

Any deck more than 30" at any point above grade requires a permit. Any deck attached to the house requires a permit. Any deck/landing that serves the front door requires a permit. Any Deck more than 200 sq. ft. requires a permit.

Note: Repairs to any of the scenarios above also require a permit (i.e. replacement of beams/posts/joists, heavier decking material etc) This document is meant to provide a general residential permitting guide and does NOT include all requirements.

**Submittal Checklist** All plans shall comply with the 2021 International Residential Code, Section R507, or this prescriptive guide. All plans must be to scale. (example: <sup>1</sup>/<sub>4</sub> inch per foot), can be hand-drawn or computer file, must be PDF format.

- Permit Application: include square footage of the deck and note if electrical work is included (lights, outlets, list licensed electric contractor)
- Site Plan the deck shall be placed on the approved plot plan, drawn to scale (you can obtain a copy of the plot plan on our website)(see example below)
  - Show location of the proposed deck in relation to the house
  - □ Provide measurements from deck to property lines and other structures
  - □ Show overall length and width of the new deck
- Construction Drawings
  - □ Floor Plan fully dimensioned and show locations and sizes of piers, posts, beams, joists, ledger, etc. \*the deck shall not be supported by a cantilever\*
  - Section/side view fully dimensioned and show locations and sizes of posts, beams, joists, ledger, guardrail details, and stair section (if applicable) etc.
  - Connection details (joist hangers, hold downs, bolts, lateral load connections, anchors, etc.)
  - Show proposed electric (if applicable)



**Required Inspections** Schedule online or by phone, 24 hours in advance, before 3pm of the previous day.

- 1. Location & Footings (Open pier hole shall be inspected without water or obstruction before pouring concrete into the hole.)
- 2. Rough Frame (Only required if deck is less than 4' from grade or if all connections will be covered, must be called in before decking is installed). *Multiple rough frame inspections may need to be scheduled if using concealed connectors.*
- 3. Rough Electric (if electric work is being done, prior to being concealed by fixtures/outlets)



4. Final Inspection and Final electric (if applicable) Inspectors need to see all connections. *NOTE: Third or more inspections for documented correction requirements will be subject to a \$50 fee.* 

**General Construction** Wood material shall be No. 2 grade or better, preservative-treated, naturally termite and decay resistant or approved material. Fasteners shall be hot-dipped galvanized nails, stainless steel or approved material.

**Piers** shall extend a minimum 30" below grade and sized per Table R507.3.1, based on the tributary area, or be constructed to a minimum of 16" diameter with a 20" bell at the base. The posts shall be anchored to piers with a bolt or other approved connection, such as post base connector.

**Posts** Maximum deck post height is based on the tributary load and size/species of the post. Maximum height for 4x4 posts is 8', for 6x6 posts is 11' and 8x8 posts is 14'. See table R507.4 in the 2021 IRC for maximum heights or follow this guide.

**Beams** shall be sized per Table R507.5(1) (a partial table is shown below) and shall be permitted to cantilever at each end up to one-fourth of the actual beam span. The ends of beams shall have not less than 1-1/2 inches (38 mm) of bearing on wood or metal for the entire width of the beam. Deck beams shall be attached to posts in accordance with Figures R507.5.5(1) and R507.5.1(2), bolts shall have washers under the post head and nut.



Figures R507.5.1(1) and (2)



		EFFECTIVE DECK JOIST SPAN LENGTH									
BEAM SPECIES	BEAM SIZE	6	8	10	12	14	16	18			
		MAXIMUM DECK BEAM SPAN LENGTH (feet-inches)									
BEAM SPECIES	1 – 2 × 6	4-7	4-0	3-7	3-3	3-0	2-10	2-8			
	1 – 2 × 8	5-11	5-1	4-7	4-2	3-10	3-7	3-5			
	1 - 2 × 10	7-0	6-0	5-5	4-11	4-7	4-3	4-0			
	1 – 2 × 12	8-3	7-1	6-4	5-10	5-5	5-0	4-9			
	2 – 2 × 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0			
	2 – 2 × 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0			
	2 - 2 × 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0			
	2 – 2 × 12	12-2	10-7	9-5	8-7	8-0	7-5	7-0			
	3 – 2 × 6	8-6	7-5	6-8	6-1	5-8	5-3	4-11			
	3 – 2 × 8	10-11	9-6	8-6	7-9	7-2	6-8	6-4			
	3 - 2 × 10	13-0	11-2	10-0	9-2	8-6	7-11	7-6			

#### Table R507.5(1) Max Deck Beam Span (partial)

**Joists** shall follow the maximum allowable spans as shown in Figure R507.6 and Table R507.6 (a partial table is shown below). Joists bearing on top of a single-ply beam or ledger shall be attached by a mechanical connector. Joists bearing on top of a multiple-ply beam or ledger shall be fastened in accordance with 2021 IRC or approved hold-down clip. Joist framing into the side of a beam or ledger board shall be supported by approved joist hangers.



JOIST SPECIES	JOIST SIZE	ALLOWABLE JOIST SPAN (feet-inches)			MAXIMUM CANTILEVER (feet-inches)							
		Joist spacing(inches)			Joist back span (feet)							
		12	16	24	4	6	8	10	12	14	16	18
Southern pine	2×6	9-11	9-0	7-7	1-0	1-6	1-5	NP	NP	NP	NP	NP
	2×8	13-1	11-10	9-8	1-0	1-6	2-0	2-6	2-3	NP	NP	NP
	2×10	16-2	14-0	11-5	1-0	1-6	2-0	2-6	3-0	3-4	3-4	NP
	2×12	18-0	16-6	13-6	1-0	1-6	2-0	2-6	3-0	3-6	4-0	4-1
Douglas fir-larch Hem-fir	2×6	9-6	8-4	6-10	1-0	1-6	1-4	NP	NP	NP	NP	NP
	2×8	12-6	11-1	9-1	1-0	1-6	2-0	2-3	2-0	NP	NP	NP
	2×10	15-8	13-7	11-1	1-0	1-6	2-0	2-6	3-0	3-3	NP	NP
Spruce- pine-fir	2×12	18-0	15-9	12-10	1-0	1-6	2-0	2-6	3-0	3-6	3-11	3-11

### Table R507.6 Max Deck Joist Spans (partial)

**Ledger Boards** shall be a minimum of 2x8 nominal pressure-preservative-treated Southern pine. Fasteners used in deck ledger connections in accordance with Table R507.9.1.3(1) shall be hot-dipped galvanized or stainless steel and shall be installed in accordance with Table R507.9.1.3(2) and Figures R507.9.1.3(1) and R507.9.1.3(2). Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger, and a maximum 5 inches from end of boards and end of row spacing. For engineered rim joists, the manufacturer's recommendations shall govern.



Figure R507.9.1.3(1)Placement of Lag Screws & Bolts in Ledgers

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS								
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING				
Ledger	2 inches	3/4 inch	2 inches	1-5/8 inches				
Band Joist	3/4 inch	2 inches	2 inches	1-5/8 inches				

Table R507.9.1.3(2) Placement of Lag Screws & Bolts in Deck Ledgers and Band Joists





## Figure R507.9.1.3(2) Placement of Lag Screws & Bolts in Band Joists

**Guardrails** are required when the finished floor height of a deck exceeds 30" above grade up to 36" from the edge of the deck. Guardrails must be a minimum of 36 inches in height, and must not have more than 4 inch opening between. For cable railing, use 3" maximum spacing and a maximum of 4 foot on center support post spacing. Guards mounted on top of the deck shall be connected to the deck joists or memes or blocking to transfer the load to the adjacent joists. Where guards are mounted on the side of a beam/joist they shall be connected to the adjacent joist to prevent rotation. Fasteners shall not be installed in the end grain.

**Handrails** are required on at least one side of the stairs where there are 4 or more risers in a flight. Handrails must be graspable.

**Stairs** must have a minimum clear width of 36 inches. The stair riser height is not to exceed 7 3/4 inches. Tread depth must be a minimum of 10 inches measured from nose to nose. These measurements must be uniform (within 3/16 inch) for the entire length of the stairs. All risers must be closed or have maximum openings of 4 inches. Three stringers are recommended.

Handrails must be 34 inches to 38 inches high, measured vertically above the nosing of the treads. Handrails are required to be graspable (example: 2x2, 2" diameter round, or 2x4 on edge.)

There shall be a floor or landing (36"x36" min) at the top and bottom of the stairway.

**Lateral Load**s shall be transferred to the ground or to a structure capable of transmitting them to the ground. hold-down tension devices shall be installed in not less than two locations per deck, within 24 inches (610 mm) of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 pounds. Where the lateral load connections are provided in accordance with Figure R507.9.2(2), the hold-down tension devices shall be installed in not less than four locations per deck, and each device shall have an allowable stress design capacity of not less than 750 pounds.

*Engineered and stamped structural plans are required to be submitted for any of the following conditions:* 

- 1. Multi-story / stacked decks.
- 2. Beam supported by hangers.
- 3. Deck is supported by a ledger attached to a cantilever/overhang on the existing house such as a bay window.
- 4. Decks attached to brick, masonry, or stone veneer.
- 5. Decks supporting a hot tub/pool.
- 6. Steel decks that do not conform to section R505.
- 7. Materials not addressed in the adopted code.
- 8. Designs outside of those presented in the adopted code.

# **DECK PRESCRIPTIVE GUIDE**



#### Handrail Notes:

- 1. Handrails shall be continuous on at least one side of stairs with 4 or more risers.
- 2. Top of the handrails shall be placed not less than 34 inches nor more than 38 inches above stair nosings.
- 3. The handgrip portion of handrails shall be not less than 1-1/4 inches nor more than 2 1/4 inches in cross section for non circular handrails
- 4. Handrails shall be placed not less than 1-1/2 inches from any wall or other surface.
- 5. Handrails to be returned to wall, post or safety terminal (per 311.7.8.4 IRC)



Figure R507.9.2(1) & (2) Deck Attachment for Lateral Loads