Pacific County
DEPARTMENT OF COMMUNITY DEVELOPMENT

BUILDING • ENVIRONMENTAL HEALTH • PLANNING

Span Table

Floor Joist Spans for Common Lumber Species (Live Load = 40 lbs)

R502.3.1(2)

JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 psf			
			2 x 6	2 x 8	2 x 10	2 x 12
			Maximum Floor Joist Spans			
			(ft-in)	(ft-in)	(ft-in)	(ft-in)
12	Douglas fir-larch	SS	11-4	15-0	19-1	23-3
	Douglas fir-larch	#1	10-11	14-5	18-5	22-0
	Douglas fir-larch	#2	10-9	14-2	18-0	20-11
	Douglas fir-larch	#3	8-11	11-3	13-9	16-0
	Hem-fir	SS	10-9	14-2	18-0	21-11
	Hem-fir	#1	10-6	13-10	17-8	21-6
	Hem-fir	#2	10-0	13-2	16-10	20-4
	Hem-fir	#3	8-8	11-0	13-5	15-7
16	Douglas fir-larch	SS	10-4	13-7	17-4	21-1
	Douglas fir-larch	#1	9-11	13-1	16-5	19-1
	Douglas fir-larch	#2	9-9	12-9	15-7	18-1
	Douglas fir-larch	#3	7-8	9-9	11-11	13-1
	Hem-fir	SS	9-9	12-10	16-5	19-11
	Hem-fir	#1	9-6	12-7	16-0	18-10
	Hem-fir	#2	9-1	12-0	15-2	17-7
	Hem-fir	#3	7-6	9-6	11-8	13-6
19.2	Douglas fir-larch	SS	9-8	12-10	16-4	19-10
	Douglas fir-larch	#1	9-4	12-4	15-0	17-5
	Douglas fir-larch	#2	9-2	11-8	14-3	16-6
	Douglas fir-larch	#3	7-0	8-11	10-11	12-7
	Hem-fir	SS	9-2	12-1	15-5	18-9
	Hem-fir	#1	9-0	11-10	14-10	17-2
	Hem-fir	#2	8-7	11-3	13-10	16-1
	Hem-fir	#3	6-10	8-8	10-7	12-4
24	Douglas fir-larch	SS	9-0	11-11	15-2	18-5
	Douglas fir-larch	#1	8-8	11-0	13-5	15-7
	Douglas fir-larch	#2	8-3	10-5	12-9	14-9
	Douglas fir-larch	#3	6-3	8-0	9-9	11-3
	Hem-fir	SS	8-6	11-3	14-4	17-5
	Hem-fir	#1	8-4	10-10	13-3	15-5
	Hem-fir	#2	7-11	10-2	12-5	14-4
	Hem-fir	#3	6-2	7-9	9-6	11-0

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

Note: Check sources for availability of lumber in lengths greater than 20 feet.

a. End bearing length shall be increased to 2 inches.

b. Dead load limits for townhouses in Seismic Design Category C and all structures in Seismic Design Categories D_0, D_1, and D_2 shall be determined in accordance with Section R301.2.2.2.

1216 W. Robert Bush Dr., PO Box 68, South Bend, WA 98586 ph 360.875.9356, fax 360.875.9304
7013 Sandridge Rd., Long Beach, WA 98631 ph 360.642.9382, fax 360.642.9387

"Pacific County is an Equal Opportunity Employer & Provider"

Pacific County
DEPARTMENT OF COMMUNITY DEVELOPMENT

BUILDING • ENVIRONMENTAL HEALTH • PLANNING

Rafter Spans for Common Lumber Species (Ground Snow Load = 30 psf)

R802.4.1(4)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 psf				
			2 x 4	2 x 6	2 x 8	2 x 10	2 X 12
			Maximum Rafter Spans[a]				
			(ft-in)	(ft-in)	(ft-in)	(ft-in)	(ft-in)
12	Douglas fir-larch	SS	9-1	14-4	18-10	24-1	Note b
	Douglas fir-larch	#1	8-9	13-9	18-2	22-9	Note b
	Douglas fir-larch	#2	8-7	13-6	17-8	21-7	25-1
	Douglas fir-larch	#3	7-3	10-8	13-6	16-6	19-1
	Hem-fir	SS	8-7	13-6	17-10	22-9	Note b
	Hem-fir	#1	8-5	13-3	17-5	22-3	26-0
	Hem-fir	#2	8-0	12-7	16-7	21-0	24-4
	Hem-fir	#3	7-1	10-5	13-2	16-1	18-8
16	Douglas fir-larch	SS	8-3	13-0	17-2	21-10	Note b
	Douglas fir-larch	#1	8-0	12-6	16-2	19-9	22-10
	Douglas fir-larch	#2	7-10	12-1	15-4	18-9	21-8
	Douglas fir-larch	#3	6-4	9-3	11-8	14-3	16-7
	Hem-fir	SS	7-10	12-3	16-2	20-8	25-1
	Hem-fir	#1	7-8	12-0	15-10	19-6	22-7
	Hem-fir	#2	7-3	11-5	14-11	18-2	21-1
	Hem-fir	#3	6-2	9-0	11-5	13-11	16-2
19.2	Douglas fir-larch	SS	7-9	12-3	16-1	20-7	25-0
	Douglas fir-larch	#1	7-6	11-8	14-9	18-0	20-11
	Douglas fir-larch	#2	7-4	11-0	14-0	17-1	19-10
	Douglas fir-larch	#3	5-9	8-5	10-8	13-1	15-2
	Hem-fir	SS	7-4	11-7	15-3	19-5	23-7
	Hem-fir	#1	7-2	11-4	14-7	17-9	20-7
	Hem-fir	#2	6-10	10-9	13-7	16-7	19-3
	Hem-fir	#3	5-7	8-3	10-5	12-9	14-9
24	Douglas fir-larch	SS	7-3	11-4	15-0	19-1	22-10
	Douglas fir-larch	#1	7-0	10-5	13-2	16-1	18-8
	Douglas fir-larch	#2	6-9	9-10	12-6	15-3	17-9
	Douglas fir-larch	#3	5-2	7-7	9-7	11-8	13-6
	Hem-fir	SS	6-10	10-9	14-2	18-0	21-11
	Hem-fir	#1	6-8	10-3	13-0	15-11	18-5
	Hem-fir	#2	6-4	9-7	12-2	14-10	17-3
	Hem-fir	#3	5-0	7-4	9-4	11-5	13-2

Check sources for availability of lumber in lengths greater than 20 feet.
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. The tabulated rafter spans assume that ceiling joists are located at the bottom of the attic space or that some other method of resisting the outward push of the rafters on the bearing walls, such as rafter ties, is provided at that location. Where ceiling joists or rafter ties are located higher in the attic space, the rafter spans shall be multiplied by the adjustment factors in Table R802.4.1(9).

b. Span exceeds 26 feet in length.

7/23/2024

1216 W. Robert Bush Dr., PO Box 68, South Bend, WA 98586 ph 360.875.9356, fax 360.875.9304
7013 Sandridge Rd., Long Beach, WA 98631 ph 360.642.9382, fax 360.642.9387

"Pacific County is an Equal Opportunity Employer & Provider"

Pacific County
DEPARTMENT OF COMMUNITY DEVELOPMENT

BUILDING • ENVIRONMENTAL HEALTH • PLANNING

Ceiling Joist Spans for Common Lumber Species (Limited Storage 20 psf)

R802.5.1(2)

CEILING JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 psf			
			2 x 4	2 x 6	2 x 8	2 x 10
			Maximum Ceiling Joist Spans			
			(ft-in)	(ft-in)	(ft-in)	(ft-in)
12	Douglas fir-larch	SS	10-5	16-4	21-7	Note a
	Douglas fir-larch	#1	10-0	15-9	20-1	24-6
	Douglas fir-larch	#2	9-10	15-0	19-1	23-3
	Douglas fir-larch	#3	7-10	11-6	14-7	17-9
	Hem-fir	SS	9-10	15-6	20-5	Note a
	Hem-fir	#1	9-8	15-2	19-10	24-3
	Hem-fir	#2	9-2	14-5	18-6	22-7
	Hem-fir	#3	7-8	11-2	14-2	17-4
16	Douglas fir-larch	SS	9-6	14-11	19-7	25-0
	Douglas fir-larch	#1	9-1	13-9	17-5	21-3
	Douglas fir-larch	#2	8-11	13-0	16-6	20-2
	Douglas fir-larch	#3	6-10	9-11	12-7	15-5
	Hem-fir	SS	8-11	14-1	18-6	23-8
	Hem-fir	#1	8-9	13-7	17-2	21-0
	Hem-fir	#2	8-4	12-8	16-0	19-7
	Hem-fir	#3	6-8	9-8	12-4	15-0
19.2	Douglas fir-larch	SS	8-11	14-0	18-5	23-7
	Douglas fir-larch	#1	8-7	12-6	15-10	19-5
	Douglas fir-larch	#2	8-2	11-11	15-1	18-5
	Douglas fir-larch	#3	6-2	9-1	11-6	14-1
	Hem-fir	SS	8-5	13-3	17-5	22-3
	Hem-fir	#1	8-3	12-4	15-8	19-2
	Hem-fir	#2	7-10	11-7	14-8	17-10
	Hem-fir	#3	6-1	8-10	11-3	13-8
24	Douglas fir-larch	SS	8-3	13-0	17-2	21-3
	Douglas fir-larch	#1	7-8	11-2	14-2	17-4
	Douglas fir-larch	#2	7-3	10-8	13-6	16-5
	Douglas fir-larch	#3	5-7	8-1	10-3	12-7
	Hem-fir	SS	7-10	12-3	16-2	20-6
	Hem-fir	#1	7-7	11-1	14-0	17-1
	Hem-fir	#2	7-1	10-4	13-1	16-0
	Hem-fir	#3	5-5	7-11	10-0	12-3

Check sources for availability of lumber in lengths greater than 20 feet.
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. Span exceeds 26 feet in length.

7/23/2024

1216 W. Robert Bush Dr., PO Box 68, South Bend, WA 98586 ph 360.875.9356, fax 360.875.9304
7013 Sandridge Rd., Long Beach, WA 98631 ph 360.642.9382, fax 360.642.9387

"Pacific County is an Equal Opportunity Employer & Provider"