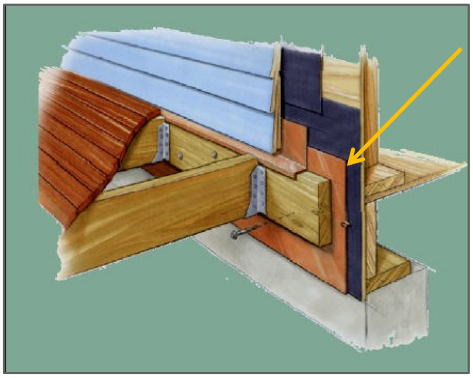
Exception: A *water-resistive barrier* shall not be required in unconditioned detached tool sheds, storage sheds, playhouses, and other similar *accessory structures* provided all of the following requirements are met:

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.

RB190 AMPC, RB212 AS, RB213 AS, RB214 AS

Water-Resistive Barrier - R703.2

- Continuous WRB behind deck ledgers



Flashing – R703.4

Clarified Application

- *Approved* corrosion-resistant flashing shall be applied in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Overlapped flashing shall be applied in *shingle fashion*. . .
- Flashing shall be installed above deck ledgers in accordance with Section R507.9.1.5.

https://www.decks.com

Addition

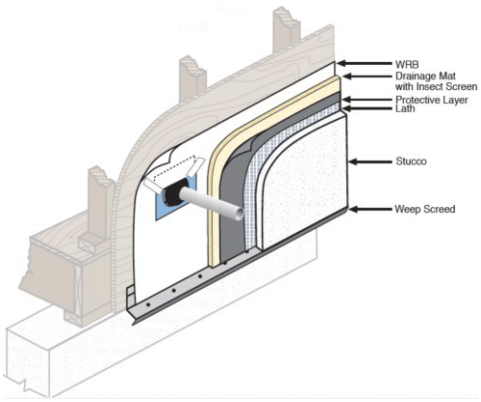
Furring over WRBs for Shakes and Shingles – R703.6.1

- 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.
- When installed over foam plastic *insulating sheathing*, furring attachments shall comply with Section R703.15, R703.16 or R703.17

Addition

Water Resistive Barriers for Stucco – R703.7.3

- Several changes to the water-resistive barrier (WRB) requirements for stucco:
  - **Sheathing:** WRBs and drainage requirements now apply to all sheathing types behind stucco, not just wood-based sheathing.
  - **Dry climates:** WRB options for stucco in dry climates have been modified.
  - **Separation:** The WRB must be separated from the stucco by a drainage space, waterproof layer, foam insulation, or material that drains water away from the wall.



Vinyl Siding R703.11 - Exterior Wall Coverings

Clarification

- **R703.11 Vinyl Siding** - *Vinyl siding* shall be certified and *labeled* as conforming to the requirements of **ASTM D3679** by an *approved* agency.
- **R703.11.1 Installation** - *Vinyl siding*, *insulated vinyl siding* and compatible accessories shall be installed in accordance with the manufacturer's installation instructions.
- **R703.11.1.1 Starter Strip** - 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). When 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.

https://polymericexteriors.org

Vinyl Siding Institute is now the Polymeric Exterior Products Association (PEPA)

https://polymericexteriors.org/installation/installation-manual

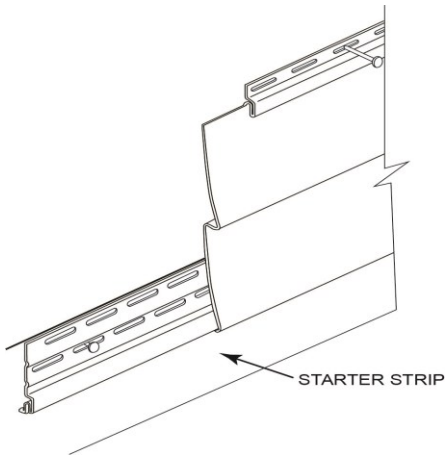


Figure R703.11.1.1(1) [a]

RB229 AM, RB230 AM, RB236 AM, RB228 AS, RB231 AM, RB232 AM

Vinyl Siding R703.11 - Exterior Wall Coverings

Code Addition

- **R703.11.1.2 Utility trim.**

When 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 FiguresR703.11.1.2(1) and R703.11.1.2(2).

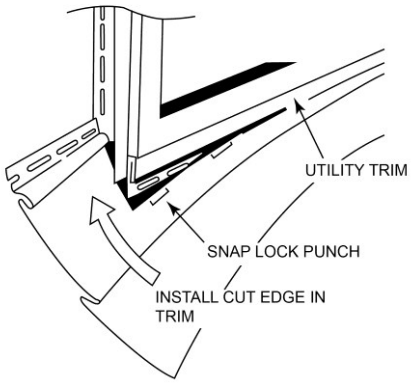


Figure R703.11.1.2 (2)
Typical Snap Lock and Utility Trim Under Window

RB229 AM, RB230 AM, RB236 AM, RB228 AS, RB231 AM, RB232 AM

Code Change

Fiber-Mat Reinforced Backer Units – R703.18

RB235-22

Original Proposal

IRC: R703.18 (New)

Proponents: Michael Gardner, M Gardner Services, LLC, National Gypsum Company (michael@mgardnerservices.com)

2021 International Residential Code

Add new text as follows:

R703.18 Fiber-mat reinforced cementitious backer units. 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 manufacturer's installation instructions. Backer units shall be installed using corrosion-resistant fasteners. Finish materials shall be installed in accordance with manufacturer's instructions.

Reason: ASTM C1325 cement board (technically, fiber-mat reinforced cementitious backer unit) was incorporated into the IRC in the mid-2000s when it was added to Section 702 as a substrate for interior wall tile in shower and tub areas.
In the interim period, C1325 cement board has gained use as an exterior substrate. It is primarily used for architectural stone and direct-applied finish system applications.

Exterior use of cement board is permitted by the C1325 standard and the two applicable Acceptance Criteria for cement board: AC 376, which addresses the cement board itself, and AC 59, which addresses direct-applied finish systems.

But because the only IRC reference to the material is the interior use described in Section 702 confusion occurs regarding the ability to use cement board as an exterior substrate. This proposal intends to clarify that cement board conforming with the ASTM C1325 standard can be used as a substrate in exterior applications by expanding the existing IRC reference to apply to exterior applications under Section R703.

A change to the IBC with the same intent was approved during the 'A' Cycle.

New Code

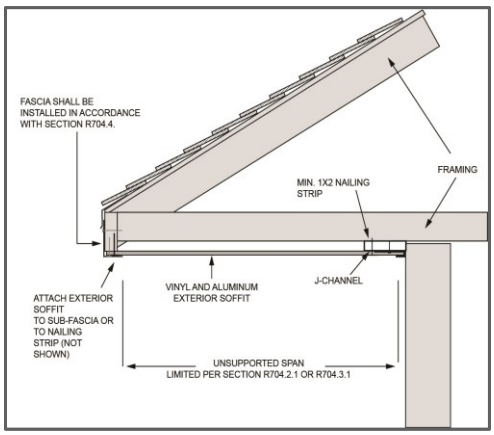
Exterior Soffits and Fascia – R704

R704.4 Fascia - shall be installed in accordance with the manufacturer's installation instructions.

R704.4.1 Aluminum fascia - 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 - When the design wind pressure is 30 lb. psf. or less, aluminum fascia shall be attached with one finish nail [$1^1/_4$" X 0.57" X 0.177" head diameter (32 mm × 14.5 mm × 4.5 mm)] in the return leg spaced a maximum of 24" o.c., and the fascia shall be inserted under the drip edge with at least 1" of fascia material covered by the drip edge. . .

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



Roof Assemblies ~~Covering Materials~~ – R902.1

- Roof decks shall be covered with materials as set forth in Section R904 or with roof coverings as set forth in Section R905. Class A, B or C roof assemblies shall be installed in *jurisdictions* designated 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.

- **Reason:** Changing "roofing" to "roof assemblies" in Section R902.1 is important to recognize that roof assemblies are classified, not "roofing." The additional changes create a logical progression of thought that establishes when fire classification is required, what tests are to be done when fire classification is necessary, and provisions for listing when that additional step is appropriate.

Roof Assemblies

Ice Barriers - 905

- A significant change in the 2024 IRC that affects how ice barriers are installed on steep-sloped roofs.
- Specifically, Section R905.1.2 & R905.2.1 which governs the use of ice barriers, has been revised to remove a requirement that applied to roofs with a slope of 8:12 or greater.

Code language

- The ice barrier shall consist of not fewer than two layers of *underlayment* cemented together, or a self-adhering polymer-modified bitumen sheet shall be used in place of normal *underlayment* and extend from the lowest edges of all roof surfaces to a point not less than 24 inches inside the exterior wall line of the *building*.
- On roofs with slope equal to or greater than 8 units vertical in 12 units horizontal, the ice barrier shall be applied not less than 36 inches measured along the roof slope from the eave edge of the *building*.

Roof Covering Application

Roof Covering - Sheathing - 905

- **R905.2.1 Sheathing requirements.** Asphalt shingles shall be fastened to *wood structural panels* or solid lumber sheathing. ~~solidly sheathed decks.~~
- **R905.3.1 ~~Deck~~ Sheathing requirements.** Concrete and clay tile shall be installed ~~only~~ over ~~solid sheathing.~~ *wood structural panels* or solid lumber sheathing.
- **R905.4.1 ~~Deck~~ Sheathing requirements.** *Metal roof shingles* shall be fastened to *wood structural panels*, solid lumber sheathing, or closely-fitted lumber sheathing ~~applied to a solid or closely fitted deck~~, except where the roof covering is specifically designed to be applied to spaced lumber sheathing.

Clay, Concrete and Slate Roofs – Wind - 905

- Roof cladding must resist component and cladding loads
- **R905.3.6 Wind resistance of concrete and clay tile**
- **R905.5.6 Wind resistance of mineral-surfaced roll roofing - R905.6.5 Wind resistance of slate shingles.**
- Component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).

New Code

RB268-22

Original Proposal

IRC: R905.6.5 (New), TABLE R905.6.5 (New)

Proponents: Mark Graham, National Roofing Contractors Assoc., National Roofing Contractors Assoc. (mgraham@nrca.net)

2021 International Residential Code

Add new text as follows:

R905.6.5 Wind resistance of slate shingles. 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 ACCORDACNE 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

Reason: This code change proposal is intended to provide building officials and users of the code guidance regarding the wind resistance of slate roof covings. Wind resistance of slate roof coverings is not currently addressed in the IRC. This code change adds wind resistance testing in accordance with ASTM D3161 and its classification designations similar to what is already provided for in the IBC for asphalt shingles and metal roof shingles. A new table is added, Table R905.6.5 providing the required wind resistance classification based on the maximum ultimate design wind speed, Vult, or maximum basic wind speed, Vasd. Slate package labeling is required to facilitate classification identification and enforcement. Such package labeling would be slate supplier specific, but most likely would be in the form of a pallet tag

New Code & Addition

Wood Shakes and Shingles – R907, 905.8

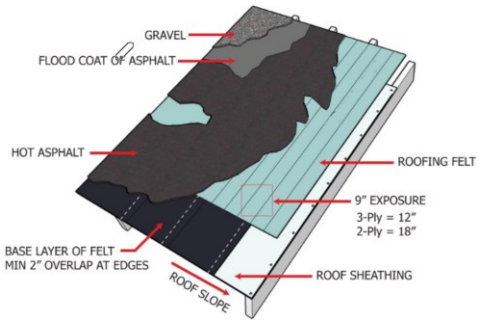
- New Sheathing & Fastening Req'ts
- Wind Resistance added
- In regions when wind design is required in accordance with Figure R301.2.1.1, wood shingles shall be installed to resist the component and cladding loads specified in Table R301.2.1(1), adjusted for height and exposure in accordance with Table R301.2.1(2).
- In regions when 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.

New Code & Addition

Wind Resistance—Built-Up, Metal and Bitumen Roofing – R905.9, R905.10, R905.11

- New Req't. added for Wind Resistance for built-up and modified bitumen roofing and for metal roof panels
- New testing standards
- All connected back to FigureR301.2.1.1
- Regions wind Design is Required in Table R301.2.19(1), Components and Cladding Loads

Brent Snyder's Old Barn



New Code & Addition

Single-ply Liquid and Sprayed Roofing – R905.12, R905.13, R905.14

- Table R905.12 – Single-Ply Roofing Material Standards - Updated
- R905.12.4 - Wind resistance of single-ply roofing – (CC)
- Table R905.13.3 - Protective Coating Material Standards
- R905.13.4 - Wind resistance of sprayed polyurethane foam roofing
- R905.14.4 - Wind resistance of liquid-applied roofing
- New Testing Standard are added as option

New Code & Addition

Single-ply Liquid and Sprayed Roofing – R905.12, R905.13, R905.14

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
Thermosplastic polyolefin (TPO)	ASTM D6878

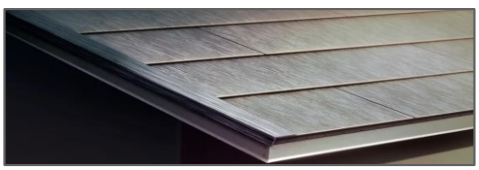
RB266 AM, RB274 AS

Clarification and Addition

BIPV Roofs - R905.15, R905.16

R905.15.1 Sheathing requirements. *BIPV shingles* shall be 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.

R905.16.1 Sheathing requirements. *BIPV roof panels* shall be 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.



RB254 AS, RB261 AS,
RB266 AM, S35-22 Part II AS

New Code Exceptions

Roof Replacement - R908.3

- Roof Replacement: Exceptions 1-3
- Ice-barrier membrane and self-adhered underlayment is permitted to stay in place if all material is in good shape. Without remove and another overlay

New Section in Code

Roof Coatings - R909

- Chpt 2 Definition: **ROOF COATING.** A fluid-applied, adhered coating used for roof maintenance or *roof repair*, or as a component of a *roof covering* system or *roof assembly*.

New Section in Code

Roof Coatings - R909

R909.1 General.

The installation of a *roof coating* on 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.

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

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

Summary

- Verify all code requirements.
- Call upon one another for uniformity of code enforcement.
- …And remember: "Life is good." (Brent Snyder 2006)

THANK YOU FOR LISTENING