

Christopher Hine, January 14, 2025

## Decked Out: A Dive into the Updated 2021 IRC Residential Deck Code Provisions

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### Description

Join in for an overview of the updated 2021 International Residential Code (IRC) deck provisions! This session will highlight past deck failures while exploring their root causes and crucial lessons learned. Next, dive into the current and updated provisions of Chapter 5 of the 2021 IRC along with additional guidelines to ensure our future designs and builds are “decked out” for safety as well as functionality.

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### Learning Objectives

- Study past residential deck failures and how the failures led to occupant injury or death.
- Understand provisions in Chapter 5 of the 2021 IRC that relate to the design and construction of a code compliant residential deck.
- Identify new and revised provisions in the 2021 IRC for residential deck construction. This includes the revised section R507.5 for deck beams and a new section specific to Exterior Guards specific to decks.
- Review residential deck guard rail testing results and additional guidelines that can help in the design and construction of safer system for the occupant.

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### New "Base" Code



The slide shows two covers of the International Residential Code (IRC). The left cover is the 2018 edition, with the year '2018' highlighted in a red box. A green arrow points to the right cover, which is the 2021 edition, with the year '2021' highlighted in a red box. The PHRC logo is in the bottom right corner.

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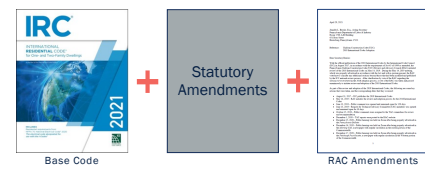
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### PA UCC Residential Code Summary



The slide illustrates the components of the Pennsylvania UCC Residential Code. It shows the 'Base Code' (2021 IRC), 'Statutory Amendments', and 'RAC Amendments' (Residential Amendments Code) connected by plus signs. The PHRC logo is in the bottom right corner.

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### When Is It Changing?

- Anticipated effective date for PA UCC code changes:

**July 13, 2025**

The PHRC logo is in the bottom right corner.

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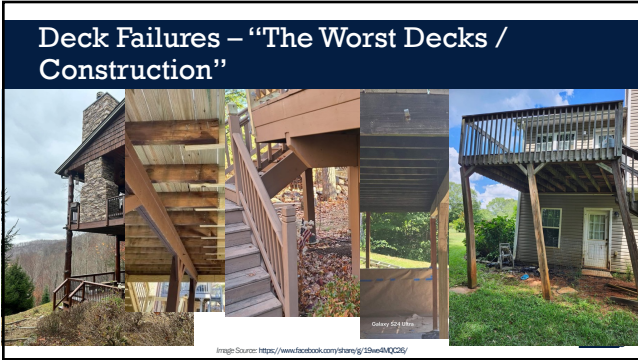
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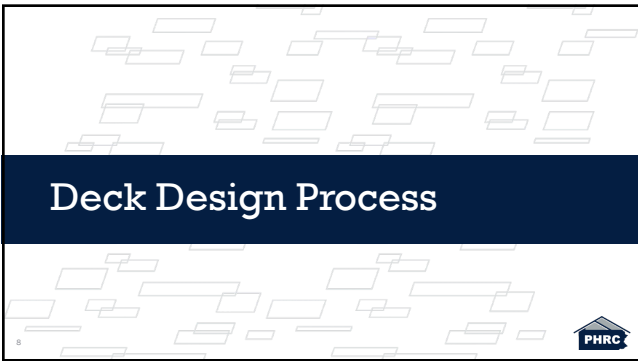
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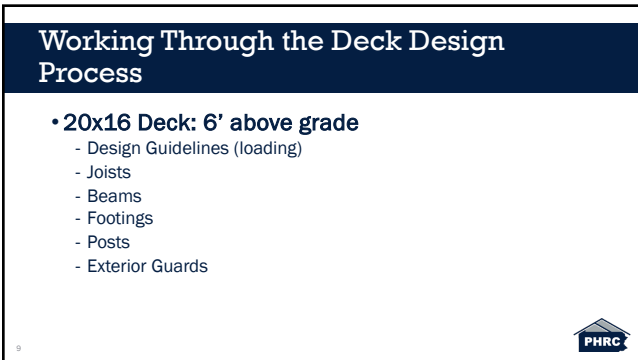
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### Here is Our Deck Layout

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### Section 507.1 - Decks

- Wood-framed decks shall be in accordance with this section. Decks shall be designed for the **live load required in Section R301.5** or the **ground snow load indicated in Table R301.2**, whichever is greater. For decks using materials and conditions not prescribed in this section, refer to Section R301.

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### Section R301.5 – Minimum Uniformly Distributed Live Loads

USE	UNIFORM LOAD (psf)	CONCENTRATED LOAD (pl)
Uninhabitable attics without storage <sup>a</sup>	10	—
Uninhabitable attics with limited storage <sup>a</sup>	20	—
Habitable attics and attics served with fixed stairs	30	—
Balconies (exterior) and decks <sup>a</sup>	40	—
Fire escapes	40	—
Guards	—	200 <sup>b</sup>
Guard in-fill components <sup>c</sup>	—	50 <sup>b</sup>
Handrails <sup>d</sup>	—	200 <sup>b</sup>
Passenger vehicle garages	50	2,000 <sup>e</sup>
Areas other than sleeping areas	40	—
Sleeping areas	30	—
Stairs	40 <sup>f</sup>	300 <sup>f</sup>

<sup>a</sup> See Section 507.1 for decks attached to exterior walls.

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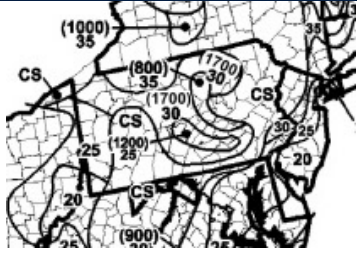
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### Figure R301.2(4) – Ground Snow Loads



Source: International Code Council (ICC), (2003), (2009), (2012) International Residential Code: Country Club Hills, IL; International Code Council.



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### Working Through the Deck Design Process

- **20x16 Deck: 6' above grade**
  - Design Guidelines (loading)
    - Based on Section R507.1, our governing load will be from Table R301.5: Uniform load of 40psf for residential decks
  - Joists
  - Beams
  - Footings
  - Posts
  - Exterior Guards



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### Deck Joists



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### Section 507.6 – Deck Joists

- **Maximum allowable spans for wood deck joists, as shown in Figure R507.6, shall be in accordance with Table R507.6. The maximum joist spacing shall be limited by the decking materials in accordance with Table R507.7.**



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### Section 507.7 – Decking

- **Maximum allowable spacing for joists supporting wood decking, excluding stairways, shall be in accordance with Table R507.7. Wood decking shall be attached to each supporting member with not less than two 8d threaded nails or two No. 8 wood screws. Maximum allowable spacing for joists supporting plastic composite decking shall be in accordance with Section R507.2. Other approved decking or fastener systems shall be installed in accordance with the manufacturer's installation requirements.**



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### Table 507.7 – Maximum Joist Spacing for Wood Decking

DECKING MATERIAL TYPE AND NOMINAL SIZE	DECKING PERPENDICULAR TO JOIST		DECKING DIAGONAL TO JOIST*	
	Single span <sup>a</sup>	Multiple span <sup>b</sup>	Single span <sup>a</sup>	Multiple span <sup>b</sup>
1 1/2-inch-thick wood <sup>c</sup>	12	16	8	12
2-inch-thick wood	24	24	16	24

For 32 1/2 inch x 25.4 mm, 1 foot x 304.8 mm, 1 degree x 0.0761 rad.  
 a. Maximum angle of 45 degrees from perpendicular for wood deck boards.  
 b. Other maximum span provided by an accredited lumber grading or inspection agency also allowed.  
 c. Individual wood deck boards supported by two joists shall be considered single span and three or more joists shall be considered multiple span.



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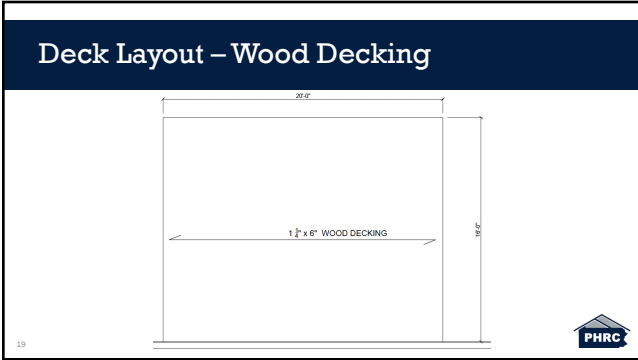
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### Section 507.6 – Deck Joists

• Maximum allowable spans for wood deck joists, as shown in Figure R507.6, shall be in accordance with Table R507.6. The maximum joist spacing shall be limited by the decking materials in accordance with Table R507.7.

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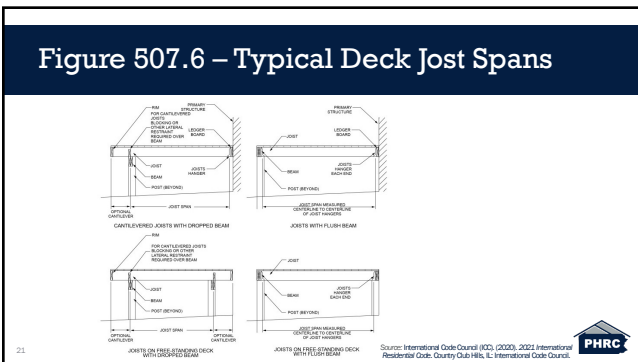
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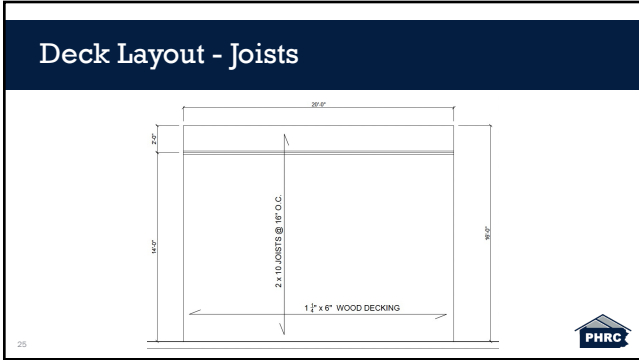
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- ### Working Through the Deck Design Process
- **20x16 Deck: 6' above grade**
    - Design Guidelines (loading)
    - Joists
      - 2x10 @ 16" o.c.
    - Beams
    - Footings
    - Posts
    - Exterior Guards
- A PHRC logo is in the bottom right corner.

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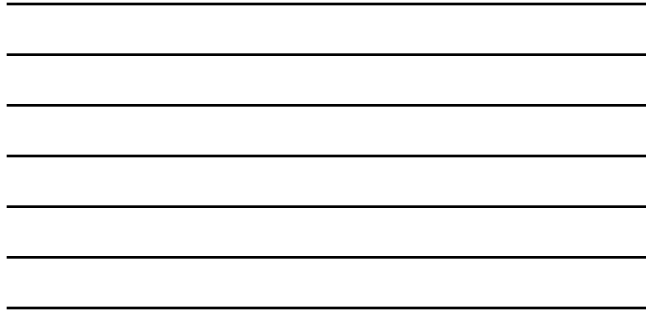
## Section 507.5 – Deck Beams

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

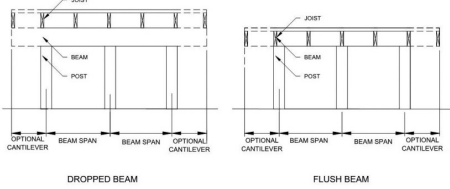
Source: International Code Council (ICC), (2003), 2002 International Residential Code, Country Club Hills, IL; International Code Council.



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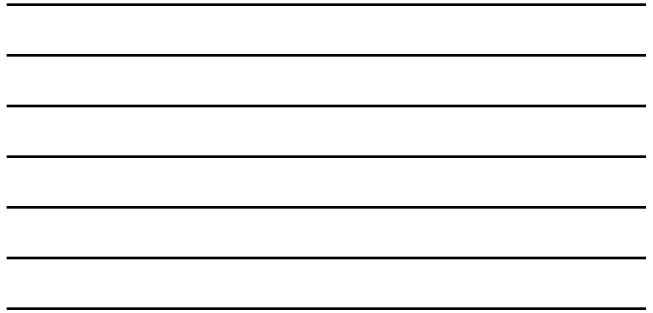
## Figure 507.5 – Typical Deck Beam Spans



Source: International Code Council (ICC), (2003), 2002 International Residential Code, Country Club Hills, IL; International Code Council.



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## Table 507.5 (1) – Maximum Deck Beam Span – 40 PSF Live Load

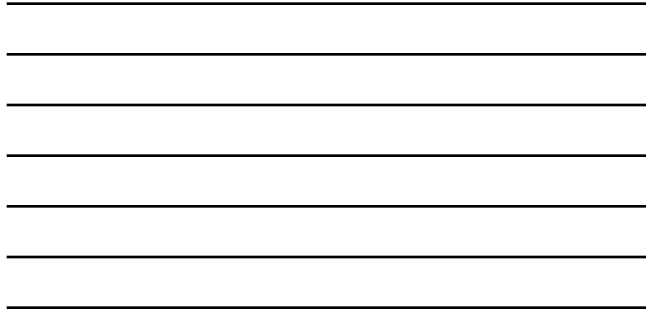
BEAM SPECIES*	BEAM SIZE**	EFFECTIVE DECK JOIST SPAN LENGTH <sup>1,11</sup> (ft/in)						
		6	8	10	12	14	16	18
		MAXIMUM DECK BEAM SPAN LENGTH <sup>1,11</sup> (ft/in)						
	1-2 x 6	4-7	4-0	3-7	3-3	3-0	2-10	2-6
	1-2 x 8	5-11	5-1	4-7	4-2	3-10	3-7	3-5
	1-2 x 10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1-2 x 12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2-2 x 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2-2 x 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2-2 x 10	10-4	9-2	8-2	7-4	6-8	6-4	6-0
	2-2 x 12	12-2	10-7	9-5	8-7	8-0	7-5	7-0
	3-2 x 6	6-6	7-5	6-8	6-1	5-8	5-3	4-11
	3-2 x 8	10-11	9-6	8-6	7-9	7-2	6-8	6-4
	3-2 x 10	13-0	11-2	10-0	9-2	8-6	7-11	7-6
	3-2 x 12	15-3	13-3	11-10	10-0	10-0	9-4	8-10

Fig. 507.5 (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (104) (105) (106) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) (126) (127) (128) (129) (130) (131) (132) (133) (134) (135) (136) (137) (138) (139) (140) (141) (142) (143) (144) (145) (146) (147) (148) (149) (150) (151) (152) (153) (154) (155) (156) (157) (158) (159) (160) (161) (162) (163) (164) (165) (166) (167) (168) (169) (170) (171) (172) (173) (174) (175) (176) (177) (178) (179) (180) (181) (182) (183) 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Source: International Code Council (ICC), (2003), 2002 International Residential Code, Country Club Hills, IL; International Code Council.




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## Deck Beam Span

- A deck with a ground snow load of 40 psf is designed using (2) plies of SYP 2x12.
- Joist span is 14 feet and there is a 24" cantilever
  - C = cantilever, J = Joist
  - C = 2 feet
  - J = 14 feet
    - Without footnote J, limits the beam to maximum span of 8'-0"




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## Table 507.5 (1) – Maximum Deck Beam Span – 40 PSF Live Load

BEAM SPECIES*	BEAM SIZE**	EFFECTIVE DECK JOIST SPAN LENGTH <sup>1) (feet)</sup>						
		6	8	10	12	14	16	18
		<b>MAXIMUM DECK BEAM SPAN LENGTH<sup>2) (feet-inches)<sup>a, b, c</sup></sup></b>						
Southern pine	1-2 x 6	4-7	4-0	3-7	3-3	3-0	2-10	2-6
	1-2 x 8	5-11	5-1	4-7	4-2	3-10	3-7	3-3
	1-2 x 10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1-2 x 12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2-2 x 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2-2 x 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2-2 x 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2-2 x 12	12-2	10-7	9-5	8-7	8-0	7-5	7-0
	3-2 x 6	8-6	7-5	6-8	6-1	5-8	5-3	4-11
	3-2 x 8	10-11	9-6	8-6	7-9	7-2	6-8	6-4
3-2 x 10	13-0	11-8	10-2	8-7	8-6	7-11	7-8	
3-2 x 12	15-3	13-3	11-10	10-8	10-0	9-4	8-10	

Footnote 1: Deck (12-foot, 14-foot, 16-foot, 18-foot) joist span length (feet) is limited to 14 feet. Footnote 2: Maximum deck beam span length (feet) is limited to 14 feet. Footnote 3: Deck beam span length (feet) is limited to 14 feet. Footnote 4: Deck beam span length (feet) is limited to 14 feet. Footnote 5: Deck beam span length (feet) is limited to 14 feet. Footnote 6: Deck beam span length (feet) is limited to 14 feet. Footnote 7: Deck beam span length (feet) is limited to 14 feet. Footnote 8: Deck beam span length (feet) is limited to 14 feet. Footnote 9: Deck beam span length (feet) is limited to 14 feet. Footnote 10: Deck beam span length (feet) is limited to 14 feet.




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## Table 507.5 (5) – Joist Span Factors for Calculating Effective Deck Joist Span

C/J <sup>a</sup>	JOIST SPAN FACTOR
0 (No cantilever)	0.86
1/12 (0.83)	0.72
1/10 (0.90)	0.80
1/8 (0.125)	0.84
1/6 (0.167)	0.90
1/4 (0.250)	1.00

Footnote 1: Foot = 304.8 mm.  
 Footnote 2: C = actual cantilever length (feet); J = actual joist span length (feet).




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### Explanation of Table 507.5 (5)

- Applying the adjustment factor from Table R5075(5):
  - $C/J = 2/14 = .143$



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### Table 507.5 (5) – Joist Span Factors for Calculating Effective Deck Joist Span

C/J*	JOIST SPAN FACTOR
0 (No cantilever)	0.99
1/12 (0.83)	0.72
1/10 (0.10)	0.80
1/8 (0.125)	0.84
1/6 (0.167)	0.90
1/4 (0.250)	1.00

For 8" Truss = 354.6 mm.  
a. C = actual joist cantilever length (feet), J = actual joist span length (feet).

Source: International Code Council (ICC), 2020, 2021 International Residential Code, Country Club Hills, IL, International Code Council.



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### Explanation of Table 507.5 (5)

- Applying the adjustment factor from Table R5075(5):
  - $C/J = 2/14 = .143$ 
    - Footnotes in Table R507.5(5) do not call out the allowance of interpolation, so we will round to .167 or a 90% Joist span factor.
    - An effective joist span can be calculated as  $.90 \times 14' = 12'-6"$
    - A maximum beam span can be determined from Table 507.5(1) for a 14' effective joist span = 8'-0"
    - Or by interpolating (Table 507.5(1) footnote a) for an adjusted joist span of 12'-6" per footnote a, maximum beam span of 8'-5".



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### Section 507.5.1 – Deck Beam Bearing

- The ends of beams shall have not less than 1 1/2 inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) of bearing on concrete or masonry for the entire width of the beam. Where multiple-span beams bear on intermediate posts, each ply must have full bearing on the post in accordance with Figures R507.5.1(1) and R507.5.1(2).



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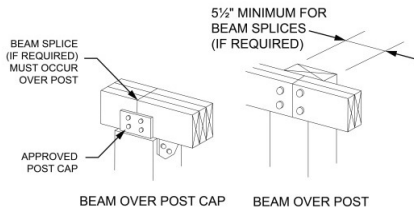
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### Figure 507.5.1 (1) – Deck Beam to Deck Post



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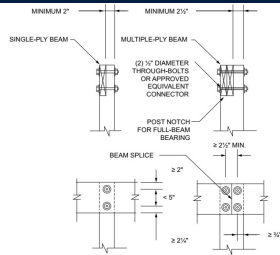
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### Figure 507.5.1 (2) – Notched Post-to-Beam Connection



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### Section 507.5.2 – Deck Beam Connection to Supports

- Deck beams shall be attached to supports in a manner capable of transferring vertical loads and resisting horizontal displacement. Deck beam connections to wood posts shall be in accordance with Figures R507.5.1(1) and R507.5.1(2). Manufactured post-to-beam connectors shall be sized for the post and beam sizes. Bolts shall have washers under the head and nut.

Source: International Code Council (ICC), (2003, 2009, 2012) International Residential Code, Country Club Hills, IL; International Code Council.



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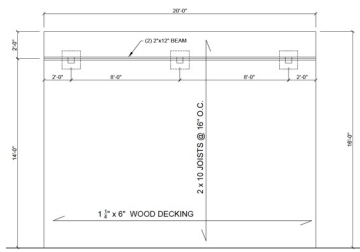
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### Deck Layout - Beam



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### Working Through the Deck Design Process

- **20x16 Deck: 6' above grade**
  - Design Guidelines (loading)
  - Joists
  - Beams
    - (2) 2x12 w/ 8'-0" spacing and 24" cantilever
  - Footings
  - Posts
  - Exterior Guards

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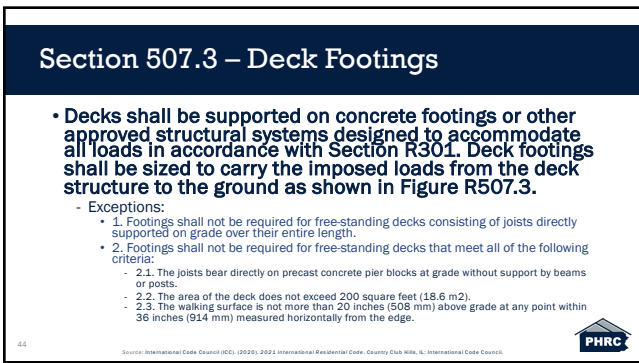
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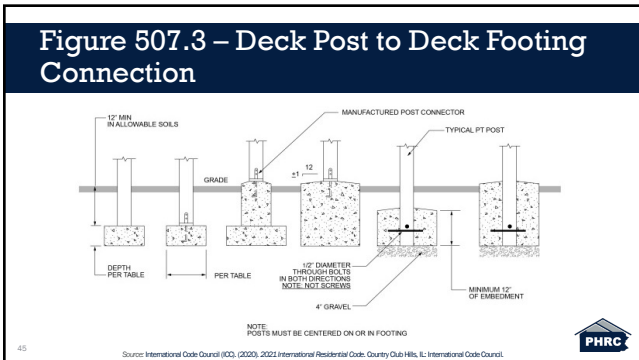
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### Section 507.3.1 – Minimum Size

- The minimum size of concrete footings shall be in accordance with Table R507.3.1, based on the tributary area and allowable soil-bearing pressure in accordance with Table R401.4.1.

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Source: International Code Council (ICC), (2003), 2002 International Residential Code, Country Club Hills, IL; International Code Council.




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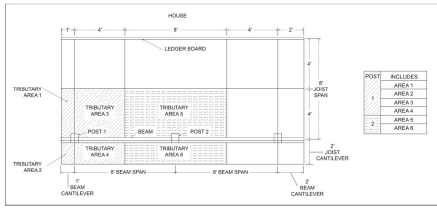
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### Tributary Area Defined in the Commentary



Commentary Figure R507.3.1 MINIMUM FOOTING SIZE FOR DECKS

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Source: International Code Council (ICC), (2003), 2002 International Residential Code Commentary, Country Club Hills, IL.




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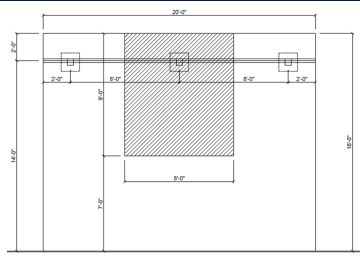
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### Tributary Area



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### Table 507.3.1 – Minimum Footing Size for Decks

LIVE OR GROUND SNOW LOAD <sup>a</sup> (psf)	TRIANGULAR AREA (ft <sup>2</sup> ) <sup>b</sup>	LOAD-BEARING VALUE OF SOILS <sup>c</sup> (psf)								
		1,000			2,000			≥ 3,000		
		Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches) <sup>d</sup>	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches) <sup>d</sup>	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches) <sup>d</sup>
40	5	7	8	6	7	8	6	7	8	6
	20	10	12	6	9	9	6	7	8	6
	40	14	16	6	12	14	6	10	12	6
	60	17	19	6	15	17	6	12	14	6
	80	20	22	7	17	19	6	14	16	6
	100	22	25	8	19	21	6	15	17	6
	120	24	27	9	21	23	7	17	19	6
	140	26	29	10	22	25	8	18	21	6
	160	28	31	11	24	27	9	20	22	7
	180	30	33	12	26	29	10	21	24	7

For 0.1 inch = 25.4 mm, 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square foot = 0.0479 kPa.  
 a. Interpolation permitted, extrapolation not permitted.  
 b. Interpolation permitted, extrapolation not permitted.  
 c. Footing dimensions shall allow complete bearing of the post.  
 d. If the support is a block or slab, the footing shall have a minimum 2-inch projection on all sides.  
 e. Area in square feet of deck surface supported by post and footings.  
 f. Minimum thickness of deck joists in table governing footings.  
 Source: International Code Council (ICC), (2003), 2002 International Residential Code, County Club Hills, IL, International Code Council.

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### Section 507.3.2 – Minimum Depth

- Deck footings shall be placed not less than 12 inches (305 mm) below the undisturbed ground surface.

Source: International Code Council (ICC), (2003), 2002 International Residential Code, County Club Hills, IL, International Code Council.

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### Section 507.3.3 – Frost Protection

- Where decks are attached to a frost-protected structure, deck footings shall be protected from frost by one or more of the following methods:
  - Extending below the frost line specified in Table R301.2.
  - Erecting on solid rock.
  - Other approved methods of frost protection.

Source: International Code Council (ICC), (2003), 2002 International Residential Code, County Club Hills, IL, International Code Council.

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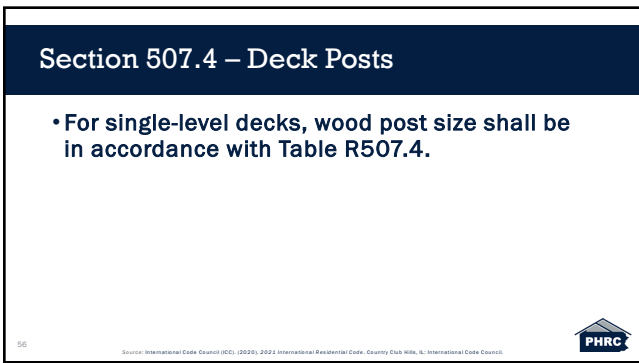
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### Table 507.4 – Deck Post Height

LOADS (psf) <sup>a</sup>	POST SPECIES <sup>b</sup>	POST SIZE <sup>c</sup>	TRIBUTARY AREA (ft) <sup>2</sup> <sup>d</sup>							
			20	40	60	80	100	120	140	160
40 live load	Southern pine	4 x 4	14-0	13-8	11-0	9-5	8-4	7-5	6-9	6-2
		4 x 6	14-0	14-0	13-11	12-0	10-8	9-8	8-10	8-2
		6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0
		8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0
		4 x 4	14-0	13-6	10-10	9-3	8-0	7-0	6-2	5-3
		4 x 6	14-0	14-0	13-10	11-10	10-6	9-5	8-7	7-10
	Douglas fir <sup>e</sup> hem-fir <sup>f</sup> Spruce-pine-fir <sup>g</sup>	4 x 4	14-0	14-0	13-10	11-10	10-6	9-5	8-7	7-10
		4 x 6	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0
		6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0
		8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0
		4 x 4	14-0	13-6	10-10	9-3	8-0	7-0	6-2	5-3
		4 x 6	14-0	14-0	13-10	11-10	10-6	9-5	8-7	7-10


For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.  
 NP = Not Permitted.  
 a. Measured from the underside of the beam to the top of footing or pile.  
 b. 10 psf dead load. Snow load not assumed to be concurrent with live load.  
 c. No. 2 grade, wet service factor included.  
 d. Decked deck posts shall be sized to accommodate beam size in accordance with Section B507.5.2.  
 e. Includes incising factor.  
 f. Incising factor not included.  
 g. Area, in square feet, of deck surface supported by post and footings.  
 h. Interpolation permitted. Extrapolation not permitted.

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**Additional Notes for Posts and Connections**

- Must bear on concrete footing and resist lateral movement

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**Working Through the Deck Design Process**

- **20x16 Deck: 6' above grade**
  - Design Guidelines (loading)
  - Joists
  - Beams
  - Footings
  - Posts
    - 6"x6" posts
  - Exterior Guards

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**Working Through the Deck Design Process**

- **20x16 Deck: 6' above grade**
  - Design Guidelines (loading)
  - Joists
  - Beams
  - Footings
  - Posts
  - Other design features
    - 2x10 ledger board
    - (4) 750# hold downs
  - Exterior Guards

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## Deck Guards




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### Section 507.10 – Exterior Guards (all new in 2021 IRC)


- Guards shall be constructed to meet the requirements of Sections R301.5 and R312, and this section.
- **R301.5 – Minimum Uniformly Distributed Live Loads**

USE	UNIFORM LOAD (psf)	CONCENTRATED LOAD (plf)
Guards	—	200 <sup>(1)</sup>
Guard in-fill components <sup>2</sup>	—	50 <sup>3</sup>
Handrail <sup>4</sup>	—	200 <sup>5</sup>

<sup>1</sup> Guard in-fill components (all those except the handrail, balusters, and panel fills) shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot. This load need not be assumed to act concurrently with any other live load requirement.

<sup>2</sup> Existing loads in handrail assemblies and guards shall be designed with a load adjustment factor of 4. The load adjustment factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the in-fill components. These loads shall be determined independent of one another, and loads are assumed not to occur with any other live load.

<sup>3</sup> Where the top of a guard system is not required to serve as a handrail, the single concentrated load shall be applied at any point along the top, in the vertical downward direction and in the horizontal direction away from the walking surface. Where the top of a guard is also serving as the handrail, a single concentrated load shall be applied in any direction at any point along the top. Concentrated loads shall not be applied concurrently.



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### Section 312 – Guards

- **R312.1.1 – Where Required**
  - Walking surfaces more than 30" to the floor or grade below
- **R312.2 – Height**
  - Required guards shall not be less than 36" in height
- **R312.3 – Opening Limitations**
  - Required guards shall not have openings that allow passage of a sphere 4" in diameter



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### Section 507.10.1 – Support of Guards

- Where guards are supported on deck framing, guard loads shall be transferred to the deck framing with a continuous load path to the deck joists.

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Source: International Code Council (ICC), (2003), 2021 International Residential Code, Country Club Hills, IL, International Code Council.




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### Section 507.10.1.1 – Guards Supported by Side of Deck Framing

- Where guards are connected to the interior or exterior side of a deck joist or beam, the joist or beam shall be connected to the adjacent joists to prevent rotation of the joist or beam. Connections relying only on fasteners in end grain withdrawal are not permitted.

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Source: International Code Council (ICC), (2003), 2021 International Residential Code, Country Club Hills, IL, International Code Council.




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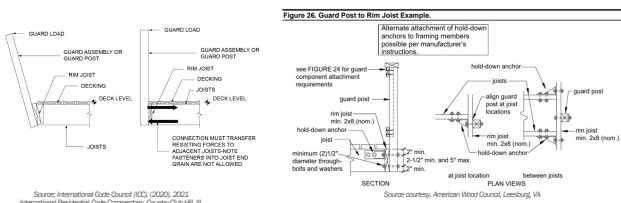
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### Commentary Figure 507.10.1.1(1) – Guard at Rim Joist



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Source: International Code Council (ICC), (2003), 2021 International Residential Code Commentary, Country Club Hills, IL.




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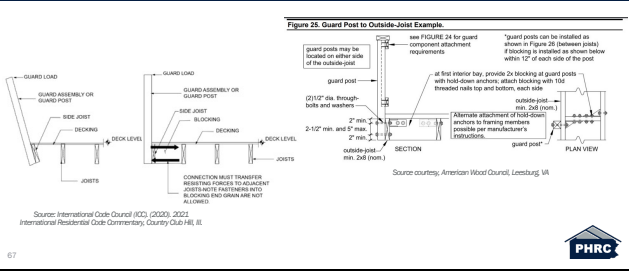
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### Commentary Figure 507.10.1.1(2) – Guard at Side Joist



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### Section 507.10.1.2 – Guards Supported by Top of Deck Framing

- Where guards are mounted on top of the decking, the guards shall be connected to the deck framing or blocking and installed in accordance with manufacturer's instructions to transfer the guard loads to the adjacent joists.



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### Section 507.10.2 – Wood Posts at Deck Guards

- Where 4-inch by 4-inch (102 mm by 102 mm) wood posts support guard loads applied to the top of the guard, such posts shall not be notched at the connection to the supporting structure.



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**Notched Post**

- This is now prohibited




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**Section 507.10.3 – Plastic Composite Guards**

- Plastic composite guards shall comply with the provisions of Section R507.2.2.
- R507.2.2 – Plastic composite deck boards, stair treads, guards or handrails.
  - Plastic composite exterior deck boards, stair treads, guards and handrails shall comply with the requirements of ASTM D7032 and this section.

71 Source: International Code Council (ICC), (2003), 2021 International Residential Code, County Club Hills, IL, International Code Council.



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**Section 507.10.4 – Other Guards**

- Other guards shall be in accordance with either manufacturer's instructions or accepted engineering principles.

72 Source: International Code Council (ICC), (2003), 2021 International Residential Code, County Club Hills, IL, International Code Council.



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## Working Through the Deck Design Process

- **20x16 Deck: 6' above grade**
  - Design Guidelines (loading)
  - Decking
  - Joists
  - Beams
  - Footings
  - Posts
  - Other design features
  - Exterior Guards
    - 4"x4" posts with proper attachment per DCA6-15 guidelines

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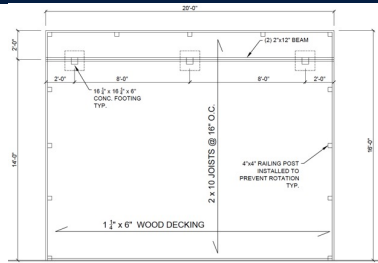
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## Final Deck Design



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## Questions?

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**Decked Out: A Dive into the Updated 2021 IRC Residential Deck Code Provisions**

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