

MINIMUM REQUIREMENTS FOR WOODEN DECKS AND PORCHES

In order to establish the minimum requirements for building a wooden deck or porch it is necessary to understand the terminology used in their construction. Please read the following definitions carefully before proceeding any further:

CONCRETE FOOTINGS:	Supports that carry the weight of the deck and holds the deck posts in place. The code requires that they be a minimum of 42 inches below grade. Post anchors, if used, should be made of galvanized steel to resist corrosion.
POSTS	Members that transfer the weight of the deck to the footings. They are attached to post anchors with galvanized nails, and to the beams with lag screws.
BEAMS	The main structural supports for the deck, usually made from a pair of 2 x 8 or 2 x 10 boards attached to the deck posts.
LEDGER	A board, generally a 2 x 8 or larger, depending on the size of the deck, that anchors an attached deck to the house. Ledgers support one end of all joists.
JOISTS	Members that support the decking. For an attached deck the joists are fastened at one end to the ledger and at the other end to the header joists. The outside joists and the header joist may be covered with a facing board for appearance. ALL JOISTS MUST BE SUPPORTED BY EITHER JOIST HANGERS OR AN EQUIVALENT SYSTEM.
DECKING	The boards that make up the floor of the deck. They are attached to the joists with galvanized nails or screws.
RAILING	The railing consists of four parts: the top and bottom rails, railing posts and balusters. The railing posts must be attached to the header and outside joists. The balusters are located between the bottom rail and top rail (cap), horizontal spacing between these members shall be a maximum of four inches (4"). HANDRAILS are required on every set of stairs having three or more risers. GUARDRAIL is required on all porches, balconies, decks or raised floor surfaces located more than thirty inches (30") above grade.
STAIRWAY	A pair of stringers fastened to the side of the deck, and a series of treads attached to the stringers.

It is recommended that all the wood that is used for outside projects be either "naturally durable" such as redwood or cedar or "pressure treated" for resistance to water. It is required that any wood that comes in contact with the ground or is located less than eight inches (8") from the ground, that any beam closer than twelve inches (12") to the ground and that any joist closer than eighteen inches (18") to the ground be "naturally durable or pressure-treated".

All fastening devices, nails, lag screws, joist hangers, post anchors, etc. should be made of galvanized steel or an equivalent corrosion resistant material.

Span Limit Tables for Deck Lumber

Recommended Post Size:

Choose post size by finding the load area for the deck. To find the load area, multiply the distance between beams by the distance between posts. For example, on a deck that has one beam spaced 10 feet from the ledger, with posts spaced 7 feet apart, the load area is 70.

Load Area

Multiply distance between beams (feet)
times the distance between posts (feet)

Deck Height	48	72	96	120	144
Up to 6 ft	4 x 4	4 x 4	6 x 6	6 x 6	6 x 6
More than 6 ft	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6

Maximum Beam Span Between Posts:

Maximum beam span depends on the size of the beams and their spacing. For example, a deck with a 4x8 beam, and joists that span 12 feet should have posts that are no more than 7 feet apart.

Beam Size	Joist Span			
	6 ft	8 ft	10 ft	12 ft
4 x 6 (two 2x6s)	8 ft	7 ft	6 ft	5 ft
4 x 8 (two 2x8s)	10 ft	9 ft	8 ft	7 ft
4 x 10 (two 2x10s)	12 ft	11 ft	10 ft	9 ft
4 x 12 (two 2x12s)	14 ft	13 ft	12 ft	11 ft

Maximum Joist Span Between Supports:

Maximum joist span between supports depends on the size of the joists and the spacing between joists. For example, a deck with 2x8 joists spaced 16" apart requires supports no more than 12'10" apart. On a cantilevered deck, the joists may extend past the beam by a distance equal to one-third the total length of the joists.

Joist Size	Joist Spacing (on center)		
	12"	16"	24"
2 x 6	11' 7"	9' 9"	7' 11"
2 x 8	15' 0"	12' 10"	10' 6"
2 x 10	19' 6"	16' 5"	13' 4"

Recommended Decking Span Between Joists: Decking boards can be made from a variety of lumber sizes. For a basic deck use 2x4 or 2x6 lumber with joists spaced 16" apart.

Decking Boards	Recommended Span
1x4 or 1x6, laid straight	16"
1x4 or 1x6, laid diagonal	12"
2x4 or 2x6, laid straight	16"
2x4 or 2x6, laid diagonal	12"
2x4, laid on edge	24"

Recommended Railing Sizes: Size of posts, rails, and caps depends on the spacing of the railing posts. For example, if railing posts are spaced 6 feet apart, use 4x4 posts and 2x6 rails and caps.

Space Between Railing Posts	Post Size	Cap Size	Rail Size
2 ft to 3 ft	2 x 4	2 x 4	2 x 4
3 ft to 4 ft	4 x 4	2 x 4	2 x 4
4 ft to 6 ft	4 x 4	2 x 6	2 x 6

Minimum Stair Stringer Sizes:

Size of stair stringers depends on the span of the stairway. For example, if the bottom of the stairway lies 7 feet from the deck, build the stringers from 2 x 12s.

Span of Stairway	Stringer Size
Up to 6 ft	2 x 10
More than 6 ft	2 x 12