

SPAN TABLE

FLOOR JOIST SPANS

Species or Group	Grade*	Span (feet and inches)											
		<i>Italic Bold Print</i> indicates spans controlled by deflection											
		2 x 6			2 x 8			2 x 10			2 x 12		
		12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc
Douglas Fir-Larch	1	10-11	9-11	8-8	14-5	13-1	11-0	18-5	16-5	13-5	22-0	19-1	15-7
	2	10-9	9-9	8-1	14-2	12-7	10-3	17-9	15-5	12-7	20-7	17-10	14-7
	3	8-8	7-6	6-2	11-10	9-6	7-9	13-5	11-8	9-6	15-7	13-6	11-10
Douglas Fir-South	1	<i>10-0</i>	9-1	7-11	13-2	12-0	10-5	16-10	15-3	12-9	20-6	18-1	14-9
	2	9-9	8-10	7-9	12-10	11-8	10-0	16-5	14-11	12-2	19-11	17-4	14-2
	3	8-6	7-4	6-0	10-9	9-3	7-7	13-1	11-4	9-3	15-2	13-2	10-9
Hem-Fir	1	10-6	9-6	8-4	13-10	12-7	10-9	17-8	16-0	13-1	21-6	18-7	15-2
	2	10-0	9-1	7-11	13-2	12-0	10-2	16-10	15-2	12-5	20-4	17-7	14-4
	3	8-8	7-6	6-2	11-0	9-6	7-9	13-5	11-8	9-6	15-7	13-6	11-0
Southern Pine	1 Dense	11-2	10-2	8-10	14-8	13-4	11-8	18-9	17-0	14-11	22-10	20-9	18-1
	1	10-11	9-11	8-8	14-5	13-1	11-5	18-5	16-9	14-7	22-5	20-4	17-5
	1 Non-Dense	10-9	9-9	8-6	14-2	12-10	11-3	18-0	16-5	14-0	21-11	19-11	16-8
	2 Dense	10-11	9-11	8-8	14-5	13-1	11-5	18-5	16-9	14-0	22-5	20-4	16-8
	2	10-9	9-9	8-6	14-2	12-10	11-0	18-0	16-1	13-2	21-9	18-10	15-4
	2 Non-Dense	10-3	9-4	8-2	13-6	12-3	10-6	17-3	15-3	12-6	20-11	18-1	14-9
3	9-4	8-1	6-7	11-11	10-3	8-5	14-0	12-2	9-11	16-8	14-5	11-10	
Southern Pine (mixed)	1	10-6	9-6	8-4	13-10	12-7	11-0	17-8	16-0	13-1	21-6	18-10	15-5
	2	10-3	9-4	8-2	13-6	12-3	10-3	17-3	15-1	12-4	20-7	17-10	14-7
	3	8-10	7-8	6-3	11-3	9-9	7-11	13-1	11-4	9-3	15-7	13-6	11-0
Spruce-Pine-Fir	1	10-3	9-4	8-1	13-6	12-3	10-3	17-3	15-5	12-7	20-7	17-10	14-7
	2	10-3	9-4	8-1	13-6	12-3	10-3	17-3	15-5	12-7	20-7	17-10	14-7
	3	8-8	7-6	6-2	11-10	9-6	7-9	13-5	11-8	9-6	15-7	13-6	11-0
Spruce-Pine-Fire (south)	1	9-9	8-10	7-9	12-10	11-8	10-2	16-5	14-11	12-5	19-11	17-7	14-4
	2	9-6	8-7	7-6	12-6	11-4	9-6	15-11	14-3	11-8	19-1	16-6	13-6
	3	8-0	6-11	5-8	10-2	8-9	7-2	12-5	10-9	8-9	14-4	12-5	10-2
Western Woods	1	9-6	8-7	7-0	12-6	10-10	8-10	15-4	13-3	10-10	17-9	15-5	12-7
	2	9-2	8-4	7-0	12-1	10-10	8-10	15-4	13-3	10-10	17-9	15-5	12-7
	3	7-6	6-6	5-4	9-6	8-3	6-9	11-8	10-1	8-3	13-6	11-8	9-6

SPAN TABLE

CEILING JOIST SPANS

Species or Group	Grade*	Span (feet and inches)											
		<i>Italic Bold Print</i> indicates spans controlled by deflection											
		2 x 6			2 x 8			2 x 10			2 x 12		
		12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc
Douglas Fir-Larch	1	15-9	13-9	11-2	20-1	17-5	14-2	24-6	21-3	17-4	28-5	24-8	20-1
	2	14-10	12-10	10-6	18-9	16-3	13-3	22-11	19-10	16-3	26-7	23-0	18-10
	3	11-2	9-8	7-11	14-2	12-4	10-0	17-4	15-0	12-3	20-1	17-5	14-3
Douglas Fir-South	1	14-5	13-0	10-8	19-0	16-6	13-6	23-3	20-2	16-5	27-0	23-4	19-1
	2	14-1	12-6	10-2	18-3	15-9	12-11	22-3	19-3	15-9	25-10	22-4	18-3
	3	10-11	9-6	7-9	13-10	12-0	9-9	16-11	14-8	11-11	19-7	17-0	13-10
Hem-Fir	1	15-2	13-5	10-11	19-7	16-11	13-10	23-11	20-8	16-11	27-9	24-0	19-7
	2	14-5	12-8	10-4	18-6	16-0	13-1	22-7	19-7	16-0	26-3	22-8	18-6
	3	11-2	9-8	7-11	14-2	12-4	10-0	17-4	15-0	12-3	20-1	17-5	14-3
Southern Pine	1 Dense	16-1	14-7	12-9	21-2	19-3	16-8	27-1	24-5	19-11	32-11	28-7	23-4
	1	15-9	14-4	12-6	20-10	18-11	15-11	26-6	23-2	18-11	31-10	27-6	22-6
	1 Non-Dense	15-6	14-1	12-0	20-5	18-5	15-1	25-7	22-2	18-1	30-6	26-5	21-7
	2 Dense	15-9	14-4	11-10	20-10	18-9	15-4	25-7	22-2	18-1	30-6	26-5	21-7
	2	15-6	13-6	11-0	20-1	17-5	14-2	24-0	20-9	17-0	28-1	24-4	19-10
	2 Non-Dense	14-9	12-11	10-7	19-3	16-8	13-7	22-9	19-9	16-1	27-0	23-4	19-1
3	12-1	10-5	8-6	15-4	13-3	10-10	18-1	15-8	12-10	21-7	18-8	15-3	
Southern Pine (mixed)	1	15-2	13-9	11-2	19-11	17-5	14-2	23-11	20-9	16-11	28-1	24-4	19-10
	2	14-9	12-11	10-7	18-9	16-3	13-3	22-6	19-6	15-11	26-7	23-0	18-10
	3	11-5	9-11	8-1	14-6	12-7	10-3	16-11	14-8	12-0	20-1	17-5	14-3
Spruce-Pine-Fir	1	14-9	12-10	10-6	18-9	16-3	13-3	22-11	19-10	16-3	26-7	23-0	18-10
	2	14-9	12-10	10-6	18-9	16-3	13-3	22-11	19-10	16-3	26-7	23-0	18-10
	3	11-2	9-8	7-11	14-2	12-4	10-0	17-4	15-0	12-3	20-1	17-5	14-3
Spruce-Pine-Fire (south)	1	14-1	12-8	10-4	18-6	16-0	13-1	22-7	19-7	16-0	26-3	22-8	18-6
	2	13-8	11-11	9-8	17-5	15-1	12-4	21-3	18-5	15-0	24-8	21-4	17-5
	3	10-4	8-11	7-4	13-1	11-4	9-3	16-0	13-10	11-4	18-6	16-1	13-1
Western Woods	1	12-9	11-1	9-0	16-2	14-0	11-5	19-9	17-1	14-0	22-11	19-10	16-3
	2	12-9	11-1	9-0	16-2	14-0	11-5	19-9	17-1	14-0	22-11	19-10	16-3
	3	9-8	8-5	6-10	12-4	10-8	8-8	15-0	13-0	10-7	17-5	15-1	12-4

SPAN TABLE

LOW SLOPE RAFTER SPANS – PITCH 3 IN 12 OR LESS – NO FINISHED CEILING

Species or Group	Grade*	Span (feet and inches)											
		<i>Italic Bold Print</i> indicates spans controlled by deflection											
		2 x 6			2 x 8			2 x 10			2 x 12		
		12”oc	16”oc	24”oc	12”oc	16”oc	24”oc	12”oc	16”oc	24”oc	12”oc	16”oc	24”oc
Douglas Fir-Larch	1	<i>15-9</i>	<i>14-4</i>	<i>12-6</i>	<i>20-10</i>	<i>18-11</i>	15-10	<i>26-6</i>	23-9	19-5	31-10	27-6	22-6
	2	<i>15-6</i>	<i>14-1</i>	11-9	<i>20-5</i>	18-2	14-10	25-8	22-3	18-2	29-9	25-9	21-0
	3	12-6	10-10	8-10	15-10	13-9	11-3	19-5	16-9	13-8	22-6	19-6	15-11
Douglas Fir-South	1	<i>14-5</i>	<i>13-1</i>	<i>11-5</i>	<i>19-0</i>	<i>17-3</i>	15-1	<i>24-3</i>	<i>22-1</i>	18-5	<i>29-6</i>	26-1	21-4
	2	<i>14-1</i>	<i>12-9</i>	<i>11-2</i>	<i>18-6</i>	<i>16-10</i>	14-5	<i>23-8</i>	<i>21-6</i>	17-7	<i>28-9</i>	25-0	20-5
	3	12-3	10-7	8-8	15-6	13-5	10-11	18-11	16-4	13-4	21-11	19-0	15-6
Hem-Fir	1	<i>15-2</i>	<i>13-9</i>	<i>12-0</i>	<i>19-11</i>	<i>18-2</i>	15-6	<i>25-5</i>	<i>23-2</i>	18-11	<i>30-11</i>	26-10	21-11
	2	<i>14-5</i>	<i>13-1</i>	<i>11-5</i>	<i>19-0</i>	<i>17-3</i>	14-8	<i>24-3</i>	21-11	17-10	29-4	25-5	20-9
	3	12-6	10-10	8-10	15-10	13-9	11-3	19-5	16-9	13-8	22-6	19-6	15-11
Southern Pine	1 Dense	<i>16-1</i>	<i>14-7</i>	<i>12-9</i>	<i>21-2</i>	<i>19-3</i>	<i>16-10</i>	<i>27-1</i>	<i>24-7</i>	<i>21-6</i>	<i>32-11</i>	<i>29-11</i>	<i>26-1</i>
	1	<i>15-9</i>	<i>14-4</i>	<i>12-6</i>	<i>20-10</i>	<i>18-11</i>	<i>16-6</i>	<i>26-6</i>	<i>24-1</i>	<i>21-1</i>	<i>32-3</i>	<i>29-4</i>	25-2
	1 Non-Dense	<i>15-6</i>	<i>14-1</i>	<i>12-3</i>	<i>20-5</i>	<i>18-6</i>	<i>16-2</i>	<i>26-0</i>	<i>23-8</i>	20-3	<i>31-8</i>	<i>28-9</i>	24-1
	2 Dense	<i>15-9</i>	<i>14-4</i>	<i>12-6</i>	<i>20-10</i>	<i>18-11</i>	<i>16-6</i>	<i>26-6</i>	<i>24-1</i>	20-3	<i>32-3</i>	<i>29-4</i>	24-1
	2	<i>15-6</i>	<i>14-1</i>	<i>12-3</i>	<i>20-5</i>	<i>18-6</i>	15-10	<i>26-0</i>	23-2	18-11	31-5	27-2	22-2
	2 Non-Dense	14-9	<i>13-5</i>	<i>11-9</i>	<i>19-6</i>	<i>17-9</i>	15-2	<i>24-10</i>	22-1	18-0	30-2	26-1	21-4
Southern Pine (mixed)	1	<i>15-2</i>	<i>13-9</i>	<i>12-0</i>	<i>19-11</i>	<i>18-2</i>	<i>15-10</i>	<i>25-5</i>	<i>23-2</i>	18-11	<i>30-11</i>	27-2	22-2
	2	<i>14-9</i>	<i>13-5</i>	<i>11-9</i>	<i>19-6</i>	<i>17-9</i>	14-10	<i>24-10</i>	21-9	17-9	29-9	25-9	21-0
	3	12-9	11-1	9-0	16-2	14-0	11-5	18-11	16-5	13-5	22-6	19-6	15-11
Spruce-Pine-Fir	1	<i>14-9</i>	<i>13-5</i>	<i>11-9</i>	<i>19-6</i>	<i>17-9</i>	<i>14-10</i>	<i>24-10</i>	22-3	<i>18-2</i>	29-9	25-9	21-0
	2	<i>14-9</i>	<i>13-5</i>	<i>11-9</i>	<i>19-6</i>	<i>17-9</i>	<i>14-10</i>	<i>24-10</i>	22-3	<i>18-2</i>	29-9	25-9	21-0
	3	12-6	10-10	8-10	15-10	13-9	11-3	19-5	16-9	13-8	22-6	19-6	15-11
Spruce-Pine-Fire (south)	1	<i>14-1</i>	<i>12-9</i>	<i>11-2</i>	<i>18-6</i>	<i>16-10</i>	14-8	<i>23-8</i>	<i>21-6</i>	17-10	<i>28-9</i>	25-5	20-9
	2	<i>13-8</i>	<i>12-5</i>	<i>10-10</i>	<i>18-0</i>	<i>16-4</i>	13-9	<i>22-11</i>	20-7	16-9	27-6	23-10	19-6
	3	11-7	10-0	8-2	14-8	12-8	10-4	17-10	15-6	12-8	20-9	17-11	14-8
Western Woods	1	<i>13-8</i>	12-4	10-1	<i>18-0</i>	15-8	12-10	22-1	19-2	15-8	25-8	22-2	18-1
	2	<i>13-3</i>	<i>12-0</i>	10-1	<i>17-5</i>	15-8	12-10	22-1	19-2	15-8	25-8	22-2	18-1
	3	10-10	9-5	7-8	13-9	11-11	9-9	16-9	14-6	11-10	19-6	16-10	13-9

SPAN TABLE

HIGH SLOPE RAFTER SPANS WITH HEAVY ROOF COVERING AND NO FINISHED CEILING

Species or Group	Grade*	Span (feet and inches)											
		<i>Italic Bold Print</i> indicates spans controlled by deflection											
		2 x 6			2 x 8			2 x 10			2 x 12		
		12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc	12"oc	16"oc	24"oc
Douglas Fir-Larch	1	16-5	14-3	11-7	20-9	18-0	14-8	25-5	22-0	17-11	29-5	25-6	20-10
	2	15-4	13-3	10-10	19-5	16-10	13-9	23-9	20-7	16-9	27-6	23-10	19-6
	3	11-7	10-1	8-2	14-8	12-9	10-5	17-11	15-7	12-8	20-10	18-0	14-9
Douglas Fir-South	1	15-7	13-6	11-0	19-9	17-1	13-11	24-1	20-10	17-0	27-11	24-2	19-9
	2	14-11	12-11	10-6	18-10	16-4	13-4	23-1	20-0	16-4	26-9	23-2	18-11
	3	11-4	9-10	8-0	14-4	12-5	10-2	17-6	15-2	12-4	20-3	17-7	14-4
Hem-Fir	1	16-0	13-10	11-4	20-3	17-6	14-4	24-9	21-5	17-6	28-8	24-10	20-3
	2	15-2	13-1	10-8	19-2	16-7	13-7	23-5	20-3	16-7	27-2	23-6	19-2
	3	11-7	10-1	8-2	14-8	12-9	10-5	17-11	15-7	12-8	20-10	18-0	14-9
Southern Pine	1 Dense	17-8	16-1	13-6	23-4	21-1	17-3	29-2	25-3	20-7	34-2	29-7	24-2
	1	17-4	15-9	13-1	22-11	20-1	16-5	27-7	23-11	19-6	32-11	28-6	23-3
	1 Non-Dense	17-0	15-3	12-6	22-0	19-1	15-7	26-6	23-0	18-9	31-7	27-4	22-4
	2 Dense	17-4	15-0	12-3	22-5	19-5	15-10	26-6	23-0	18-9	31-7	27-4	22-4
	2	16-1	13-11	11-5	20-9	18-0	14-8	24-10	21-6	17-6	29-1	25-2	20-7
	2 Non-Dense	15-5	13-4	10-11	19-11	17-3	14-1	23-7	20-5	16-8	27-11	24-2	19-9
3	12-6	10-10	8-10	15-10	13-9	11-3	18-9	16-3	13-3	22-4	19-4	15-9	
Southern Pine (mixed)	1	16-5	14-3	11-7	20-9	18-0	14-8	24-10	21-6	17-6	29-1	25-2	20-7
	2	15-5	13-4	10-11	19-5	16-10	13-9	23-3	20-2	16-6	27-6	23-10	19-6
	3	11-10	10-3	8-4	15-0	13-0	10-7	17-6	15-2	12-5	20-10	18-0	14-9
Spruce-Pine-Fir	1	15-4	13-3	10-10	19-5	16-10	13-9	23-9	20-7	16-9	27-6	23-10	19-6
	2	15-4	13-3	10-10	19-5	16-10	13-9	23-9	20-7	16-9	27-6	23-10	19-6
	3	11-7	10-1	8-2	14-8	12-9	10-5	17-11	15-7	12-8	20-10	18-0	14-9
Spruce-Pine-Fire (south)	1	15-2	13-1	10-8	19-2	16-7	13-7	23-5	20-3	16-7	27-2	23-6	19-2
	2	14-3	12-4	10-1	18-0	15-7	12-9	22-0	19-0	15-7	25-6	22-1	18-0
	3	10-8	9-3	7-7	13-7	11-9	9-7	16-7	14-4	11-8	19-2	16-7	13-7
Western Woods	1	13-3	11-5	9-4	16-9	14-6	11-10	20-6	17-9	14-6	23-9	20-7	16-9
	2	13-3	11-5	9-4	16-9	14-6	11-10	20-6	17-9	14-6	23-9	20-7	16-9
	3	10-1	8-8	7-1	12-9	11-0	9-0	15-7	13-6	11-0	18-0	15-7	12-9

SPAN TABLE

ALLOWABLE SPANS FOR BUILT-UP WOOD CENTER GIRDERS AND FOOTING SIZES FOR GIRDER SUPPORT COLUMNS

Width of Structure (feet)	Girder Size (inches)	ONE STORY		TWO STORY		THREE STORY	
		Maximum Span (feet-in.)	Footing Size (inches)	Maximum Span (feet-in.)	Footing Size (inches)	Maximum Span (feet-in.)	Footing Size (inches)
24	3-2x8	6-7	17x17*	4-11	20x20	4-1	22x22
	4-2x8	7-8	19x19*	5-8	21x21	4-9	24x24
	3-2x10	8-5	20x20*	6-3	23x23	5-3	25x25
	4-2x10	9-9	21x21	7-3	24x24	6-1	27x27
	3-2x12	10-3	22x22	7-8	25x25	6-4	27x27
	4-2x12	11-10	23x23	8-10	27x27	7-4	29x29
26	3-2x8	6-4	17x17*	4-9	20x20	3-11	22x22
	4-2x8	7-4	18x18*	5-6	22x22	4-7	24x24
	3-2x10	8-1	19x19	6-1	23x23	5-0	25x25
	4-2x10	9-4	21x21	7-0	24x24	5-10	27x27
	3-2x12	9-10	21x21	7-4	25x25	6-1	28x28
	4-2x12	11-5	23x23	8-6	27x27	7-1	30x30
28	3-2x8	6-2	17x17*	4-7	21x21	3-10	23x23
	4-2x8	7-1	18x18*	5-3	22x22	4-5	24x24
	3-2x10	7-10	19x19	5-10	23x23	4-10	26x26
	4-2x10	9-0	20x20	6-9	25x25	5-7	28x28
	3-2x12	9-6	21x21	7-1	26x26	5-11	28x28
	4-2x12	11-0	22x22	8-2	28x28	6-10	30x30
32	3-2x8	5-9	16x16*	4-3	21x21	3-7	24x24
	4-2x8	6-7	17x17	4-11	23x23	4-1	25x25
	3-2x10	7-4	18x18	5-5	24x24	4-6	27x27
	4-2x10	8-5	20x20	6-3	26x26	5-3	28x28
	3-2x12	8-11	20x20	6-8	27x27	5-6	29x29
	4-2x12	10-3	22x22	7-8	29x29	6-4	31x31

For **SI**: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1psf = 0.0479kN/m², 1 psi = 6.895 kPa.

Notes:

1. Values shown are for a clear span trussed roof, a load bearing center wall on the first floor in 2-story construction, and a load bearing center wall on the first and second floors in a 3-story construction.
2. Spans based on allowable bending moment $F_b=1000$ pounds per square inch (psi) for repetitive members. See Table 502.3.1c.
3. Footing size based on 2000 psf soil-bearing capacity; footing thickness shall be one-half (min.) the width of the footing.
4. 4x4 posts may be used at these (*) locations, 6x6 posts, or 4x4 posts or 3-inch diameter steel columns with bearing plates or equivalent area, are acceptable in all locations.