

## DECKS

The IRC provides prescriptive methods for conventional wood deck construction that reflect widely accepted construction techniques in use over many decades. The provisions do not intend to limit design flexibility, and other approved methods may be used. Deck support provisions describe maximum joist and beam spans, appropriate joist spacing for the type of decking material, minimum post sizes, connections between beams and posts, and minimum bearing lengths. Details also are provided for attachment of the deck to the structure. Deck posts must be supported on footings and restrained at the bottom to prevent lateral movement. [\[Ref. R507\]](#)

### Deck joists and beams

The joist and beam span values in Tables 6-4 and 6-5 assume outdoor, potentially wet conditions and include wood species such as redwood, western cedars, ponderosa pine and red pine that are commonly used in deck construction. Minimum bearing lengths match those for interior floor joists and beams: 1½ inches on wood or metal and 3 inches on concrete or masonry.

Joists framing into the side of a ledger board or beam require joist hangers (Figure 6-18). [\[Ref. R507.5 through R507.7, Table R507.5, Table R507.6\]](#)

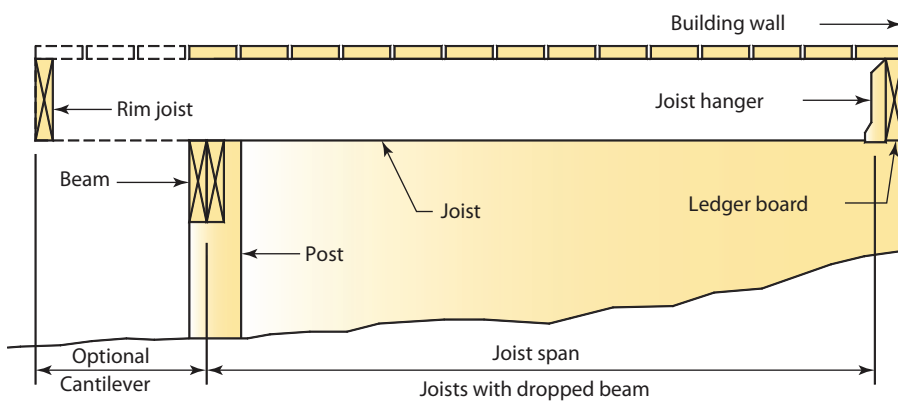
**TABLE 6-4** Deck joist spans (in feet – inches)

Species	Size	Spacing of deck joists with no cantilever (in.)		Spacing of deck joists with cantilevers (in.)	
		16	24	16	24
Southern pine	2 x 8	11-10	9-8	10-1	9-8
	2 x 10	14-0	11-5	14-0	11-5
	2 x 12	16-6	13-6	16-6	13-6
Douglas fir-larch, hem-fir, spruce-pine-fir	2 x 8	11-1	9-1	9-5	9-1
	2 x 10	13-7	11-1	13-7	11-1
	2 x 12	15-9	12-10	15-9	12-10
Redwood, western cedars, ponderosa pine, red pine	2 x 8	10-7	8-8	8-6	8-6
	2 x 10	13-0	10-7	12-3	10-7
	2 x 12	15-1	12-4	15-1	12-4

[\[Ref. excerpt of Table R507.5\]](#)

Note: Spans based on No. 2 grade lumber with wet service factor.

continued



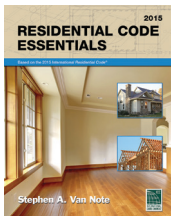
**FIGURE 6-18** Typical deck joist span and supports

**TABLE 6-5** Deck beam spans (feet - inches)

Species	Size	Deck joist span (ft.)				
		8	10	12	14	16
Southern pine	2 – 2 x 8	7-7	6-9	6-2	5-9	5-4
	2 – 2 x 10	9-0	8-0	7-4	6-9	6-4
	2 – 2 x 12	10-7	9-5	8-7	8-0	7-6
	3 – 2 x 8	9-6	8-6	7-9	7-2	6-8
	3 – 2 x 10	11-3	10-0	9-2	8-6	7-11
	3 – 2 x 12	13-3	11-10	10-9	10-0	9-4
Douglas fir-larch, hem-fir, spruce-pine-fir, redwood, western cedars, ponderosa pine, red pine	2 – 2 x 8	5-11	5-4	4-10	4-6	4-1
	2 – 2 x 10	7-3	6-6	5-11	5-6	5-1
	2 – 2 x 12	8-5	7-6	6-10	6-4	5-11
	3 – 2 x 8	8-6	7-7	6-11	6-5	6-0
	3 – 2 x 10	10-5	9-4	8-6	7-10	7-4
	3 – 2 x 12	12-1	10-9	9-10	9-1	8-6

[Ref. excerpt of Table R507.6]

Note: Spans based on No. 2 grade lumber with wet service factor



This excerpt is taken from ICC's *Residential Code Essentials: Based on the 2015 International Residential Code®*.

The I-Code Essentials series uses a straightforward, focused approach to explore code requirements with non-code language, allowing readers to gain confidence in their understanding of the material. Each book is an invaluable companion guide to the 2015 IBC, IRC, IFC or IECC for both new and experienced code users.