

**TABLE 2308.8(1)**  
**FLOOR JOIST SPANS FOR COMMON LUMBER SPECIES**  
 (Residential Sleeping Areas, Live Load = 30 psf, L/Δ = 360)

JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			2x6	2x8	2x10	2x12	2x6	2x8	2x10	2x12
			Maximum floor joist spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	12-6	16-6	21-0	25-7	12-6	16-6	21-0	25-7
	Douglas Fir-Larch	#1	12-0	15-10	20-3	24-8	12-0	15-7	19-0	22-0
	Douglas Fir-Larch	#2	11-10	15-7	19-10	23-0	11-6	14-7	17-9	20-7
	Douglas Fir-Larch	#3	9-8	12-4	15-0	17-5	8-8	11-0	13-5	15-7
	Hem-Fir	SS	11-10	15-7	19-10	24-2	11-10	15-7	19-10	24-2
	Hem-Fir	#1	11-7	15-3	19-5	23-7	11-7	15-2	18-6	21-6
	Hem-Fir	#2	11-0	14-6	18-6	22-6	11-0	14-4	17-6	20-4
	Hem-Fir	#3	9-8	12-4	15-0	17-5	8-8	11-0	13-5	15-7
	Southern Pine	SS	12-3	16-2	20-8	25-1	12-3	16-2	20-8	25-1
	Southern Pine	#1	<del>12-0-11-10</del>	<del>15-10-15-7</del>	<del>20-3-19-10</del>	<del>24-8-24-2</del>	<del>12-0-11-10</del>	<del>15-10-15-7</del>	<del>20-3-18-7</del>	<del>24-8-22-0</del>
	Southern Pine	#2	<del>11-10-11-3</del>	<del>15-7-14-11</del>	<del>19-10-18-1</del>	<del>24-2-21-4</del>	<del>11-10-10-9</del>	<del>15-7-13-8</del>	<del>18-7-16-2</del>	<del>21-9-19-1</del>
	Southern Pine	#3	<del>10-5-9-2</del>	<del>13-3-11-6</del>	<del>15-8-14-0</del>	<del>18-8-16-6</del>	<del>9-4-8-2</del>	<del>11-11-10-3</del>	<del>14-0-12-6</del>	<del>16-8-14-9</del>
	Spruce-Pine-Fir	SS	11-7	15-3	19-5	23-7	11-7	15-3	19-5	23-7
	Spruce-Pine-Fir	#1	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7
	Spruce-Pine-Fir	#2	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7
	Spruce-Pine-Fir	#3	9-8	12-4	15-0	17-5	8-8	11-0	13-5	15-7
16	Douglas Fir-Larch	SS	11-4	15-0	19-1	23-3	11-4	15-0	19-1	23-0
	Douglas Fir-Larch	#1	10-11	14-5	18-5	21-4	10-8	13-6	16-5	19-1
	Douglas Fir-Larch	#2	10-9	14-1	17-2	19-11	9-11	12-7	15-5	17-10
	Douglas Fir-Larch	#3	8-5	10-8	13-0	15-1	7-6	9-6	11-8	13-6
	Hem-Fir	SS	10-9	14-2	18-0	21-11	10-9	14-2	18-0	21-11
	Hem-Fir	#1	10-6	13-10	17-8	20-9	10-4	13-1	16-0	18-7
	Hem-Fir	#2	10-0	13-2	16-10	19-8	9-10	12-5	15-2	17-7
	Hem-Fir	#3	8-5	10-8	13-0	15-1	7-6	9-6	11-8	13-6
	Southern Pine	SS	11-2	14-8	18-9	22-10	11-2	14-8	18-9	22-10
	Southern Pine	#1	<del>10-11-10-9</del>	<del>14-5-14-2</del>	<del>18-5-18-0</del>	<del>22-5-21-4</del>	<del>10-11-10-9</del>	<del>14-5-13-9</del>	<del>17-11-16-1</del>	<del>21-4-19-1</del>
	Southern Pine	#2	<del>10-9-10-3</del>	<del>14-2-13-3</del>	<del>18-0-15-8</del>	<del>21-1-18-6</del>	<del>10-5-9-4</del>	<del>13-6-11-10</del>	<del>16-1-14-0</del>	<del>18-10-16-6</del>
	Southern Pine	#3	<del>9-0-7-11</del>	<del>11-6-10-0</del>	<del>13-7-12-1</del>	<del>16-2-14-4</del>	<del>8-1-7-1</del>	<del>10-3-8-11</del>	<del>12-2-10-10</del>	<del>14-6-12-10</del>
	Spruce-Pine-Fir	SS	10-6	13-10	17-8	21-6	10-6	13-10	17-8	21-4
	Spruce-Pine-Fir	#1	10-3	13-6	17-2	19-11	9-11	12-7	15-5	17-10
	Spruce-Pine-Fir	#2	10-3	13-6	17-2	19-11	9-11	12-7	15-5	17-10
	Spruce-Pine-Fir	#3	8-5	10-8	13-0	15-1	7-6	9-6	11-8	13-6
19.2	Douglas Fir-Larch	SS	10-8	14-1	18-0	21-10	10-8	14-1	18-0	21-0
	Douglas Fir-Larch	#1	10-4	13-7	16-9	19-6	9-8	12-4	15-0	17-5
	Douglas Fir-Larch	#2	10-1	12-10	15-8	18-3	9-1	11-6	14-1	16-3
	Douglas Fir-Larch	#3	7-8	9-9	11-10	13-9	6-10	8-8	10-7	12-4
	Hem-Fir	SS	10-1	13-4	17-0	20-8	10-1	13-4	17-0	20-7
	Hem-Fir	#1	9-10	13-0	16-4	19-0	9-6	12-0	14-8	17-0
	Hem-Fir	#2	9-5	12-5	15-6	17-1	8-11	11-4	13-10	16-1
	Hem-Fir	#3	7-8	9-9	11-10	13-9	6-10	8-8	10-7	12-4

(continued)

**TABLE 2308.8(1)—continued**  
**FLOOR JOIST SPANS FOR COMMON LUMBER SPECIES**  
 (Residential Sleeping Areas, Live Load = 30 psf, L/Δ = 360)

JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
			2x6	2x8	2x10	2x12	2x6	2x8	2x10	2x12
			Maximum floor joist spans							
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Southern Pine	SS	10-6	13-10	17-8	21-6	10-6	13-10	17-8	21-6
	Southern Pine	#1	10-4-10-1	13-7-13-4	17-4-16-5	21-1-19-6	10-4-9-11	13-7-12-7	16-4-14-8	19-6-17-5
	Southern Pine	#2	10-1-9-6	13-4-12-1	16-5-14-4	19-3-16-10	9-6-8-6	12-4-10-10	14-8-12-10	17-2-15-1
	Southern Pine	#3	8-3-7-3	10-6-9-1	12-5-11-0	14-9-13-1	7-4-6-5	9-5-8-2	11-1-9-10	13-2-11-8
	Spruce-Pine-Fir	SS	9-10	13-0	16-7	20-2	9-10	13-0	16-7	19-6
	Spruce-Pine-Fir	#1	9-8	12-9	15-8	18-3	9-1	11-6	14-1	16-3
	Spruce-Pine-Fir	#2	9-8	12-9	15-8	18-3	9-1	11-6	14-1	16-3
	Spruce-Pine-Fir	#3	7-8	9-9	11-10	13-9	6-10	8-8	10-7	12-4
24	Douglas Fir-Larch	SS	9-11	13-1	16-8	20-3	9-11	13-1	16-2	18-9
	Douglas Fir-Larch	#1	9-7	12-4	15-0	17-5	8-8	11-0	13-5	15-7
	Douglas Fir-Larch	#2	9-1	11-6	14-1	16-3	8-1	10-3	12-7	14-7
	Douglas Fir-Larch	#3	6-10	8-8	10-7	12-4	6-2	7-9	9-6	11-0
	Hem-Fir	SS	9-4	12-4	15-9	19-2	9-4	12-4	15-9	18-5
	Hem-Fir	#1	9-2	12-0	14-8	17-0	8-6	10-9	13-1	15-2
	Hem-Fir	#2	8-9	11-4	13-10	16-1	8-0	10-2	12-5	14-4
	Hem-Fir	#3	6-10	8-8	10-7	12-4	6-2	7-9	9-6	11-0
	Southern Pine	SS	9-9	12-10	16-5	19-11	9-9	12-10	16-5	19-11-19-8
	Southern Pine	#1	9-7-9-4	12-7-12-4	16-1-14-8	19-6-17-5	9-7-8-10	12-4-11-3	14-7-13-1	17-5-15-7
	Southern Pine	#2	9-4-8-6	12-4-10-10	14-8-12-10	17-2-15-1	8-6-7-7	11-0-9-8	13-1-11-5	15-5-13-6
	Southern Pine	#3	7-4-6-5	9-5-8-2	11-1-9-10	13-2-11-8	6-7-5-9	8-5-7-3	9-11-8-10	11-10-10-5
	Spruce-Pine-Fir	SS	9-2	12-1	15-5	18-9	9-2	12-1	15-0	17-5
	Spruce-Pine-Fir	#1	8-11	11-6	14-1	16-3	8-1	10-3	12-7	14-7
	Spruce-Pine-Fir	#2	8-11	11-6	14-1	16-3	8-1	10-3	12-7	14-7
	Spruce-Pine-Fir	#3	6-10	8-8	10-7	12-4	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 = 47.8 N/m<sup>2</sup>.

**TABLE 2308.8(2)**  
**FLOOR JOIST SPANS FOR COMMON LUMBER SPECIES**  
 (Residential Living Areas, Live Load = 40 psf, L/Δ = 360)

JOIST SPACING (inches)	SPECIES AND GRADE	DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
		2x6	2x8	2x10	2x12	2x6	2x8	2x10	2x12
		Maximum floor joist spans							
		(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch SS	11-4	15-0	19-1	23-3	11-4	15-0	19-1	23-3
	Douglas Fir-Larch #1	10-11	14-5	18-5	22-0	10-11	14-2	17-4	20-1
	Douglas Fir-Larch #2	10-9	14-2	17-9	20-7	10-6	13-3	16-3	18-10
	Douglas Fir-Larch #3	8-8	11-0	13-5	15-7	7-11	10-0	12-3	14-3
	Hem-Fir SS	10-9	14-2	18-0	21-11	10-9	14-2	18-0	21-11
	Hem-Fir #1	10-6	13-10	17-8	21-6	10-6	13-10	16-11	19-7
	Hem-Fir #2	10-0	13-2	16-10	20-4	10-0	13-1	16-0	18-6
	Hem-Fir #3	8-8	11-0	13-5	15-7	7-11	10-0	12-3	14-3
	Southern Pine SS	11-2	14-8	18-9	22-10	11-2	14-8	18-9	22-10
	Southern Pine #1	<del>10-11-10-9</del>	<del>14-5-14-2</del>	<del>18-5-18-0</del>	<del>22-5-21-11</del>	<del>10-11-10-9</del>	<del>14-5-14-2</del>	<del>18-5-16-11</del>	<del>22-5-20-1</del>
	Southern Pine #2	<del>10-9-10-3</del>	<del>14-2-13-6</del>	<del>18-0-16-2</del>	<del>21-9-19-1</del>	<del>10-9-9-10</del>	<del>14-2-12-6</del>	<del>16-11-14-9</del>	<del>19-10-17-5</del>
	Southern Pine #3	<del>9-4-8-2</del>	<del>11-11-10-3</del>	<del>14-0-12-6</del>	<del>16-8-14-9</del>	<del>8-6-7-5</del>	<del>10-10-9-5</del>	<del>12-10-11-5</del>	<del>15-3-13-6</del>
	Spruce-Pine-Fir SS	10-6	13-10	17-8	21-6	10-6	13-10	17-8	21-6
	Spruce-Pine-Fir #1	10-3	13-6	17-3	20-7	10-3	13-3	16-3	18-10
Spruce-Pine-Fir #2	10-3	13-6	17-3	20-7	10-3	13-3	16-3	18-10	
Spruce-Pine-Fir #3	8-8	11-0	13-5	15-7	7-11	10-0	12-3	14-3	
16	Douglas Fir-Larch SS	10-4	13-7	17-4	21-1	10-4	13-7	17-4	21-0
	Douglas Fir-Larch #1	9-11	13-1	16-5	19-1	9-8	12-4	15-0	17-5
	Douglas Fir-Larch #2	9-9	12-7	15-5	17-10	9-1	11-6	14-1	16-3
	Douglas Fir-Larch #3	7-6	9-6	11-8	13-6	6-10	8-8	10-7	12-4
	Hem-Fir SS	9-9	12-10	16-5	19-11	9-9	12-10	16-5	19-11
	Hem-Fir #1	9-6	12-7	16-0	18-7	9-6	12-0	14-8	17-0
	Hem-Fir #2	9-1	12-0	15-2	17-7	8-11	11-4	13-10	16-1
	Hem-Fir #3	7-6	9-6	11-8	13-6	6-10	8-8	10-7	12-4
	Southern Pine SS	10-2	13-4	17-0	20-9	10-2	13-4	17-0	20-9
	Southern Pine #1	<del>9-11-9-9</del>	<del>13-1-12-10</del>	<del>16-9-16-1</del>	<del>20-4-19-1</del>	<del>9-11-9-9</del>	<del>13-1-12-7</del>	<del>16-4-14-8</del>	<del>19-6-17-5</del>
	Southern Pine #2	<del>9-9-9-4</del>	<del>12-10-11-10</del>	<del>16-1-14-0</del>	<del>18-10-16-6</del>	<del>9-6-8-6</del>	<del>12-4-10-10</del>	<del>14-8-12-10</del>	<del>17-2-15-1</del>
	Southern Pine #3	<del>8-1-7-1</del>	<del>10-3-8-11</del>	<del>12-2-10-10</del>	<del>14-6-12-10</del>	<del>7-4-6-5</del>	<del>9-5-8-2</del>	<del>11-1-9-10</del>	<del>13-2-11-8</del>
	Spruce-Pine-Fir SS	9-6	12-7	16-0	19-6	9-6	12-7	16-0	19-6
	Spruce-Pine-Fir #1	9-4	12-3	15-5	17-10	9-1	11-6	14-1	16-3
Spruce-Pine-Fir #2	9-4	12-3	15-5	17-10	9-1	11-6	14-1	16-3	
Spruce-Pine-Fir #3	7-6	9-6	11-8	13-6	6-10	8-8	10-7	12-4	
19.2	Douglas Fir-Larch SS	9-8	12-10	16-4	19-10	9-8	12-10	16-4	19-2
	Douglas Fir-Larch #1	9-4	12-4	15-0	17-5	8-10	11-3	13-8	15-11
	Douglas Fir-Larch #2	9-1	11-6	14-1	16-3	8-3	10-6	12-10	14-10
	Douglas Fir-Larch #3	6-10	8-8	10-7	12-4	6-3	7-11	9-8	11-3
	Hem-Fir SS	9-2	12-1	15-5	18-9	9-2	12-1	15-5	18-9
	Hem-Fir #1	9-0	11-10	14-8	17-0	8-8	10-11	13-4	15-6
	Hem-Fir #2	8-7	11-3	13-10	16-1	8-2	10-4	12-8	14-8
	Hem-Fir #3	6-10	8-8	10-7	12-4	6-3	7-11	9-8	11-3
	Southern Pine SS	9-6	12-7	16-0	19-6	9-6	12-7	16-0	19-6
	Southern Pine #1	<del>9-4-9-2</del>	<del>12-4-12-1</del>	<del>15-9-14-8</del>	<del>19-2-17-5</del>	<del>9-4-9-0</del>	<del>12-4-11-5</del>	<del>14-11-13-5</del>	<del>17-9-15-11</del>
	Southern Pine #2	<del>9-2-8-6</del>	<del>12-1-10-10</del>	<del>14-8-12-10</del>	<del>17-2-15-1</del>	<del>8-8-7-9</del>	<del>11-3-9-10</del>	<del>13-5-11-8</del>	<del>15-8-13-9</del>
	Southern Pine #3	<del>7-4-6-5</del>	<del>9-5-8-2</del>	<del>11-1-9-10</del>	<del>13-2-11-8</del>	<del>6-9-5-11</del>	<del>8-7-7-5</del>	<del>10-1-9-0</del>	<del>12-1-10-8</del>
	Spruce-Pine-Fir SS	9-0	11-10	15-1	18-4	9-0	11-10	15-1	17-9
	Spruce-Pine-Fir #1	8-9	11-6	14-1	16-3	8-3	10-6	12-10	14-10
Spruce-Pine-Fir #2	8-9	11-6	14-1	16-3	8-3	10-6	12-10	14-10	
Spruce-Pine-Fir #3	6-10	8-8	10-7	12-4	6-3	7-11	9-8	11-3	

(continued)

**TABLE 2308.8(2)—continued**  
**FLOOR JOIST SPANS FOR COMMON LUMBER SPECIES**  
**(Residential Living Areas, Live Load = 40 psf, L/Δ = 360)**

JOIST SPACING (inches)	SPECIES AND GRADE	DEAD LOAD = 10 psf				DEAD LOAD = 20 psf			
		2x6	2x8	2x10	2x12	2x6	2x8	2x10	2x12
		Maximum floor joist spans							
		(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
24	Douglas Fir-Larch SS	9-0	11-11	15-2	18-5	9-0	11-11	14-9	17-1
	Douglas Fir-Larch #1	8-8	11-0	13-5	15-7	7-11	10-0	12-3	14-3
	Douglas Fir-Larch #2	8-1	10-3	12-7	14-7	7-5	9-5	11-6	13-4
	Douglas Fir-Larch #3	6-2	7-9	9-6	11-0	5-7	7-1	8-8	10-1
	Hem-Fir SS	8-6	11-3	14-4	17-5	8-6	11-3	14-4	16-10 <sup>a</sup>
	Hem-Fir #1	8-4	10-9	13-1	15-2	7-9	9-9	11-11	13-10
	Hem-Fir #2	7-11	10-2	12-5	14-4	7-4	9-3	11-4	13-1
	Hem-Fir #3	6-2	7-9	9-6	11-0	5-7	7-1	8-8	10-1
	Southern Pine SS	8-10	11-8	14-11	18-1	8-10	11-8	14-11	<del>18-1</del> 18-0
	Southern Pine #1	<del>8-8</del> 8-6	<del>11-5</del> 11-3	<del>14-7</del> 13-1	<del>17-5</del> 15-7	<del>8-8</del> 8-1	<del>11-3</del> 10-3	<del>13-4</del> 12-0	<del>15-11</del> 14-3
	Southern Pine #2	<del>8-6</del> 7-7	<del>11-0</del> 9-8	<del>13-1</del> 11-5	<del>15-5</del> 13-6	<del>7-9</del> 7-0	<del>10-0</del> 8-10	<del>12-0</del> 10-5	<del>14-0</del> 12-4
	Southern Pine #3	<del>6-7</del> 5-9	<del>8-5</del> 7-3	<del>9-11</del> 8-10	<del>11-10</del> 10-5	<del>6-0</del> 5-3	<del>7-8</del> 6-8	<del>9-1</del> 8-1	<del>10-9</del> 9-6
	Spruce-Pine-Fir SS	8-4	11-0	14-0	17-0	8-4	11-0	13-8	15-11
	Spruce-Pine-Fir #1	8-1	10-3	12-7	14-7	7-5	9-5	11-6	13-4
	Spruce-Pine-Fir #2	8-1	10-3	12-7	14-7	7-5	9-5	11-6	13-4
	Spruce-Pine-Fir #3	6-2	7-9	9-6	11-0	5-7	7-1	8-8	10-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.8 N/m<sup>2</sup>.

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

**TABLE 2308.9.5  
 HEADER AND GIRDER SPANS<sup>a,b</sup> FOR EXTERIOR BEARING WALLS  
 (Maximum Spans for Douglas Fir-Larch, Hem-Fir, Southern Pine and Spruce-Pine-Fir<sup>c</sup> and Required Number of Jack Studs)**

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	NJ <sup>d</sup>
Roof & Ceiling	2-2x4	3-6	1	3-2	1	2-10	1	3-2	1	2-9	1	2-6	1
	2-2x6	5-5	1	4-8	1	4-2	1	4-8	1	4-1	1	3-8	2
	2-2x8	6-10	1	5-11	2	5-4	2	5-11	2	5-2	2	4-7	2
	2-2x10	8-5	2	7-3	2	6-6	2	7-3	2	6-3	2	5-7	2
	2-2x12	9-9	2	8-5	2	7-6	2	8-5	2	7-3	2	6-6	2
	3-2x8	8-4	1	7-5	1	6-8	1	7-5	1	6-5	2	5-9	2
	3-2x10	10-6	1	9-1	2	8-2	2	9-1	2	7-10	2	7-0	2
	3-2x12	12-2	2	10-7	2	9-5	2	10-7	2	9-2	2	8-2	2
	4-2x8	9-2	1	8-4	1	7-8	1	8-4	1	7-5	1	6-8	1
	4-2x10	11-8	1	10-6	1	9-5	2	10-6	1	9-1	2	8-2	2
4-2x12	14-1	1	12-2	2	10-11	2	12-2	2	10-7	2	9-5	2	
Roof, Ceiling & 1 Center-Bearing Floor	2-2x4	3-1	1	2-9	1	2-5	1	2-9	1	2-5	1	2-2	1
	2-2x6	4-6	1	4-0	1	3-7	2	4-1	1	3-7	2	3-3	2
	2-2x8	5-9	2	5-0	2	4-6	2	5-2	2	4-6	2	4-1	2
	2-2x10	7-0	2	6-2	2	5-6	2	6-4	2	5-6	2	5-0	2
	2-2x12	8-1	2	7-1	2	6-5	2	7-4	2	6-5	2	5-9	3
	3-2x8	7-2	1	6-3	2	5-8	2	6-5	2	5-8	2	5-1	2
	3-2x10	8-9	2	7-8	2	6-11	2	7-11	2	6-11	2	6-3	2
	3-2x12	10-2	2	8-11	2	8-0	2	9-2	2	8-0	2	7-3	2
	4-2x8	8-1	1	7-3	1	6-7	1	7-5	1	6-6	1	5-11	2
	4-2x10	10-1	1	8-10	2	8-0	2	9-1	2	8-0	2	7-2	2
4-2x12	11-9	2	10-3	2	9-3	2	10-7	2	9-3	2	8-4	2	
Roof, Ceiling & 1 Clear Span Floor	2-2x4	2-8	1	2-4	1	2-1	1	2-7	1	2-3	1	2-0	1
	2-2x6	3-11	1	3-5	2	3-0	2	3-10	2	3-4	2	3-0	2
	2-2x8	5-0	2	4-4	2	3-10	2	4-10	2	4-2	2	3-9	2
	2-2x10	6-1	2	5-3	2	4-8	2	5-11	2	5-1	2	4-7	3
	2-2x12	7-1	2	6-1	3	5-5	3	6-10	2	5-11	3	5-4	3
	3-2x8	6-3	2	5-5	2	4-10	2	6-1	2	5-3	2	4-8	2
	3-2x10	7-7	2	6-7	2	5-11	2	7-5	2	6-5	2	5-9	2
	3-2x12	8-10	2	7-8	2	6-10	2	8-7	2	7-5	2	6-8	2
	4-2x8	7-2	1	6-3	2	5-7	2	7-0	1	6-1	2	5-5	2
	4-2x10	8-9	2	7-7	2	6-10	2	8-7	2	7-5	2	6-7	2
4-2x12	10-2	2	8-10	2	7-11	2	9-11	2	8-7	2	7-8	2	

*(continued)*

**TABLE 2308.9.5—continued**  
**HEADER AND GIRDER SPANS<sup>a,b</sup> FOR EXTERIOR BEARING WALLS**  
**(Maximum Spans for Douglas Fir-Larch, Hem-Fir, Southern Pine and Spruce-Pine-Fir<sup>c</sup> and Required Number of Jack Studs)**

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>
Roof, Ceiling & 2 Center-Bearing Floors	2-2×4	2-7	1	2-3	1	2-0	1	2-6	1	2-2	1	1-11	1
	2-2×6	3-9	2	3-3	2	2-11	2	3-8	2	3-2	2	2-10	2
	2-2×8	4-9	2	4-2	2	3-9	2	4-7	2	4-0	2	3-8	2
	2-2×10	5-9	2	5-1	2	4-7	3	5-8	2	4-11	2	4-5	3
	2-2×12	6-8	2	5-10	3	5-3	3	6-6	2	5-9	3	5-2	3
	3-2×8	5-11	2	5-2	2	4-8	2	5-9	2	5-1	2	4-7	2
	3-2×10	7-3	2	6-4	2	5-8	2	7-1	2	6-2	2	5-7	2
	3-2×12	8-5	2	7-4	2	6-7	2	8-2	2	7-2	2	6-5	3
	4-2×8	6-10	1	6-0	2	5-5	2	6-8	1	5-10	2	5-3	2
	4-2×10	8-4	2	7-4	2	6-7	2	8-2	2	7-2	2	6-5	2
4-2×12	9-8	2	8-6	2	7-8	2	9-5	2	8-3	2	7-5	2	
Roof, Ceiling & 2 Clear Span Floors	2-2×4	2-1	1	1-8	1	1-6	2	2-0	1	1-8	1	1-5	2
	2-2×6	3-1	2	2-8	2	2-4	2	3-0	2	2-7	2	2-3	2
	2-2×8	3-10	2	3-4	2	3-0	3	3-10	2	3-4	2	2-11	3
	2-2×10	4-9	2	4-1	3	3-8	3	4-8	2	4-0	3	3-7	3
	2-2×12	5-6	3	4-9	3	4-3	3	5-5	3	4-8	3	4-2	3
	3-2×8	4-10	2	4-2	2	3-9	2	4-9	2	4-1	2	3-8	2
	3-2×10	5-11	2	5-1	2	4-7	3	5-10	2	5-0	2	4-6	3
	3-2×12	6-10	2	5-11	3	5-4	3	6-9	2	5-10	3	5-3	3
	4-2×8	5-7	2	4-10	2	4-4	2	5-6	2	4-9	2	4-3	2
	4-2×10	6-10	2	5-11	2	5-3	2	6-9	2	5-10	2	5-2	2
4-2×12	7-11	2	6-10	2	6-2	3	7-9	2	6-9	2	6-0	3	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.8 N/m<sup>2</sup>.

- Spans are given in feet and inches (ft-in).
- Tabulated values are for No.2 grade lumber. Spans are based on minimum design properties for No. 2 Grade lumber of Douglas fir-larch, hem-fir, and spruce-pine-fir. No. 1 or better grade lumber shall be used for southern pine.
- 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 pounds per square foot ground snow load for cases in which ground snow load is less than 30 pounds per square foot and the roof live load is equal to or less than 20 pounds per square foot.

**TABLE 2308.9.6  
HEADER AND GIRDER SPANS<sup>a,b</sup> FOR INTERIOR BEARING WALLS  
(Maximum Spans for Douglas Fir-Larch, Hem-Fir, Southern Pine and Spruce-Pine-Fir<sup>c</sup> and Required Number of Jack Studs)**

HEADERS AND GIRDERS SUPPORTING	SIZE	BUILDING width <sup>c</sup> (feet)					
		20		28		36	
		Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>	Span	NJ <sup>d</sup>
One Floor Only	2-2×4	3-1	1	2-8	1	2-5	1
	2-2×6	4-6	1	3-11	1	3-6	1
	2-2×8	5-9	1	5-0	2	4-5	2
	2-2×10	7-0	2	6-1	2	5-5	2
	2-2×12	8-1	2	7-0	2	6-3	2
	3-2×8	7-2	1	6-3	1	5-7	2
	3-2×10	8-9	1	7-7	2	6-9	2
	3-2×12	10-2	2	8-10	2	7-10	2
	4-2×8	9-0	1	7-8	1	6-9	1
	4-2×10	10-1	1	8-9	1	7-10	2
	4-2×12	11-9	1	10-2	2	9-1	2
Two Floors	2-2×4	2-2	1	1-10	1	1-7	1
	2-2×6	3-2	2	2-9	2	2-5	2
	2-2×8	4-1	2	3-6	2	3-2	2
	2-2×10	4-11	2	4-3	2	3-10	3
	2-2×12	5-9	2	5-0	3	4-5	3
	3-2×8	5-1	2	4-5	2	3-11	2
	3-2×10	6-2	2	5-4	2	4-10	2
	3-2×12	7-2	2	6-3	2	5-7	3
	4-2×8	6-1	1	5-3	2	4-8	2
	4-2×10	7-2	2	6-2	2	5-6	2
	4-2×12	8-4	2	7-2	2	6-5	2

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Spans are given in feet and inches (ft-in).
- b. Tabulated values are for No. 2 grade lumber. Spans are based on minimum design properties for No. 2 Grade lumber of Douglas fir-larch, hem-fir, and spruce-pine-fir. No. 1 or better grade lumber shall be used for southern pine.
- c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- d. NJ - Number of jack studs required to support each end. Where the number of required jack studs equals one, the headers are permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.

**TABLE 2308.10.2(1)**  
**CEILING JOIST SPANS FOR COMMON LUMBER SPECIES**  
 (Uninhabitable Attics Without Storage, Live Load = 10 pounds psf, L/Δ = 240)

CEILING JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 5 pounds per square foot			
			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	13-2	20-8	26-0	26-0
	Douglas Fir-Larch	#1	12-8	19-11	26-0	26-0
	Douglas Fir-Larch	#2	12-5	19-6	25-8	26-0
	Douglas Fir-Larch	#3	10-10	15-10	20-1	24-6
	Hem-Fir	SS	12-5	19-6	25-8	26-0
	Hem-Fir	#1	12-2	19-1	25-2	26-0
	Hem-Fir	#2	11-7	18-2	24-0	26-0
	Hem-Fir	#3	10-10	15-10	20-1	24-6
	Southern Pine	SS	12-11	20-3	26-0	26-0
	Southern Pine	#1	<del>12-8</del> 12-5	<del>19-11</del> 19-6	<del>26-0</del> 25-8	26-0
	Southern Pine	#2	<del>12-5</del> 11-10	<del>19-6</del> 18-8	<del>25-8</del> 24-7	26-0
	Southern Pine	#3	<del>11-6</del> 10-1	<del>17-0</del> 14-11	<del>21-8</del> 18-9	<del>25-7</del> 22-9
	Spruce-Pine-Fir	SS	12-2	19-1	25-2	26-0
	Spruce-Pine-Fir	#1	11-10	18-8	24-7	26-0
	Spruce-Pine-Fir	#2	11-10	18-8	24-7	26-0
	Spruce-Pine-Fir	#3	10-10	15-10	20-1	24-6
16	Douglas Fir-Larch	SS	11-11	18-9	24-8	26-0
	Douglas Fir-Larch	#1	11-6	18-1	23-10	26-0
	Douglas Fir-Larch	#2	11-3	17-8	23-0	26-0
	Douglas Fir-Larch	#3	9-5	13-9	17-5	21-3
	Hem-Fir	SS	11-3	17-8	23-4	26-0
	Hem-Fir	#1	11-0	17-4	22-10	26-0
	Hem-Fir	#2	10-6	16-6	21-9	26-0
	Hem-Fir	#3	9-5	13-9	17-5	21-3
	Southern Pine	SS	11-9	18-5	24-3	26-0
	Southern Pine	#1	<del>11-6</del> 11-3	<del>18-1</del> 17-8	<del>23-10</del> 23-4	26-0
	Southern Pine	#2	<del>11-3</del> 10-9	<del>17-8</del> 16-11	<del>23-4</del> 21-7	<del>26-0</del> 25-7
	Southern Pine	#3	<del>10-0</del> 8-9	<del>14-9</del> 12-11	<del>18-9</del> 16-3	<del>22-2</del> 19-9
	Spruce-Pine-Fir	SS	11-0	17-4	22-10	26-0
	Spruce-Pine-Fir	#1	10-9	16-11	22-4	26-0
	Spruce-Pine-Fir	#2	10-9	16-11	22-4	26-0
	Spruce-Pine-Fir	#3	9-5	13-9	17-5	21-3

*(continued)*



TABLE 2308.10.2(1)—continued  
 CEILING JOIST SPANS FOR COMMON LUMBER SPECIES  
 (Uninhabitable Attics Without Storage, Live Load = 10 pounds psf, L/Δ = 240)

CEILING JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 5 pounds per square foot			
			2 × 4	2 × 6	2 × 8	2 × 10
			Maximum ceiling joist spans			
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	11-3	17-8	23-3	26-0
	Douglas Fir-Larch	#1	10-10	17-0	22-5	26-0
	Douglas Fir-Larch	#2	10-7	16-7	21-0	25-8
	Douglas Fir-Larch	#3	8-7	12-6	15-10	19-5
	Hem-Fir	SS	10-7	16-8	21-11	26-0
	Hem-Fir	#1	10-4	16-4	21-6	26-0
	Hem-Fir	#2	9-11	15-7	20-6	25-3
	Hem-Fir	#3	8-7	12-6	15-10	19-5
	Southern Pine	SS	11-0	17-4	22-10	26-0
	Southern Pine	#1	<del>10-10</del> 10-7	<del>17-0</del> 16-8	<del>22-5</del> 22-0	26-0
	Southern Pine	#2	<del>10-7</del> 10-2	<del>16-8</del> 15-7	<del>21-11</del> 19-8	<del>26-0</del> 23-5
	Southern Pine	#3	<del>9-1</del> 8-0	<del>13-6</del> 11-9	<del>17-2</del> 14-10	<del>20-3</del> 18-0
	Spruce-Pine-Fir	SS	10-4	16-4	21-6	26-0
	Spruce-Pine-Fir	#1	10-2	15-11	21-0	25-8
	Spruce-Pine-Fir	#2	10-2	15-11	21-0	25-8
	Spruce-Pine-Fir	#3	8-7	12-6	15-10	19-5
24	Douglas Fir-Larch	SS	10-5	16-4	21-7	26-0
	Douglas Fir-Larch	#1	10-0	15-9	20-1	24-6
	Douglas Fir-Larch	#2	9-10	14-10	18-9	22-11
	Douglas Fir-Larch	#3	7-8	11-2	14-2	17-4
	Hem-Fir	SS	9-10	15-6	20-5	26-0
	Hem-Fir	#1	9-8	15-2	19-7	23-11
	Hem-Fir	#2	9-2	14-5	18-6	22-7
	Hem-Fir	#3	7-8	11-2	14-2	17-4
	Southern Pine	SS	10-3	16-1	21-2	26-0
	Southern Pine	#1	<del>10-0</del> 9-10	<del>15-9</del> 15-6	<del>20-10</del> 20-5	<del>26-0</del> 24-0
	Southern Pine	#2	<del>9-10</del> 9-3	<del>15-6</del> 13-11	<del>20-1</del> 17-7	<del>23-11</del> 20-11
	Southern Pine	#3	<del>8-2</del> 7-2	<del>12-0</del> 10-6	<del>15-4</del> 13-3	<del>18-1</del> 16-1
	Spruce-Pine-Fir	SS	9-8	15-2	19-11	25-5
	Spruce-Pine-Fir	#1	9-5	14-9	18-9	22-11
	Spruce-Pine-Fir	#2	9-5	14-9	18-9	22-11
	Spruce-Pine-Fir	#3	7-8	11-2	14-2	17-4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.8 N/m<sup>2</sup>.

**TABLE 2308.10.2(2)**  
**CEILING JOIST SPANS FOR COMMON LUMBER SPECIES**  
 (Uninhabitable Attics With Limited Storage, Live Load = 20 pounds per square foot, L/Δ = 240)

CEILING JOIST SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot			
			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	26-0
	Douglas Fir-Larch	#1	10-0	15-9	20-1	24-6
	Douglas Fir-Larch	#2	9-10	14-10	18-9	22-11
	Douglas Fir-Larch	#3	7-8	11-2	14-2	17-4
	Hem-Fir	SS	9-10	15-6	20-5	26-0
	Hem-Fir	#1	9-8	15-2	19-7	23-11
	Hem-Fir	#2	9-2	14-5	18-6	22-7
	Hem-Fir	#3	7-8	11-2	14-2	17-4
	Southern Pine	SS	10-3	16-1	21-2	26-0
	Southern Pine	#1	10-0 9-10	15-9 15-6	20-10 20-5	26-0 24-0
	Southern Pine	#2	9-10 9-3	15-6 13-11	20-1 17-7	23-11 20-11
	Southern Pine	#3	8-2 7-2	12-0 10-6	15-4 13-3	18-1 16-1
	Spruce-Pine-Fir	SS	9-8	15-2	19-11	25-5
	Spruce-Pine-Fir	#1	9-5	14-9	18-9	22-11
	Spruce-Pine-Fir	#2	9-5	14-9	18-9	22-11
	Spruce-Pine-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	8-9	12-10	16-3	19-10
	Douglas Fir-Larch	#3	6-8	9-8	12-4	15-0
	Hem-Fir	SS	8-11	14-1	18-6	23-8
	Hem-Fir	#1	8-9	13-5	16-10	20-8
	Hem-Fir	#2	8-4	12-8	16-0	19-7
	Hem-Fir	#3	6-8	9-8	12-4	15-0
	Southern Pine	SS	9-4	14-7	19-3	24-7
	Southern Pine	#1	9-1 8-11	14-4 14-0	18-11 17-9	23-1 20-9
	Southern Pine	#2	8-11 8-0	13-6 12-0	17-5 15-3	20-9 18-1
	Southern Pine	#3	7-1 6-2	10-5 9-2	13-3 11-6	15-8 14-0
	Spruce-Pine-Fir	SS	8-9	13-9	18-1	23-1
	Spruce-Pine-Fir	#1	8-7	12-10	16-3	19-10
	Spruce-Pine-Fir	#2	8-7	12-10	16-3	19-10
	Spruce-Pine-Fir	#3	6-8	9-8	12-4	15-0

(continued)

**TABLE 2308.10.2(2)—continued**  
**CEILING JOIST SPANS FOR COMMON LUMBER SPECIES**  
**(Uninhabitable Attics With Limited Storage, Live Load = 20 pounds per square foot, L/Δ = 240)**

CEILING JOIST SPACING (inches)	SPECIES AND GRADE	DEAD LOAD = 10 pounds per square foot			
		2 x 4	2 x 6	2 x 8	2 x 10
		Maximum ceiling joist spans			
		(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch SS	8-11	14-0	18-5	23-4
	Douglas Fir-Larch #1	8-7	12-6	15-10	19-5
	Douglas Fir-Larch #2	8-0	11-9	14-10	18-2
	Douglas Fir-Larch #3	6-1	8-10	11-3	13-8
	Hem-Fir SS	8-5	13-3	17-5	22-3
	Hem-Fir #1	8-3	12-3	15-6	18-11
	Hem-Fir #2	7-10	11-7	14-8	17-10
	Hem-Fir #3	6-1	8-10	11-3	13-8
	Southern Pine SS	8-9	13-9	<del>18-1</del> 18-2	23-1
	Southern Pine #1	<del>8-7</del> 8-5	<del>13-6</del> 12-9	<del>17-9</del> 16-2	<del>21-4</del> 18-11
	Southern Pine #2	<del>8-5</del> 7-4	<del>12-3</del> 11-0	<del>15-10</del> 13-11	<del>18-11</del> 16-6
	Southern Pine #3	<del>6-5</del> 5-8	<del>9-6</del> 8-4	<del>12-1</del> 10-6	<del>14-4</del> 12-9
	Spruce-Pine-Fir SS	8-3	12-11	17-1	21-8
	Spruce-Pine-Fir #1	8-0	11-9	14-10	18-2
	Spruce-Pine-Fir #2	8-0	11-9	14-10	18-2
	Spruce-Pine-Fir #3	6-1	8-10	11-3	13-8
24	Douglas Fir-Larch SS	8-3	13-0	17-1	20-11
	Douglas Fir-Larch #1	7-8	11-2	14-2	17-4
	Douglas Fir-Larch #2	7-2	10-6	13-3	16-3
	Douglas Fir-Larch #3	5-5	7-11	10-0	12-3
	Hem-Fir SS	7-10	12-3	16-2	20-6
	Hem-Fir #1	7-6	10-11	13-10	16-11
	Hem-Fir #2	7-1	10-4	13-1	16-0
	Hem-Fir #3	5-5	7-11	10-0	12-3
	Southern Pine SS	8-1	12-9	16-10	21-6
	Southern Pine #1	<del>8-0</del> 7-8	<del>12-6</del> 11-5	<del>15-10</del> 14-6	<del>18-10</del> 16-11
	Southern Pine #2	<del>7-8</del> 6-7	<del>11-0</del> 9-10	<del>14-2</del> 12-6	<del>16-11</del> 14-9
	Southern Pine #3	<del>5-9</del> 5-1	<del>8-6</del> 7-5	<del>10-10</del> 9-5	<del>12-10</del> 11-5
	Spruce-Pine-Fir SS	7-8	12-0	15-10	19-5
	Spruce-Pine-Fir #1	7-2	10-6	13-3	16-3
	Spruce-Pine-Fir #2	7-2	10-6	13-3	16-3
	Spruce-Pine-Fir #3	5-5	7-11	10-0	12-3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.8 N/m<sup>2</sup>.

**TABLE 2308.10.3(1)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Roof Live Load = 20 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	11-6	18-0	23-9	26-0	26-0	11-6	18-0	23-5	26-0	26-0
	Douglas Fir-Larch	#1	11-1	17-4	22-5	26-0	26-0	10-6	15-4	19-5	23-9	26-0
	Douglas Fir-Larch	#2	10-10	16-7	21-0	25-8	26-0	9-10	14-4	18-2	22-3	25-9
	Douglas Fir-Larch	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Hem-Fir	SS	10-10	17-0	22-5	26-0	26-0	10-10	17-0	22-5	26-0	26-0
	Hem-Fir	#1	10-7	16-8	21-10	26-0	26-0	10-3	14-11	18-11	23-2	26-0
	Hem-Fir	#2	10-1	15-11	20-8	25-3	26-0	9-8	14-2	17-11	21-11	25-5
	Hem-Fir	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Southern Pine	SS	11-3	17-8	23-4	26-0	26-0	11-3	17-8	23-4	26-0	26-0
	Southern Pine	#1	<del>11-1</del> 10-10	<del>17-4</del> 17-0	<del>22-11</del> 22-5	26-0	26-0	<del>11-1</del> 10-6	<del>17-3</del> 15-8	<del>21-9</del> 19-10	<del>25-10</del> 23-2	26-0
	Southern Pine	#2	<del>10-10</del> 10-4	<del>17-0</del> 15-7	<del>22-5</del> 19-8	<del>26-0</del> 23-5	26-0	<del>10-6</del> 9-0	<del>15-1</del> 13-6	<del>19-5</del> 17-1	<del>23-2</del> 20-3	<del>26-0</del> 23-10
	Southern Pine	#3	<del>9-1</del> 8-0	<del>13-6</del> 11-9	<del>17-2</del> 14-10	<del>20-3</del> 18-0	<del>24-1</del> 21-4	<del>7-11</del> 6-11	<del>11-8</del> 10-2	<del>14-10</del> 12-10	<del>17-6</del> 15-7	<del>20-11</del> 18-6
	Spruce-Pine-Fir	SS	10-7	16-8	21-11	26-0	26-0	10-7	16-8	21-9	26-0	26-0
	Spruce-Pine-Fir	#1	10-4	16-3	21-0	25-8	26-0	9-10	14-4	18-2	22-3	25-9
	Spruce-Pine-Fir	#2	10-4	16-3	21-0	25-8	26-0	9-10	14-4	18-2	22-3	25-9
	Spruce-Pine-Fir	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
16	Douglas Fir-Larch	SS	10-5	16-4	21-7	26-0	26-0	10-5	16-0	20-3	24-9	26-0
	Douglas Fir-Larch	#1	10-0	15-4	19-5	23-9	26-0	9-1	13-3	16-10	20-7	23-10
	Douglas Fir-Larch	#2	9-10	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Douglas Fir-Larch	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Hem-Fir	SS	9-10	15-6	20-5	26-0	26-0	9-10	15-6	19-11	24-4	26-0
	Hem-Fir	#1	9-8	14-11	18-11	23-2	26-0	8-10	12-11	16-5	20-0	23-3
	Hem-Fir	#2	9-2	14-2	17-11	21-11	25-5	8-5	12-3	15-6	18-11	22-0
	Hem-Fir	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Southern Pine	SS	10-3	16-1	21-2	26-0	26-0	10-3	16-1	21-2	<del>26-0</del> 25-7	26-0
	Southern Pine	#1	<del>10-0</del> 9-10	<del>15-9</del> 15-6	<del>20-10</del> 19-10	<del>25-10</del> 23-2	26-0	<del>10-0</del> 9-1	<del>15-0</del> 13-7	<del>18-10</del> 17-2	<del>22-4</del> 20-1	<del>26-0</del> 23-10
	Southern Pine	#2	<del>9-10</del> 9-0	<del>15-1</del> 13-6	<del>19-5</del> 17-1	<del>23-2</del> 20-3	<del>26-0</del> 23-10	<del>9-1</del> 7-9	<del>13-0</del> 11-8	<del>16-10</del> 14-9	<del>20-1</del> 17-6	<del>23-7</del> 20-8
	Southern Pine	#3	<del>7-11</del> 6-11	<del>11-8</del> 10-2	<del>14-10</del> 12-10	<del>17-6</del> 15-7	<del>20-11</del> 18-6	<del>6-10</del> 6-0	<del>10-1</del> 8-10	<del>12-10</del> 11-2	<del>15-2</del> 13-6	<del>18-1</del> 16-0
	Spruce-Pine-Fir	SS	9-8	15-2	19-11	25-5	26-0	9-8	14-10	18-10	23-0	26-0
	Spruce-Pine-Fir	#1	9-5	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-Pine-Fir	#2	9-5	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-Pine-Fir	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10

(continued)

**TABLE 2308.10.3(1)—continued**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Roof Live Load = 20 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	9-10	15-5	20-4	25-11	26-0	9-10	14-7	18-6	22-7	26-0
	Douglas Fir-Larch	#1	9-5	14-0	17-9	21-8	25-2	8-4	12-2	15-4	18-9	21-9
	Douglas Fir-Larch	#2	8-11	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Douglas Fir-Larch	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	SS	9-3	14-7	19-2	24-6	26-0	9-3	14-4	18-2	22-3	25-9
	Hem-Fir	#1	9-1	13-8	17-4	21-1	24-6	8-1	11-10	15-0	18-4	21-3
	Hem-Fir	#2	8-8	12-11	16-4	20-0	23-2	7-8	11-2	14-2	17-4	20-1
	Hem-Fir	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
	Southern Pine	SS	9-8	15-2	19-11	25-5	26-0	9-8	15-2	<del>19-11</del> 19-7	<del>25-5</del> 23-4	26-0
	Southern Pine	#1	<del>9-5</del> 9-3	<del>14-10</del> 14-3	<del>19-7</del> 18-1	<del>23-7</del> 21-2	<del>26-0</del> 25-2	9-3	<del>13-8</del> 12-4	<del>17-2</del> 15-8	<del>20-5</del> 18-4	<del>24-4</del> 21-9
	Southern Pine	#2	<del>9-3</del> 8-2	<del>13-9</del> 12-3	<del>17-9</del> 15-7	<del>21-2</del> 18-6	<del>24-10</del> 21-9	8-4	<del>11-11</del> 10-8	<del>15-4</del> 13-6	<del>18-4</del> 16-0	<del>21-6</del> 18-10
	Southern Pine	#3	<del>7-3</del> 6-4	<del>10-8</del> 9-4	<del>13-7</del> 11-9	<del>16-0</del> 14-3	<del>19-1</del> 16-10	6-3	9-3	<del>11-9</del> 10-2	<del>13-10</del> 12-4	<del>16-6</del> 14-7
	Spruce-Pine-Fir	SS	9-1	14-3	18-9	23-11	26-0	9-1	13-7	17-2	21-0	24-4
	Spruce-Pine-Fir	#1	8-10	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Spruce-Pine-Fir	#2	8-10	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Spruce-Pine-Fir	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
24	Douglas Fir-Larch	SS	9-1	14-4	18-10	23-4	26-0	8-11	13-1	16-7	20-3	23-5
	Douglas Fir-Larch	#1	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Douglas Fir-Larch	#2	8-0	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Douglas Fir-Larch	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9
	Hem-Fir	SS	8-7	13-6	17-10	22-9	26-0	8-7	12-10	16-3	19-10	23-0
	Hem-Fir	#1	8-4	12-3	15-6	18-11	21-11	7-3	10-7	13-5	16-4	19-0
	Hem-Fir	#2	7-11	11-7	14-8	17-10	20-9	6-10	10-0	12-8	15-6	17-11
	Hem-Fir	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9
	Southern Pine	SS	8-11	14-1	18-6	23-8	26-0	8-11	<del>14-1</del> 13-10	<del>18-6</del> 17-6	<del>22-11</del> 20-10	<del>26-0</del> 24-8
	Southern Pine	#1	<del>8-9</del> 8-7	<del>13-9</del> 12-9	<del>17-9</del> 16-2	<del>21-1</del> 18-11	<del>25-2</del> 22-6	8-3	<del>12-3</del> 11-1	<del>15-4</del> 14-0	<del>18-3</del> 16-5	<del>21-9</del> 19-6
	Southern Pine	#2	<del>8-7</del> 7-4	<del>12-3</del> 11-0	<del>15-10</del> 13-11	<del>18-11</del> 16-6	<del>22-2</del> 19-6	7-5	<del>10-8</del> 9-6	<del>13-9</del> 12-1	<del>16-5</del> 14-4	<del>19-3</del> 16-10
	Southern Pine	#3	<del>6-5</del> 5-8	<del>9-6</del> 8-4	<del>12-1</del> 10-6	<del>14-4</del> 12-9	<del>17-1</del> 15-1	5-7	8-3	<del>10-6</del> 9-1	<del>12-5</del> 11-0	<del>14-9</del> 13-1
	Spruce-Pine-Fir	SS	8-5	13-3	17-5	21-8	25-2	8-4	12-2	15-4	18-9	21-9
	Spruce-Pine-Fir	#1	8-0	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Spruce-Pine-Fir	#2	8-0	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Spruce-Pine-Fir	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>.

**TABLE 2308.10.3(2)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Roof Live Load = 20 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	10-5	16-4	21-7	26-0	26-0	10-5	16-4	21-7	26-0	26-0
	Douglas Fir-Larch	#1	10-0	15-9	20-10	26-0	26-0	10-0	15-4	19-5	23-9	26-0
	Douglas Fir-Larch	#2	9-10	15-6	20-5	25-8	26-0	9-10	14-4	18-2	22-3	25-9
	Douglas Fir-Larch	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Hem-Fir	SS	9-10	15-6	20-5	26-0	26-0	9-10	15-6	20-5	26-0	26-0
	Hem-Fir	#1	9-8	15-2	19-11	25-5	26-0	9-8	14-11	18-11	23-2	26-0
	Hem-Fir	#2	9-2	14-5	19-0	24-3	26-0	9-2	14-2	17-11	21-11	25-5
	Hem-Fir	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Southern Pine	SS	10-3	16-1	21-2	26-0	26-0	10-3	16-1	21-2	26-0	26-0
	Southern Pine	#1	<del>10-0</del> 9-10	<del>15-9</del> 15-6	<del>20-10</del> 20-5	26-0	26-0	<del>10-0</del> 9-10	<del>15-9</del> 15-6	<del>20-10</del> 19-10	<del>25-10</del> 23-2	26-0
	Southern Pine	#2	<del>9-10</del> 9-5	<del>15-6</del> 14-9	<del>20-5</del> 19-6	<del>26-0</del> 23-5	26-0	<del>9-10</del> 9-0	<del>15-4</del> 13-6	<del>19-5</del> 17-1	<del>23-2</del> 20-3	<del>26-0</del> 23-10
	Southern Pine	#3	<del>9-1</del> 8-0	<del>13-6</del> 11-9	<del>17-2</del> 14-10	<del>20-3</del> 18-0	<del>24-1</del> 21-4	<del>7-11</del> 6-11	<del>11-8</del> 10-2	<del>14-10</del> 12-10	<del>17-6</del> 15-7	<del>20-11</del> 18-6
	Spruce-Pine-Fir	SS	9-8	15-2	19-11	25-5	26-0	9-8	15-2	19-11	25-5	26-0
	Spruce-Pine-Fir	#1	9-5	14-9	19-6	24-10	26-0	9-5	14-4	18-2	22-3	25-9
	Spruce-Pine-Fir	#2	9-5	14-9	19-6	24-10	26-0	9-5	14-4	18-2	22-3	25-9
	Spruce-Pine-Fir	#3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
16	Douglas Fir-Larch	SS	9-6	14-11	19-7	25-0	26-0	9-6	14-11	19-7	24-9	26-0
	Douglas Fir-Larch	#1	9-1	14-4	18-11	23-9	26-0	9-1	13-3	16-10	20-7	23-10
	Douglas Fir-Larch	#2	8-11	14-1	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Douglas Fir-Larch	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Hem-Fir	SS	8-11	14-1	18-6	23-8	26-0	8-11	14-1	18-6	23-8	26-0
	Hem-Fir	#1	8-9	13-9	18-1	23-1	26-0	8-9	12-11	16-5	20-0	23-3
	Hem-Fir	#2	8-4	13-1	17-3	21-11	25-5	8-4	12-3	15-6	18-11	22-0
	Hem-Fir	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Southern Pine	SS	9-4	14-7	19-3	24-7	26-0	9-4	14-7	19-3	24-7	26-0
	Southern Pine	#1	<del>9-1</del> 8-11	<del>14-4</del> 14-1	<del>18-11</del> 18-6	<del>24-1</del> 23-2	26-0	<del>9-1</del> 8-11	<del>14-4</del> 13-7	<del>18-10</del> 17-2	<del>22-4</del> 20-1	<del>26-0</del> 23-10
	Southern Pine	#2	<del>8-11</del> 8-7	<del>14-1</del> 13-5	<del>18-6</del> 17-1	<del>23-2</del> 20-3	<del>26-0</del> 23-10	<del>8-11</del> 7-9	<del>13-0</del> 11-8	<del>16-10</del> 14-9	<del>20-1</del> 17-6	<del>23-7</del> 20-8
	Southern Pine	#3	<del>8-7</del> 7-11 6-11	<del>13-5</del> 11-8 10-2	<del>17-1</del> 14-10 12-10	<del>20-3</del> 17-6 15-7	<del>23-10</del> 20-11 18-6	<del>7-9</del> 6-10 6-0	<del>11-8</del> 10-1 8-10	<del>14-9</del> 12-10 11-2	<del>17-6</del> 15-2 13-6	<del>20-8</del> 18-1 16-0
	Spruce-Pine-Fir	SS	8-9	13-9	18-1	23-1	26-0	8-9	13-9	18-1	23-0	26-0
	Spruce-Pine-Fir	#1	8-7	13-5	17-9	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-Pine-Fir	#2	8-7	13-5	17-9	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-Pine-Fir	#3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10

(continued)

**TABLE 2308.10.3(2)—continued  
 RAFTER SPANS FOR COMMON LUMBER SPECIES  
 (Roof Live Load = 20 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)**

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	8-11	14-0	18-5	23-7	26-0	8-11	14-0	18-5	22-7	26-0
	Douglas Fir-Larch	#1	8-7	13-6	17-9	21-8	25-2	8-4	12-2	15-4	18-9	21-9
	Douglas Fir-Larch	#2	8-5	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Douglas Fir-Larch	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	SS	8-5	13-3	17-5	22-3	26-0	8-5	13-3	17-5	22-3	25-9
	Hem-Fir	#1	8-3	12-11	17-1	21-1	24-6	8-1	11-10	15-0	18-4	21-3
	Hem-Fir	#2	7-10	12-4	16-3	20-0	23-2	7-8	11-2	14-2	17-4	20-1
	Hem-Fir	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
	Southern Pine	SS	8-9	13-9	<del>18-1</del> 18-2	23-1	26-0	8-9	13-9	<del>18-1</del> 18-2	23-1	26-0
	Southern Pine	#1	<del>8-7</del> 8-5	<del>13-6</del> 13-3	<del>17-9</del> 17-5	<del>22-8</del> 21-2	Note b 25-2	<del>8-7</del> 8-4	<del>13-6</del> 12-4	<del>17-2</del> 15-8	<del>20-5</del> 18-4	<del>24-4</del> 21-9
	Southern Pine	#2	<del>8-5</del> 8-1	<del>13-3</del> 12-3	<del>17-5</del> 15-7	<del>21-2</del> 18-6	<del>24-10</del> 21-9	<del>8-4</del> 7-1	<del>11-11</del> 10-8	<del>15-4</del> 13-6	<del>18-4</del> 16-0	<del>21-6</del> 18-10
	Southern Pine	#3	<del>7-3</del> 6-4	<del>10-8</del> 9-4	<del>13-7</del> 11-9	<del>16-0</del> 14-3	<del>19-1</del> 16-10	<del>6-3</del> 5-6	<del>9-3</del> 8-1	<del>11-9</del> 10-2	<del>13-10</del> 12-4	<del>16-6</del> 14-7
	Spruce-Pine-Fir	SS	8-3	12-11	17-1	21-9	26-0	8-3	12-11	17-1	21-0	24-4
	Spruce-Pine-Fir	#1	8-1	12-8	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Spruce-Pine-Fir	#2	8-1	12-8	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20-4
	Spruce-Pine-Fir	#3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15-5
24	Douglas Fir-Larch	SS	8-3	13-0	17-2	21-10	26-0	8-3	13-0	16-7	20-3	23-5
	Douglas Fir-Larch	#1	8-0	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Douglas Fir-Larch	#2	7-10	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Douglas Fir-Larch	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9
	Hem-Fir	SS	7-10	12-3	16-2	20-8	25-1	7-10	12-3	16-2	19-10	23-0
	Hem-Fir	#1	7-8	12-0	15-6	18-11	21-11	7-3	10-7	13-5	16-4	19-0
	Hem-Fir	#2	7-3	11-5	14-8	17-10	20-9	6-10	10-0	12-8	15-6	17-11
	Hem-Fir	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9
	Southern Pine	SS	8-1	12-9	16-10	21-6	26-0	8-1	12-9	16-10	<del>21-6</del> 20-10	<del>26-0</del> 24-8
	Southern Pine	#1	<del>8-0</del> 7-10	<del>12-6</del> 12-3	<del>16-6</del> 16-2	<del>21-1</del> 18-11	<del>25-2</del> 22-6	<del>8-0</del> 7-5	<del>12-3</del> 11-1	<del>15-4</del> 14-0	<del>18-3</del> 16-5	<del>21-9</del> 19-6
	Southern Pine	#2	<del>7-10</del> 7-4	<del>12-3</del> 11-0	<del>15-10</del> 13-11	<del>18-11</del> 16-6	<del>22-2</del> 19-6	<del>7-5</del> 6-4	<del>10-8</del> 9-6	<del>13-9</del> 12-1	<del>16-5</del> 14-4	<del>19-3</del> 16-10
	Southern Pine	#3	<del>6-5</del> 5-8	<del>9-6</del> 8-4	<del>12-1</del> 10-6	<del>14-4</del> 12-9	<del>17-1</del> 15-1	<del>5-7</del> 4-11	<del>8-3</del> 7-3	<del>10-6</del> 9-1	<del>12-5</del> 11-0	<del>14-9</del> 13-1
	Spruce-Pine-Fir	SS	7-8	12-0	15-10	20-2	24-7	7-8	12-0	15-4	18-9	21-9
	Spruce-Pine-Fir	#1	7-6	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Spruce-Pine-Fir	#2	7-6	11-9	14-10	18-2	21-0	6-11	10-2	12-10	15-8	18-3
	Spruce-Pine-Fir	#3	6-1	8-10	11-3	13-8	15-11	5-3	7-8	9-9	11-10	13-9

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>.

**TABLE 2308.10.3(3)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 30 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	10-0	15-9	20-9	26-0	26-0	10-0	15-9	20-1	24-6	26-0
	Douglas Fir-Larch	#1	9-8	14-9	18-8	22-9	26-0	9-0	13-2	16-8	20-4	23-7
	Douglas Fir-Larch	#2	9-5	13-9	17-5	21-4	24-8	8-5	12-4	15-7	19-1	22-1
	Douglas Fir-Larch	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Hem-Fir	SS	9-6	14-10	19-7	25-0	26-0	9-6	14-10	19-7	24-1	26-0
	Hem-Fir	#1	9-3	14-4	18-2	22-2	25-9	8-9	12-10	16-3	19-10	23-0
	Hem-Fir	#2	8-10	13-7	17-2	21-0	24-4	8-4	12-2	15-4	18-9	21-9
	Hem-Fir	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Southern Pine	SS	9-10	15-6	20-5	26-0	26-0	9-10	15-6	20-5	<del>26-0</del> 25-4	26-0
	Southern Pine	#1	<del>9-8</del> 9-6	<del>15-2</del> 14-10	<del>20-0</del> 19-0	<del>24-9</del> 22-3	26-0	<del>9-8</del> 9-0	<del>14-10</del> 13-5	<del>18-8</del> 17-0	<del>22-2</del> 19-11	<del>26-0</del> 23-7
	Southern Pine	#2	<del>9-6</del> 8-7	<del>14-5</del> 12-11	<del>18-8</del> 16-4	<del>22-3</del> 19-5	<del>26-0</del> 22-10	<del>9-0</del> 7-8	<del>12-11</del> 11-7	<del>16-8</del> 14-8	<del>19-11</del> 17-4	<del>23-4</del> 20-5
	Southern Pine	#3	<del>7-7</del> 6-7	<del>11-2</del> 9-9	<del>14-3</del> 12-4	<del>16-10</del> 15-0	<del>20-0</del> 17-9	<del>6-9</del> 5-11	<del>10-0</del> 8-9	<del>12-9</del> 11-0	<del>15-1</del> 13-5	<del>17-11</del> 15-10
	Spruce-Pine-Fir	SS	9-3	14-7	19-2	24-6	26-0	9-3	14-7	18-8	22-9	26-0
	Spruce-Pine-Fir	#1	9-1	13-9	17-5	21-4	24-8	8-5	12-4	15-7	19-1	22-1
	Spruce-Pine-Fir	#2	9-1	13-9	17-5	21-4	24-8	8-5	12-4	15-7	19-1	22-1
	Spruce-Pine-Fir	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
16	Douglas Fir-Larch	SS	9-1	14-4	18-10	23-9	26-0	9-1	13-9	17-5	21-3	24-8
	Douglas Fir-Larch	#1	8-9	12-9	16-2	19-9	22-10	7-10	11-5	14-5	17-8	20-5
	Douglas Fir-Larch	#2	8-2	11-11	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Douglas Fir-Larch	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6
	Hem-Fir	SS	8-7	13-6	17-10	22-9	26-0	8-7	13-6	17-1	20-10	24-2
	Hem-Fir	#1	8-5	12-5	15-9	19-3	22-3	7-7	11-1	14-1	17-2	19-11
	Hem-Fir	#2	8-0	11-9	14-11	18-2	21-1	7-2	10-6	13-4	16-3	18-10
	Hem-Fir	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6
	Southern Pine	SS	8-11	14-1	18-6	23-8	26-0	8-11	14-1	<del>18-6</del> 18-5	<del>23-8</del> 21-11	<del>26-0</del> 25-11
	Southern Pine	#1	<del>8-9</del> 8-7	<del>13-9</del> 13-0	<del>18-1</del> 16-6	<del>21-5</del> 19-3	<del>25-7</del> 22-10	<del>8-8</del> 7-10	<del>12-10</del> 11-7	<del>16-2</del> 14-9	<del>19-2</del> 17-3	<del>22-10</del> 20-5
	Southern Pine	#2	<del>8-7</del> 7-6	<del>12-6</del> 11-2	<del>16-2</del> 14-2	<del>19-3</del> 16-10	<del>22-7</del> 19-10	<del>7-10</del> 6-8	<del>11-2</del> 10-0	<del>14-5</del> 12-8	<del>17-3</del> 15-1	<del>20-2</del> 17-9
	Southern Pine	#3	<del>6-7</del> 5-9	<del>9-8</del> 8-6	<del>12-4</del> 10-8	<del>14-7</del> 13-0	<del>17-4</del> 15-4	<del>5-10</del> 5-2	<del>8-8</del> 7-7	<del>11-0</del> 9-7	<del>13-0</del> 11-7	<del>15-6</del> 13-9
	Spruce-Pine-Fir	SS	8-5	13-3	17-5	22-1	25-7	8-5	12-9	16-2	19-9	22-10
	Spruce-Pine-Fir	#1	8-2	11-11	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Spruce-Pine-Fir	#2	8-2	11-11	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Spruce-Pine-Fir	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6

(continued)



**TABLE 2308.10.3(3)—continued  
 RAFTER SPANS FOR COMMON LUMBER SPECIES  
 (Ground Snow Load = 30 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)**

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	8-7	13-6	17-9	21-8	25-2	8-7	12-6	15-10	19-5	22-6
	Douglas Fir-Larch	#1	7-11	11-8	14-9	18-0	20-11	7-1	10-5	13-2	16-1	18-8
	Douglas Fir-Larch	#2	7-5	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6
	Douglas Fir-Larch	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2
	Hem-Fir	SS	8-1	12-9	16-9	21-4	24-8	8-1	12-4	15-7	19-1	22-1
	Hem-Fir	#1	7-9	11-4	14-4	17-7	20-4	6-11	10-2	12-10	15-8	18-2
	Hem-Fir	#2	7-4	10-9	13-7	16-7	19-3	6-7	9-7	12-2	14-10	17-3
	Hem-Fir	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2
	Southern Pine	SS	8-5	13-3	17-5	22-3	26-0	8-5	13-3	17-5	22-0	25-9
	Southern Pine	#1	8-3	13-0	16-6	19-7	23-4	7-11	11-9	14-9	17-6	20-11
	Southern Pine	#2	7-11	11-5	14-9	17-7	20-11	7-1	10-7	13-5	15-9	18-8
	Southern Pine	#3	6-10	10-2	12-11	15-4	18-1	6-1	9-2	11-7	13-9	16-2
	Southern Pine	#3	6-0	8-10	11-3	13-4	15-10	5-4	7-11	10-1	11-11	14-2
	Southern Pine	#3	5-3	7-9	9-9	11-10	14-0	4-8	6-11	8-9	10-7	12-6
	Spruce-Pine-Fir	SS	7-11	12-5	16-5	20-2	23-4	7-11	11-8	14-9	18-0	20-11
	Spruce-Pine-Fir	#1	7-5	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6
Spruce-Pine-Fir	#2	7-5	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6	
Spruce-Pine-Fir	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2	
24	Douglas Fir-Larch	SS	7-11	12-6	15-10	19-5	22-6	7-8	11-3	14-2	17-4	20-1
	Douglas Fir-Larch	#1	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Douglas Fir-Larch	#2	6-8	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7
	Douglas Fir-Larch	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10
	Hem-Fir	SS	7-6	11-10	15-7	19-1	22-1	7-6	11-0	13-11	17-0	19-9
	Hem-Fir	#1	6-11	10-2	12-10	15-8	18-2	6-2	9-1	11-6	14-0	16-3
	Hem-Fir	#2	6-7	9-7	12-2	14-10	17-3	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10
	Southern Pine	SS	7-10	12-3	16-2	20-8	25-1	7-10	12-3	16-2	19-8	23-0
	Southern Pine	#1	7-8	11-9	14-9	17-6	20-11	7-1	10-6	13-2	15-8	18-8
	Southern Pine	#2	7-1	10-7	13-5	15-9	18-8	6-4	9-6	12-0	14-1	16-8
	Southern Pine	#3	6-1	9-2	11-7	13-9	16-2	5-5	8-2	10-4	12-3	14-6
	Southern Pine	#3	5-4	7-11	10-1	11-11	14-2	4-9	7-1	9-0	10-8	12-8
	Southern Pine	#3	4-8	6-11	8-9	10-7	12-6	4-2	6-2	7-10	9-6	11-2
	Spruce-Pine-Fir	SS	7-4	11-7	14-9	18-0	20-11	7-1	10-5	13-2	16-1	18-8
	Spruce-Pine-Fir	#1	6-8	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7
Spruce-Pine-Fir	#2	6-8	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7	
Spruce-Pine-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>.

**TABLE 2308.10.3(4)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 50 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	8-5	13-3	17-6	22-4	26-0	8-5	13-3	17-0	20-9	24-10
	Douglas Fir-Larch	#1	8-2	12-0	15-3	18-7	21-7	7-7	11-2	14-1	17-3	20-0
	Douglas Fir-Larch	#2	7-8	11-3	14-3	17-5	20-2	7-1	10-5	13-2	16-1	18-8
	Douglas Fir-Larch	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Hem-Fir	SS	8-0	12-6	16-6	21-1	25-6	8-0	12-6	16-6	20-4	23-7
	Hem-Fir	#1	7-10	11-9	14-10	18-1	21-0	7-5	10-10	13-9	16-9	19-5
	Hem-Fir	#2	7-5	11-1	14-0	17-2	19-11	7-0	10-3	13-0	15-10	18-5
	Hem-Fir	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Southern Pine	SS	8-4	<del>13-0</del> 13-1	17-2	21-11	26-0	8-4	<del>13-0</del> 13-1	17-2	<del>21-11</del> 21-5	<del>26-0</del> 25-3
	Southern Pine	#1	<del>8-2</del> 8-0	<del>12-10</del> 12-3	<del>16-10</del> 15-6	<del>20-3</del> 18-2	<del>24-1</del> 21-7	<del>8-2</del> 7-7	<del>12-6</del> 11-4	<del>15-9</del> 14-5	<del>18-9</del> 16-10	<del>22-4</del> 20-0
	Southern Pine	#2	<del>8-0</del> 7-0	<del>11-9</del> 10-6	<del>15-3</del> 13-4	<del>18-2</del> 15-10	<del>21-3</del> 18-8	<del>7-7</del> 6-6	<del>10-11</del> 9-9	<del>14-1</del> 12-4	<del>16-10</del> 14-8	<del>19-9</del> 17-3
	Southern Pine	#3	<del>6-2</del> 5-5	<del>9-2</del> 8-0	<del>11-8</del> 10-1	<del>13-9</del> 12-3	<del>16-4</del> 14-6	<del>5-9</del> 5-0	<del>8-5</del> 7-5	<del>10-9</del> 9-4	<del>12-9</del> 11-4	<del>15-2</del> 13-5
	Spruce-Pine-Fir	SS	7-10	12-3	16-2	20-8	24-1	7-10	12-3	15-9	19-3	22-4
	Spruce-Pine-Fir	#1	7-8	11-3	14-3	17-5	20-2	7-1	10-5	13-2	16-1	18-8
	Spruce-Pine-Fir	#2	7-8	11-3	14-3	17-5	20-2	7-1	10-5	13-2	16-1	18-8
	Spruce-Pine-Fir	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
16	Douglas Fir-Larch	SS	7-8	12-1	15-10	19-5	22-6	7-8	11-7	14-8	17-11	20-10
	Douglas Fir-Larch	#1	7-1	10-5	13-2	16-1	18-8	6-7	9-8	12-2	14-11	17-3
	Douglas Fir-Larch	#2	6-8	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2
	Douglas Fir-Larch	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3
	Hem-Fir	SS	7-3	11-5	15-0	19-1	22-1	7-3	11-5	14-5	17-8	20-5
	Hem-Fir	#1	6-11	10-2	12-10	15-8	18-2	6-5	9-5	11-11	14-6	16-10
	Hem-Fir	#2	6-7	9-7	12-2	14-10	17-3	6-1	8-11	11-3	13-9	15-11
	Hem-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3
	Southern Pine	SS	7-6	11-10	15-7	19-11	<del>24-3</del> 23-7	7-6	11-10	15-7	<del>19-11</del> 18-6	<del>23-10</del> 21-10
	Southern Pine	#1	<del>7-5</del> 7-1	<del>11-7</del> 10-7	<del>14-9</del> 13-5	<del>17-6</del> 15-9	<del>20-11</del> 18-8	<del>7-4</del> 6-7	<del>10-10</del> 9-10	<del>13-8</del> 12-5	<del>16-2</del> 14-7	<del>19-4</del> 17-3
	Southern Pine	#2	<del>7-1</del> 6-1	<del>10-2</del> 9-2	<del>13-2</del> 11-7	<del>15-9</del> 13-9	<del>18-5</del> 16-2	<del>6-7</del> 5-8	<del>9-5</del> 8-5	<del>12-2</del> 10-9	<del>14-7</del> 12-9	<del>17-1</del> 15-0
	Southern Pine	#3	<del>5-4</del> 4-8	<del>7-11</del> 6-11	<del>10-1</del> 8-9	<del>11-11</del> 10-7	<del>14-2</del> 12-6	<del>4-11</del> 4-4	<del>7-4</del> 6-5	<del>9-4</del> 8-1	<del>11-0</del> 9-10	<del>13-1</del> 11-7
	Spruce-Pine-Fir	SS	7-1	11-2	14-8	18-0	20-11	7-1	10-9	13-8	16-8	19-4
	Spruce-Pine-Fir	#1	6-8	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2
	Spruce-Pine-Fir	#2	6-8	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2
	Spruce-Pine-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3

(continued)

**TABLE 2308.10.3(4)—continued**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 50 pounds per square foot, Ceiling Not Attached to Rafters, L/Δ = 180)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	7-3	11-4	14-6	17-8	20-6	7-3	10-7	13-5	16-5	19-0
	Douglas Fir-Larch	#1	6-6	9-6	12-0	14-8	17-1	6-0	8-10	11-2	13-7	15-9
	Douglas Fir-Larch	#2	6-1	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9
	Douglas Fir-Larch	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2
	Hem-Fir	SS	6-10	10-9	14-2	17-5	20-2	6-10	10-5	13-2	16-1	18-8
	Hem-Fir	#1	6-4	9-3	11-9	14-4	16-7	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	#2	6-0	8-9	11-1	13-7	15-9	5-7	8-1	10-3	12-7	14-7
	Hem-Fir	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2
	Southern Pine	SS	7-1	11-2	14-8	<del>18-9</del> 18-3	<del>22-10</del> 21-7	7-1	11-2	<del>14-8</del> 14-2	<del>18-7</del> 16-11	<del>21-9</del> 20-0
	Southern Pine	#1	<del>7-0</del> 6-6	<del>10-8</del> 9-8	<del>13-5</del> 12-3	<del>16-0</del> 14-4	<del>19-1</del> 17-1	<del>6-8</del> 6-0	<del>9-11</del> 9-0	<del>12-5</del> 11-4	<del>14-10</del> 13-4	<del>17-8</del> 15-9
	Southern Pine	#2	<del>6-6</del> 5-7	<del>9-4</del> 8-4	<del>12-0</del> 10-7	<del>14-4</del> 12-6	<del>16-10</del> 14-9	<del>6-0</del> 5-2	<del>8-8</del> 7-9	<del>11-2</del> 9-9	<del>13-4</del> 11-7	<del>15-7</del> 13-8
	Southern Pine	#3	<del>4-11</del> 4-3	<del>7-3</del> 6-4	<del>9-2</del> 8-0	<del>10-10</del> 9-8	<del>12-11</del> 11-5	<del>4-6</del> 4-0	<del>6-8</del> 5-10	<del>8-6</del> 7-4	<del>10-1</del> 8-11	<del>12-0</del> 10-7
	Spruce-Pine-Fir	SS	6-8	10-6	13-5	16-5	19-1	6-8	9-10	12-5	15-3	17-8
	Spruce-Pine-Fir	#1	6-1	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9
	Spruce-Pine-Fir	#2	6-1	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9
	Spruce-Pine-Fir	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2
24	Douglas Fir-Larch	SS	6-8	10-3	13-0	15-10	18-4	6-6	9-6	12-0	14-8	17-0
	Douglas Fir-Larch	#1	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Douglas Fir-Larch	#2	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2
	Douglas Fir-Larch	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0
	Hem-Fir	SS	6-4	9-11	12-9	15-7	18-0	6-4	9-4	11-9	14-5	16-8
	Hem-Fir	#1	5-8	8-3	10-6	12-10	14-10	5-3	7-8	9-9	11-10	13-9
	Hem-Fir	#2	5-4	7-10	9-11	12-1	14-1	4-11	7-3	9-2	11-3	13-0
	Hem-Fir	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0
	Southern Pine	SS	6-7	10-4	13-8	<del>17-5</del> 16-4	<del>21-0</del> 19-3	6-7	<del>10-4</del> 10-0	<del>13-8</del> 12-8	<del>16-7</del> 15-2	<del>19-5</del> 17-10
	Southern Pine	#1	<del>6-5</del> 5-10	<del>9-7</del> 8-8	<del>12-0</del> 11-0	<del>14-4</del> 12-10	<del>17-1</del> 15-3	<del>6-0</del> 5-5	<del>8-10</del> 8-0	<del>11-2</del> 10-2	<del>13-3</del> 11-11	<del>15-9</del> 14-1
	Southern Pine	#2	<del>5-10</del> 5-0	<del>8-4</del> 7-5	<del>10-9</del> 9-5	<del>12-10</del> 11-3	<del>15-1</del> 13-2	<del>5-5</del> 4-7	<del>7-9</del> 6-11	<del>10-0</del> 8-9	<del>11-11</del> 10-5	<del>13-11</del> 12-3
	Southern Pine	#3	<del>4-4</del> 3-10	<del>6-5</del> 5-8	<del>8-3</del> 7-1	<del>9-9</del> 8-8	<del>11-7</del> 10-3	<del>4-1</del> 3-6	<del>6-0</del> 5-3	<del>7-7</del> 6-7	<del>9-0</del> 8-0	<del>10-8</del> 9-6
	Spruce-Pine-Fir	SS	6-2	9-6	12-0	14-8	17-1	6-0	8-10	11-2	13-7	15-9
	Spruce-Pine-Fir	#1	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2
	Spruce-Pine-Fir	#2	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2
	Spruce-Pine-Fir	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>.

**TABLE 2308.10.3(5)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 30 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	9-1	14-4	18-10	24-1	26-0	9-1	14-4	18-10	24-1	26-0
	Douglas Fir-Larch	#1	8-9	13-9	18-2	22-9	26-0	8-9	13-2	16-8	20-4	23-7
	Douglas Fir-Larch	#2	8-7	13-6	17-5	21-4	24-8	8-5	12-4	15-7	19-1	22-1
	Douglas Fir-Larch	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Hem-Fir	SS	8-7	13-6	17-10	22-9	26-0	8-7	13-6	17-10	22-9	26-0
	Hem-Fir	#1	8-5	13-3	17-5	22-2	25-9	8-5	12-10	16-3	19-10	23-0
	Hem-Fir	#2	8-0	12-7	16-7	21-0	24-4	8-0	12-2	15-4	18-9	21-9
	Hem-Fir	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Southern Pine	SS	8-11	14-1	18-6	23-8	26-0	8-11	14-1	18-6	23-8	26-0
	Southern Pine	#1	<del>8-9</del> 8-7	<del>13-9</del> 13-6	<del>18-2</del> 17-10	<del>23-2</del> 22-3	26-0	<del>8-9</del> 8-7	<del>13-9</del> 13-5	<del>18-2</del> 17-0	<del>22-2</del> 19-11	<del>26-0</del> 23-7
	Southern Pine	#2	<del>8-7</del> 8-3	<del>13-6</del> 12-11	<del>17-10</del> 16-4	<del>22-3</del> 19-5	<del>26-0</del> 22-10	<del>8-7</del> 7-8	<del>12-11</del> 11-7	<del>16-8</del> 14-8	<del>19-11</del> 17-4	<del>23-4</del> 20-5
	Southern Pine	#3	<del>7-7</del> 6-7	<del>11-2</del> 9-9	<del>14-3</del> 12-4	<del>16-10</del> 15-0	<del>20-0</del> 17-9	<del>6-9</del> 5-11	<del>10-0</del> 8-9	<del>12-9</del> 11-0	<del>15-1</del> 13-5	<del>17-11</del> 15-10
	Spruce-Pine-Fir	SS	8-5	13-3	17-5	22-3	26-0	8-5	13-3	17-5	22-3	26-0
	Spruce-Pine-Fir	#1	8-3	12-11	17-0	21-4	24-8	8-3	12-4	15-7	19-1	22-1
	Spruce-Pine-Fir	#2	8-3	12-11	17-0	21-4	24-8	8-3	12-4	15-7	19-1	22-1
	Spruce-Pine-Fir	#3	7-1	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
16	Douglas Fir-Larch	SS	8-3	13-0	17-2	21-10	26-0	8-3	13-0	17-2	21-3	24-8
	Douglas Fir-Larch	#1	8-0	12-6	16-2	19-9	22-10	7-10	11-5	14-5	17-8	20-5
	Douglas Fir-Larch	#2	7-10	11-11	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Douglas Fir-Larch	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6
	Hem-Fir	SS	7-10	12-3	16-2	20-8	25-1	7-10	12-3	16-2	20-8	24-2
	Hem-Fir	#1	7-8	12-0	15-9	19-3	22-3	7-7	11-1	14-1	17-2	19-11
	Hem-Fir	#2	7-3	11-5	14-11	18-2	21-1	7-2	10-6	13-4	16-3	18-10
	Hem-Fir	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6
	Southern Pine	SS	8-1	12-9	16-10	21-6	26-0	8-1	12-9	16-10	21-6	<del>26-0</del> 25-11
	Southern Pine	#1	<del>8-0</del> 7-10	<del>12-6</del> 12-3	<del>16-6</del> 16-2	<del>21-1</del> 19-3	<del>25-7</del> 22-10	<del>8-0</del> 7-10	<del>12-6</del> 11-7	<del>16-2</del> 14-9	<del>19-2</del> 17-3	<del>22-10</del> 20-5
	Southern Pine	#2	<del>7-10</del> 7-6	<del>12-3</del> 11-2	<del>16-2</del> 14-2	<del>19-3</del> 16-10	<del>22-7</del> 19-10	<del>7-10</del> 6-8	<del>11-2</del> 10-0	<del>14-5</del> 12-8	<del>17-3</del> 15-1	<del>20-2</del> 17-9
	Southern Pine	#3	<del>6-7</del> 5-9	<del>9-8</del> 8-6	<del>12-4</del> 10-8	<del>14-7</del> 13-0	<del>17-4</del> 15-4	<del>5-10</del> 5-2	<del>8-8</del> 7-7	<del>11-0</del> 9-7	<del>13-0</del> 11-7	<del>15-6</del> 13-9
	Spruce-Pine-Fir	SS	7-8	12-0	15-10	20-2	24-7	7-8	12-0	15-10	19-9	22-10
	Spruce-Pine-Fir	#1	7-6	11-9	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Spruce-Pine-Fir	#2	7-6	11-9	15-1	18-5	21-5	7-3	10-8	13-6	16-6	19-2
	Spruce-Pine-Fir	#3	6-2	9-0	11-5	13-11	16-2	5-6	8-1	10-3	12-6	14-6

(continued)

**TABLE 2308.10.3(5)—continued**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 30 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	7-9	12-3	16-1	20-7	25-0	7-9	12-3	15-10	19-5	22-6
	Douglas Fir-Larch	#1	7-6	11-8	14-9	18-0	20-11	7-1	10-5	13-2	16-1	18-8
	Douglas Fir-Larch	#2	7-4	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6
	Douglas Fir-Larch	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2
	Hem-Fir	SS	7-4	11-7	15-3	19-5	23-7	7-4	11-7	15-3	19-1	22-1
	Hem-Fir	#1	7-2	11-4	14-4	17-7	20-4	6-11	10-2	12-10	15-8	18-2
	Hem-Fir	#2	6-10	10-9	13-7	16-7	19-3	6-7	9-7	12-2	14-10	17-3
	Hem-Fir	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2
	Southern Pine	SS	7-8	12-0	15-10	20-2	24-7	7-8	12-0	15-10	<del>20-2</del> 20-0	<del>24-7</del> 23-7
	Southern Pine	#1	<del>7-6</del> 7-4	<del>11-9</del> 11-7	<del>15-6</del> 15-1	<del>19-7</del> 17-7	<del>23-4</del> 20-11	<del>7-6</del> 7-1	<del>11-9</del> 10-7	<del>14-9</del> 13-5	<del>17-6</del> 15-9	<del>20-11</del> 18-8
	Southern Pine	#2	<del>7-4</del> 6-10	<del>11-5</del> 10-2	<del>14-9</del> 12-11	<del>17-7</del> 15-4	<del>20-7</del> 18-1	<del>7-1</del> 6-1	<del>10-2</del> 9-2	<del>13-2</del> 11-7	<del>15-9</del> 13-9	<del>18-5</del> 16-2
	Southern Pine	#3	<del>6-0</del> 5-3	<del>8-10</del> 7-9	<del>11-3</del> 9-9	<del>13-4</del> 11-10	<del>15-10</del> 14-0	<del>5-4</del> 4-8	<del>7-11</del> 6-11	<del>10-1</del> 8-9	<del>11-11</del> 10-7	<del>14-2</del> 12-6
	Spruce-Pine-Fir	SS	7-2	11-4	14-11	19-0	23-1	7-2	11-4	14-9	18-0	20-11
	Spruce-Pine-Fir	#1	7-0	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6
	Spruce-Pine-Fir	#2	7-0	10-11	13-9	16-10	19-6	6-8	9-9	12-4	15-1	17-6
	Spruce-Pine-Fir	#3	5-7	8-3	10-5	12-9	14-9	5-0	7-4	9-4	11-5	13-2
24	Douglas Fir-Larch	SS	7-3	11-4	15-0	19-1	22-6	7-3	11-3	14-2	17-4	20-1
	Douglas Fir-Larch	#1	7-0	10-5	13-2	16-1	18-8	6-4	9-4	11-9	14-5	16-8
	Douglas Fir-Larch	#2	6-8	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7
	Douglas Fir-Larch	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10
	Hem-Fir	SS	6-10	10-9	14-2	18-0	21-11	6-10	10-9	13-11	17-0	19-9
	Hem-Fir	#1	6-8	10-2	12-10	15-8	18-2	6-2	9-1	11-6	14-0	16-3
	Hem-Fir	#2	6-4	9-7	12-2	14-10	17-3	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10
	Southern Pine	SS	7-1	11-2	14-8	18-9	22-10	7-1	11-2	14-8	<del>18-9</del> 17-11	<del>22-10</del> 21-2
	Southern Pine	#1	<del>7-0</del> 6-10	<del>10-11</del> 10-7	<del>14-5</del> 13-5	<del>17-6</del> 15-9	<del>20-11</del> 18-8	<del>7-0</del> 6-4	<del>10-6</del> 9-6	<del>13-2</del> 12-0	<del>15-8</del> 14-1	<del>18-8</del> 16-8
	Southern Pine	#2	<del>6-10</del> 6-1	<del>10-2</del> 9-2	<del>13-2</del> 11-7	<del>15-9</del> 13-9	<del>18-5</del> 16-2	<del>6-4</del> 5-5	<del>9-2</del> 8-2	<del>11-9</del> 10-4	<del>14-1</del> 12-3	<del>16-6</del> 14-6
	Southern Pine	#3	<del>5-4</del> 4-8	<del>7-11</del> 6-11	<del>10-1</del> 8-9	<del>11-11</del> 10-7	<del>14-2</del> 12-6	<del>4-9</del> 4-2	<del>7-1</del> 6-2	<del>9-0</del> 7-10	<del>10-8</del> 9-6	<del>12-8</del> 11-2
	Spruce-Pine-Fir	SS	6-8	10-6	13-10	17-8	20-11	6-8	10-5	13-2	16-1	18-8
	Spruce-Pine-Fir	#1	6-6	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7
	Spruce-Pine-Fir	#2	6-6	9-9	12-4	15-1	17-6	5-11	8-8	11-0	13-6	15-7
	Spruce-Pine-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-6	6-7	8-4	10-2	11-10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>.

**TABLE 2308.10.3(6)**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
 (Ground Snow Load = 50 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
12	Douglas Fir-Larch	SS	7-8	12-1	15-11	20-3	24-8	7-8	12-1	15-11	20-3	24-0
	Douglas Fir-Larch	#1	7-5	11-7	15-3	18-7	21-7	7-5	11-2	14-1	17-3	20-0
	Douglas Fir-Larch	#2	7-3	11-3	14-3	17-5	20-2	7-1	10-5	13-2	16-1	18-8
	Douglas Fir-Larch	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Hem-Fir	SS	7-3	11-5	15-0	19-2	23-4	7-3	11-5	15-0	19-2	23-4
	Hem-Fir	#1	7-1	11-2	14-8	18-1	21-0	7-1	10-10	13-9	16-9	19-5
	Hem-Fir	#2	6-9	10-8	14-0	17-2	19-11	6-9	10-3	13-0	15-10	18-5
	Hem-Fir	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Southern Pine	SS	7-6	11-0	15-7	19-11	24-3	7-6	11-10	15-7	19-11	24-3
	Southern Pine	#1	<del>7-5</del>	<del>11-7</del>	<del>15-4</del>	<del>19-7</del>	<del>23-9</del>	<del>7-5</del>	<del>11-7</del>	<del>15-4</del>	<del>18-9</del>	<del>22-4</del>
	Southern Pine	#1	<del>7-3</del>	<del>11-5</del>	<del>15-0</del>	<del>18-2</del>	<del>21-7</del>	<del>7-3</del>	<del>11-4</del>	<del>14-5</del>	<del>16-10</del>	<del>20-0</del>
	Southern Pine	#2	<del>7-3</del>	<del>11-5</del>	<del>15-0</del>	<del>18-2</del>	<del>21-3</del>	<del>7-3</del>	<del>10-11</del>	<del>14-1</del>	<del>16-10</del>	<del>19-9</del>
	Southern Pine	#2	<del>6-11</del>	<del>10-6</del>	<del>13-4</del>	<del>15-10</del>	<del>18-8</del>	<del>6-6</del>	<del>9-9</del>	<del>12-4</del>	<del>14-8</del>	<del>17-3</del>
	Southern Pine	#3	<del>6-2</del>	<del>9-2</del>	<del>11-8</del>	<del>13-9</del>	<del>16-4</del>	<del>5-9</del>	<del>8-5</del>	<del>10-9</del>	<del>12-9</del>	<del>15-2</del>
	Southern Pine	#3	<del>5-5</del>	<del>8-0</del>	<del>10-1</del>	<del>12-3</del>	<del>14-6</del>	<del>5-0</del>	<del>7-5</del>	<del>9-4</del>	<del>11-4</del>	<del>13-5</del>
	Spruce-Pine-Fir	SS	7-1	11-2	14-8	18-9	22-10	7-1	11-2	14-8	18-9	22-4
Spruce-Pine-Fir	#1	6-11	10-11	14-3	17-5	20-2	6-11	10-5	13-2	16-1	18-8	
Spruce-Pine-Fir	#2	6-11	10-11	14-3	17-5	20-2	6-11	10-5	13-2	16-1	18-8	
Spruce-Pine-Fir	#3	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1	
16	Douglas Fir-Larch	SS	7-0	11-0	14-5	18-5	22-5	7-0	11-0	14-5	17-11	20-10
	Douglas Fir-Larch	#1	6-9	10-5	13-2	16-1	18-8	6-7	9-8	12-2	14-11	17-3
	Douglas Fir-Larch	#2	6-7	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2
	Douglas Fir-Larch	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3
	Hem-Fir	SS	6-7	10-4	13-8	17-5	21-2	6-7	10-4	13-8	17-5	20-5
	Hem-Fir	#1	6-5	10-2	12-10	15-8	18-2	6-5	9-5	11-11	14-6	16-10
	Hem-Fir	#2	6-2	9-7	12-2	14-10	17-3	6-1	8-11	11-3	13-9	15-11
	Hem-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3
	Southern Pine	SS	6-10	10-9	14-2	18-1	22-0	6-10	10-9	14-2	18-1	<del>22-0</del> <del>21-10</del>
	Southern Pine	#1	<del>6-9</del>	<del>10-7</del>	<del>13-11</del>	<del>17-6</del>	<del>20-11</del>	<del>6-9</del>	<del>10-7</del>	<del>13-8</del>	<del>16-2</del>	<del>19-4</del>
	Southern Pine	#1	<del>6-7</del>	<del>10-4</del>	<del>13-5</del>	<del>15-9</del>	<del>18-8</del>	<del>6-7</del>	<del>9-10</del>	<del>12-5</del>	<del>14-7</del>	<del>17-3</del>
	Southern Pine	#2	<del>6-7</del>	<del>10-2</del>	<del>13-2</del>	<del>15-9</del>	<del>18-5</del>	<del>6-7</del>	<del>9-5</del>	<del>12-2</del>	<del>14-7</del>	<del>17-1</del>
	Southern Pine	#2	<del>6-1</del>	<del>9-2</del>	<del>11-7</del>	<del>13-9</del>	<del>16-2</del>	<del>5-8</del>	<del>8-5</del>	<del>10-9</del>	<del>12-9</del>	<del>15-0</del>
	Southern Pine	#3	<del>5-4</del>	<del>7-11</del>	<del>10-1</del>	<del>11-11</del>	<del>14-2</del>	<del>4-11</del>	<del>7-4</del>	<del>9-4</del>	<del>11-0</del>	<del>13-1</del>
	Southern Pine	#3	<del>4-8</del>	<del>6-11</del>	<del>8-9</del>	<del>10-7</del>	<del>12-6</del>	<del>4-4</del>	<del>6-5</del>	<del>8-1</del>	<del>9-10</del>	<del>11-7</del>
	Spruce-Pine-Fir	SS	6-5	10-2	13-4	17-0	20-9	6-5	10-2	13-4	16-8	19-4
Spruce-Pine-Fir	#1	6-4	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2	
Spruce-Pine-Fir	#2	6-4	9-9	12-4	15-1	17-6	6-2	9-0	11-5	13-11	16-2	
Spruce-Pine-Fir	#3	5-0	7-4	9-4	11-5	13-2	4-8	6-10	8-8	10-6	12-3	

(continued)

**TABLE 2308.10.3(6)—continued**  
**RAFTER SPANS FOR COMMON LUMBER SPECIES**  
**(Ground Snow Load = 50 pounds per square foot, Ceiling Attached to Rafters, L/Δ = 240)**

RAFTER SPACING (inches)	SPECIES AND GRADE		DEAD LOAD = 10 pounds per square foot					DEAD LOAD = 20 pounds per square foot				
			2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12
			Maximum rafter spans									
			(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)	(ft. - in.)
19.2	Douglas Fir-Larch	SS	6-7	10-4	13-7	17-4	20-6	6-7	10-4	13-5	16-5	19-0
	Douglas Fir-Larch	#1	6-4	9-6	12-0	14-8	17-1	6-0	8-10	11-2	13-7	15-9
	Douglas Fir-Larch	#2	6-1	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9
	Douglas Fir-Larch	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2
	Hem-Fir	SS	6-2	9-9	12-10	16-5	19-11	6-2	9-9	12-10	16-1	18-8
	Hem-Fir	#1	6-1	9-3	11-9	14-4	16-7	5-10	8-7	10-10	13-3	15-5
	Hem-Fir	#2	5-9	8-9	11-1	13-7	15-9	5-7	8-1	10-3	12-7	14-7
	Hem-Fir	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2
	Southern Pine	SS	6-5	10-2	13-4	17-0	20-9	6-5	10-2	13-4	17-0	20-9
	Southern Pine	#1	6-4	9-11	13-1	16-0	19-1	6-4	9-11	12-5	16-11	20-0
	Southern Pine	#2	6-2	9-8	12-3	14-4	17-1	6-0	9-0	11-4	14-10	17-8
	Southern Pine	#3	6-2	9-4	12-0	14-4	16-10	6-0	8-8	11-2	13-4	15-7
	Southern Pine	#3	5-7	8-4	10-7	12-6	14-9	5-2	7-9	9-9	11-7	13-8
	Southern Pine	#3	4-11	7-3	9-2	10-10	12-11	4-6	6-8	8-6	10-1	12-0
	Southern Pine	#3	4-3	6-4	8-0	9-8	11-5	4-0	5-10	7-4	8-11	10-7
	Spruce-Pine-Fir	SS	6-1	9-6	12-7	16-0	19-1	6-1	9-6	12-5	15-3	17-8
Spruce-Pine-Fir	#1	5-11	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9	
Spruce-Pine-Fir	#2	5-11	8-11	11-3	13-9	15-11	5-7	8-3	10-5	12-9	14-9	
Spruce-Pine-Fir	#3	4-7	6-9	8-6	10-5	12-1	4-3	6-3	7-11	9-7	11-2	
24	Douglas Fir-Larch	SS	6-1	9-7	12-7	15-10	18-4	6-1	9-6	12-0	14-8	17-0
	Douglas Fir-Larch	#1	5-10	8-6	10-9	13-2	15-3	5-5	7-10	10-0	12-2	14-1
	Douglas Fir-Larch	#2	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2
	Douglas Fir-Larch	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0
	Hem-Fir	SS	5-9	9-1	11-11	15-12	18-0	5-9	9-1	11-9	14-5	16-8
	Hem-Fir	#1	5-8	8-3	10-6	12-10	14-10	5-3	7-8	9-9	11-10	13-9
	Hem-Fir	#2	5-4	7-10	9-11	12-1	14-1	4-11	7-3	9-2	11-3	13-0
	Hem-Fir	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0
	Southern Pine	SS	6-0	9-5	12-5	15-10	19-3	6-0	9-5	12-5	15-10	19-3
	Southern Pine	#1	5-10	9-3	12-0	14-4	17-1	5-10	8-10	11-2	13-3	15-9
	Southern Pine	#2	5-9	8-8	11-0	12-10	15-3	5-5	8-0	10-2	11-11	14-1
	Southern Pine	#3	5-9	8-4	10-9	12-10	15-1	5-5	7-9	10-0	11-11	13-11
	Southern Pine	#3	5-0	7-5	9-5	11-3	13-2	4-7	6-11	8-9	10-5	12-3
	Southern Pine	#3	4-4	6-5	8-3	9-9	11-7	4-1	6-0	7-7	9-0	10-8
	Southern Pine	#3	3-10	5-8	7-1	8-8	10-3	3-6	5-3	6-7	8-0	9-6
	Spruce-Pine-Fir	SS	5-8	8-10	11-8	14-8	17-1	5-8	8-10	11-2	13-7	15-9
Spruce-Pine-Fir	#1	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2	
Spruce-Pine-Fir	#2	5-5	7-11	10-1	12-4	14-3	5-0	7-4	9-4	11-5	13-2	
Spruce-Pine-Fir	#3	4-1	6-0	7-7	9-4	10-9	3-10	5-7	7-1	8-7	10-0	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 47.9 N/m<sup>2</sup>