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Proposed Permanent Rules Adopting Changes to the International Residential Cod
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1309.0010 ADOPTION OF INTERNATIONAL RESIDENTIAL CODE (II	RC) BY
REFERENCE.	

- Subpart 1. **Generally.** The <u>2012</u> <u>2018</u> edition of the International Residential Code ("IRC") as promulgated by the International Code Council, Inc. ("ICC"), Washington, D.C., is incorporated by reference and made part of the Minnesota State Building Code except as qualified by the applicable provisions in Minnesota Rules, chapter 1300, and as amended in this chapter. Portions of this publication reproduce excerpts from the <u>2012</u> <u>2018</u> IRC, International Code Council, Inc., Washington, D.C., copyright <u>2012</u> <u>2017</u>, reproduced with permission, all rights reserved. The IRC is not subject to frequent change and a copy of the IRC, with amendments for use in Minnesota, is available in the office of the commissioner of labor and industry.
- Subp. 1a. **Deleted appendices.** All of the IRC appendices are deleted except Appendix K and Appendix Q.
- Subp. 2. **Mandatory chapters.** The <u>2012</u> <u>2018</u> IRC chapters 2 to 10, 44, section P2904 of chapter 29, and Appendix K, and Appendix Q shall be administered by any municipality that has adopted the Minnesota State Building Code, except as qualified by the applicable provisions in Minnesota Rules, chapter 1300, and as amended by this chapter.
- Subp. 3. **Replacement chapters.** The following 2012 2018 IRC chapters are being deleted and replaced with the provisions listed below in items A to E:
 - A. Chapter 1 of the 2012 2018 IRC and any references to code administration in this code are is deleted and replaced with Minnesota Rules, chapter 1300, Minnesota Building Code Administration as provided in part 1309.0100, subpart 1.

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2.1	B. Chapter 11 of the 2012 2018 IRC and any references to residential or
2.2	commercial energy in this code are deleted and replaced with Minnesota Rules, chapters
2.3	1322 and 1323, Minnesota Energy Code.
2.4	C. Chapters 12 to 24 of the 2012 2018 IRC and any references to mechanical
2.5	matters in this code are deleted and replaced with Minnesota Rules, chapter 1346, Minnesota
2.6	Mechanical Code.
2.7	D. Chapters 25 to 33 of the 2012 2018 IRC and any references to plumbing in
2.8	this code are deleted and replaced with Minnesota Rules, chapter 4714, Minnesota Plumbing
2.9	Code, except that section P2904 of IRC chapter 29 is not deleted.
2.10	E. Chapters 34 to 43 of the 2012 2018 IRC and references to electrical matters in
2.11	this code, other than section sections R314 Smoke Alarms and R315 Carbon Monoxide
2.12	Alarms, are deleted and replaced with Minnesota Rules, chapter 1315, Minnesota Electrical
2.13	Code.
2.14	Subp. 4. [Repealed, 39 SR 91]
2.15	[For text of subparts 5 and 6, see Minnesota Rules]
2.16	1309.0020 REFERENCES TO OTHER ICC CODES.
2.17	Subpart 1. Generally. References to other codes and standards promulgated by the
2.18	ICC in the 2012 2018 IRC are modified in subparts 2 to 11.
2.19	[For text of subparts 2 to 6, see Minnesota Rules]
2.20	Subp. 7. Plumbing code. References to the International Plumbing code in this code
2.21	mean the Minnesota Plumbing Code, Minnesota Rules, chapter 4714, adopted under
2.22	Minnesota Statutes, section 326B.106, subdivisions 1 and 2 326B.435.
2.23	[For text of subparts 8 to 11, see Minnesota Rules]

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3.1	1309.0100	CHAPTER 1, ADM	INISTRATION.		
3.2		[For text of sub	pparts 1 and 2, see Minn	nesota Rules]	
3.3	Subp.	3. Transient use. Bui	ldings constructed for tr	ransient use and rec	quired to be
3.4	licensed by	any Minnesota state aş	gency shall be construct	ed in accordance w	vith the
3.5	requiremen	ts for Group R occupar	ncies located in Minneso	ota Rules, chapter	1305.
3.6	1309.0202	SECTION R202, DE	EFINITIONS.		
3.7		[For text of	^c subpart 1, see Minneso	ota Rules]	
3.8	Subp. 2	2. Additional definitio	ns. IRC section R202 is	amended by adding	the following
3.9	definitions:				
3.10	<u>APPROVE</u>	E D. "Approved" means ε	approval by the building	official, pursuant to	the Minnesota
3.11	State Build	ing Code, by reason of	<u> </u>		
3.12	a. insp	ection, investigation, or	r testing;		
3.13	b. acce	epted principles;			
3.14	c. com	puter simulations;			
3.15	d. rese	arch reports; or			
3.16 3.17	-	ng performed by either a laboratory.	a licensed engineer or by	a locally or nationa	lly recognized
3.18	CODE. For	r purposes of this chapt	ter, "the code" or "this c	ode" means the Mi	nnesota
3.19	Residential	Code, Minnesota Rule	s, chapter 1309.		
3.20	CRAWL S	PACE. Areas or rooms	s with less than 6 feet 4	inches (1931 mm)	ceiling height
3.21	measured to	o the finished floor or g	grade below.		

FLASHING. Approved corrosion-resistive material provided in such a manner as to deflect

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and resist entry of water into the construction assembly.

3.22

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4.1 **FLOOR AREA.** The calculated square footage of the floor within the inside perimeter of

- 4.2 the exterior walls of the building under consideration without deduction for hallways,
- 4.3 stairways, closets, the thickness of interior walls, columns, or other features.
- 4.4 **KICK-OUT FLASHING.** Flashing used to divert water where the lower portion of a sloped
- 4.5 roof stops within the plane of an intersecting wall cladding.

OCCUPANCY CLASSIFICATIONS

- 4.7 **IRC-1** Single-family dwelling
- 4.8 **IRC-2** Two-family dwellings
- 4.9 **IRC-3** Townhouses
- 4.10 **IRC-4** Accessory structures:
- a. Garages;

4.6

- 4.12 b. Storage sheds; and
- 4.13 c. Similar structures.
- 4.14 **SILL HEIGHT.** The lowest part of the window opening of an operable window measured
- 4.15 from the finished floor.
- 4.16 **TRANSIENT.** Occupancy of a dwelling unit or sleeping unit for not more than 30 days.
- 4.17 **WATERPROOFING.** Treatment of a surface or structure located below grade to resist
- 4.18 the passage of water in liquid form, under hydrostatic pressure that bridges nonstructural
- 4.19 cracks.
- 4.20 **1309.0301 SECTION R301, DESIGN CRITERIA.**
- 4.21 Subpart 1. [Repealed, 39 SR 91]
- Subp. 2. **IRC Table R301.2(1).** Table R301.2(1) is amended to read as follows:

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TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

5.1

5.2 5.3	$\begin{array}{c} \text{ROOF SNOW} \\ \text{LOAD}^{\text{f}} \end{array}$	WIND DE	ESIGN	SEISMIC DESIGN CATEGORY ^l
5.4		Speed ^d (mph) Te	opographic effects ^k	
5.5	$p_{\rm f} = 0.7 * p_{\rm g}$	90 <u>115</u>	YES	A
5.6 5.7	SUBJE	CT TO DAMAGE FF	ROM	WINTER DESIGN TEMP ^e
5.8	Weathering ^a	Frost line depth ^b	Termite ^c	
5.9 5.10	Severe	See MR part 1303.1600	See Footnote "c"	lee MR chapter 1323 1322
5.11 5.12 5.13	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
5.14 5.15	Yes	See MR chapte 1335	er See Table R403.3(2	41.16 <u>See Footnote</u> "j"

- For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.
- ^{5.17} ^a- Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index, such as "negligible," "moderate," or "severe," for concrete as determined from the Weathering Probability Map [Figure R301.2(3)] R301.2(4). The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216, or C 652.
- b- See Minnesota Rules, part 1303.1600 -- Footing Depth for Frost Protection to verify
 whether the county requires Zone I or Zone II frost protection.
- c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

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6.1 d. The jurisdiction shall fill in this part of the table with the wind speed from the basic See

- wind speed map [Figure R301.2(4)A] R301.2(5)A. Wind exposure category shall be
- determined on a site-specific basis in accordance with section R301.2.1.4.
- ^{6.4} See Minnesota Rules, chapter 1322 Table R403.5.17, Climate Data Design Conditions
- 6.5 to verify by city.
- 6.6 frame of the frame of the first frame of the fi
- other structures are given in Minnesota Rules, part 1303.1700 Ground Snow Load to verify
- by county. The roof snow load is a uniform load on the horizontal projection of the roof.
- 6.9 g. See Minnesota Rules, chapter 1335, Flood Proofing Regulations.
- 6.10 h. In accordance with sections R905.2.7.1 R905.1.2, R905.2.7, R905.4.3.1, R905.5.3.1,
- 6.11 R905.6.3.1, R905.7.3.1, and R905.8.3.1, where there has been a history of local damage
- 6.12 from the effects of ice damming.
- 6.13 i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing
- 6.14 index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the
- 6.15 National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32° F)"
- at www.nedc.noaa.gov/oa/fpsf www.ncdc.noaa.gov.sites/default/files/attachments/Air-
- 6.17 Freezing-Index-Return-Periods-and-Associated-Probabilities.pdf.
- 6.18 j.: The jurisdiction shall fill in this part of the table with the mean annual temperature from
- 6.19 the National Climatic Data Center data table "Average Mean Temperature Index" at
- 6.20 http://www.esrl.noaa.gov/psd/data/usclimate/tmp.state.19712000.climo
- 6.21 www.ncdc.noaa.gov.sites/default/files/attachments/Air-Freezing-Index-Return-Periods-
- 6.22 and-Associated-Probabilities.pdf.
- 6.23 k. In accordance with section R301.2.1.5.
- 6.24 1- Assigned to allow the application of the least restrictive topographic provisions of the

6.25 code.

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Subp. 3. **IRC Figure R301.2(5) R301.2(6).** Figure R301.2(5) R301.2(6), Ground 7.1 Snow Loads, Pg, for the United States (lb/ft²), is deleted in its entirety. 7.2 Subp. 4. [Repealed, 39 SR 91] 7.3 1309.0302 SECTION R302, FIRE-RESISTANT CONSTRUCTION. 7.4 7.5 Subpart 1. IRC section R302.2, Townhouses Tables R302.1(1) and **R302.1(2).** Section R302.2 is Table R302.1(1) and Table R302.1(2) are amended to read 7.6 as follows: 7.7 R302.2 Townhouses. Each townhouse shall be considered a separate building and 7.8 shall be separated by fire-resistance-rated wall assemblies meeting the requirements 7.9 of section R302.1 for exterior walls. 7.10 Exception: A common 1-hour fire-resistance-rated wall assembly tested in 7.11 7.12 7.13

Exception: A common 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Minnesota Rules, chapter 1315. Penetrations of electrical outlet boxes shall be in accordance with section R302.4.

R302.2.1 Continuity. The fire-resistance-rated wall assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, roof deck, or roof slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed accessory structures. The separation shall extend through enclosed soffits, overhangs, and similar projections.

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R302.2.2 Parapets. Parapets constructed in accordance with section R302.2.3 shall be constructed for townhouses as an extension of exterior walls or common walls in accordance with the following:

1. where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces; or

2. where roof surfaces adjacent to the wall or walls are at different elevations, and the higher roof is not more than 30 inches (762 mm) above the lower roof, the parapet shall extend not less than 30 inches (762 mm) above the lower roof surface.

Exception: A parapet is not required in the two cases above when the roof is covered with a minimum class C roof covering, and the roof decking or sheathing is of noncombustible materials or approved fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of 5/8-inch (15.9 mm) type X gypsum board is installed directly beneath the roof decking or sheathing, supported by a minimum of nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a minimum distance of 4 feet (1219 mm) on each side of the wall or walls and there are no openings or penetrations in the roof within 4 feet (1219 mm) of the common walls.

3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.

TABLE R302.1(1) EXTERIOR WALLS

7/29/19	REVISOR	SS/LN RD4510
EXTERIOR WALL ELEMENT	MINIMUM FIRE-RESISTANO RATING	MINIMUM FIRE CE SEPARATION DISTANCE
Valls		
3	EXTERIOR WALL ELEMENT Valls	MINIMUM FIRE-RESISTANG EXTERIOR WALL ELEMENT RATING

9.5 Fire-resistance-rated 1-hour - tested in < 5 feet accordance with ASTM E 9.6 119 or UL 263 with 9.7 exposure from both sides 9.8 Not fire-resistance-rated 0 hours > 5 feet 9.9

Projections 9.10

Fire-resistance-rated 1-hour on the underside^a \geq 2 feet to \leq 5 feet 9.11 Not fire-resistance-rated 0 hours > 5 feet 9.12

9.13 **Openings in walls**

Not allowed N/A < 3 feet 9.14 25% Maximum of Wall Area 0 hours 3 feet 9.15 **Unlimited** 0 hours 5 feet

Penetrations 9.17

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A11 Comply with section < 5 feet 9.18 R302.4 9.19

5 feet None required 9.20

For SI: 1 foot = 304.8 mm 9.21

N/A = Not Applicable 9.22

^a 1-hour on the underside equates to one layer of 5/8-inch type X gypsum sheathing. Openings

are not allowed.

TABLE R302.1(2) EXTERIOR WALLS - DWELLINGS WITH FIRE SPRINKLERS

9.26		MINIMUM	MINIMUM FIRE
9.27		FIRE-RESISTANCE	SEPARATION
9.28	EXTERIOR WALL ELEMENT	RATING	DISTANCE

Walls 9.29

	07/29/19	REVISOR	SS/LN	RD4510
10.1 10.2 10.3 10.4	Fire-resistance-rated	1-hour - tested accordance with AS 119 or UL 263 v exposure from the o	STM E vith	eet
10.5	Not fire-resistance-rated	0 hours	3 f c	eet
10.6	Projections			
10.7	Fire-resistance-rated	1-hour on the unde	erside ^a 2 fe	eet
10.8	Not fire-resistance-rated	0 hours	3 f c	eet
10.9	Openings in walls			
10.10	Not allowed	N/A	< 3	feet
10.11	Unlimited	0 hours	3 fe	eet
10.12	Penetrations			
10.13 10.14	All	Comply with sec R302.4	tion <3:	feet
10.15		None required	1 3 fc	eet
10.16	For SI: 1 foot = 304.8 mm			
10.17	N/A = Not Applicable			
10.18	^a 1-hour on the underside equates to on	ne layer of 5/8-inch type X	gypsum sheathing.	Openings
10.19	are not allowed.			
10.20	R302.2.3 Parapet construct	tion. Parapets shall have t	he same fire-resista	ence rating
10.21	as that required for the supp	oorting wall or walls. On a	any side adjacent t	o a roof
10.22	surface, the parapet shall have noncombustible faces for the uppermost 18 inches			
10.23	(457 mm), to include counte	erflashing and coping mat	erials. Where the r	oof slopes
10.24	toward a parapet at slopes greater than 2 units vertical in 12 units horizontal (16.7)			
10.25	percent slope), the parapet s			·
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roof within a distance of 3 feet (914 mm), but in no case shall the height be less

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than 30 inches (762 mm).

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R302.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

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- 1. Foundations supporting exterior walls or common walls.
- 2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
- 3. Nonstructural wall and roof coverings.
- 4. Flashing at termination of roof covering over common wall.
- 5. Townhouses separated by a common 1-hour fire-resistance-rated wall as provided in section R302.2.

R302.2.5 Sound transmission. Townhouses constructed in accordance with section R302.2 shall comply with the sound transmission requirements of Appendix K.

TABLE R302.1(1)

EXTERIOR WALLS

EXTERI	OR WALL ELEMENT	MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour - tested in accordance with ASTM E 119, UL 263, or section 703.3 of the International Building Code with exposure from both sides	
	Not fire-resistance rated	<u>0 hours</u>	<u>≥ 5 feet</u>
	Not allowed	<u>NA</u>	< 2 feet
Projections	Fire-resistance rated	1 hour on the underside, or heavy timber, or	\geq 2 feet to < 5 feet

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		$\frac{\text{fire-retardant-treated}}{\text{wood}^{a,b,c}}$	
	Not fire-resistance rated	0 hours	<u>≥ 5 feet</u>
	Not allowed	<u>NA</u>	< 3 feet
Openings in walls	25% Maximum of Wall Area	<u>0 hours</u>	3 feet
	<u>Unlimited</u>	<u>0 hours</u>	5 feet
Penetrations	All	Comply with section R302.4	< 3 feet
		None required	3 feet

- 12.11 For SI: 1 foot = 304.8 mm.
- 12.12 NA = Not Applicable.

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- ^{12.13} ^a The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave overhang if fireblocking is provided from the wall top plate to the underside of the roof sheathing.
- b The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.
- ^{12.18} Cone hour on the underside equates to one layer of 5/8-inch type X gypsum sheathing.
- 12.19 Openings are not allowed.

12.20 **TABLE R302.1(2)**

EXTERIOR WALLS - DWELLINGS WITH FIRE SPRINKLERS

12.22 12.23 12.24	EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
12.25 12.26 12.27 12.28	<u>Walls</u>	Fire-resistance rated	1 hour - tested in accordance with ASTM E 119, UL 263, or section 703.3 of the International	0 feet

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		Building Code with exposure from the outside	
	Not fire-resistance rated	<u>0 hours</u>	3 feet ^a
	Not allowed	<u>NA</u>	< 2 feet
Projections	Fire-resistance rated	1 hour on the underside, or heavy timber, or fire-retardant-treated wood ^{b,c,d}	2 feet ^a
	Not fire-resistance rated	<u>0 hours</u>	3 feet
Openings in	Not allowed	<u>N/A</u>	< 3 feet
walls	<u>Unlimited</u>	<u>0 hours</u>	3 feet ^a
Penetrations	<u>All</u>	Comply with section R302.4	< 3 feet
		None required	3feet ^a

13.16 For SI: 1 foot = 304.8 mm.

13.17 NA = Not Applicable.

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a For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed in accordance with section P2904, the fire separation distance for exterior walls not fire-resistance rated and for fire-resistance-rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

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

^{13.27} c The fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the rake overhang where gable vent openings are not installed.

14.1	d One hour on the underside equates to one layer of 5/8-inch type X gypsum sheathing.
14.2	Openings are not allowed.
14.3	Subp. 2. IRC section R302.3, Two-family dwellings R302.2.3, Continuity. Section
14.4	302.3 R302.2.3 is amended by adding a subsection to the end of the section to read as
14.5	follows:
14.6	R302.3.2 Sound transmission R302.2.3 Continuity. Two-family dwellings
14.7	constructed in accordance with section R302.3 shall comply with the sound
14.8	transmission requirements of Appendix K. The fire-resistance-rated wall or
14.9	assembly separating townhouses shall be continuous from the foundation to the
14.10	underside of the roof sheathing, roof deck, or roof slab. The fire-resistance rating
14.11	shall extend the full length of the wall or assembly, including wall extensions
14.12	through and separating attached enclosed accessory structures. The separation
14.13	shall extend through enclosed soffits, overhangs, and similar projections.
14.14	Subp. 2a. IRC section R302.2.7. Section R302.2 is amended by adding a subsection
14.15	to read as follows:
14.16	R302.2.7 Sound transmission. Townhouses constructed in accordance with section
14.17	R302.2 shall comply with the sound transmission requirements of IRC Appendix
14.18	<u>K.</u>
14.19	Subp. 3. IRC section R302.5.1, Opening protection R302.3, Two-family
14.20	dwellings. Section 302.5.1 R302.3 is amended by adding a subsection to the end of the
14.21	section to read as follows:
14.22	R302.5.1 Opening protection. Openings from a private garage directly into a
14.23	room used for sleeping purposes shall not be permitted. Other openings between
14.24	the garage and residence shall be equipped with solid wood doors not less than

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15.1	1-3/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less		
15.2	than 1-3/8 inches (35 mm) thick, or 20-minute fire-rated doors.		
15.3	R302.3.2 Sound transmission. Two-family dwellings constructed in accordance		
15.4	with section R302.3 shall c	comply with the sound transmission requirements of	
15.5	IRC Appendix K.		
15.6	Subp. 4. IRC section R302.6 I	R302.5.1, Opening protection. Section R302.6 and	
15.7	Table R302.6 are R305.5.1 is amend	led to read as follows:	
15.8	R302.6 Dwelling/garage fire se	eparation. The garage shall be separated as required	
15.9	by Table R302.6. Openings in g	garage walls shall comply with section R302.5.	
15.10	TABLE R302.6 DW	ELLING/GARAGE SEPARATION	
15.11	SEPARATION	MATERIAL	
15.12 15.13 15.14 15.15	From the residence and atties	Not less than 1/2-inch gypsum board or equivalent applied to the garage side. Vertical separation between the garage and the residence attic shall extend to the roof sheathing or rafter blocking.	
15.16 15.17	From all habitable rooms above the garage	Not less than 5/8-inch type X gypsum board or equivalent.	
15.18 15.19 15.20 15.21 15.22 15.23	Structural members supporting floor/ceiling assemblies or garage ceiling used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent applied to the garage side of structural members supporting the floor/ceiling assemblies or garage ceiling. Structural members include, but are not limited to: walls, columns, beams, girders, and trusses.	
15.24 15.25 15.26 15.27 15.28	Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.	
15.29	R302.5.1 Opening protect	tion. Openings from a private garage directly into a	
15.30	room used for sleeping pur	poses shall not be permitted. Other openings between	

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16.1	the garage and residence sl	nall be equipped with soli	d wood doors not	less than
16.2	1-3/8 inches (35 mm) in th	ickness, solid or honeyco	mb-core steel doc	ors not less
16.3	than 1-3/8 inches (35 mm)	thick, or 20-minute fire-r	ated doors.	
16.4	Subp. 5. IRC section R302.6.	Section R 302 6 and Table	e R302 6 are amer	nded to read
16.5	as follows:	Section R302.0 and Table	7 K302.0 are amen	idea to read
10.5	<u>as renews.</u>			
16.6	R302.6 Dwelling/garage fire s	eparation. The garage sh	all be separated a	s required
16.7	by Table R302.6. Openings in g	garage walls shall comply	with section R30	2.5.
16.8		TABLE R302.6 ^a		
10.0		IIIDEE 10 0210		
16.9	DWELLING/GAR	RAGE SEPARATION M	<u>IATERIAL</u>	
16.10	SEPARATION	MA	TERIAL	
16.11	From the residence and attics	Not less than 1/2-inch	gypsum board or	equivalent
16.12 16.13		applied to the garage sibetween the garage and		
16.14		extend to the roof shear		
16.15	From all habitable rooms above	Not less than 5/8-inch	type X gypsum bo	oard or
16.16 16.17	the garage Structural members supporting	equivalent. Not less than 1/2-inch	gynsum hoard or	eguivalent
16.18	floor/ceiling assemblies or garage	applied to the garage s	ide of structural m	nembers
16.19 16.20	ceiling used for separation required by this section	supporting the floor/ce ceiling. Structural men		
16.21		limited to: walls, colum		
16.22	C141412 f4	trusses.	11	14
16.23 16.24	Garages located less than 3 feet from a dwelling unit on the same	Not less than 1/2-inch applied to the interior s	side of exterior wa	alls that are
16.25 16.26	lot	within this area. This p		
16.27		garage walls that are podwelling unit wall.	erpendicular to the	<u>e aujacem</u>
16.20	Ear CI. 1 inch = 25.4 cm. 1 fact = 2	204 S mm		
16.28	For SI: 1 inch = 25.4 mm, 1 foot = 3	904.8 IIIII.		
16.29	^a Attachment of gypsum board shall	comply with Table R702	.3.5.	

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Section R303.4 is amended to read as follows:

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R303.4 Mechanical ventilation. Mechanical ventilation of a dwelling unit shall comply with either Minnesota Rules, chapter 1322, or ASHRAE 62.2, as incorporated by reference in Minnesota Rules, chapter 1346.

1309.0310 SECTION R310, EMERGENCY ESCAPE AND RESCUE OPENINGS.

Subpart 1. IRC section R310.1, Emergency escape and rescue opening required. Section R310.1 is amended to read as follows:

R310.1 Emergency escape and rescue opening required. Basements, habitable attics, and every sleeping room shall have at least not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency egress and rescue openings opening shall be required in each sleeping room, but not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) measured from the finished floor to the bottom of the clear opening. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

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18.1	1. Basements Storm shelters and basements used only to house mechanical
18.2	equipment and not exceeding a total floor area of 200 square feet (18.58 m ²).
18.3	2. Basements or basement bedrooms when the building is protected with an
18.4	automatic sprinkler system installed in accordance with IRC section P2904 or
18.5	NFPA 13D.
18.6	3. Basements or basement bedrooms that comply with all of the following
18.7	conditions:
18.8	A. constructed prior to August 1, 2008;
18.9	B. undergoing an alteration or repair; and
18.10	C. where the entire basement area, when including all portions of the means
18.11	of egress to the level of exit discharge, and all areas on the level of exit
18.12	discharge that are open to the means of egress is protected with an automatic
18.13	sprinkler system in accordance with IRC section P2904 or NFPA 13D.
18.14	(Section R310.1.1 remains unchanged.)
18.15	R310.1.1 Minimum opening area. All emergency escape and rescue openings
18.16	shall have a minimum net clear opening of 5.7 square feet (0.530 m ²).
18.17	Exception: Grade floor openings shall have a minimum net clear opening of
18.18	5 square feet (0.465 m ²).
18.19	R310.1.2 Minimum opening height. The minimum net clear opening height shall
18.20	be 24 inches (610 mm).
18.21	R310.1.3 Minimum opening width. The minimum net clear opening width shall
18.22	be 20 inches (508 mm).

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R310.1.4 Operational constraints. Emergency escape and rescue openings shall 19.1 be operational from the inside of the room without the use of keys, tools, or special 19.2 knowledge. 19.3 Exception: Windows with approved window opening control devices and 19.4 installed in accordance with ASTM F 2090. The devices shall not require the 19.5 use of keys or tools to operate. 19.6 R310.1.5 Replacement windows. Replacement windows installed in buildings 19.7 regulated by the International Residential Code shall be exempt from the maximum 19.8 sill height requirements of section R310.1, including subsections R310.1.1, 19.9 R310.1.2, and R310.1.3, if the replacement window is the manufacturer's largest 19.10 standard size window that will fit within the existing frame or existing rough 19.11 opening. The replacement window shall be the same operating style as the existing 19.12 19.13 window or a style that provides for an equal or greater window opening area than the existing window. 19.14 Subp. 2. R310.1.5.1 Licensed facilities IRC section R310.2, Emergency escape 19.15 **rescue openings.** Section R310.2 is amended by adding a subsection to read as follows: 19.16 R310.2.5.1 Licensed facilities. Windows in rooms used for foster care or day care 19.17 licensed or registered by the state of Minnesota shall comply with the provisions of 19.18 section R310.1.5, or all of the following conditions, whichever is more restrictive: 19.19 1. Minimum of 20 inches in clear opening width; 19.20 2. Minimum of 20 inches in clear opening height; 19.21 3. Minimum of 648 square inches (4.5 square feet) clear opening; and 19.22 4. Maximum of 48 inches from the floor to the sill height. 19.23

20.1	Subp. 3. IRC section R310.6, Alterations or repairs of existing basements. Section
20.2	R310.6 is amended and a subsection added to read as follows:
20.3	R310.6 Alterations or repairs of existing basements. An emergency escape and
20.4	rescue opening is not required where existing basements undergo alterations or repairs.
20.5	R310.6.1 Sleeping rooms in existing basements. New sleeping rooms created in
20.6	an existing basement shall be provided with emergency escape and rescue openings
20.7	in accordance with section R310.1.
20.8	Exception: Emergency escape and rescue openings are not required to be
20.9	provided where the entire basement area, including all portions of the means
20.10	of egress to the level of exit discharge, and all areas on the level of exit
20.11	discharge that are open to the means of egress are protected with an automatic
20.12	sprinkler system in accordance with IRC section P2904 or NFPA 13D.
20.13	1309.0311 SECTION R311, MEANS OF EGRESS.
20.14	[For text of subparts 1 and 2, see Minnesota Rules]
20.15	Subp. 3. IRC section R311.7.2, Headroom. Section R311.7.2 is amended to read as
20.16	follows:
20.17	R311.7.2 Headroom. The minimum headroom in all parts of the stairway shall
20.18	not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped
20.19	line adjoining the tread nosing or from the floor surface of the landing or platform
20.20	on that portion of the stairway.
20.21	Exceptions:
20.22	1. Where the nosings of treads at the side of a flight extend under the edge of
20.23	a floor opening through which the stair passes, the floor opening shall be

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21.1		allowed to project horizon	tally into the re	quired headroom a m	naximum of
21.2		4-3/4 inches (121 mm).			
21.3		2. The minimum headroom	n for existing bu	iildings shall be in ac	cordance with
21.4		section R305.2.2.			
21.5		3. The headroom for spira	l stairways shal	l be in accordance wi	ith section
21.6		<u>R311.7.10.1.</u>			
21.7	1309.0312	SECTION R312, GUARD	S AND WIND	OW FALL PROTE	CTION.
21.8		[For text of subpo	art 1, see Minne	esota Rules]	
21.9	Subp. 2.	IRC section R312.2, Wir	ndow fall prote	ction. Section R312	.2 is amended
21.10	to read as fol	lows.			
21.11	R312.2 V	Window fall protection. Wi	ndow fall protec	tion shall be provided	in accordance
21.12	with sec	tions R312.2.1 and R312.2	.2.		
21.13	R31	2.2.1 Window sills. In dw	elling units, who	ere the lowest part of	the opening
21.14	of a	n operable window is located	d more than 72 ii	nches (1829 mm) abo	ve the finished
21.15	grad	le or surface below, the low	est part of the w	indow opening shall	be a minimum
21.16	of 3	6 inches (914 mm) above to	he finished floo	r of the room in whic	the window
21.17	is lo	ocated. Operable sections of	f windows shall	not permit openings	that allow
21.18	pass	sage of a 4-inch diameter (1	02 mm) sphere	where such opening	s are located
21.19	with	nin 36 inches (914 mm) of	the finished floo	or.	
21.20		Exceptions:			
21.21		1. Windows with openings	s that will not al	low a 4-inch diamete	er (102 mm)
21.22		sphere to pass through the	opening when	the window is in its l	argest opened
21.23		position.			

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22.1	2. Openings that are provided with window fall prevention devices that comply
22.2	with ASTM F 2090.
22.3	3. Windows that are provided with window opening control devices that
22.4	comply with section R312.2.2.
22.5	4. Replacement windows.
22.6	R312.2.2 Window opening control devices. Window opening control devices
22.7	shall comply with ASTM F 2090. The window opening control device, after
22.8	operation to release the control device allowing the window to fully open, shall
22.9	not reduce the minimum net clear opening area of the window unit to less than the
22.10	area required by section R310.1.1.
22.11	(Subsection R312.2.2 remains unchanged.)
22.12	1309.0314 SECTION R314, SMOKE ALARMS.
22.13	Subpart 1. IRC section R314.3.1 R314.2.2, Alterations, repairs, and
22.14	<u>additions.</u> Section R314.2.2 is amended to read as follows:
22.15	R314.3.1 R314.2.2 Alterations, repairs, and additions. An individual dwelling
22.16	unit shall be equipped with smoke alarms located as required for new dwellings
22.17	when:
22.18	1. alterations, repairs (including installation or replacement of windows or
	1. alterations, repairs (including installation or replacement of windows or doors), or additions requiring a <u>building</u> permit occur; or
22.18 22.19 22.20	
22.19	doors), or additions requiring a building permit occur; or
22.19	doors), or additions requiring a <u>building</u> permit occur; or 2. one or more sleeping rooms are added or created in existing dwellings.
22.19 22.20 22.21	doors), or additions requiring a <u>building</u> permit occur; or 2. one or more sleeping rooms are added or created in existing dwellings. Exceptions:
22.19 22.20 22.21 22.22	doors), or additions requiring a <u>building</u> permit occur; or 2. one or more sleeping rooms are added or created in existing dwellings. Exceptions: 1. Work involving the exterior surfaces of dwellings, such as the replacement

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23.1	2. Installation, alteration, or repairs of plumbing, electrical, or mechanical
23.2	systems.
23.3	Subp. 2. IRC section R314.4, Interconnection. Section R314.4 is amended by adding
23.4	an exception to read as follows:
23.5	Exception: Interconnection of smoke alarms in existing areas shall not be required
23.6	where alterations or repairs do not result in removal of interior wall or ceiling
23.7	finishes exposing the structure.
23.8	Subp. 3. IRC section R314.6, Power source. Section R314.6 is amended by modifying
23.9	the second exception to read as follows:
23.10	2. Smoke alarms installed in existing areas shall be permitted to be battery powered
23.11	provided any alterations or repairs do not result in the removal of interior wall or
23.12	ceiling finishes exposing the structure.
23.13	1309.0315 SECTION R315, CARBON MONOXIDE ALARMS.
23.14	Subpart 1. IRC section R315.1, Carbon monoxide alarms IRC section R315.2,
23.15	Where required. Section R315.2 is amended to read as follows:
23.16	R315.1 Carbon monoxide alarms. For new construction, every one-family dwelling
23.17	unit, two-family dwelling unit, and each townhouse dwelling unit shall have an approved
23.18	and operational carbon monoxide alarm installed when one of the following conditions
23.19	occur:
23.20	1. Fuel-fired appliances are installed; or
23.21	2. Have attached garages.
23.22	R315.1.1 Installation. Carbon monoxide alarms shall be installed outside and not
23.23	more than 10 feet from each separate sleeping area or bedroom. Alarms shall be
23.24	installed on each level containing sleeping areas or bedrooms.

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24.1	R515.2 Where required. Carbon monoxide alarms shall be provided in accordance
24.2	with Sections R315.2.1 and R315.2.2.
4.3	R315.2.1 New construction. For new construction, every one-family dwelling
4.4	unit, each unit in a two-family dwelling unit, and each townhouse dwelling unit
4.5	shall be provided with an approved and operational carbon monoxide alarm where
4.6	one or both of the following conditions exist:
4.7	1. The dwelling unit contains a fuel-fired appliance.
4.8	2. The dwelling unit has an attached garage with an opening that communicates
4.9	with the dwelling unit.
4.10	R315.2.2 Alterations, repairs, and additions. An individual dwelling unit shall
4.11	be equipped with carbon monoxide alarms located as required for new dwellings
4.12	where:
4.13	1. alterations, repairs (including installation or replacement of windows or
24.14	doors), or additions requiring a building permit occur; or
24.15	2. one or more sleeping rooms are added or created in existing dwellings.
4.16	Exceptions:
4.17	1. Work involving the exterior surfaces of dwellings, such as the replacement
4.18	of roofing or siding, the addition of an open porch or deck, or chimney repairs.
4.19	2. Installation, alteration, or repairs of plumbing, electrical, or mechanical
24.20	systems.
4.21	Subp. 2. IRC section R315.3, Location. Section R315.3 is amended to read as follows:
4.22	R315.3 Location. Carbon monoxide alarms in dwelling units shall be installed outside
24.23	of and not more than 10 feet (3048 mm) from each separate sleeping area or bedroom.
4.24	Alarms shall be installed on each level containing sleeping areas or bedrooms. Where

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25.1	a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon
25.2	monoxide alarm shall be installed within the bedroom.
25.3	Subp. 3. IRC section R315.5, Interconnectivity. Section R315.5 is amended by
25.4	modifying the exception to read as follows:
25.5	Exception: Interconnection of carbon monoxide alarms in existing areas shall not
25.6	be required where alterations or repairs do not result in removal of interior wall
25.7	or ceiling finishes exposing the structure.
25.8	Subp. 4. IRC section R315.6, Power source. Section R315.6 is amended by modifying
25.9	the second exception to read as follows:
25.10	2. Carbon monoxide alarms installed in existing areas shall be permitted to be
25.11	battery powered provided any alterations or repairs do not result in the removal
25.12	of interior wall or ceiling finishes exposing the structure.
25.13	1309.0320 SECTION R320, ACCESSIBILITY.
25.14	IRC sections R320.1 and R320.1.1 are deleted in their entirety and replaced with the
25.14	following:
25.16	R320.1 Scope. Where there are four or more IRC-3 dwelling units or sleeping units in
25.17	a single structure, the provisions for Group R-3 occupancies located in Minnesota
25.18	Rules, chapter 1341, Minnesota Accessibility Code, shall apply.
25.19	1309.0321 SECTION R321, ELEVATORS AND PLATFORM LIFTS.
25.20	IRC sections R321.1, R321.2, and R321.3 are deleted and replaced with the following:
25.21	R321.1 Elevators, platform lifts. For elevator and platform lift requirements, see
25.22	Minnesota Rules, chapter 1307, Elevators and Related Devices.
25.23	1309.0326 SECTION R326, SWIMMING POOLS, SPAS, AND HOT TUBS.
25.24	IRC section R326 is deleted in its entirety.

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1309.0402 SECTION R402, MATERIALS.

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IRC Table R402.2 is amended to read as follows:

TABLE R402.2 MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF

26.4 **CONCRETE**

26.5 26.6	TYPE OR	MINIMUM SPECIFIED COMPRESSIVE STRENGTH ^a (f¹ <u>c</u>) (<u>f 'c</u>)						
26.7	LOCATION OF	Wea	Weathering Potential ^b					
26.8	CONCRETE CONSTRUCTION							
26.9		Negligible	Moderate	Severe				
26.10	Footings ^{g,h}	5,000	5,000	5,000				
26.11 26.12 26.13	Basement walls, foundations, and other concrete not ex_posed to the weather	2,500	2,500	2,500°				
26.14 26.15	Basement slabs and interior slabs on grade, except garage floor slabs	2,500	2,500	2,500°				
26.16 26.17 26.18 26.19	Basement walls, foundation walls, exterior walls, and other vertical concrete work exposed to the weather	2,500	3,000 ^d	3,000 ^d				
26.20 26.21 26.22	Porches, carport slabs, and steps exposed to the weather, and garage floor slabs	2,500	3,000 ^{d, e, f}	3,500 ^{d, e, f}				

- 26.23 For SI: 1 pound per square inch = 6.895 kPa.
- ^{26.24} ^a- Strength at 28 days psi.
- ^{26.25} b. See Table R301.2(1) for weathering potential.
- ^{26.26} ^c-Concrete in these locations that may be subject to freezing and thawing during construction
- shall be air-entrained concrete in accordance with Footnote d.
- ^{26.28} d. Concrete shall be air-entrained. Total air content (percent by volume of concrete) shall
- be not less than 5 percent or more than 7 percent.

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27.1	^e - See section R402.2 for maximum cementitious materials content.
27.2	f. For garage floors with a steel-troweled finish, reduction of the total air content (percent
27.3	by volume of concrete) to not less than 3 percent is permitted if the specified compressive
27.4	strength of the concrete is increased to not less than 4,000 psi.
27.5	^g . Compressive strength $\frac{(f'_c)}{(f'_c)}$ of 2,500 psi, with an approved admixture that provides
27.6	a water and vapor resistance at least equivalent to 5,000 psi concrete.
27.7	^h Compressive strength (f' _c) of 5,000 psi, is not required for post footings for decks or
27.8	porches, wood foundations, slab-on-grade foundation walls, and footings for floating slabs.
27.9	1309.0403 SECTION R403, FOOTINGS.
27.10	Subpart 1. IRC section R403.1.4.1. Section R403.1.4.1 is amended to read as follows:
27.11	R403.1.4.1 Frost protection. Footings shall not bear on frozen soil.
27.12	Foundation walls, piers, and other permanent supports of buildings and
27.13	structures not otherwise protected from frost shall be protected by one or more
27.14	of the following methods:
27.15	1. Extended below the frost line specified in Table R301.2(1);
27.16	2. Constructing in accordance with section R403.3;
27.17	3. Constructing in accordance with ASCE 32;
27.18	4. Erected on solid rock; or
27.19	5. Constructing in accordance with Minnesota Rules, chapter 1303.
27.20	Exception: Decks not supported by a dwelling need not be provided
27.21	with footings that extend below the frost line.
27.22	Subp. 2. IRC section R403.1.6. IRC Section R403.1.6 is amended to read as follows:

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R403.1.6 Foundation anchorage. Sill plates and walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs, and all wood sill plates shall be anchored to the foundation with anchor bolts spaced a maximum of 6 feet (1829 mm) on center. Bolts shall be at least 1/2-inch (12.7 mm) in diameter and shall extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. A nut and washer shall be tightened on each bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than 7 bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by sections R317 and R318. Cold-formed steel framing systems shall be fastened to the wood sill plates or anchored directly to the foundation as required in section R505.3.1 or R603.1.1. When vertical reinforcing is required by other sections of this code, the foundation anchor bolts shall align with be within 8 inches (203 mm) of the vertical reinforcing. All anchor bolts installed in masonry shall be grouted in place with at least 1-inch (25 mm) of grout between the bolt and measured from the inside face of the masonry and the anchor bolt.

Exceptions:

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1. Foundation anchor straps spaced as required to provide equivalent anchorage to 1/2-inch diameter (12.7 mm) anchor bolts. When vertical reinforcing is required by other sections of this code, the foundation anchor straps shall align with the reinforcing.

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29.1	2. Walls 24 inches (609.6 mm) total length or shorter connecting offset braced
29.2	wall panels shall be anchored to the foundation with a minimum of one anchor
29.3	bolt located in the center third of the plate section and shall be attached to
29.4	adjacent braced wall panels according to Figure R602.10.5 at corners.
29.5	3. Walls 12 inches (304.8 mm) total length or shorter connecting offset braced
29.6	wall panels shall be permitted to be connected to the foundation without anchor
29.7	bolts. The wall shall be attached to adjacent braced wall panels according to
29.8	Figure R602.10.5 at corners.
29.9	1309.0404 SECTION R404, FOUNDATION AND RETAINING WALLS.
29.10	Subpart 1. IRC section R404.1. Section R404.1 is amended to read as follows:
29.11	R404.1 Concrete and masonry foundation walls. Concrete foundation walls shall
29.12	be selected and constructed in accordance with the provisions of section R404.1.2.
29.13	Masonry foundation walls shall be selected and constructed in accordance with the
29.14	provisions of section R404.1.1. Concrete and masonry foundation walls shall be laterally
29.15	supported at the top and bottom. Foundation walls that meet all of the following shall
29.16	be considered laterally supported:
29.17	1. Full basement floor shall be 3.5 inches (89 mm) thick concrete slab poured tight
29.18	against the bottom of the foundation wall.
29.19	2. Floor joists and blocking shall be connected to the sill plate at the top of wall
29.20	with an approved connector with listed capacity meeting the top of wall reaction
29.21	in Table R404.1(1). Maximum spacing of floor joists shall be 24 inches on center.
29.22	Spacing of blocking shall be in accordance with Table R404.1(1).
29.23	3. Bolt spacing for the sill plate shall be no greater than the requirements in Table
29.24	R404.1(1).

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30.26			GW, GP, SW, & SP	30	250	72	60	
30.25	Height	Height	Soil Classes	(pcf/ft)	(plf) ^b	(inches) ^a	(inches)	
30.23 30.24	Max. Wall	Unbalanced Backfill		Soil Load	Wall Reaction	Anchor Bolt Spacing	To Floor Joists	
30.21 30.22		Max.			Top of		Perpendicular	
30.20							Spacing of Blocking	
30.19			FOUNE	ATION W	/ALL			
30.18	MA	XIMUM AN	NCHOR BOLT AND			NG FOR SUI	PPORTED	
30.17								
30.17			TARI	LE R404.1	(1)			
30.16	to read a	s follows:						
30.15	Sub	p. 2. IRC T	Table R404.1(1). Sect	ion R404.1	l is amende	ed by adding Ta	able R404.1(1)	
30.14	thei	r subsection	s remain unchanged.	<u>)</u>				
30.13	<u>(For</u>	r subsection	R404.1.1, see subpar	t 9. Subse	ctions R40	4.1.2 through	R404.1.9 and	
30.12		or Table R4	1 04.1.1(/).					
30.11			shall be constructed a	ccording to	o Table R40	04.1.1(5), Tabl	e R404.1.1(6),	
30.10			backfill that do not l	-				
30.9		-	: Cantilevered concre			_		
30.8		or an appro	ved connector supply	ym g 230 þ	ounus per	mear root eap	acity.	
30.7			rage metal angle clip					
30.6			ach as a daylight base					
30.5			oundation walls supp					
		- XXII 0	1 11		11 1		1 0.1	
30.4		installed in	accordance with foo	tnote "e" o	of Table R4	04.1(1).	_	
30.3	be fastened to blocking in accordance with Table R602.3(1). Blocking shall be							
30.2	full depth within three joist spaces of the foundation wall. Floor sheathing shall							
30.1		4. The floo	r shall be blocked per	rpendicula	r to the flo	or joists. Bloc	king shall be	

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31.1 31.2	8'-0''	7'-4''	GM, GC, SM-SC, &	. 45	370	72	40
31.3 31.4			SC, MH, ML-CL, & I-CL	60	490	48	30
31.5			GW, GP, SW, & SP	30	320	72	48
31.6 31.7	9'-0''	8'-4''	GM, GC, SM-SC, & ML	5 45	480	48	32
31.8 31.9			SC, MH, ML-CL, & I-CL	60	640	40	24

31.10 For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm

31.11 ab Sill plate shall be 2 x 6 minimum. Anchor bolt shall be minimum 0.5" diameter
 31.12 cast-in-place with 7" embed. Anchor bolt shall have a 2" diameter by 0.125" thick washer
 31.13 tightened and countersunk 0.25" into the top of the sill plate.

^{31.14} b Minimum load to be used for sizing of accepted anchors or fasteners if bolts are not used.

31.15 TABLE R404.1(1)

31.16

31.17

MAXIMUM ANCHOR BOLT AND BLOCKING SPACING FOR SUPPORTED FOUNDATION WALL

31.18 31.19							Spacing of Blocking
31.20		Max. Un-			Top of	1/2" diameter	Perpendicular
31.21	Max.	balanced			Wall	Anchor Bolt	To Floor
31.22	Wall	Backfill		Soil Load	Reaction	Spacing	Joists
31.23	Height	Height	Soil Classes ^a	(pcf/ft)	(plf) ^e	(inches) ^{b,c,d}	(inches) ^f
31.24			GW, GP, SW, & SP	<u>30</u>	<u>260</u>	<u>72</u>	<u>72</u>
31.25	8'-0"	<u>7'-6"</u>	GM, GC, SM,	<u>45</u>	400	72	72
31.26			SM-SC, & ML				
31.27			SC, MH, ML-CL, &	<u>60</u>	530	48	48
31.28			<u>I-CL</u>				
31.29			GW, GP, SW, & SP	<u>30</u>	340	<u>72</u>	72

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32.1 32.2	9'-0"	<u>8'-6"</u>	GM, GC, SM, SM-SC, & ML	<u>45</u>	<u>510</u>	<u>48</u>	<u>48</u>
32.3 32.4			SC, MH, ML-CL, & I-CL	<u>e</u> <u>60</u>	<u>680</u>	<u>32</u>	<u>32</u>
32.5			GW, GP, SW, & SP	<u>30</u>	430	<u>64</u>	<u>64</u>
32.6 32.7	10'-0"	9'-6"	GM, GC, SM, SM-SC, & ML	<u>45</u>	<u>640</u>	<u>40</u>	<u>40</u>
32.8 32.9			SC, MH, ML-CL, & I-CL	<u>60</u>	<u>860</u>	<u>24</u>	<u>24</u>
32.10	For SI: 1	inch = 25.4	4 mm, 1 foot = 304.8	mm.			
32.11	^a Soil clas	sses are in	accordance with the	Unified So	oil Class	fication Syste	em. Refer to table
32.12	<u>R405.1.</u>						
32.13	^b Anchor	bolts shall	be cast-in-place with	n a minimı	ım 7-inc	h embed. Wh	ere vertical
32.14	reinforcin	g is requir	ed by other sections	of this cod	le, the ar	chor bolts sh	all be within 8
32.15	inches of	the vertica	l reinforcing and are t	to be space	ed as requ	aired by this ta	able. Anchor bolts
32.16	installed i	n masonry	shall be grouted in p	olace with	not less	than 1 inch o	f grout measured
32.17	from the i	inside face	of the masonry and	the anchor	bolt.		
32.18	^c The sill	plate shall	be 2 x 6 minimum.	Anchor bo	lts shall	be placed at l	east 2-1/2 inches
32.19	from the	edge of the	sill plate and the ed	ge of the f	oundatio	n wall.	
32.20	d Anchor	bolts shall	have a 2 inch by 1/8	inch thick	c round o	or square was	her tightened and
32.21	countersu	nk 1/4 incl	h into the top of the s	sill plate. U	Jse of sta	andard and no	oncountersunk
32.22	washers is permitted where anchor bolt spacing is half the spacing required by this table.						
32.23	e Minimu	m load to l	oe used for the sizing	g of accept	ed ancho	ors or fastener	rs if anchor bolts
32.24	are not us	ed.					
32.25	f Perpend	icular bloc	king shall be 2-by th	e full dept	h joists o	or an approve	d alternative full
32.26	depth jois	t material t	that is installed in the	first three	joists sp	aces adjacent	to the foundation
32.27	wall. The blocking shall be connected to the sill plate with an approved fastener sized in						

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accordance with Footnote ^e. The floor sheathing shall be nailed to the blocking through the subfloor with a minimum of 8d common (2-1/2 x 0.131) nails at 3 inches on center or an equivalent connector. Blocking shall be installed within 8 inches of an anchor bolt location.

Subp. 3. [Repealed, 39 SR 91]

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Subp. 4. [Repealed, 39 SR 91]

Subp. 5. [Repealed, 39 SR 91]

Subp. 6. **IRC Table R404.1.1(5).** Section R404 is amended by adding a new table as follows:

TABLE R404.1.1(5)

CANTILEVERED CONCRETE AND MASONRY FOUNDATION WALLS

33.11 33.12 33.13 33.14 33.15	Maximum Wall Height ^j (feet)	Maximum Unbalanced Backfill Height ^e (feet)					
33.16				Soil Classes ^d			
33.17			GW, GP, SW, and SP	GM, GC, SM,	SC, MH, ML-CL,		
33.18				SM-SC, and ML	and inorganic CL		
33.19	4	3	None required	None required	None required		
33.20		4	None required	None required	No. 4 @ 72 in. o.c.		
33.21	5	3	None required	None required	None required		
33.22		4	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^h	No. 4 @ 40 in.		
33.23			-	_	o.c. ^g		
33.24 33.25		5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^h	No. 4 @ 40 in. o.c. ^g		

^a- Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi.

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34.1 b. Alternative reinforcing bar sizes and spacings having an equivalent cross-sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the 34.2 34.3 reinforcement does not exceed 72 inches. 34.4 ^c- Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 2.5 inches. 34.5 34.6 d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1. 34.7 34.8 e. Interior concrete floor slab-on-grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of 34.9 slab-on-grade to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is 34.10 the difference in height of the exterior finish ground levels and the top of the interior concrete 34.11 slab-on-grade. 34.12 34.13 f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 34.14 34.15 psi. 34.16 g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum. 34.17 34.18 h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches 34.19 34.20 on center maximum. No dowels are required where length of the foundation wall between 34.21 perpendicular walls is two times the foundation wall height or less. 34.22 ⁱ. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only 34.23

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34.24

one end by a perpendicular wall is 17 feet or less.

^j- Maximum wall height is measured from top of the foundation wall to the bottom of the
 interior concrete slab-on-grade.

^k- Install foundation anchorage per section R403.1.6.

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Subp. 7. **IRC Table R404.1.1(6).** Section R404 is amended by adding a new table as follows:

TABLE R404.1.1(6)

CANTILEVERED CONCRETE AND MASONRY FOUNDATION WALLS

Maximum Wall Height ^j (feet)	Maximum Unbalanced Backfill Height ^e (feet)	Minimum Vertical Reinforcement Size and Spacing for 10-Inch Nominal Wall Thickness ^{a,b,c,e,f,i,k}			
		Soil Classes			
		GW, GP, SW, and SP	GM, GC, SM, SM-SC, and ML	SC, MH, ML-CL, and inorganic CL	
4	3	None required	None required	None required	
	4	None required	None required	None required	
5	3	None required	None required	None required	
	4	None required	No. 4 @ 72 in. o.c.	No. 4 @ 64 in. o.c. ^g	
	5	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^g	
6	3	None required	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	
	4	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 64 in. o.c. ^h	
	5	No. 4 @ 64 in. o.c. ^h	No. 4 @ 40 in. o.c. ^{g,h}	No. 5 @ 48 in.	
				o.c. ^{g,h}	
	6	No. 4 @ 64 in. o.c. ^h	No. 4 @ 40 in. o.c. ^{g,h}	No. 5 @ 48 in. o.c. ^{g,h}	
	Wall Height ^j (feet) 4	Maximum Unbalanced Wall Backfill Height ^j Height ^e (feet) 4 3 4 5 3 4 5 3 4 5 4 5 5 6 3 4 5 5	Maximum Unbalanced Wall Backfill Height ^j Height ^e (feet) Minimum Vertical Re (feet) (feet) Mominal Wall Thickner GW, GP, SW, and SP 4 3 None required 4 None required 5 3 None required 4 None required 5 No. 4 @ 72 in. o.c. 6 3 None required 4 No. 4 @ 72 in. o.c. 5 No. 4 @ 64 in. o.c. 6 No. 4 @ 64 in. o.c.	Maximum WallUnbalanced Wall BackfillHeightightHeighte (feet)Minimum Vertical Reinforcement Size and S Nominal Wall Thickness a,b,c,e,f,i,kSoil ClassesdGW, GP, SW, and SPGM, GC, SM, SM-SC, and ML43None requiredNone required53None requiredNone required53None requiredNone required4None requiredNo. 4 @ 72 in. o.c.5No. 4 @ 72 in. o.c.No. 4 @ 72 in. o.c.63None requiredNo. 4 @ 72 in. o.c.63None requiredNo. 4 @ 72 in. o.c.5No. 4 @ 72 in. o.c.No. 4 @ 72 in. o.c.5No. 4 @ 64 in. o.c. hNo. 4 @ 40 in. o.c. g,h	

^a- Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi.

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36.1 b. Alternative reinforcing bar sizes and spacings having an equivalent cross-sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the 36.2 36.3 reinforcement does not exceed 72 inches. 36.4 ^c. Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 2.5 inches. 36.5 36.6 d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1. 36.7 36.8 e. Interior concrete slab-on-grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of slab-on-grade 36.9 to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is the difference in 36.10 height of the exterior finish ground levels and the top of the interior concrete slab-on-grade. 36.11 36.12 f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 36.13 psi. 36.14 36.15 g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum. 36.16 36.17 h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches 36.18 on center maximum. No dowels are required where length of the foundation wall between 36.19 perpendicular walls is two times the foundation wall height or less. 36.20 36.21 ⁱ. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only 36.22 one end by a perpendicular wall is 17 feet or less. 36.23 36.24 ^j. Maximum wall height is measured from top of the foundation wall to the bottom of the

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interior concrete slab-on-grade.

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37.1 k₋ Install foundation anchorage per section R403.1.6.

37.2

37.3

37.4

37.5

Subp. 8. **IRC Table R404.1.1(7).** Section R404 is amended by adding a new table as follows:

TABLE R404.1.1(7)

CANTILEVERED CONCRETE AND MASONRY FOUNDATION WALLS

37.6 37.7 37.8 37.9 37.10	Maximum Wall Height ^j (feet)	Maximum Unbalanced Backfill Height ^e (feet)	Minimum Vertical Reinforcement Size and Spacing for 12-Inch Nominal Wall Thickness ^{a,b,c,e,f,i,k}						
37.11				Soil Classes ^d					
37.12 37.13			GW, GP, SW, and SP	GM, GC, SM, SM-SC, and ML	SC, MH, ML-CL, and inorganic CL				
37.14	4	3	None required	None required	None required				
37.15		4	None required	None required	None required				
37.16	5	3	None required	None required	None required				
37.17		4	None required	None required	No. 4 @ 72 in. o.c.				
37.18		5	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.				
37.19	6	3	None required	None required	None required				
37.20		4	None required	None required	No. 4 @ 72 in. o.c.				
37.21		5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^h	No. 4 @ 40 in. o.c. ^g				
37.22 37.23		6	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^g	No. 4 @ 32 in. o.c. g,h				
37.24	7	3	None required	None required	None required				
37.25		4	None required	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.				
37.26		5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c. ^h	No. 4 @ 40 in. o.c. ^g				
37.27 37.28		6	No. 4 @ 48 in. o.c. ^h	No. 5 @ 48 in. o.c. ^{g,h}	No. 6 @ 48 in. o.c. ^{g,h}				
37.29 37.30		7	No. 4 @ 48 in. o.c. ^h	No. 5 @ 40 in. o.c. ^{g,h}	No. 6 @ 48 in. o.c. g,h				

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38.1 ^a. Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi. 38.2 38.3 b. Alternative reinforcing bar sizes and spacings having an equivalent cross-sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the 38.4 reinforcement does not exceed 72 inches. 38.5 38.6 ^c. Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 3 inches. 38.7 38.8 d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1. 38.9 38.10 e. Interior concrete slab-on-grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of slab-on-grade 38.11 to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is the difference in 38.12 height of the exterior finish ground levels and the top of the interior concrete slab-on-grade. 38.13 38.14 f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 38.15 psi. 38.16 38.17 g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum. 38.18 38.19 h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches 38.20 on center maximum. No dowels are required where length of the foundation wall between 38.21 perpendicular walls is two times the foundation wall height or less. 38.22 38.23 ⁱ. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only 38.24

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38.25

one end by a perpendicular wall is 17 feet or less.

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^j. Maximum wall height is measured from top of the foundation wall to the bottom of the
 interior concrete slab-on-grade.

^k. Install foundation anchorage per section R403.1.6.

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39.9

39.10

39.11

Subp. 9. **IRC section R404.1.3** R404.1.1. Section R404.1.3 R404.1.1 is amended by adding the following exception to condition 2:

Exception: Cantilevered concrete and masonry foundation walls constructed in accordance with Table R404.1.1(5), R404.1.1(6), or R404.1.1(7).

1309.0507 SECTION R507, EXTERIOR DECKS.

Subpart 1. IRC Table R507.3.1. Table R507.3.1 is modified to read as follows:

TABLE R507.3.1

MINIMUM FOOTING SIZE FOR DECKS

39.12			<u> </u>	LOAD BEA	RING VAL	UE OF SOI	LS ^{a, c, d} (psi	2)
39.13				<u>1500^e</u>			<u>2000^e</u>	
39.14	LIME		Side of a	<u>Diameter</u>		Side of a	<u>Diameter</u>	
39.15	LIVE	TRIBUTARY		of a round	PD1 : 1	square	of a round	
39.16	LOAD ^b			<u>footing</u>	Thickness	<u>footing</u>	<u>footing</u>	<u>Thickness</u>
39.17	(psf)	<u>ft.)</u>	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
39.18		20	12	14	<u>6</u>	12	14	<u>6</u>
39.19		<u>40</u>	14	<u>16</u>	<u>6</u>	12	14	<u>6</u>
39.20		<u>60</u>	<u>17</u>	<u>19</u>	<u>6</u>	<u>15</u>	<u>17</u>	<u>6</u>
39.21	<u>40</u>	80	<u>20</u>	<u>22</u>	<u>7</u>	<u>17</u>	<u>19</u>	<u>6</u>
39.22		100	<u>22</u>	<u>25</u>	8	<u>19</u>	<u>21</u>	<u>6</u>
39.23		120	<u>24</u>	<u>27</u>	9	21	23	<u>7</u>
39.24		140	<u>26</u>	<u>29</u>	10	22	<u>25</u>	8
39.25		<u>160</u>	<u>28</u>	<u>31</u>	<u>11</u>	<u>24</u>	<u>27</u>	9

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40.1			<u>I</u>	LOAD BEA	RING VAL	UE OF SOI	LS ^{a, c, d} (psf)
40.2				<u>2500^e</u>		>3000°		
40.3 40.4 40.5 40.6	LIVE LOAD ^b (psf)	TRIBUTARY AREA (sq. ft.)		Diameter of a round footing (inches)	Thickness (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches)
40.7		20	12	14	<u>6</u>	12	14	6
40.8		40	12	14	<u>6</u>	12	14	<u>6</u>
40.9		<u>60</u>	13	<u>15</u>	<u>6</u>	12	14	<u>6</u>
40.10	<u>40</u>	80	<u>15</u>	<u>17</u>	<u>6</u>	14	<u>16</u>	<u>6</u>
40.11		100	<u>17</u>	<u>19</u>	6	<u>15</u>	<u>17</u>	6
40.12		120	<u>19</u>	21	6	<u>17</u>	<u>19</u>	6
40.13		140	20	23	7	18	21	6
40.14		160	21	24	8	20	22	7

40.15 For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m^2 , 1 pound per square foot = 0.0479 kPa.

^{40.16} ^a Interpolation permitted, extrapolation not permitted.

b Live load = 40 psf, dead load = 10 psf.

40.18 c Assumes minimum square footing to be 12 inches x 12 inches x 6 inches for a 6 x 6 post.

d If the support is a brick or CMU pier, the footing shall have a minimum 2-inch projection

40.20 <u>on all sides.</u>

^{40.21} ^e Area, in square feet, of deck surface supported by post and footings.

40.22 <u>Subp. 2.</u> <u>IRC Table R507.5.</u> <u>Table R507.5 is amended by modifying footnote "a" to</u>
40.23 read as follows:

^{40.24} a Live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever

with a 220-pound load applied at the end.

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Subp. 3. IRC Table R507.6. Table R507.6 is amended by modifying footnotes "b"

41.2 and "c" to read as follows:

41.1

41.8

41.9

- b Live load = 40 psf, dead load = 10 psf, $L/\Delta = 360$.
- Live load = 40 psf, dead load = 10 psf, $L/\Delta = 360$ at main span, $L/\Delta = 180$ at cantilever
- with a 220-pound point load applied to end.

41.6 Subp. 4. **IRC Table 507.9.1.3(1).** Table R507.9.1.3(1) is modified to read as follows:

41.7 **TABLE R507.9.1.3(1)**

DECK LEDGER CONNECTION TO BAND JOIST^a

(Deck live load = 40 psf, deck dead load = 10 psf)

41.10		JOIST SPAN						
41.11 41.12	CONNECTION DETAILS	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
41.13			<u>O</u> 1	n-center	spacing o	of fastene	ers	
41.14 41.15 41.16	1/2-inch diameter lag screw with 1/2-inch maximum sheathing ^{b,c}	<u>30</u>	<u>23</u>	<u>18</u>	<u>15</u>	<u>13</u>	<u>11</u>	10
41.17 41.18 41.19	1/2-inch diameter bolt with 1/2-inch maximum sheathing ^c	<u>36</u>	<u>36</u>	<u>34</u>	<u>29</u>	<u>24</u>	<u>21</u>	<u>19</u>
41.20 41.21 41.22	1/2-inch diameter bolt with 1-inch maximum sheathing ^d	<u>36</u>	<u>36</u>	<u>29</u>	<u>24</u>	<u>21</u>	<u>18</u>	<u>16</u>

- 41.23 For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.
- ^{41.24} a Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting
- 41.25 <u>the house band joist.</u>
- ^{41.26} b The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- ^{41.27} ^c Sheathing shall be wood structural panel or solid sawn lumber.

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42.1	d Sheathing sh	vall he nermitte	d to be wo	od structural na	nel gynsum ho	ard, fiberboard,	
42.2						rs shall be permitted	
		_					
42.3				ole sheathing th	ickness where c	ombined with wood	
42.4	structural pane	el or lumber sh	eatning.				
42.5	1309.0602 S	ECTION R60	2, WOOD	WALL FRAM	IING.		
42.6	Subpart 1	. IRC Table F	R602.3.1.	Table R602.3.1	is amended to r	ead as follows:	
42.7			TA	BLE R602.3.1			
42.8	MAXIMU	M ALLOWAB	LE LENG	TH OF WOOD	WALL STUDS	S EXPOSED TO	
42.9	WIND SPEEDS OF $90 \underline{115}$ MPH OR LESS ^{b,c,d,e,f,g,h,i,j}						
42.10	Where conditions are not within the parameters						
42.11	of footnotes b, c, d, e, f, g, h, and i, and j,						
42.12			des	ign is required.			
42.13	ROOF SPAN	S UP TO 22' S	UPPORTII	NG A ROOF O	NLY		
42.14	Maximum	F					
42.15 42.16	Wall Height (feet)	Exposure Category ^{h,i}		On-Cent	er Spacing (incl	nes)	
42.17			24	16	12	8	
42.18							
42.19	10	В	2x6	2x4	2x4	2x4	
42.20		C	2x6	2x6	2x4	2x4	
42.21	12	В	2x6	2x6	2x4	2x4	
42.22		C	2x6	2x6	2x6	2x4	
42.23	14	В	2x6	2x6	2x6	2x4	
42.24		C	2x6	2x6	2x6	2x6	
42.25	16	В	2x8	2x6	2x6	2x6	
42.26		C	2x8	2x6	2x6	2x6	

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43.1	18	В	2x8	2x8	2x6	2x6
43.2		C	2x8	2x8	2x6	2x6
43.3	20	В	2x8	2x8	2x8	2x6
43.4		C	NA^a	2x8	2x8	2x6
43.5	24	В	NA^a	2x8	2x8	2x8
43.6		C	NA^a	NA^a	2x8	2x8
43.7						
43.8	ROOF SPAN	S GREATER T	ΓHAN 22	' AND UP TO 26'	SUPPORTIN	G A ROOF ONLY
43.9	Maximum	_				
43.10 43.11	Wall Height (feet)	Exposure Category ^{h,i}		On-Cente	r Spacing (inc	ches)
43.12	,		24	16	12	8
43.13						
43.14	10	В	2x6	2x6	2x4	2x4
43.15		C	2x6	2x6	2x6	2x4
43.16	12	В	2x6	2x6	2x6	2x4
43.17		C	2x8	2x6	2x6	2x6
43.18	14	В	2x6	2x6	2x6	2x6
43.19		C	2x8	2x8	2x6	2x6
43.20	16	В	2x8	2x6	2x6	2x6
43.21		C	2x8	2x8	2x6	2x6
43.22	18	В	2x8	2x8	2x6	2x6
43.23		C	NA^a	2x8	2x8	2x6
43.24	20	В	NA ^a	2x8	2x8	2x6
43.25		C	NA^a	NA ^a	2x8	2x8
43.26	24	В	NA^a	NA ^a	2x8	2x8
43.27		C	NA^a	NA^a	NA^a	2x8
43.28						

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44.1	ROOF SPANS	GREATER	THAN 26'	AND UP TO	30' SUPPORTING A	A ROOF ONLY
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44.2 44.3	Maximum Wall Height	Exposure				
44.4	(feet)	Category <u>h,i</u>		On-Cente	er Spacing (incl	nes)
44.5			24	16	12	8
44.6						
44.7	10	В	2x6	2x6	2x4	2x4
44.8		C	2x6	2x6	2x6	2x4
44.9	12	В	2x6	2x6	2x6	2x4
44.10		C	2x8	2x6	2x6	2x6
44.11	14	В	2x8	2x6	2x6	2x6
44.12		C	2x8	2x8	2x6	2x6
44.13	16	В	2x8	2x6	2x6	2x6
44.14		C	2x8	2x8	2x8	2x6
44.15	18	В	2x8	2x8	2x6	2x6
44.16		C	NA^a	2x8	2x8	2x8
44.17	20	В	NA^a	2x8	2x8	2x6
44.18		C	NA^a	NA^a	2x8	2x8
44.19	24	В	NA^a	NA^a	2x8	2x8
44.20		C	NA^a	NA^a	NA^a	2x8
44.21						

ROOF SPANS GREATER THAN 30' AND UP TO 34' SUPPORTING A ROOF ONLY

44.23 44.24 44.25	Maximum Wall Height (feet)	Exposure Category ^{h,i}		On-Cent	er Spacing (inc	hes)	
44.26			24	16	12	8	
44.27							
44.28	10	В	2x6	2x6	2x4	2x4	
44.29		C	2x6	2x6	2x6	2x4	

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44.22

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45.1	12	В	2x6	2x6	2x6	2x4
45.2		C	2x8	2x6	2x6	2x6
45.3	14	В	2x8	2x6	2x6	2x6
45.4		C	2x8	2x8	2x6	2x6
45.5	16	В	2x8	2x8	2x6	2x6
45.6		C	NA^a	2x8	2x8	2x6
45.7	18	В	2x8	2x8	2x6	2x6
45.8		C	NA^a	NA^a	2x8	2x8
45.9	20	В	NA^a	2x8	2x8	2x6
45.10		C	NA^a	NA^a	2x8	2x8
45.11	24	В	NA^a	NA^a	2x8	2x8
45.12		C	NA^a	NA ^a	NA^a	2x8

^{45.13} ^a- Design required.

- b. Applicability of these tables assumes the following: SPF#2 or better, Ground snow = 60
- psf, Roof snow = 42 psf, Component and Cladding Zone 4 50 square feet (Exposure B =
- 45.16 14.3 psf, Exposure C = 18.4 psf), eaves not greater than 2.0 feet in dimension.
- 45.17 c. The exterior of the wall shall be continuously sheathed in accordance with one of the
- 45.18 materials listed in items $\frac{32}{30}$ to $\frac{38}{36}$ in Table R602.3(1), including the prescribed fastening.
- 45.19 All wall bracing requirements shall be in accordance with section R602.10.
- 45.20 d. Studs shall be continuous full height. Where studs do not extend full height due to a wall
- opening, full height studs shall be provided on each side of the opening, equal in number
- 45.22 to the spacing of the required full height studs multiplied by half the width of the opening,
- plus one stud. Where multiple openings occur adjacent to one another, framing between
- openings shall include the total of all full height studs required for both openings combined.
- 45.25 ^e- Full depth blocking is required at 10-foot spacing maximum.
- 45.26 f. Utility, standard, stud, and No. 3 grade lumber of any species are not permitted.

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46.1	^g . This table is based on a maximum allowable deflection limit of L/120.
46.2	h Where the sill plate of the frame wall bears on the supporting foundation and the frame
46.3	wall is less than 12 feet in height, anchor the sill plate to the supporting foundation wall
46.4	with 1/2-inch diameter anchor bolts spaced a maximum of 6 feet on center. For frame walls
46.5	more than 12 feet but not exceeding 24 feet in height, anchor the sill plate to the supporting
46.6	foundation wall with 1/2-inch diameter anchor bolts spaced a maximum of 3 feet on center
46.7	ⁱ Where the sill plate of the frame wall bears on the supporting floor framing, it shall be
46.8	fastened to the rim board through the subfloor using 8d common (3-1/2 by 0.131) nails or
46.9	equivalent fastening spaced at 6 inches on center.
46.10	^j For frame walls up to 20 feet in height, fasten the studs to the top and sole plates in
46.11	accordance with Table R602.3(1). For frame walls that are more than 20 feet in height,
46.12	fasten the studs to the top plate and sole plate using fastening or an approved fastener that
46.13	is capable of supporting at least 450 pounds.
46.14	Subp. 2. [See repealer.]
46.15	1309.0703 SECTION R703, EXTERIOR COVERING.
46.16	Subpart 1. [Repealed, 32 SR 12]
46.17	Subp. 2. [Repealed, 32 SR 12]
46.18	Subp. 2a. IRC Section R703.2 Water-resistive barrier. Section R703.2 is amended
46.19	to read as follows:
46.20	R703.2 Water-resistive barrier. One layer of No. 15 asphalt felt, free from holes and
46.21	breaks, complying with ASTM D 226 for Type 1 felt or other approved water-resistive
46.22	barrier shall be applied over studs or sheathing of all exterior walls. Such felt or materia
46.23	No. 15 asphalt felt shall be applied horizontally, with the upper layer lapped over the
46 24	lower layer not less than 2 inches (51 mm). The water-resistive barrier shall overlap

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the flashings required in section R703.8 not less than 2 inches (51 mm). Where joints occur in the water-resistive barrier or flashing, the joints, felt shall be lapped not less than 6 inches (152 mm). Other approved materials shall be installed in accordance with the water-resistive barrier manufacturer's installation instructions. The No. 15 asphalt felt or other approved water-resistive barrier material shall overlap the flashings required in section R703.4 not less than 2 inches (51 mm). The No. 15 asphalt felt or other approved water-resistive barrier material shall be continuous up to the underside of the rafter or truss top chord 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.

Exception: Omission of the water-resistive barrier is permitted in the following situations:

1. In detached accessory buildings.

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- 2. Under exterior wall finish materials as permitted in Table R703.4.
- 47.15 3. Under paperbacked stucco lath when the paper backing is an approved water-resistive barrier.
 - Subp. 2b. IRC Section R703.4 Flashing. Section R703.4 is amended and a subsection is added to read as follows:

R703.4 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. 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. Approved corrosion-resistant flashing shall be installed at all of the following locations:

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18.1	1. Exterior window and door openings. Flashing shall be installed at the head and
18.2	sides of exterior window and door openings and shall extend to the surface of the
18.3	exterior wall finish or to the water-resistive barrier for subsequent drainage.
18.4	Flashing at exterior window and door openings shall be installed in accordance
18.5	with at least one of the following:
18.6	(a) the fenestration manufacturer's installation and flashing instructions. When
18.7	flashing is not addressed in the fenestration manufacturer's instructions, it
18.8	shall be installed in accordance with the flashing manufacturer's instructions;
18.9	(b) in accordance with the flashing design or method of a registered design
48.10	professional; and
18.11	(c) in accordance with other approved methods.
18.12	2. At the intersection of chimneys or other masonry construction with frame or
18.13	stucco walls, with projecting lips on both sides under stucco copings.
18.14	3. Under and at the ends of masonry, wood, or metal copings and sills.
18.15	4. Continuously above all projecting wood trim.
18.16	5. Where exterior porches, decks, or stairs attach to a wall or floor assembly of
18.17	wood-frame construction.
18.18	6. At wall and roof intersections.
18.19	7. At built-in gutters.
18.20	8. Where exterior material meets in other than a vertical line.
18.21	9. Where the lower portion of a sloped roof stops within the plane of an intersecting
18.22	wall cladding in such a manner as to divert water away from the assembly in
18.23	compliance with section R903.2.1.

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19.1	10. At the intersection of the foundation and rim joist framing when the exterior
19.2	wall covering does not lap the foundation insulation.
19.3	R703.4.1 Pan flashing of windows and doors. Pan flashing shall be installed in
19.4	accordance with the fenestration manufacturer's installation and flashing
19.5	instructions. Where flashing instructions or details are not provided, pan flashing
19.6	shall be installed at the sill of exterior window and door openings. Pan flashing
19.7	shall be sealed or sloped in such a manner as to direct water to the surface of the
19.8	exterior wall finish or to the water-resistive barrier for subsequent drainage.
19.9	Exceptions:
19.10	1. Windows or doors installed in accordance with the manufacturer's
19.11	installation instructions which include an alternate flashing method.
19.12	2. Windows or doors in detached accessory structures.
19.13	3. Skylights, bow or bay windows.
19.14	4. Doors required to meet accessibility requirements that would prevent the
19.15	installation of pan flashing.
19.16	5. Repairs or replacement of existing windows and doors.
19.17	6. When a method is provided by a registered design professional.
19.18	Subp. 3. IRC Section R703.6 R703.7. Section R703.6 R703.7 is amended to read as
19.19	follows:
19.20	R703.6 R703.7 Exterior plaster. Installation of these materials shall be in compliance
19.21	with ASTM C 926 and ASTM C 1063 and provisions of this code.
19.22	R703.6.1 R703.7.1 Lath. All lath and lath attachments shall be of
19.23	corrosion-resistant materials. Expanded metal or woven wire lath shall be attached
19.24	with 11 gage nails having a 7/16-inch (11.1 mm) head or 16 gage staples, spaced

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50.1	at no more than 6 inches (152 mm) or as otherwise approved. Nails or staples shall
50.2	penetrate wood framing support members not less than 3/4-inch (19 mm).
50.3	R703.6.1.1 R703.7.1.1 Control joints and expansion joints. Provisions for
50.4	the control of expansion shall be determined by the exterior plaster application
50.5	designer. ASTM C 1063 sections 7.11.4 - 7.11.4.4 do not apply.
50.6	R703.6.2 R703.7.2 Plaster. Plastering with portland cement plaster shall be in
50.7	accordance with ASTM C926. Cement materials shall be in accordance with one
50.8	of the following:
50.9	1. Masonry cement conforming to ASTM C91 Type M, S, or N.
50.10	2. Portland cement conforming to ASTM C150 Type I, II, or III.
50.11	3. Blended hydraulic cement conforming to ASTM C595 Type IP, IS (<70),
50.12	$\underline{\text{IL}}$, or $\underline{\text{IT }}$ (S < 70).
50.13	4. Hydraulic cement conforming to ASTM C1157 Type GU, HE, MS, HS,
50.14	or MH.
50.15	5. Plastic (stucco) cement conforming to ASTM C1328.
50.16	Plastering with portland cement plaster shall be not less than three coats when
50.17	applied over metal lath or wire lath and shall be not less than two coats when
50.18	applied over masonry, concrete, pressure-preservative treated wood, or
50.19	decay-resistant wood as specified in section R317.1 or gypsum backing. If the
50.20	plaster surface is completely covered by veneer or other facing material or is
50.21	completely concealed, plaster application need be only two coats, provided the
50.22	total thickness is as set forth in Table R702.1(1).
50.23	On wood-frame construction with an on-grade floor slab system, exterior plaster
50.24	shall be applied to cover, but not extend below, lath, paper, and screed.

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51.1	R703.6.2.1 R703.7.2.1 Weep screeds. A minimum 0.019-inch (0.5 mm) (No.
51.2	26 galvanized sheet gage), corrosion-resistant weep screed or plastic weep
51.3	screed, with a minimum vertical attachment flange of 3-1/2 inches (89 mm)
51.4	shall be provided at or below the foundation plate line on exterior stud walls
51.5	in accordance with ASTM C 1063. The weep screed shall be placed a minimum
51.6	of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas
51.7	and shall be of a type that will allow trapped water to drain to the exterior of
51.8	the building. The weather-resistant barrier shall lap the attachment flange.
51.9	The exterior lath shall cover and terminate on the attachment flange of the
51.10	weep screed.
51.11	R703.6.3 R703.7.3 Water-resistive barriers. Water-resistive barriers shall be
51.12	installed as required in section R703.2 and, where applied over wood-based
51.13	sheathing, shall include two layers of a water-resistive vapor-permeable barrier.
51.14	Each layer shall meet both of the following requirements:
51.15	1. A water resistance of not less than that of 60-minute Grade D paper; or a
51.16	minimum hydrostatic head of 23-31/32 inches (60.9 cm) when tested in
51.17	accordance with hydrostatic pressure test method AATCC 127-2008; or a
51.18	minimum water transudation time of 60 minutes when tested in accordance
51.19	with ASTM D-779.
51.20	2. A water vapor permeance of not less than that of No. 15 felt; or a minimum
51.21	permeance rating of 8.5 gr/h.ft. ² in Hg (US perm) (4.9 x 10 ¹⁰ kg/Pa.s.m ²) when
51.22	tested in accordance with Procedure B of ASTM E96.
51.23	Exception: One layer of water-resistive barrier complying with R703.2
51.24	is permitted when a drainage space that allows bulk water to flow freely
51.25	behind the cladding is provided.

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52.1	R703.6.4 R703.7.4 Application. Each coat shall be kept in a moist condition
52.2	for at least 48 hours prior to application of the next coat.
52.3	Exception: Applications installed in accordance with ASTM C 926. The
52.4	second coat is permitted to be applied as soon as the first coat has attained
52.5	sufficient rigidity to receive the second coat.
52.6	R703.6.5 R703.7.5 Curing. The finish coat for two-coat cement plaster shall not
52.7	be applied sooner than seven days after application of the first coat. For three-coat
52.8	cement plaster, the second coat shall not be applied sooner than 48 hours after
52.9	application of the first coat, except as required in section R703.6.4 R703.7.4. The
52.10	finish coat for three-coat cement plaster shall not be applied sooner than seven
52.11	days after application of the second coat.
52.12	Subp. 3a. [Repealed, 39 SR 91]
52.13	Subp. 4. [Repealed, 32 SR 12]
52.14	Subp. 5. [Repealed, 32 SR 12]
52.15	Subp. 6. [Repealed, 32 SR 12]
52.16	Subp. 7. [Repealed, 32 SR 12]
52.17	Subp. 8. [Repealed, 32 SR 12]
52.18	Subp. 8a. [See repealer.]
52.19	Subp. 8b. [See repealer.]
52.20	Subp. 9. [See repealer.]
52.21	1309.0807 SECTION R807, ATTIC ACCESS.
52.22	IRC Section R807.1 is amended as follows:

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R807.1 Attic access. Buildings with combustible ceiling or roof construction shall 53.1 have an attic access opening to attic areas that exceed 30 square feet (2.8 m²) and have 53.2 a vertical height of 30 inches (762 mm) or greater. The vertical height shall be measured 53.3 from the top of the ceiling framing members to the underside of the roof framing 53.4 members. 53.5 The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 53.6 762 mm) and shall be located in a hallway or other readily accessible location. Where 53.7 located in a wall, the opening shall be not less than 22 inches wide by 30 inches high 53.8 (59 mm wide by 762 mm high). Where the access is located in a ceiling, minimum 53.9 unobstructed head-room in the attic space shall be 30 inches (762 mm) at some point 53.10 above the access measured vertically from the bottom of ceiling framing members. See 53.11 Minnesota Rules, chapter 1346, the Minnesota Mechanical Code, for access requirements 53.12 53.13 where mechanical equipment is located in attics.

1309.0903 SECTION R903, WEATHER PROTECTION.

IRC Section R903.2.1 is amended as follows:

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R903.2.1 Locations. Flashings shall be installed at wall and roof intersections, wherever there is a change in roof slope or direction and around roof openings. A kick-out flashing shall be installed to divert the water away from where the eave of a sloped roof intersects a vertical sidewall. The kick-out flashing on the roof shall be a minimum of 2-1/2 inches (63.5 mm) long. Where flashing is of metal, the metal shall be corrosion-resistant with a thickness of not less than 0.019 inch (0.5 mm) (No. 26 galvanized sheet).

R903.2.1.1 Existing buildings and structures. Kick-out flashings shall be required in accordance with section R903.2.1 when <u>re-siding or simultaneously</u> re-siding and re-roofing existing buildings and structures.

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54.1	Exception: Kick-out flashings are not required when only re-roofing
54.2	existing buildings and structures.
54.3	REPEALER. Minnesota Rules, parts 1309.0602, subpart 2; 1309.0612; 1309.0702, subpart
54.4	1; and 1309.0703, subparts 8a, 8b, and 9, are repealed.
54.5	EFFECTIVE DATE. The amendments to chapter 1309 in this rule are effective March
54.6	31, 2020, or five business days after publication of the notice of adoption in the State
54.7	Register, whichever is later.

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