

2006 Residential Code for One- and Two-family Dwellings

**2006 International Residential Code® for One- and Two-family Dwellings / Part III — Building Planning and Construction / CHAPTER 5 FLOORS / SECTION R502 WOOD FLOOR FRAMING / R502.5 Allowable girder spans. / TABLE R502.5(1) GIRDER SPANS<sup>a</sup> AND HEADER SPANS<sup>a</sup> FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir<sup>b</sup> and required number of jack studs)**

**TABLE R502.5(1)  
GIRDER SPANS<sup>a</sup> AND HEADER SPANS<sup>a</sup> FOR EXTERIOR BEARING WALLS  
(Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir<sup>b</sup> and required number of jack studs)**

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) <sup>e</sup>											
		30						50					
		Building width <sup>c</sup> (feet)											
		20		28		36		20		28		36	
Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	
Roof and ceiling	2-2x4	3-6	1	3-2	1	2-10	1	3-2	1	2-9	1	2-6	
	2-2x6	5-5	1	4-8	1	4-2	1	4-8	1	4-1	1	3-8	
	2-2x8	6-10	1	5-11	2	5-4	2	5-11	2	5-2	2	4-7	
	2-2x10	8-5	2	7-3	2	6-6	2	7-3	2	6-3	2	5-7	
	2-2x12	9-9	2	8-5	2	7-6	2	8-5	2	7-3	2	6-6	
	3-2x8	8-4	1	7-5	1	6-8	1	7-5	1	6-5	2	5-9	
	3-2x10	10-6	1	9-1	2	8-2	2	9-1	2	7-10	2	7-0	
	3-2x12	12-2	2	10-7	2	9-5	2	10-7	2	9-2	2	8-2	
	4-2x8	9-2	1	8-4	1	7-8	1	8-4	1	7-5	1	6-8	
	4-2x10	11-8	1	10-6	1	9-5	2	10-6	1	9-1	2	8-2	
4-2x12	14-1	1	12-2	2	10-11	2	12-2	2	10-7	2	9-5		
Roof, ceiling and one center-bearing floor	2-2x4	3-1	1	2-9	1	2-5	1	2-9	1	2-5	1	2-2	
	2-2x6	4-6	1	4-0	1	3-7	2	4-1	1	3-7	2	3-3	
	2-2x8	5-9	2	5-0	2	4-6	2	5-2	2	4-6	2	4-1	
	2-2x10	7-0	2	6-2	2	5-6	2	6-4	2	5-6	2	5-0	
	2-2x12	8-1	2	7-1	2	6-5	2	7-4	2	6-5	2	5-9	
	3-2x8	7-2	1	6-3	2	5-8	2	6-5	2	5-8	2	5-1	
	3-2x10	8-9	2	7-8	2	6-11	2	7-11	2	6-11	2	6-3	
	3-2x12	10-2	2	8-11	2	8-0	2	9-2	2	8-0	2	7-3	
	4-2x8	8-1	1	7-3	1	6-7	1	7-5	1	6-6	1	5-11	
	4-2x10	10-1	1	8-10	2	8-0	2	9-1	2	8-0	2	7-2	
4-2x12	11-9	2	10-3	2	9-3	2	10-7	2	9-3	2	8-4		
	2-2x4	2-8	1	2-4	1	2-1	1	2-7	1	2-3	1	2-0	
	2-2x6	3-11	1	3-5	2	3-0	2	3-10	2	3-4	2	3-0	
	2-2x8	5-0	2	4-4	2	3-10	2	4-10	2	4-2	2	3-9	

2006 Residential Code for One- and Two-family Dwellings

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		Building width <sup>c</sup> (feet)										
		20		28		36		20		28		36
		Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span
Roof, ceiling and one clear span floor	2-2x10	6-1	2	5-3	2	4-8	2	5-11	2	5-1	2	4-7
	2-2x12	7-1	2	6-1	3	5-5	3	6-10	2	5-11	3	5-4
	3-2x8	6-3	2	5-5	2	4-10	2	6-1	2	5-3	2	4-8
	3-2x10	7-7	2	6-7	2	5-11	2	7-5	2	6-5	2	5-9
	3-2x12	8-10	2	7-8	2	6-10	2	8-7	2	7-5	2	6-8
	4-2x8	7-2	1	6-3	2	5-7	2	7-0	1	6-1	2	5-5
	4-2x10	8-9	2	7-7	2	6-10	2	8-7	2	7-5	2	6-7
	4-2x12	10-2	2	8-10	2	7-11	2	9-11	2	8-7	2	7-8
Roof, ceiling and two center-bearing floors	2-2x4	2-7	1	2-3	1	2-0	1	2-6	1	2-2	1	1-11
	2-2x6	3-9	2	3-3	2	2-11	2	3-8	2	3-2	2	2-10
	2-2x8	4-9	2	4-2	2	3-9	2	4-7	2	4-0	2	3-8
	2-2x10	5-9	2	5-1	2	4-7	3	5-8	2	4-11	2	4-5
	2-2x12	6-8	2	5-10	3	5-3	3	6-6	2	5-9	3	5-2
	3-2x8	5-11	2	5-2	2	4-8	2	5-9	2	5-1	2	4-7
	3-2x10	7-3	2	6-4	2	5-8	2	7-1	2	6-2	2	5-7
	3-2x12	8-5	2	7-4	2	6-7	2	8-2	2	7-2	2	6-5
	4-2x8	6-10	1	6-0	2	5-5	2	6-8	1	5-10	2	5-3
	4-2x10	8-4	2	7-4	2	6-7	2	8-2	2	7-2	2	6-5
	4-2x12	9-8	2	8-6	2	7-8	2	9-5	2	8-3	2	7-5

(continued)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) <sup>e</sup>										
		30						50				
		Building width <sup>c</sup> (feet)										
		20		28		36		20		28		36
		Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span
Roof, ceiling, and two clear span floors	2-2x4	2-1	1	1-8	1	1-6	2	2-0	1	1-8	1	1-5
	2-2x6	3-1	2	2-8	2	2-4	2	3-0	2	2-7	2	2-3
	2-2x8	3-10	2	3-4	2	3-0	3	3-10	2	3-4	2	2-11
	2-2x10	4-9	2	4-1	3	3-8	3	4-8	2	4-0	3	3-7
	2-2x12	5-6	3	4-9	3	4-3	3	5-5	3	4-8	3	4-2
	3-2x8	4-10	2	4-2	2	3-9	2	4-9	2	4-1	2	3-8
	3-2x10	5-11	2	5-1	2	4-7	3	5-10	2	5-0	2	4-6
	3-2x12	6-10	2	5-11	3	5-4	3	6-9	2	5-10	3	5-3
	4-2x8	5-7	2	4-10	2	4-4	2	5-6	2	4-9	2	4-3
	4-2x10	6-10	2	5-11	2	5-3	2	6-9	2	5-10	2	5-2

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		20		28		36		20		28		36	
Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	
	4-2x12	7-11	2	6-10	2	6-2	3	7-9	2	6-9	2	6-0	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Tabulated values assume #2 grade lumber.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ - Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.