

Work Group Item 4.5

IBC-12/13 Table 2304.9.1

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee

Revise as follows:

Completely delete and replace existing Table 2304.9.1 Fastening Schedule with a new table.

**Table 2304.9.1
FASTENING SCHEDULE**

CONNECTION	FASTENING ^{a,m}	LOCATION
1. Joist to sill or girder	3 8d common (2 1/2" x 0.131") 3 3" x 0.131" nails 3 3" 14 gage staples	toenail
2. Bridging to joist	2 8d common (2 1/2" x 0.131") 2 3" x 0.131" nails 2 3" 14 gage staples	toenail each end
3. 1" x 6" subfloor or less to each joist	2 8d common (2 1/2" x 0.131")	face nail
4. Wider than 1" x 6" subfloor to each joist	3 8d common (2 1/2" x 0.131")	face nail
5. 2" subfloor to joist or girder	2 16d common (3 1/2" x 0.162")	Blind and face nail
6. sole plate to joist or blocking	16d (3 1/2" x 0.135") at 16" o.e. 3" x 0.131" nails at 8" o.e. 3" 14 gage staples at 12" o.e.	typical face nail
Sole plate to joist or blocking at braced wall panel	3 16d (3 1/2" x 0.135") at 16" o.e. 4 3" x 0.131" nails at 16" o.e. 4 3" 14 gage staples at 16" o.e.	braced wall panels
7. Top plate to stud	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	end nail
8. Stud to sole plate	4 8d common (2 1/2" x 0.131") 4 3" x 0.131" nails 3 3" 14 gage staples	toenail
	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	end nail
9. Double studs	16d (3 1/2" x 0.135") at 24" o.e. 3" x 0.131" nail at 8" o.e. 3" 14 gage staple at 8" o.e.	face nail
10. Double top plates	16d (3 1/2" x 0.135") at 16" o.e. 3" x 0.131" nail at 12" o.e. 3" 14 gage staple at 8" o.e.	typical face nail
Double top plates	8 16d common (3 1/2" x 0.162") 12 3" x 0.131" nails 12 3" 14 gage staples	lap splice
11. Blocking between joists or rafters to top plate	3 8d common (2 1/2" x 0.131") 3 3" x 0.131" nails 3 3" 14 gage staples	toenail
12. Rim joist to top plate	8d (2 1/2" x 0.131") at 6" o.e. 3" x 0.131" nail at 6" o.e. 3" 14 gage staple at 6" o.e.	toenail
13. Top plates, laps and intersections	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	face nail

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14. Continuous header, two pieces	16d common (3 1/2" x 0.162")	16" o.e. along edge
15. Ceiling joists to plate	3 8d common (2 1/2" x 0.131") 5 3" x 0.131" nails 5 3" 14 gage staples	toenail
16. Continuous header to stud	4 8d common (2 1/2" x 0.131")	toenail
17. Ceiling joists, laps over partitions (see Section 2308.10.4.1, Table 2308.10.4.1)	3 16d common (3 1/2" x 0.162") minimum, Table 2308.10.4.1 4 3" x 0.131" nails 4 3" 14 gage staples	face nail
18. Ceiling joists to parallel rafters (see Section 2308.10.4.1, Table 2308.10.4.1)	3 16d common (3 1/2" x 0.162") minimum, Table 2308.10.4.1 4 3" x 0.131" nails 4 3" 14 gage staples	face nail
19. Rafter to plate (see Section 2308.10.1, Table 2308.10.1)	3 8d common (2 1/2" x 0.131") 3 3" x 0.131" nails 3 3" 14 gage staples	Face nail
20. 1" diagonal brace to each stud and plate	2 8d common (2 1/2" x 0.131") 2 3" x 0.131" nails 3 3" 14 gage staples	Face nail
21. 1" x 8" sheathing to each bearing	3 8d common (2 1/2" x 0.131")	face nail
22. Wider than 1" x 8" sheathing to each bearing	3 8d common (2 1/2" x 0.131")	face nail
23. Built up corner studs	16d common (2 1/2" x 0.131") 3" x 0.131" nails 3" 14 gage staples	24" o.e. 16" o.e. 16" o.e.
24. Built up girder and beams	20d common (4" x 0.192") 32" o.e. 3" x 0.131" nails @ 24" o.e. 3" 14 gage staples @ 24" o.e.	face nail at top and bottom staggered on opposite sides
	2 20d common (4" x 0.192") 3 3" x 0.131" nails @ 24" o.e. 3 3" 14 gage staples @ 24" o.e.	face nail at ends and at each splice
25. 2" planks	16d common (3 1/2" x 0.162")	at each bearing
26. Collar tie to rafter	3 10d common (3" x 0.148") 4 3" x 0.131" nails 4 3" 14 gage staples	face nail
27. Jack rafter to hip	3 10d common (3" x 0.148") 4 3" x 0.131" nails 4 3" 14 gage staples	toenail
	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	face nail
28. Roof rafter to 2 by ridge beam	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	toenail
	2 16d common (3 1/2" x 0.162") 3 3" x 0.131" nails 3 3" 14 gage staples	face nail
29. Joist to band joist	3 16d common (3 1/2" x 0.162") 4 3" x 0.131" nails 4 3" 14 gage staples	face nail
30. Ledger strip	3 16d common (3 1/2" x 0.162") 4 3" x 0.131" nails 4 3" 14 gage staples	face nail at each joist
31. Wood structural panels and particleboard ^b Subfloor, roof and wall sheathing (to	1/2" and less	6d ^{e†} 2 3/8" x 0.113" nail ^h 1 3/4" 16 gage ^g

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framing)			
Single floor (combination subfloor-underlayment to framing)	19/32" to 3/4"	8d ^d or 6d ^e 2 3/8" x 0.113" nail ^p 2" 16 gage ^p	
	7/8" to 1"	8d ^e	
	1 1/8" to 1 1/4"	10d ^d or 8d ^e	
	3/4" and less	6d ^e	
	7/8" to 1"	8d ^e	
	1 1/8" to 1 1/4"	10d ^d or 8d ^e	
32. Panel siding (to framing)	1/2" or less	6d ^f	
	5/8"	8d ^f	
33. Fiberboard sheathing ^e	1/2"	No. 11 gage roofing nail ^h 6d common nail (2" x 0.113") No. 16 gage staple ⁱ	
	25/32"	No. 11 gage roofing nail ^h 8d common nail (2" x 0.113") No. 16 gage staple ⁱ	
34. Interior paneling	1/4"	4d ^j	
	3/8"	6d ^k	

For SI: 1 inch = 25.4 mm.

- a. common or box nails are permitted to be used except where otherwise stated.
- b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.
- c. Common or deformed shank (6d 2" x 0.113"; 8d 2 1/2" x 0.131"; 10d 3" x 0.148").
- d. Common (6d 2" x 0.113"; 8d 2 1/2" x 0.131"; 10d 3" x 0.148").
- e. Deformed shank (6d 2" x 0.113"; 8d 2 1/2" x 0.131"; 10d 3" x 0.148").
- f. Corrosion-resistant siding (6d 1 7/8 x 0.106"; 8d 2 3/8" x 0.128") or casing (6d 2" x 0.099"; 8d 2 1/2" x 0.113") nail.
- g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.
- h. Corrosion-resistant roofing nails with 7/16-inch diameter head and d1 1 1/2" inch length for 1/2-inch sheathing and 1 3/4-inch length for 25/32-inch sheathing.
- i. Corrosion-resistant staples with nominal 7/16-inch crown or 1-inch crown and 1 1/4-inch length for 1/2-inch sheathing and 1 1/2-inch length for 25/32-inch sheathing. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).
- j. Casing (1 1/2" x 0.080") or finish (1 1/2" x 0.072") nails spaced 6 inches on panel edges, 12 inches at intermediate supports.
- k. Panel supports at 24 inches. Casing or finish nails spaced 6 inches on panel edges, 12 inches at intermediate supports.
- l. For roof sheathing applications, 8d nails (2 1/2" x 0.113") are the minimum required for wood structural panels.
- m. Staples shall have a minimum crown width of 7/16 inch.
- n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.
- o. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
- p. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.

Completely replace with the following new table (underlining has been omitted for table clarity):

**Table 2304.9.1
FASTENING SCHEDULE**

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
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ROOF			
1	Blocking between ceiling joists or rafters to top plate	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	at each end, toenail
2	Ceiling joists to top plate	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	per joist, toenail
3	Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.10.4.1, Table 2308.10.4.1)	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.10.4.1, Table 2308.10.4.1)	Per table 2308.10.4.1	Face nail
5	Collar tie to rafter	3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6	Rafter or roof truss to top plate (See Section 2308.10.1, Table 2308.10.1)	3-10 common (3" x 0.148"); or 3-16d box (3.5" x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c
7	Roof rafters to ridge valley or hip rafters; or, roof rafter to 2-inch ridge beam	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown; or 3-10d common (3.5" x 0.148"); or 3-16d box (3.5" x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	End nail Toenail
WALL			
8	Stud to stud (not at braced wall panels)	16d common (3.5" x 0.162");	24" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	16" o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3.5" x 0.162"); or	16" o.c. face nail
		16d box (3.5" x 0.135"); or	12" o.c. face nail
		3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail
10	Built-up header (2-inch to 2-inch header)	16d common (3.5" x 0.162"); or	16" o.c. each edge, face nail
		16d box (3.5" x 0.135")	12" o.c. each edge, face nail
11	Continuous header to stud	4-8d common (2.5" x 0.131"); or 4-10d box (3" x 0.128")	Toenail
12	Top plate to top plate	16d common (3.5" x 0.162"); or	16" o.c. face nail
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13	Top plate to top plate, at end joints	8-16d common (3.5" x 0.162"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3.5" x 0.162"); or	16" o.c. face nail
		16d box (3.5" x 0.135"); or 3" x 0.131" nails; or	12" o.c. face nail

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		3" 14 gage staples, 7/16" crown	
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3.5" x 0.162"); or 3-16d box (3.5" x 0.135"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16	Stud to bottom plate	4-8d common (2.5" x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown; or	Toenail
		2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17	Top or bottom plate to stud	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
18	Top plates, laps at corners and intersections	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
19	1" brace to each stud and plate	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
20	1" x 6" sheathing to each bearing	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128")	Face nail
21	1" x 8" and wider sheathing to each bearing	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128")	Face nail
FLOOR			
22	Joist to sill, top plate, or girder	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Toenail
23	Rim joist, band joist, or blocking to sill or top plate	8d common (2.5" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	6" o.c., toenail
24	1" x 6" subfloor or less to each joist	2-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128")	Face nail
25	2" subfloor to joist or girder	2-16d common (3.5" x 0.162")	Face nail
26	2" planks (plank & beam – floor & roof)	2-16d common (3.5" x 0.162")	At each bearing, face nail
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192")	32" o.c., face nail at top and bottom staggered on opposite sides
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides
		And: 2-20d common (4" x 0.192"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail at ends and at each splice
28	Ledger strip supporting joists or rafters	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	At each joist or rafter, face nail

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29	Joist to band joist or rim joist	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	End nail	
30	Bridging to joist	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Each end, toenail	
Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing^a				
			Edges (inches)	Intermediate supports (inches)
31	3/8" – 1/2"	6d common or deformed (2" x 0.113") (subfloor and wall)	6	12
		8d box or deformed (2.5" x 0.113") (roof)	6	12
		2 3/8" x 0.113" nail (subfloor and wall)	6	12
		1 3/4" 16 gage staple, 7/16" crown (subfloor and wall)	4	8
		2 3/8 x 0.113" nail (roof)	4	8
		1 3/4" 16 gage staple, 7/16" crown (roof)	3	6
32	19/32" – 3/4"	8d common (2.5" x 0.131"); or 6d deformed (2" x 0.113)	6	12
		2 3/8" x 0.113" nail; or 2" 16 gage staple, 7/16" crown	4	8
33	7/8" – 1 1/4"	10d common (3" x 0.148"); or 8d deformed (2.5" x 0.131")	6	12
Other exterior wall sheathing				
34	1/2" fiberboard sheathing ^b	1 1/2" galvanized roofing nail (7/16" head diameter; or 6d common (2" x 0.113"); or 1 1/4" 16 gage staple with 7/16" or 1" crown	3	6
35	25/32" fiberboard sheathing ^b	1 3/4" galvanized roofing nail (7/16" diameter head); or 8d common (2.5" x 0.131"); or 1 1/2" 16 gage staple with 7/16" or 1" crown	3	6
Wood structural panels, combination subfloor underlayment to framing				
36	3/4" and less	8d common (2.5" x 0.131"); or 6d deformed (2" x 0.113")	6	12
37	7/8" – 1"	8d common (2.5" x 0.131"); or 8d deformed (2 1/2" x 0.131")	6	12
38	1 1/8" – 1 1/4"	10d common (3" x 0.148"); or 8d deformed (2 1/2" x 0.131")	6	12
Panel Siding to Framing				
39	1/2" or less	6d corrosion-resistant siding (1 7/8" x 0.106"); or 6d corrosion-resistant casing (2" x 0.099")	6	12
40	5/8"	8d corrosion-resistant siding (2 3/8" x 0.128"); or 8d corrosion-resistant casing (2 1/2" x 0.113")	6	12
Interior Paneling				
41	1/4"	4d casing (1 1/2" x 0.080"); or 4d finish (1 1/2" x 0.072")	6	12
42	3/8"	6d casing (2" x 0.099"); or 6d finish (Panel supports at 24 inches)	6	12

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- a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box, or casing.
- b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).
- c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

Reason: Reason:

The ICC Building Code Action Committee sought to reformat and correlate the current fastening schedule for wood frame construction in Chapter 23 with the current fastening schedule in the IRC. The organization of the IRC table was thought to be easier to use, and it was generally acknowledged that it may help users of both codes if the tables more closely resembled each other in format and content.

Descriptions and specified fastening in the IBC and IRC tables were compared. In developing the proposed new table, the committee tried to make as few technical changes as possible while reorganizing and reformatting the IBC table to look more like the IRC table. Care was taken to retain, for the most part, all fastening alternatives currently in the IBC, while at the same time adding appropriate alternatives that appear in the IRC for the same connection, if they were missing.

To attain complete coordination between the two tables was not possible because certain technical changes that would have been required were beyond the chosen scope of the committee's work. However, the proposed table is much closer to the IRC table and the committee will look at the IRC table in the Group B changes to attempt further correlations between the two.

When inconsistencies or apparent anomalies were discovered between tables or within the IBC table itself, in general the following principles were applied:

- a. attempt to establish a reference common nail specification for each connection where it appeared to be lacking;
- b. provide box nails alternatives, if lacking, where possible
- c. retain all current alternatives for power-driven and staple alternatives (though in a few cases the number or size of fastener was adjusted to be consistent with the IRC or to achieve consistency within the IBC table itself based on other entries);
- d. in creating box nail alternatives where they currently are missing, for simplicity assume 10d box nails (3" x 0.128") to be equivalent to 3" x 0.131" power-driven fasteners;
- e. take into account calculated connection capacities. (These were also compared to the engineered connections specified in the AWC Wood Frame Construction Manual for like connections.)

Finally, this proposed IBC table is much cleaner and more complete than the current table. Besides adding many fastener alternatives, many detailed and difficult-to-use footnotes in the

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current table were eliminated since their content was incorporated directly into the proposed table.

The following three tables are provided: i) the proposed IBC Table 2304.9.1 with an additional column of notes explaining how it correlates to the existing IBC table, ii) the existing IBC Table 2304.9.1 with an additional column of notes explaining how it correlates to the proposed IBC table, and iii) the existing IRC table, shown for reference.

Proposed Table 2304.9.1 with additional column of explanation:

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	<i>Notes:</i>
ROOF				
1	Blocking between ceiling joists or rafters to top plate	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	at each end, toenail	<i>-Nailing from IBC Row 11. -10d box equivalent to 8d common added.</i>
2	Ceiling joists to top plate	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	per joist, toenail	<i>-Nailing from IBC Row 15. -10d box equivalent to 8d common added. -Correct power driven number from 5 to 3.</i>
3	Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (for parallel rafter case see Section 2308.10.4.1, Table 2308.10.4.1)	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	<i>-Nailing from IBC Row 17. -10d box equivalent to power driven nail size added.</i>
4	Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.10.4.1, Table 2308.10.4.1)	Per table 2308.10.4.1	Face nail	<i>-Nailing from IBC Row 18.</i>
5	Collar tie to rafter	3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	<i>-Nailing from IBC Row 26. -10d box equivalent to power driven nail size added.</i>
6	Rafter or roof truss to top plate (See Section 2308.10.1, Table 2308.10.1)	3-10 common (3" x 0.148"); or 3-16d box (3.5" x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c	<i>-Nailing from IRC Row 5. -10d box equivalent to power driven nail size added.</i>
7	Roof rafters to ridge valley or hip rafters; or, roof rafter to 2-inch ridge beam	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown; or	End nail	<i>-Nailing from IBC Rows 27 and 28. -10d box equivalent to power driven nail size added.</i>
		3-10d common (3.5" x 0.148"); or 3-16d box (3.5" x 0.135"); or 4-10d box (3" x 0.128"); or	Toenail	<i>-Nailing from IBC Rows 27 and 28. -10d box equivalent to power driven nail size</i>

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		4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown		<i>added.</i> <i>-16d box per IRC for toenailing of rafter in Row 6 added.</i>
WALL				
8	Stud to stud (not at braced wall panels)	16d common (3.5" x 0.162");	24" o.c. face nail	<i>-Nailing from IBC Row 9.</i>
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	16" o.c. face nail	<i>-10d box equivalent to power driven nail size added.</i> <i>-Corrected spacing for power driven nail to be equivalent to the specified common nail.</i>
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3.5" x 0.162"); or	16" o.c. face nail	<i>-Nailing from IBC Row 23.</i> <i>-16d box equivalent from IRC Row 8.</i>
		16d box (3.5" x 0.135"); or 3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail	
10	Built-up header (2-inch to 2-inch header)	16d common (3.5" x 0.162"); or	16" o.c. each edge, face nail	<i>-Nailing from IBC Row 14.</i>
		16d box (3.5" x 0.135")	12" o.c. each edge, face nail	<i>-16d box equivalent added but at 12" o.c. spacing.</i>
11	Continuous header to stud	4-8d common (2.5" x 0.131"); or 4-10d box (3" x 0.128")	Toenail	<i>-Nailing from IBC Row 16.</i> <i>-10d box equivalent to 8d common added.</i>
12	Top plate to top plate	16d common (3.5" x 0.162"); or	16" o.c. face nail	<i>-Nailing from IBC Row 10 except that 16d common specified in lieu of 16d box to align with power driven sizes.</i> <i>-10d box equivalent to power driven sizes added.</i>
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail	
13	Top plate to top plate, at end joints	8-16d common (3.5" x 0.162"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)	<i>-Nailing from IBC Row 10.</i> <i>-10d box equivalent to power driven sizes added.</i>
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3.5" x 0.162"); or	16" o.c. face nail	<i>-Nailing from IBC Row 6 except that 16d common used in lieu of 16d box.</i> <i>-16d box equivalent added at 12" o.c.</i>
		16d box (3.5" x 0.135"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail	

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15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3.5" x 0.162"); or 3-16d box (3.5" x 0.135"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail	-Nailing from IBC Row 6; 16d common equivalent added
16	Stud to bottom plate	4-8d common (2.5" x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown; or	Toenail	-Nailing per IBC Row 8. -10d box equivalent to 8d common added.
		2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail	-Nailing per IBC Row 8. -10d box equivalent to power driven sizes added.
17	Top or bottom plate to stud	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail	-Nailing per IBC Row 7. -10d box equivalent to power driven sizes added.
18	Top plates, laps at corners and intersections	2-16d common (3.5" x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail	-Nailing per IBC Row 13. -10d box equivalent to power driven sizes added.
19	1" brace to each stud and plate	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail	-Nailing per IBC Row 20. -10d box equivalent to 8d common added.
20	1" x 6" sheathing to each bearing	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128")	Face nail	-Nailing per IRC Row 21. -10d box equivalent to 8d common added.
21	1" x 8" and wider sheathing to each bearing	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128")	Face nail	-Nailing per IRC Rows 22 and 23, and IBC Rows 4, 21 and 22. -10d box equivalent to 8d common added.
FLOOR				
22	Joist to sill, top plate, or girder	3-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Toenail	-Nailing from IBC Row 1. -10d box equivalent to 8d common added.
23	Rim joist, band joist, or blocking to sill or top plate	8d common (2.5" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	6" o.c., toenail	-Nailing from IBC Row 12. -10d box equivalent to 8d common added.
24	1" x 6" subfloor or less to each joist	2-8d common (2.5" x 0.131"); or 3-10d box (3" x 0.128")	Face nail	-Nailing from IBC Row 3. -10d box equivalent to

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					<i>8d common added</i>
25	2" subfloor to joist or girder	2-16d common (3.5" x 0.162")	Face nail		<i>-Nailing from IBC Row 5.</i>
26	2" planks (plank & beam – floor & roof)	2-16d common (3.5" x 0.162")	At each bearing, face nail		<i>-Nailing from IBC Row 25.</i>
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192")	32" o.c., face nail at top and bottom staggered on opposite sides		<i>-Nailing from IBC Row 24. -10d box equivalent to power driven nail size added.</i>
		10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides		
		And: 2-20d common (4" x 0.192"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail at ends and at each splice		<i>-Nailing from IBC Row 24. -10d box equivalent to power driven nail sizes added.</i>
28	Ledger strip supporting joists or rafters	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	At each joist or rafter, face nail		<i>-Nailing from IBC Row 30. -10d box equivalent to power driven nail size added.</i>
29	Joist to band joist or rim joist	3-16d common (3.5" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	End nail		<i>-Nailing from IBC Row 29. -10d box equivalent to power driven nail size added.</i>
30	Bridging to joist	2-8d common (2.5" x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Each end, toenail		<i>-Nailing from IBC Row 2. -10d box equivalent to 8d common nail added.</i>
Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing^a					
			Edges (inches)	Intermediate supports (inches)	
31	3/8" – 1/2"	6d common or deformed (2" x 0.113") (subfloor and wall)	6	12	<i>-Nailing from IBC Row 31.</i>
		8d box or deformed (2.5" x 0.113") (roof)	6	12	<i>-Nailing from IBC Row 31 footnote "L".</i>
		2 3/8" x 0.113" nail (subfloor and wall)	6	12	<i>-Nailing from IBC Row 31.</i>
		1 3/4" 16 gage staple, 7/16" crown (subfloor and wall)	4	8	<i>-Nailing from IBC Row 31 and footnote "o".</i>
		2 3/8 x 0.113" nail (roof)	4	8	<i>-Nailing from IBC Row 31 and footnote "n".</i>
		1 3/4" 16 gage staple, 7/16" crown (roof)	3	6	<i>-Nailing from IBC Row 31 and footnote "o".</i>
32	19/32" – 3/4"	8d common (2.5" x 0.131"); or	6	12	<i>-Nailing from IBC</i>

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		6d deformed (2" x 0.113) 2 3/8" x 0.113" nail; or 2" 16 gage staple, 7/16" crown	4	8	Row 31. -Nailing from IBC Row 31 and footnote "p".
33	7/8" – 1 1/4"	10d common (3" x 0.148"); or 8d deformed (2.5" x 0.131")	6	12	-Nailing from IBC Row 31 and footnote "e".
Other exterior wall sheathing					
34	1/2" fiberboard sheathing ^b	1 1/2" galvanized roofing nail (7/16" head diameter; or 6d common (2" x 0.113"); or 1 1/4" 16 gage staple with 7/16" or 1" crown	3	6	-Nailing from IBC Row 33 and footnote "g" and "h" and "i".
35	25/32" fiberboard sheathing ^b	1 3/4" galvanized roofing nail (7/16" diameter head); or 8d common (2.5" x 0.131"); or 1 1/2" 16 gage staple with 7/16" or 1" crown	3	6	-Nailing from IBC Row 33 and footnote "g" and "h" and "i".
Wood structural panels, combination subfloor underlayment to framing					
36	3/4" and less	8d common (2.5" x 0.131"); or 6d deformed (2" x 0.113")	6	12	-Nailing from IBC Row 31 and footnote "e" and IRC Row 39 for common nail size.
37	7/8" – 1"	8d common (2.5" x 0.131"); or 8d deformed (2 1/2" x 0.131")	6	12	-Nailing from IBC Row 31 and footnote "e" and IRC Row 40 for common nail size.
38	1 1/8" – 1 1/4"	10d common (3" x 0.148"); or 8d deformed (2 1/2" x 0.131")	6	12	-Nailing from IBC Row 31 for common and deformed nail size.
Panel Siding to Framing					
39	1/2" or less	6d corrosion-resistant siding (1 7/8" x 0.106"); or 6d corrosion-resistant casing (2" x 0.099")	6	12	-Nailing from IBC Row 32 and footnote "f".
40	5/8"	8d corrosion-resistant siding (2 3/8" x 0.128"); or 8d corrosion-resistant casing (2 1/2" x 0.113")	6	12	-Nailing from IBC Row 32 and footnote "f".
Interior Paneling					
41	1/4"	4d casing (1 1/2" x 0.080"); or 4d finish (1 1/2" x 0.072")	6	12	-Nailing from IBC Row 34 and footnote "j".
42	3/8"	6d casing (2" x 0.099"); or 6d finish (Panel supports at 24 inches)	6	12	-Nailing from IBC Row 34 and footnote "k".

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

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Current (Existing) Table 2304.9.1 with additional column indicating new location:

CONNECTION	FASTENING ^{a,m}	LOCATION	Notes:
1. Joist to sill or girder	3-8d common (2 ½" x 0.131") 3-3" x 0.131" nails 3-3" 14 gage staples	toenail	to new row 22
2. Bridging to joist	2-8d common (2 ½" x 0.131") 2-3" x 0.131" nails 2-3" 14 gage staples	toenail each end	to new row 30
3. 1" x 6" subfloor or less to each joist	2-8d common (2 ½" x 0.131")	face nail	to new row 24
4. Wider than 1" x 6" subfloor to each joist	3-8d common (2 ½" x 0.131")	face nail	deleted from table, wider condition addressed by row 21
5. 2" subfloor to joist or girder	2-16d common (3 ½" x 0.162")	Blind and face nail	to new row 25
6. sole plate to joist or blocking	16d (3 ½" x 0.135") at 16" o.c. 3" x 0.131" nails at 8 o.c. 3" 14 gage staples at 12" o.c.	typical face nail	to new row 14
Sole plate to joist or blocking at braced wall panel	3-16d (3 ½" x 0.135") at 16" o.c. 4-3" x 0.131" nails at 16" o.c. 4-3" 14 gage staples at 16" o.c.	braced wall panels	to new row 15
7. Top plate to stud	2-16d common (3 ½" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	end nail	to new row 17
8. Stud to sole plate	4-8d common (2 ½" x 0.131") 4-3" x 0.131" nails 3-3" 14 gage staples	toenail	to new row 16 and 17
	2-16d common (3 ½" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	end nail	to new row 16 and 17
9. Double studs	16d (3 ½" x 0.135") at 24" o.c. 3" x 0.131" nail at 8" o.c. 3" 14 gage staple at 8" o.c.	face nail	to new rows 8 and 9
10. Double top plates	16d (3 ½" x 0.135") at 16" o.c. 3" x 0.131" nail at 12" o.c. 3" 14 gage staple at 8" o.c.	typical face nail	to new rows 12
	8-16d common (3 ½" x 0.162") 12-3" x 0.131" nails 12-3" 14 gage staples	lap splice	
11. Blocking between joists or rafters to top plate	3-8d common (2 ½" x 0.131") 3-3" x 0.131" nails 3-3" 14 gage staples	toenail	to new row 1
12. Rim joist to top plate	8d (2 ½" x 0.131") at 6" o.c. 3" x 0.131" nail at 6" o.c. 3" 14 gage staple at 6" o.c.	toenail	to new row 23
13. Top plates, laps and intersections	2-16d common (3 ½" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	face nail	to new row 18
14. Continuous header, two pieces	16d common (3 ½" 0.162")	16" o.c. along edge	to new row 10
15. Ceiling joists to plate	3-8d common (2 ½" x 0.131") 5-3" x 0.131" nails 5-3" 14 gage staples	toenail	to new row 2
16. Continuous header to stud	4-8d common (2 ½" x 0.131")	toenail	to new row 11
17. Ceiling joists, laps over partitions (see Section 2308.10.4.1, Table 2308.10.4.1)	3-16d common (3 ½" x 0.162") minimum, Table 2308.10.4.1 4-3" x 0.131" nails	face nail	to new rows 3 and 4

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	4-3" 14 gage staples		
18. Ceiling joists to parallel rafters (see Section 2308.10.4.1, Table 2308.10.4.1)	3-16d common (3 1/2" x 0.162") minimum, Table 2308.10.4.1 4-3" x 0.131" nails 4-3" 14 gage staples	face nail	<i>to new row 4</i>
19. Rafter to plate (see Section 2308.10-.1, Table 2308.10.1)	3-8d common (2 1/2" x 0.131") 3-3" x 0.131" nails 3-3" 14 gage staples	Face nail	<i>to new row 6</i>
20. 1" diagonal brace to each stud and plate	2-8d common (2 1/2" x 0.131") 2-3" x 0.131" nails 3-3" 14 gage staples	Face nail	<i>to new row 19</i>
21. 1" x 8" sheathing to each bearing	3-8d common (2 1/2" x 0.131")	face nail	<i>to new row 21</i>
22. Wider than 1" x 8" sheathing to each bearing	3-8d common (2 1/2" x 0.131")	face nail	<i>to new row 21</i>
23. Built-up corner studs	16d common (2 1/2" x 0.131") 3" x 0.131" nails 3" 14 gage staples	24" o.c. 16" o.c. 16" o.c.	<i>to new row 9</i>
24. Built-up girder and beams	20d common (4" x 0.192") 32" o.c. 3" x 0.131" nails @ 24" o.c. 3" 14 gage staples @ 24" o.c.	face nail at top and bottom staggered on opposite sides	<i>to new row 27</i>
	2-20d common (4" x 0.192") 3-3" x 0.131" nails @ 24" o.c. 3-3" 14 gage staples @ 24" o.c.	face nail at ends and at each splice	<i>to new row 27</i>
25. 2" planks	16d common (3 1/2" x 0.162")	at each bearing	<i>to new row 26</i>
26. Collar tie to rafter	3-10d common (3" x 0.148") 4-3" x 0.131" nails 4-3" 14 gage staples	face nail	<i>to new row 5</i>
27. Jack rafter to hip	3-10d common (3" x 0.148") 4-3" x 0.131" nails 4-3" 14 gage staples	toenail	<i>to new row 7</i>
	2-16d common (3 1/2" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	face nail	<i>to new row 7</i>
28. Roof rafter to 2-by ridge beam	2-16d common (3 1/2" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	toenail	<i>to new row 7 except 10d common is specified for toe-nail case to match jack to hip nailing.</i>
	2-16d common (3 1/2" x 0.162") 3-3" x 0.131" nails 3-3" 14 gage staples	face nail	<i>to new row 7</i>
29. Joist to band joist	3-16d common (3 1/2" x 0.162") 4-3" x 0.131" nails 4-3" 14 gage staples	face nail	<i>to new row 29</i>
30. Ledger strip	3-16d common (3 1/2" x 0.162") 4-3" x 0.131" nails 4-3" 14 gage staples	face nail at each joist	<i>to new row 28</i>
31. Wood structural panels and particleboard ^b Subfloor, roof and wall sheathing (to framing) Single floor (combination subfloor-	1/2" and less	6d ^{c,l} 2 3/8" x 0.113" nail ⁿ 1 3/4" 16 gage ^o	<i>to new row 31</i>
	19/32" to 3/4"	8d ^d or 6d ^e 2 3/8" x 0.113" nail ^p 2" 16 gage ^p	<i>to new rows 32-33</i>
	7/8" to 1"	8d ^c	
	1 1/8" to 1 1/4"	10d ^d or 8d ^e	<i>to new rows 36, 37, 38</i>
	3/4" and less	6d ^e	

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underlayment to framing)	7/8" to 1"	8d ^e	
	1 1/8" to 1 1/4"	10d ^d or 8d ^e	
32. Panel siding (to framing)	1/2" or less	6d ^f	<i>to new rows 39 and 40</i>
	5/8"	8d ^f	
33. Fiberboard sheathing ^g	1/2"	No. 11 gage roofing nail ^h 6d common nail (2" x 0.113") No. 16 gage staple ⁱ	<i>to new row 34</i>
	25/32"	No. 11 gage roofing nail ^h 8d common nail (2" x 0.113") No. 16 gage staple ⁱ	<i>to new row 35</i>
34. Interior paneling	1/4"	4d ^j	<i>to new row 41</i>
	3/8"	6d ^k	<i>to new row 42</i>

For SI: 1 inch = 25.4 mm.

- a. common or box nails are permitted to be used except where otherwise stated.
- b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.
- c. Common or deformed shank (6d-2" x 0.113"; 8d-2 1/2" x 0.131"; 10d-3" x 0.148").
- d. Common (6d-2" x 0.113"; 8d-2 1/2" x 0.131"; 10d-3" x 0.148").
- e. Deformed shank (6d-2" x 0.113"; 8d-2 1/2" x 0.131"; 10d-3" x 0.148").
- f. Corrosion-resistant siding (6d-1 7/8 x 0.106"; 8d-2 3/8" x 0.128") or casing (6d-2" x 0.099"; 8d-2 1/2" x 0.113") nail.
- g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.
- h. Corrosion-resistant roofing nails with 7/16-inch-diameter head and d1 1 1/2"-inch length for 1/2-inch sheathing and 1 3/4-inch length for 25/32-inch sheathing.
- i. Corrosion-resistant staples with nominal 7/16-inch crown or 1-inch crown and 1 1/4-inch length for 1/2-inch sheathing and 1 1/2-inch length for 25/32-inch sheathing. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).
- j. Casing (1 1/2" x 0.080") or finish (1 1/2" x 0.072") nails spaced 6 inches on panel edges, 12 inches at intermediate supports
- k. Panel supports at 24 inches. Casing or finish nails spaced 6 inches on panel edges, 12 inches at intermediate supports.
- l. For roof sheathing applications, 8d nails (2 1/2" x 0.113") are the minimum required for wood structural panels.
- m. Staples shall have a minimum crown width of 7:16 inch.
- n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.
- o. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
- p. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.

(The 2012 IRC fastener schedule is shown below for reference)

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TABLE R602.3(1)
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{a,b,c}	SPACING OF FASTENERS
Roof			
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2 1/2" x 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie to rafter, face nail or 1 1/4" x 20 gage ridge strap	3-10d (3" x 0.128")	—
5	Rafter or roof truss to plate, toe nail	3-16d box nails (3 1/2" x 0.135") or 3-10d common nails (3" x 0.148")	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss ¹
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (3 1/2" x 0.135") 3-16d (3 1/2" x 0.135")	—
Wall			
7	Built-up studs-face nail	10d (3" x 0.128")	24" o.c.
8	Abutting studs at intersecting wall corners, face nail	16d (3 1/2" x 0.135")	12" o.c.
9	Built-up header, two pieces with 1/2" spacer	16d (3 1/2" x 0.135")	16" o.c. along each edge
10	Continued header, two pieces	16d (3 1/2" x 0.135")	16" o.c. along each edge
11	Continuous header to stud, toe nail	4-8d (2 1/2" x 0.113")	—
12	Double studs, face nail	10d (3" x 0.128")	24" o.c.
13	Double top plates, face nail	10d (3" x 0.128")	24" o.c.
14	Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d (3 1/2" x 0.135")	—
15	Sole plate to joist or blocking, face nail	16d (3 1/2" x 0.135")	16" o.c.
16	Sole plate to joist or blocking at braced wall panels	3-16d (3 1/2" x 0.135")	16" o.c.
17	Stud to sole plate, toe nail	3-8d (2 1/2" x 0.113") or 2-16d (3 1/2" x 0.135")	—
18	Top or sole plate to stud, end nail	2-16d (3 1/2" x 0.135")	—
19	Top plates, laps at corners and intersections, face nail	2-10d (3" x 0.128")	—
20	1" brace to each stud and plate, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 3/4"	—
21	1" x 6" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 3/4"	—
22	1" x 8" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 3 staples 1 3/4"	—
23	Wider than 1" x 8" sheathing to each bearing, face nail	3-8d (2 1/2" x 0.113") 4 staples 1 3/4"	—
Floor			
24	Joist to sill or girder, toe nail	3-8d (2 1/2" x 0.113")	—
25	Rim joist to top plate, toe nail (roof applications also)	8d (2 1/2" x 0.113")	6" o.c.
26	Rim joist or blocking to sill plate, toe nail	8d (2 1/2" x 0.113")	6" o.c.
27	1" x 6" subfloor or less to each joist, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 3/4"	—
28	2" subfloor to joist or girder, blind and face nail	2-16d (3 1/2" x 0.135")	—
29	2" planks (plank & beam - floor & roof)	2-16d (3 1/2" x 0.135")	at each bearing
30	Built-up girders and beams, 2-inch lumber layers	10d (3" x 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
31	Ledger strip supporting joists or rafters	3-16d (3 1/2" x 0.135")	At each joist or rafter

(continued)

Work Group Item 4.5

TABLE R602.3(1)—continued
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER ^{b, c, e}	SPACING OF FASTENERS	
			Edges (inches) ⁱ	Intermediate supports ^{c, e} (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing				
32	$\frac{3}{8}$ " - $\frac{1}{2}$ "	6d common ($2 \times 0.113 \text{ } ^\circ$) nail (subfloor wall) ^j 8d common ($2\frac{1}{2} \times 0.131 \text{ } ^\circ$) nail (roof) ^f	6	12 ^g
33	$\frac{19}{32}$ " - 1"	8d common nail ($2\frac{1}{2} \times 0.131 \text{ } ^\circ$)	6	12 ^g
34	$1\frac{1}{8}$ " - $1\frac{1}{4}$ "	10d common ($3 \times 0.148 \text{ } ^\circ$) nail or 8d ($2\frac{1}{2} \times 0.131 \text{ } ^\circ$) deformed nail	6	12
Other wall sheathing^h				
35	$\frac{1}{2}$ " structural cellulose fiberboard sheathing	$\frac{1}{2}$ " galvanized roofing nail, $\frac{7}{16}$ " crown or 1" crown staple 16 ga., $1\frac{1}{4}$ " long	3	6
36	$\frac{25}{32}$ " structural cellulose fiberboard sheathing	$1\frac{3}{4}$ " galvanized roofing nail, $\frac{7}{16}$ " crown or 1" crown staple 16 ga., $1\frac{1}{2}$ " long	3	6
37	$\frac{1}{2}$ " gypsum sheathing ^d	$1\frac{1}{2}$ " galvanized roofing nail: staple galvanized, $1\frac{1}{2}$ " long; $1\frac{1}{4}$ " screws, Type W or S	7	7
38	$\frac{5}{8}$ " gypsum sheathing ^d	$1\frac{3}{4}$ " galvanized roofing nail: staple galvanized, $1\frac{3}{8}$ " long; $1\frac{3}{8}$ " screws, Type W or S	7	7
Wood structural panels, combination subfloor underlayment to framing				
39	$\frac{3}{4}$ " and less	6d deformed ($2 \times 0.120 \text{ } ^\circ$) nail or 8d common ($2\frac{1}{2} \times 0.131 \text{ } ^\circ$) nail	6	12
40	$\frac{7}{8}$ " - 1"	8d common ($2\frac{1}{2} \times 0.131 \text{ } ^\circ$) nail or 8d deformed ($2\frac{1}{2} \times 0.120 \text{ } ^\circ$) nail	6	12
41	$1\frac{1}{8}$ " - $1\frac{1}{4}$ "	10d common ($3 \times 0.148 \text{ } ^\circ$) nail or 8d deformed ($2\frac{1}{2} \times 0.120 \text{ } ^\circ$) nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 Ksi = 6.895 MPa.

- a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
- b. Staples are 16 gage wire and have a minimum $\frac{7}{16}$ -inch on diameter crown width.
- c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
- d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
- e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
- f. For regions having basic wind speed of 110 mph or greater, 8d deformed ($2\frac{1}{2} \times 0.120$) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.
- g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.
- h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
- i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
- j. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

Cost Impact: None???????????