



**2013 ADDENDUM**  
to  
**ANSI/AF&PA WFCM-2001**  
**WOOD FRAME CONSTRUCTION MANUAL FOR ONE- AND TWO-FAMILY DWELLINGS**  
(All printed and electronic versions prior to June 2013)

**Effective June 1, 2013, the following tables in the 2001 Wood-Frame Construction Manual (WFCM) are revised to reflect changes to all grades of 2x4, 2x6, 2x8, 2x10, and 2x12 Southern Pine. These tables supersede tables published in the AWC May 2013 and May 2012 Addendum. In conjunction with this amendment to the 2001 WFCM, it is strongly advised that the 2012 NDS Supplement be used as the source for obtaining design values in general, and that the 2001 WFCM Supplement no longer be used in that regard.**

2001 WFCM Table	Page Reference	Description	Action
Tables 3.18A and B	177 and 178	Floor joist spans for common lumber species.	<u>Replace</u> with revised Tables 3.18A and B as shown in this Attachment.
Tables 3.20A and A-3.20A	180, 181, 244, and 245	Maximum exterior stud lengths for common lumber species resisting interior zone wind loads. ( <i>Fully sheathed with a minimum sheathing material</i> )	<u>Replace</u> with revised Tables 3.20A and A-3.20A, respectively, as shown in this Attachment.
Tables 3.20B and A-3.20B	182, 183, 246, and 247	Maximum exterior stud lengths for common lumber species resisting interior zone wind loads. ( <i>Fully sheathed with a minimum of 3/8" wood structural panels</i> )	<u>Replace</u> with revised Tables 3.20B and A-3.20B, respectively, as shown in this Attachment.
Tables 3.22A through 3.22E	186 to 190	Header spans for exterior walls resisting gravity loads.	Revise Footnote 1 as follows: Tabulated spans are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and $E$ from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u> For #3 Grade <del>lumber Hem-Fir, Douglas Fir-Larch, or Spruce-Pine-Fir</del> , tabulated spans shall be multiplied by 0.75 <u>and, for #3 Grade Southern Pine, tabulated spans shall be multiplied by 0.70.</u>
Table 3.23A and A-3.23A	192, and 249	Header spans for exterior walls resisting (out-of-plane) wind loads.	Revise Footnote 4 as follows: Tabulated values are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and $E$ from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u>
Table 3.23B and A-3.23B	193, and 250	Header spans for non-loadbearing exterior walls and window sill plates resisting (out-of-plane) wind loads.	Revise Footnote 4 as follows: Tabulated values are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and $E$ from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be</u>

			<u>multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u>
Tables 3.24A and B	195 and 196	Header spans for interior walls resisting gravity loads.	Revise Footnote 1 as follows: Tabulated spans are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and E from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u> For #3 Grade <del>lumber</del> Hem-Fir, Douglas Fir-Larch, or Spruce-Pine-Fir, tabulated spans shall be multiplied by 0.75 and, for <u>#3 Grade Southern Pine, tabulated spans shall be multiplied by 0.70.</u>
Tables 3.25A and B	198 and 199	Ceiling joist spans for common lumber species.	<u>Replace</u> with revised Tables 3.25A and B as shown in this Attachment.
Tables 3.26A through H	200 to 207	Rafter spans for common lumber species.	<u>Replace</u> with revised Tables 3.26A through H as shown in this Attachment.
Table 3.28	210	Hip and valley beam sizes.	Revise Footnote 1 as follows: Tabulated values are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and E from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u>
Tables 3.29A through D	211 to 214	Ridge beam spans.	Revise Footnote 1 as follows: Tabulated values are based on #2 Grade Hem-Fir, and are applicable to species with equal or greater $F_b$ and E from the <u>NDS Supplement</u> (i.e., Douglas Fir-Larch, <del>Southern Pine</del> , or Spruce-Pine-Fir). <u>Where #2 Grade Southern Pine is used, tabulated spans shall be multiplied by 0.93 or, alternatively, #1 or higher grade of Southern Pine shall be required.</u>

**Table 3.18A Floor Joist Spans for Common Lumber Species**

(Residential Sleeping Areas, Live Load = 30 psf, L/Δ = 360)

Joist Spacing	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 in.	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 - 4	11 - 8	14 - 9	18 - 0	20 - 11
	Douglas Fir-Larch #3	9 - 11	12 - 7	15 - 5	17 - 10	8 - 11	11 - 3	13 - 9	16 - 0
	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 - 3	18 - 9	21 - 9
	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	11 - 10	15 - 7	19 - 10	24 - 2	11 - 10	15 - 7	18 - 7	22 - 0
	Southern Pine #2	11 - 3	14 - 11	18 - 1	21 - 4	10 - 9	13 - 8	16 - 2	19 - 1
	Southern Pine #3	9 - 2	11 - 6	14 - 0	16 - 6	8 - 2	10 - 3	12 - 6	14 - 9
	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 in.	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	21 - 4	10 - 8	13 - 6	16 - 5	19 - 1
	Douglas Fir-Larch #2	10 - 9	14 - 2	17 - 5	20 - 3	10 - 1	12 - 9	15 - 7	18 - 1
	Douglas Fir-Larch #3	8 - 7	10 - 11	13 - 4	15 - 5	7 - 8	9 - 9	11 - 11	13 - 10
	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 - 1	10 - 6	13 - 4	16 - 3	18 - 10
	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	10 - 9	14 - 2	18 - 0	21 - 4	10 - 9	13 - 9	16 - 1	19 - 1
	Southern Pine #2	10 - 3	13 - 3	15 - 8	18 - 6	9 - 4	11 - 10	14 - 0	16 - 6
	Southern Pine #3	7 - 11	10 - 0	12 - 1	14 - 4	7 - 1	8 - 11	10 - 10	12 - 10
	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 in.	Douglas Fir-Larch SS	10 - 8	14 - 1	18 - 0	21 - 10	10 - 8	14 - 1	18 - 0	21 - 4
	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	13 - 0	15 - 11	18 - 6	9 - 3	11 - 8	14 - 3	16 - 6
	Douglas Fir-Larch #3	7 - 10	10 - 0	12 - 2	14 - 1	7 - 0	8 - 11	10 - 11	12 - 7
	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 - 7	19 - 3	9 - 7	12 - 2	14 - 10	17 - 2
	Hem-Fir #2	9 - 5	12 - 5	15 - 6	17 - 11	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
	Southern Pine SS	10 - 6	13 - 10	17 - 8	21 - 6	10 - 6	13 - 10	17 - 8	21 - 6
	Southern Pine #1	10 - 1	13 - 4	16 - 5	19 - 6	9 - 11	12 - 7	14 - 8	17 - 5
	Southern Pine #2	9 - 6	12 - 1	14 - 4	16 - 10	8 - 6	10 - 10	12 - 10	15 - 1
	Southern Pine #3	7 - 3	9 - 1	11 - 0	13 - 1	6 - 5	8 - 2	9 - 10	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 in.	Douglas Fir-Larch SS	9 - 11	13 - 1	16 - 8	20 - 3	9 - 11	13 - 1	16 - 5	19 - 1
	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 - 3	11 - 8	14 - 3	16 - 6	8 - 3	10 - 5	12 - 9	14 - 9
	Douglas Fir-Larch #3	7 - 0	8 - 11	10 - 11	12 - 7	6 - 3	8 - 0	9 - 9	11 - 3
	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 - 1	14 - 10	17 - 2	8 - 7	10 - 10	13 - 3	15 - 5
	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 - 8
	Southern Pine #1	9 - 4	12 - 4	14 - 8	17 - 5	8 - 10	11 - 3	13 - 1	15 - 7
	Southern Pine #2	8 - 6	10 - 10	12 - 10	15 - 1	7 - 7	9 - 8	11 - 5	13 - 6
	Southern Pine #3	6 - 5	8 - 2	9 - 10	11 - 8	5 - 9	7 - 3	8 - 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	9 - 0	11 - 6	14 - 1	16 - 3	8 - 1	10 - 3	12 - 7	14 - 7
	Spruce-Pine Fir #2	9 - 0	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

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

**Table 3.18B Floor Joist Spans for Common Lumber Species**

(Residential Living Areas, Live Load = 40 psf, L/Δ = 360)

Joist Spacing	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 in.	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	18 - 0	20 - 11	10 - 8	13 - 6	16 - 5	19 - 1
	Douglas Fir-Larch #3	8 - 11	11 - 3	13 - 9	16 - 0	8 - 1	10 - 3	12 - 7	14 - 7
	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	17 - 1	19 - 10
	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	10 - 9	14 - 2	18 - 0	21 - 11	10 - 9	14 - 2	16 - 11	20 - 1
	Southern Pine #2	10 - 3	13 - 6	16 - 2	19 - 1	9 - 10	12 - 6	14 - 9	17 - 5
	Southern Pine #3	8 - 2	10 - 3	12 - 6	14 - 9	7 - 5	9 - 5	11 - 5	13 - 6
	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 in.	Douglas Fir-Larch SS	10 - 4	13 - 7	17 - 4	21 - 1	10 - 4	13 - 7	17 - 4	21 - 1
	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 - 9	15 - 7	18 - 1	9 - 3	11 - 8	14 - 3	16 - 6
	Douglas Fir-Larch #3	7 - 8	9 - 9	11 - 11	13 - 10	7 - 0	8 - 11	10 - 11	12 - 7
	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 - 10	9 - 6	12 - 2	14 - 10	17 - 2
	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	9 - 9	12 - 10	16 - 1	19 - 1	9 - 9	12 - 7	14 - 8	17 - 5
	Southern Pine #2	9 - 4	11 - 10	14 - 0	16 - 6	8 - 6	10 - 10	12 - 10	15 - 1
	Southern Pine #3	7 - 1	8 - 11	10 - 10	12 - 10	6 - 5	8 - 2	9 - 10	11 - 8
	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 in.	Douglas Fir-Larch SS	9 - 8	12 - 10	16 - 4	19 - 10	9 - 8	12 - 10	16 - 4	19 - 6
	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 - 2	11 - 8	14 - 3	16 - 6	8 - 5	10 - 8	13 - 0	15 - 1
	Douglas Fir-Larch #3	7 - 0	8 - 11	10 - 11	12 - 7	6 - 5	8 - 2	9 - 11	11 - 6
	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 - 10	17 - 2	8 - 9	11 - 1	13 - 6	15 - 8
	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	9 - 2	12 - 1	14 - 8	17 - 5	9 - 0	11 - 5	13 - 5	15 - 11
	Southern Pine #2	8 - 6	10 - 10	12 - 10	15 - 1	7 - 9	9 - 10	11 - 8	13 - 9
	Southern Pine #3	6 - 5	8 - 2	9 - 10	11 - 8	5 - 11	7 - 5	9 - 0	10 - 8
	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
24 in.	Douglas Fir-Larch SS	9 - 0	11 - 11	15 - 2	18 - 5	9 - 0	11 - 11	15 - 0	17 - 5
	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 - 3	10 - 5	12 - 9	14 - 9	7 - 6	9 - 6	11 - 8	13 - 6
	Douglas Fir-Larch #3	6 - 3	8 - 0	9 - 9	11 - 3	5 - 9	7 - 3	8 - 11	10 - 4
	Hem-Fir SS	8 - 6	11 - 3	14 - 4	17 - 5	8 - 6	11 - 3	14 - 4	16 - 10
	Hem-Fir #1	8 - 4	10 - 10	13 - 3	15 - 5	7 - 10	9 - 11	12 - 1	14 - 0
	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	18 - 0
	Southern Pine #1	8 - 6	11 - 3	13 - 1	15 - 7	8 - 1	10 - 3	12 - 0	14 - 3
	Southern Pine #2	7 - 7	9 - 8	11 - 5	13 - 6	7 - 0	8 - 10	10 - 5	12 - 4
	Southern Pine #3	5 - 9	7 - 3	8 - 10	10 - 5	5 - 3	6 - 8	8 - 1	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

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

**Table 3.20A Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure B**

(Fully Sheathed with a Minimum Sheathing Material)<sup>a</sup>

Stud Spacing (in.)	Species	Grade	85			90			100			110		
			2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8
Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>														
12	Douglas Fir-Larch	SS	17 - 4	†	†	16 - 7	†	†	15 - 5	†	†	14 - 5	†	†
	Douglas Fir-Larch	#1	16 - 8	†	†	16 - 0	†	†	14 - 10	†	†	13 - 11	†	†
	Douglas Fir-Larch	#2	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Douglas Fir-Larch	#3/Stud	15 - 3	†	†	14 - 4	†	†	12 - 10	19 - 3	†	11 - 7	17 - 5	†
	Douglas Fir-Larch	Standard	12 - 11	-	-	12 - 1	-	-	10 - 10	-	-	9 - 9	-	-
	Hem-Fir	SS	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Hem-Fir	#1	15 - 11	†	†	15 - 4	†	†	14 - 3	†	†	13 - 4	†	†
	Hem-Fir	#2	15 - 2	†	†	14 - 7	†	†	13 - 6	†	†	12 - 8	†	†
	Hem-Fir	#3/Stud	14 - 9	†	†	14 - 0	†	†	12 - 6	18 - 9	†	11 - 3	17 - 0	†
	Hem-Fir	Standard	12 - 7	-	-	11 - 10	-	-	10 - 7	-	-	9 - 7	-	-
	Southern Pine	SS	17 - 0	†	†	16 - 4	†	†	15 - 2	†	†	14 - 2	†	†
	Southern Pine	#1	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Southern Pine	#2	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†
	Southern Pine	#3	13 - 9	†	†	12 - 11	19 - 8	†	11 - 7	17 - 7	†	10 - 5	15 - 10	†
	Southern Pine	Stud	13 - 9	†	†	12 - 11	19 - 8	†	11 - 7	17 - 7	†	10 - 5	15 - 10	†
	Southern Pine	Standard	11 - 8	-	-	10 - 11	-	-	9 - 9	-	-	8 - 10	-	-
	Spruce-Pine-Fir	SS	15 - 11	†	†	15 - 4	†	†	14 - 3	†	†	13 - 4	†	†
	Spruce-Pine-Fir	#1	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†
	Spruce-Pine-Fir	#2	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†
	Spruce-Pine-Fir	#3/Stud	14 - 9	†	†	14 - 0	†	†	12 - 6	18 - 9	†	11 - 3	17 - 0	†
Spruce-Pine-Fir	Standard	12 - 7	-	-	11 - 10	-	-	10 - 7	-	-	9 - 7	-	-	
16	Douglas Fir-Larch	SS	15 - 8	†	†	15 - 0	†	†	14 - 0	†	†	13 - 1	†	†
	Douglas Fir-Larch	#1	15 - 1	†	†	14 - 5	†	†	13 - 5	†	†	12 - 7	†	†
	Douglas Fir-Larch	#2	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Douglas Fir-Larch	#3/Stud	13 - 1	19 - 8	†	12 - 4	18 - 6	†	11 - 0	16 - 6	†	9 - 11	14 - 11	19 - 3
	Douglas Fir-Larch	Standard	11 - 1	-	-	10 - 5	-	-	9 - 3	-	-	8 - 5	-	-
	Hem-Fir	SS	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Hem-Fir	#1	14 - 5	†	†	13 - 10	†	†	12 - 10	†	†	12 - 0	19 - 4	†
	Hem-Fir	#2	13 - 8	†	†	13 - 2	†	†	12 - 3	19 - 8	†	11 - 5	18 - 5	†
	Hem-Fir	#3/Stud	12 - 9	19 - 2	†	12 - 0	18 - 0	†	10 - 8	16 - 1	†	9 - 8	14 - 6	18 - 9
	Hem-Fir	Standard	10 - 9	-	-	10 - 2	-	-	9 - 1	-	-	8 - 2	-	-
	Southern Pine	SS	15 - 4	†	†	14 - 9	†	†	13 - 8	†	†	12 - 10	†	†
	Southern Pine	#1	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Southern Pine	#2	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 4	†
	Southern Pine	#3	11 - 10	17 - 11	†	11 - 1	16 - 10	†	9 - 11	15 - 1	19 - 4	9 - 0	13 - 7	17 - 5
	Southern Pine	Stud	11 - 10	17 - 11	†	11 - 1	16 - 10	†	9 - 11	15 - 1	19 - 4	9 - 0	13 - 7	17 - 5
	Southern Pine	Standard	10 - 0	-	-	9 - 5	-	-	8 - 5	-	-	-	-	-
	Spruce-Pine-Fir	SS	14 - 5	†	†	13 - 10	†	†	12 - 10	†	†	12 - 0	19 - 4	†
	Spruce-Pine-Fir	#1	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 10	†
	Spruce-Pine-Fir	#2	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 10	†
	Spruce-Pine-Fir	#3/Stud	12 - 9	19 - 2	†	12 - 0	18 - 0	†	10 - 8	16 - 1	†	9 - 8	14 - 6	18 - 9
Spruce-Pine-Fir	Standard	10 - 9	-	-	10 - 2	-	-	9 - 1	-	-	8 - 2	-	-	
24	Douglas Fir-Larch	SS	13 - 7	†	†	13 - 1	†	†	12 - 1	19 - 6	†	11 - 4	18 - 3	†
	Douglas Fir-Larch	#1	13 - 1	†	†	12 - 7	†	†	11 - 8	18 - 9	†	10 - 11	17 - 0	†
	Douglas Fir-Larch	#2	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	17 - 9	†	10 - 8	16 - 0	†
	Douglas Fir-Larch	#3/Stud	10 - 6	15 - 10	†	9 - 11	14 - 11	19 - 2	8 - 10	13 - 3	17 - 1	8 - 0	12 - 0	15 - 5
	Douglas Fir-Larch	Standard	8 - 11	-	-	8 - 4	-	-	-	-	-	-	-	-
	Hem-Fir	SS	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	18 - 4	†	10 - 8	17 - 2	†
	Hem-Fir	#1	12 - 6	†	†	12 - 0	19 - 3	†	11 - 2	17 - 11	†	10 - 5	16 - 9	†
	Hem-Fir	#2	11 - 11	19 - 1	†	11 - 5	18 - 4	†	10 - 7	17 - 1	†	9 - 11	15 - 6	†
	Hem-Fir	#3/Stud	10 - 3	15 - 5	19 - 10	9 - 8	14 - 6	18 - 8	8 - 7	12 - 11	16 - 8	7 - 9	11 - 8	15 - 1
	Hem-Fir	Standard	8 - 8	-	-	8 - 2	-	-	-	-	-	-	-	-
	Southern Pine	SS	13 - 4	†	†	12 - 10	†	†	11 - 11	19 - 1	†	11 - 2	17 - 10	†
	Southern Pine	#1	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	18 - 4	†	10 - 8	17 - 2	†
	Southern Pine	#2	12 - 2	19 - 5	†	11 - 9	18 - 3	†	10 - 7	16 - 4	†	9 - 7	14 - 9	19 - 0
	Southern Pine	#3	9 - 6	14 - 5	18 - 6	8 - 11	13 - 7	17 - 5	8 - 0	12 - 1	15 - 6	-	10 - 11	14 - 0
	Southern Pine	Stud	9 - 6	14 - 5	18 - 6	8 - 11	13 - 7	17 - 5	8 - 0	12 - 1	15 - 6	-	10 - 11	14 - 0
	Southern Pine	Standard	8 - 0	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	12 - 6	†	†	12 - 0	19 - 3	†	11 - 2	17 - 11	†	10 - 5	16 - 9	†
	Spruce-Pine-Fir	#1	12 - 2	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	15 - 9	†
	Spruce-Pine-Fir	#2	12 - 2	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	15 - 9	†
	Spruce-Pine-Fir	#3/Stud	10 - 3	15 - 5	19 - 10	9 - 8	14 - 6	18 - 8	8 - 7	12 - 11	16 - 8	7 - 9	11 - 8	15 - 1
Spruce-Pine-Fir	Standard	8 - 8	-	-	8 - 2	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table 3.20A are based on interior zone loads and assume that all studs are sheathed with minimum sheathing material. Studs within 4 feet of corners shall be sheathed on the exterior with a minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material, or stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements. The additional bending capacity provided by the wood structural panels or reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

See Footnote 1.

**Table 3.20A Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure B (Cont.)**

(Fully Sheathed with a Minimum Sheathing Material)<sup>a</sup>

Three Second Gust Wind Speed (mph)			120			130			140			150		
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>											
12	Douglas Fir-Larch	SS	13 - 7	†	†	12 - 10	†	†	12 - 2	19 - 7	†	11 - 8	18 - 8	†
	Douglas Fir-Larch	#1	13 - 1	†	†	12 - 4	19 - 10	†	11 - 9	18 - 10	†	11 - 2	17 - 8	†
	Douglas Fir-Larch	#2	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	17 - 11	†	11 - 0	16 - 8	†
	Douglas Fir-Larch	#3/Stud	10 - 7	15 - 10	†	9 - 8	14 - 7	18 - 9	8 - 11	13 - 5	17 - 4	8 - 4	12 - 6	16 - 1
	Douglas Fir-Larch	Standard	8 - 11	-	-	8 - 2	-	-	-	-	-	-	-	-
	Hem-Fir	SS	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	18 - 6	†	11 - 0	17 - 7	†
	Hem-Fir	#1	12 - 6	†	†	11 - 10	19 - 0	†	11 - 3	18 - 1	†	10 - 9	17 - 2	†
	Hem-Fir	#2	11 - 11	19 - 1	†	11 - 3	18 - 1	†	10 - 8	17 - 2	†	10 - 2	16 - 2	†
	Hem-Fir	#3/Stud	10 - 3	15 - 5	19 - 11	9 - 5	14 - 2	18 - 3	8 - 9	13 - 1	16 - 10	8 - 1	12 - 2	15 - 8
	Hem-Fir	Standard	8 - 8	-	-	8 - 0	-	-	-	-	-	-	-	-
	Southern Pine	SS	13 - 4	†	†	12 - 7	†	†	12 - 0	19 - 3	†	11 - 5	18 - 4	†
	Southern Pine	#1	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	18 - 6	†	11 - 0	17 - 7	†
	Southern Pine	#2	12 - 3	19 - 6	†	11 - 7	17 - 10	†	10 - 8	16 - 6	†	9 - 11	15 - 4	19 - 9
	Southern Pine	#3	9 - 6	14 - 5	18 - 6	8 - 9	13 - 3	17 - 0	8 - 1	12 - 3	15 - 8	-	11 - 5	14 - 7
	Southern Pine	Stud	9 - 6	14 - 5	18 - 6	8 - 9	13 - 3	17 - 0	8 - 1	12 - 3	15 - 8	-	11 - 5	14 - 7
	Southern Pine	Standard	8 - 1	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	12 - 6	†	†	11 - 10	19 - 0	†	11 - 3	18 - 1	†	10 - 9	17 - 2	†
	Spruce-Pine-Fir	#1	12 - 3	19 - 7	†	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 6	16 - 5	†
	Spruce-Pine-Fir	#2	12 - 3	19 - 7	†	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 6	16 - 5	†
	Spruce-Pine-Fir	#3/Stud	10 - 3	15 - 5	19 - 11	9 - 5	14 - 2	18 - 3	8 - 9	13 - 1	16 - 10	8 - 1	12 - 2	15 - 8
Spruce-Pine-Fir	Standard	8 - 8	-	-	8 - 0	-	-	-	-	-	-	-	-	
16	Douglas Fir-Larch	SS	12 - 4	19 - 9	†	11 - 8	18 - 8	†	11 - 1	17 - 9	†	10 - 6	16 - 11	†
	Douglas Fir-Larch	#1	11 - 10	19 - 0	†	11 - 2	17 - 7	†	10 - 7	16 - 3	†	10 - 1	15 - 1	19 - 6
	Douglas Fir-Larch	#2	11 - 7	18 - 2	†	11 - 0	16 - 8	†	10 - 3	15 - 4	19 - 10	9 - 6	14 - 3	18 - 5
	Douglas Fir-Larch	#3/Stud	9 - 0	13 - 7	17 - 6	8 - 4	12 - 6	16 - 1	-	11 - 6	14 - 10	-	10 - 8	13 - 9
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Hem-Fir	SS	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 5	16 - 8	†	9 - 11	15 - 11	†
	Hem-Fir	#1	11 - 4	18 - 2	†	10 - 9	17 - 2	†	10 - 2	16 - 1	†	9 - 8	14 - 11	19 - 2
	Hem-Fir	#2	10 - 9	17 - 4	†	10 - 2	16 - 2	†	9 - 8	14 - 11	19 - 3	9 - 3	13 - 10	17 - 10
	Hem-Fir	#3/Stud	8 - 10	13 - 3	17 - 1	8 - 1	12 - 2	15 - 8	-	11 - 3	14 - 5	-	10 - 5	13 - 5
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Southern Pine	SS	12 - 1	19 - 5	†	11 - 5	18 - 4	†	10 - 10	17 - 5	†	10 - 4	16 - 7	†
	Southern Pine	#1	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 5	16 - 7	†	9 - 11	15 - 5	19 - 11
	Southern Pine	#2	10 - 10	16 - 8	†	9 - 11	15 - 4	19 - 9	9 - 2	14 - 2	18 - 3	8 - 6	13 - 1	16 - 11
	Southern Pine	#3	8 - 2	12 - 5	15 - 10	-	11 - 4	14 - 7	-	10 - 6	13 - 5	-	9 - 9	12 - 6
	Southern Pine	Stud	8 - 2	12 - 5	15 - 10	-	11 - 4	14 - 7	-	10 - 6	13 - 5	-	9 - 9	12 - 6
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	11 - 4	18 - 2	†	10 - 9	17 - 2	†	10 - 2	16 - 4	†	9 - 8	15 - 7	†
	Spruce-Pine-Fir	#1	11 - 1	17 - 9	†	10 - 5	16 - 5	†	9 - 11	15 - 2	19 - 6	9 - 4	14 - 1	18 - 1
	Spruce-Pine-Fir	#2	11 - 1	17 - 9	†	10 - 5	16 - 5	†	9 - 11	15 - 2	19 - 6	9 - 4	14 - 1	18 - 1
	Spruce-Pine-Fir	#3/Stud	8 - 10	13 - 3	17 - 1	8 - 1	12 - 2	15 - 8	-	11 - 3	14 - 5	-	10 - 5	13 - 5
Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
24	Douglas Fir-Larch	SS	10 - 8	17 - 2	†	10 - 1	16 - 2	†	9 - 7	15 - 5	†	9 - 2	14 - 8	19 - 6
	Douglas Fir-Larch	#1	10 - 3	15 - 5	19 - 11	9 - 5	14 - 2	18 - 3	8 - 9	13 - 1	16 - 10	8 - 1	12 - 2	15 - 8
	Douglas Fir-Larch	#2	9 - 9	14 - 7	18 - 10	8 - 11	13 - 5	17 - 3	8 - 3	12 - 4	15 - 11	-	11 - 6	14 - 10
	Douglas Fir-Larch	#3/Stud	-	10 - 11	14 - 1	-	10 - 0	12 - 11	-	9 - 3	11 - 11	-	8 - 7	11 - 1
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Hem-Fir	SS	10 - 1	16 - 2	†	9 - 6	15 - 3	†	9 - 0	14 - 6	19 - 4	8 - 7	13 - 10	18 - 5
	Hem-Fir	#1	9 - 10	15 - 3	19 - 8	9 - 4	14 - 0	18 - 0	8 - 7	12 - 11	16 - 8	8 - 0	12 - 0	15 - 5
	Hem-Fir	#2	9 - 4	14 - 2	18 - 3	8 - 8	13 - 0	16 - 9	8 - 0	12 - 0	15 - 5	-	11 - 2	14 - 4
	Hem-Fir	#3/Stud	-	10 - 8	13 - 9	-	9 - 9	12 - 7	-	9 - 0	11 - 8	-	8 - 5	10 - 10
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Southern Pine	SS	10 - 6	16 - 10	†	9 - 11	15 - 11	†	9 - 5	15 - 1	†	9 - 0	14 - 5	19 - 3
	Southern Pine	#1	10 - 1	15 - 9	†	9 - 5	14 - 6	18 - 8	8 - 9	13 - 4	17 - 3	8 - 1	12 - 5	16 - 0
	Southern Pine	#2	8 - 8	13 - 5	17 - 4	8 - 0	12 - 4	15 - 11	-	11 - 4	14 - 8	-	10 - 7	13 - 7
	Southern Pine	#3	-	10 - 0	12 - 9	-	9 - 2	11 - 9	-	8 - 6	10 - 10	-	7 - 10	10 - 1
	Southern Pine	Stud	-	10 - 0	12 - 9	-	9 - 2	11 - 9	-	8 - 6	10 - 10	-	7 - 10	10 - 1
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	9 - 10	15 - 9	†	9 - 4	14 - 11	19 - 11	8 - 10	14 - 2	18 - 11	8 - 5	13 - 6	17 - 8
	Spruce-Pine-Fir	#1	9 - 7	14 - 4	18 - 6	8 - 9	13 - 2	17 - 0	8 - 1	12 - 2	15 - 8	-	11 - 4	14 - 7
	Spruce-Pine-Fir	#2	9 - 7	14 - 4	18 - 6	8 - 9	13 - 2	17 - 0	8 - 1	12 - 2	15 - 8	-	11 - 4	14 - 7
	Spruce-Pine-Fir	#3/Stud	-	10 - 8	13 - 9	-	9 - 9	12 - 7	-	9 - 0	11 - 8	-	8 - 5	10 - 10
Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table 3.20A are based on interior zone loads and assume that all studs are sheathed with minimum sheathing material. Studs within 4 feet of corners shall be sheathed on the exterior with a minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material, or stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements. The additional bending capacity provided by the wood structural panels or reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

See Footnote 1.

**Table A-3.20A Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure C**

(Fully Sheathed with a Minimum Sheathing Material)<sup>a</sup>

Three Second Gust Wind Speed (mph)			85			90			100			110			
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>												
12	Douglas Fir-Larch	SS	15 - 5	†	†	14 - 10	†	†	13 - 9	†	†	12 - 11	†	†	
	Douglas Fir-Larch	#1	14 - 10	†	†	14 - 3	†	†	13 - 3	†	†	12 - 5	19 - 11	†	
	Douglas Fir-Larch	#2	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Douglas Fir-Larch	#3/Stud	12 - 10	19 - 3	†	12 - 0	18 - 1	†	10 - 9	16 - 2	†	9 - 8	14 - 7	18 - 10	
	Douglas Fir-Larch	Standard	10 - 10	-	-	10 - 2	-	-	9 - 1	-	-	8 - 2	-	-	
	Hem-Fir	SS	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Hem-Fir	#1	14 - 2	†	†	13 - 8	†	†	12 - 8	†	†	11 - 10	19 - 1	†	
	Hem-Fir	#2	13 - 6	†	†	13 - 0	†	†	12 - 1	19 - 4	†	11 - 3	18 - 1	†	
	Hem-Fir	#3/Stud	12 - 6	18 - 9	†	11 - 9	17 - 8	†	10 - 6	15 - 9	†	9 - 5	14 - 3	18 - 4	
	Hem-Fir	Standard	10 - 7	-	-	9 - 11	-	-	8 - 10	-	-	8 - 0	-	-	
	Southern Pine	SS	15 - 2	†	†	14 - 6	†	†	13 - 6	†	†	12 - 8	†	†	
	Southern Pine	#1	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Southern Pine	#2	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	17 - 11	†	
	Southern Pine	#3	11 - 7	17 - 7	†	10 - 10	16 - 6	†	9 - 8	14 - 9	18 - 11	8 - 9	13 - 4	17 - 1	
	Southern Pine	Stud	11 - 7	17 - 7	†	10 - 10	16 - 6	†	9 - 8	14 - 9	18 - 11	8 - 9	13 - 4	17 - 1	
	Southern Pine	Standard	9 - 9	-	-	9 - 2	-	-	8 - 2	-	-	-	-	-	
	Spruce-Pine-Fir	SS	14 - 2	†	†	13 - 8	†	†	12 - 8	†	†	11 - 10	19 - 1	†	
	Spruce-Pine-Fir	#1	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	18 - 7	†	
	Spruce-Pine-Fir	#2	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	18 - 7	†	
	Spruce-Pine-Fir	#3/Stud	12 - 6	18 - 9	†	11 - 9	17 - 8	†	10 - 6	15 - 9	†	9 - 5	14 - 3	18 - 4	
	Spruce-Pine-Fir	Standard	10 - 7	-	-	9 - 11	-	-	8 - 10	-	-	8 - 0	-	-	
	16	Douglas Fir-Larch	SS	13 - 11	†	†	13 - 5	†	†	12 - 5	20 - 0	†	11 - 8	18 - 8	†
		Douglas Fir-Larch	#1	13 - 5	†	†	12 - 11	†	†	12 - 0	19 - 3	†	11 - 2	17 - 8	†
		Douglas Fir-Larch	#2	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 6	†	11 - 0	16 - 8	†
Douglas Fir-Larch		#3/Stud	11 - 0	16 - 6	†	10 - 4	15 - 6	20 - 0	9 - 3	13 - 10	17 - 10	8 - 4	12 - 6	16 - 1	
Douglas Fir-Larch		Standard	9 - 3	-	-	8 - 9	-	-	7 - 10	-	-	-	-	-	
Hem-Fir		SS	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 10	†	11 - 0	17 - 7	†	
Hem-Fir		#1	12 - 10	†	†	12 - 4	19 - 10	†	11 - 6	18 - 5	†	10 - 9	17 - 3	†	
Hem-Fir		#2	12 - 3	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	16 - 2	†	
Hem-Fir		#3/Stud	10 - 8	16 - 1	†	10 - 1	15 - 1	19 - 6	9 - 0	13 - 6	17 - 5	8 - 1	12 - 2	15 - 8	
Hem-Fir		Standard	9 - 1	-	-	8 - 6	-	-	-	-	-	-	-	-	
Southern Pine		SS	13 - 8	†	†	13 - 2	†	†	12 - 3	19 - 7	†	11 - 5	18 - 4	†	
Southern Pine		#1	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 10	†	11 - 0	17 - 7	†	
Southern Pine		#2	12 - 6	†	†	12 - 1	19 - 0	†	11 - 0	17 - 0	†	10 - 0	15 - 4	19 - 10	
Southern Pine		#3	9 - 11	15 - 0	19 - 3	9 - 4	14 - 2	18 - 1	8 - 4	12 - 8	16 - 2	-	11 - 5	14 - 7	
Southern Pine		Stud	9 - 11	15 - 0	19 - 3	9 - 4	14 - 2	18 - 1	8 - 4	12 - 8	16 - 2	-	11 - 5	14 - 7	
Southern Pine		Standard	8 - 4	-	-	7 - 10	-	-	-	-	-	-	-	-	
Spruce-Pine-Fir		SS	12 - 10	†	†	12 - 4	19 - 10	†	11 - 6	18 - 5	†	10 - 9	17 - 3	†	
Spruce-Pine-Fir		#1	12 - 6	†	†	12 - 1	19 - 4	†	11 - 2	18 - 0	†	10 - 6	16 - 5	†	
Spruce-Pine-Fir		#2	12 - 6	†	†	12 - 1	19 - 4	†	11 - 2	18 - 0	†	10 - 6	16 - 5	†	
Spruce-Pine-Fir		#3/Stud	10 - 8	16 - 1	†	10 - 1	15 - 1	19 - 6	9 - 0	13 - 6	17 - 5	8 - 1	12 - 2	15 - 8	
Spruce-Pine-Fir		Standard	9 - 1	-	-	8 - 6	-	-	-	-	-	-	-	-	
24		Douglas Fir-Larch	SS	12 - 1	19 - 5	†	11 - 8	18 - 8	†	10 - 10	17 - 4	†	10 - 1	16 - 3	†
		Douglas Fir-Larch	#1	11 - 8	18 - 8	†	11 - 2	17 - 8	†	10 - 5	15 - 9	†	9 - 5	14 - 3	18 - 4
		Douglas Fir-Larch	#2	11 - 5	17 - 9	†	11 - 0	16 - 8	†	9 - 11	14 - 11	19 - 2	8 - 11	13 - 5	17 - 4
	Douglas Fir-Larch	#3/Stud	8 - 10	13 - 3	17 - 1	8 - 4	12 - 6	16 - 1	-	11 - 2	14 - 4	-	10 - 1	13 - 0	
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	11 - 5	18 - 4	†	11 - 0	17 - 7	†	10 - 2	16 - 4	†	9 - 6	15 - 3	†	
	Hem-Fir	#1	11 - 2	17 - 11	†	10 - 9	17 - 2	†	10 - 0	15 - 6	†	9 - 4	14 - 0	18 - 1	
	Hem-Fir	#2	10 - 7	17 - 0	†	10 - 2	16 - 2	†	9 - 6	14 - 5	18 - 7	8 - 8	13 - 0	16 - 9	
	Hem-Fir	#3/Stud	8 - 7	12 - 11	16 - 8	8 - 1	12 - 2	15 - 8	-	10 - 10	14 - 0	-	9 - 10	12 - 8	
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Southern Pine	SS	11 - 11	19 - 1	†	11 - 5	18 - 4	†	10 - 7	17 - 0	†	9 - 11	15 - 11	†	
	Southern Pine	#1	11 - 5	18 - 4	†	11 - 0	17 - 7	†	10 - 2	16 - 1	†	9 - 5	14 - 6	18 - 9	
	Southern Pine	#2	10 - 7	16 - 3	†	9 - 11	15 - 4	19 - 9	8 - 10	13 - 8	17 - 8	8 - 0	12 - 4	15 - 11	
	Southern Pine	#3	8 - 0	12 - 1	15 - 6	-	11 - 5	14 - 7	-	10 - 2	13 - 0	-	9 - 2	11 - 9	
	Southern Pine	Stud	8 - 0	12 - 1	15 - 6	-	11 - 5	14 - 7	-	10 - 2	13 - 0	-	9 - 2	11 - 9	
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	11 - 2	17 - 11	†	10 - 9	17 - 2	†	10 - 0	16 - 0	†	9 - 4	14 - 11	20 - 0	
	Spruce-Pine-Fir	#1	10 - 11	17 - 5	†	10 - 6	16 - 5	†	9 - 9	14 - 8	18 - 11	8 - 10	13 - 3	17 - 1	
	Spruce-Pine-Fir	#2	10 - 11	17 - 5	†	10 - 6	16 - 5	†	9 - 9	14 - 8	18 - 11	8 - 10	13 - 3	17 - 1	
	Spruce-Pine-Fir	#3/Stud	8 - 7	12 - 11	16 - 8	8 - 1	12 - 2	15 - 8	-	10 - 10	14 - 0	-	9 - 10	12 - 8	
	Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table A-3.20A are based on interior zone loads and assume that all studs are sheathed with minimum sheathing material. Studs within 4 feet of corner shall be sheathed on the exterior with a minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material, or stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements. The additional bending capacity provided by the wood structural panels or reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

See Footnote 1.



**Table A-3.20A Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure C (Cont.)**

(Fully Sheathed with a Minimum Sheathing Material)<sup>a</sup>

Three Second Gust Wind Speed (mph)			120			130			140			150			
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>												
12	Douglas Fir-Larch	SS	12 - 1	19 - 6	†	11 - 6	18 - 5	†	10 - 11	17 - 6	†	10 - 5	16 - 8	†	
	Douglas Fir-Larch	#1	11 - 8	18 - 9	†	11 - 0	17 - 3	†	10 - 6	15 - 11	†	9 - 10	14 - 9	19 - 1	
	Douglas Fir-Larch	#2	11 - 5	17 - 9	†	10 - 10	16 - 3	†	10 - 0	15 - 0	19 - 5	9 - 4	14 - 0	18 - 0	
	Douglas Fir-Larch	#3/Stud	8 - 10	13 - 3	17 - 1	8 - 1	12 - 2	15 - 9	-	11 - 3	14 - 6	-	10 - 6	13 - 6	
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	11 - 5	18 - 4	†	10 - 10	17 - 4	†	10 - 3	16 - 5	†	9 - 9	15 - 8	†	
	Hem-Fir	#1	11 - 2	17 - 11	†	10 - 7	16 - 11	†	10 - 0	15 - 8	†	9 - 7	14 - 7	18 - 9	
	Hem-Fir	#2	10 - 7	17 - 1	†	10 - 1	15 - 10	†	9 - 6	14 - 7	18 - 10	9 - 0	13 - 7	17 - 5	
	Hem-Fir	#3/Stud	8 - 7	12 - 11	16 - 8	7 - 11	11 - 11	15 - 4	-	11 - 0	14 - 2	-	10 - 2	13 - 2	
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Southern Pine	SS	11 - 11	19 - 1	†	11 - 3	18 - 1	†	10 - 8	17 - 2	†	10 - 2	16 - 4	†	
	Southern Pine	#1	11 - 5	18 - 4	†	10 - 10	17 - 4	†	10 - 3	16 - 3	†	9 - 9	15 - 1	19 - 6	
	Southern Pine	#2	10 - 7	16 - 4	†	9 - 8	15 - 0	19 - 4	9 - 0	13 - 10	17 - 10	8 - 4	12 - 10	16 - 7	
	Southern Pine	#3	8 - 0	12 - 1	15 - 6	-	11 - 2	14 - 3	-	10 - 3	13 - 2	-	9 - 7	12 - 3	
	Southern Pine	Stud	8 - 0	12 - 1	15 - 6	-	11 - 2	14 - 3	-	10 - 3	13 - 2	-	9 - 7	12 - 3	
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	11 - 2	17 - 11	†	10 - 7	16 - 11	†	10 - 0	16 - 1	†	9 - 7	15 - 4	†	
	Spruce-Pine-Fir	#1	10 - 11	17 - 6	†	10 - 4	16 - 0	†	9 - 9	14 - 10	19 - 1	9 - 2	13 - 9	17 - 9	
	Spruce-Pine-Fir	#2	10 - 11	17 - 6	†	10 - 4	16 - 0	†	9 - 9	14 - 10	19 - 1	9 - 2	13 - 9	17 - 9	
	Spruce-Pine-Fir	#3/Stud	8 - 7	12 - 11	16 - 8	7 - 11	11 - 11	15 - 4	-	11 - 0	14 - 2	-	10 - 2	13 - 2	
	Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	16	Douglas Fir-Larch	SS	11 - 0	17 - 7	†	10 - 4	16 - 8	†	9 - 10	15 - 10	†	9 - 5	15 - 1	†
		Douglas Fir-Larch	#1	10 - 7	16 - 1	†	9 - 10	14 - 9	19 - 0	9 - 1	13 - 8	17 - 7	8 - 5	12 - 8	16 - 4
		Douglas Fir-Larch	#2	10 - 1	15 - 2	19 - 7	9 - 3	14 - 0	18 - 0	8 - 7	12 - 11	16 - 7	8 - 0	12 - 0	15 - 5
Douglas Fir-Larch		#3/Stud	-	11 - 5	14 - 8	-	10 - 5	13 - 6	-	9 - 8	12 - 5	-	9 - 0	11 - 7	
Douglas Fir-Larch		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Hem-Fir		SS	10 - 4	16 - 7	†	9 - 9	15 - 8	†	9 - 3	14 - 11	19 - 11	8 - 10	14 - 2	18 - 11	
Hem-Fir		#1	10 - 1	15 - 10	†	9 - 7	14 - 7	18 - 9	9 - 0	13 - 5	17 - 4	8 - 4	12 - 6	16 - 1	
Hem-Fir		#2	9 - 7	14 - 9	19 - 0	9 - 0	13 - 6	17 - 5	8 - 4	12 - 6	16 - 1	-	11 - 7	15 - 0	
Hem-Fir		#3/Stud	-	11 - 1	14 - 4	-	10 - 2	13 - 1	-	9 - 5	12 - 1	-	8 - 9	11 - 3	
Hem-Fir		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Southern Pine		SS	10 - 9	17 - 3	†	10 - 2	16 - 4	†	9 - 8	15 - 6	†	9 - 3	14 - 9	19 - 9	
Southern Pine		#1	10 - 4	16 - 5	†	9 - 9	15 - 1	19 - 5	9 - 1	13 - 11	18 - 0	8 - 5	12 - 11	16 - 8	
Southern Pine		#2	9 - 1	14 - 0	18 - 0	8 - 4	12 - 10	16 - 7	-	11 - 10	15 - 3	-	11 - 0	14 - 2	
Southern Pine		#3	-	10 - 5	13 - 4	-	9 - 6	12 - 3	-	8 - 10	11 - 3	-	8 - 2	10 - 6	
Southern Pine		Stud	-	10 - 5	13 - 4	-	9 - 6	12 - 3	-	8 - 10	11 - 3	-	8 - 2	10 - 6	
Southern Pine		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Spruce-Pine-Fir		SS	10 - 1	16 - 2	†	9 - 7	15 - 4	†	9 - 1	14 - 7	19 - 5	8 - 8	13 - 10	18 - 5	
Spruce-Pine-Fir		#1	9 - 10	15 - 0	19 - 4	9 - 2	13 - 9	17 - 9	8 - 5	12 - 8	16 - 4	7 - 10	11 - 10	15 - 2	
Spruce-Pine-Fir		#2	9 - 10	15 - 0	19 - 4	9 - 2	13 - 9	17 - 9	8 - 5	12 - 8	16 - 4	7 - 10	11 - 10	15 - 2	
Spruce-Pine-Fir		#3/Stud	-	11 - 1	14 - 4	-	10 - 2	13 - 1	-	9 - 5	12 - 1	-	8 - 9	11 - 3	
Spruce-Pine-Fir		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
24		Douglas Fir-Larch	SS	9 - 6	15 - 3	†	9 - 0	14 - 5	19 - 0	8 - 7	13 - 8	17 - 7	8 - 2	12 - 8	16 - 4
		Douglas Fir-Larch	#1	8 - 7	12 - 11	16 - 8	7 - 11	11 - 11	15 - 4	-	11 - 0	14 - 2	-	10 - 2	13 - 2
		Douglas Fir-Larch	#2	8 - 2	12 - 3	15 - 9	-	11 - 3	14 - 6	-	10 - 5	13 - 4	-	9 - 8	12 - 5
	Douglas Fir-Larch	#3/Stud	-	9 - 2	11 - 10	-	8 - 5	10 - 10	-	7 - 9	10 - 0	-	-	9 - 4	
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	9 - 0	14 - 5	19 - 3	8 - 6	13 - 7	18 - 2	8 - 1	12 - 11	16 - 11	-	12 - 2	15 - 9	
	Hem-Fir	#1	8 - 6	12 - 9	16 - 5	7 - 10	11 - 9	15 - 1	-	10 - 10	13 - 11	-	10 - 1	13 - 0	
	Hem-Fir	#2	7 - 11	11 - 10	15 - 3	-	10 - 11	14 - 0	-	10 - 1	13 - 0	-	9 - 4	12 - 0	
	Hem-Fir	#3/Stud	-	8 - 11	11 - 6	-	8 - 2	10 - 7	-	-	9 - 9	-	-	9 - 1	
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Southern Pine	SS	9 - 4	15 - 0	†	8 - 10	14 - 2	18 - 11	8 - 5	13 - 6	18 - 0	8 - 0	12 - 10	17 - 0	
	Southern Pine	#1	8 - 7	13 - 3	17 - 1	7 - 11	12 - 2	15 - 8	-	11 - 2	14 - 5	-	10 - 5	13 - 5	
	Southern Pine	#2	-	11 - 3	14 - 6	-	10 - 4	13 - 4	-	9 - 6	12 - 4	-	8 - 10	11 - 5	
	Southern Pine	#3	-	8 - 4	10 - 9	-	-	9 - 10	-	-	9 - 1	-	-	8 - 5	
	Southern Pine	Stud	-	8 - 4	10 - 9	-	-	9 - 10	-	-	9 - 1	-	-	8 - 5	
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	8 - 9	14 - 1	18 - 9	8 - 4	13 - 4	17 - 3	7 - 11	12 - 4	15 - 11	-	11 - 6	14 - 10	
	Spruce-Pine-Fir	#1	8 - 0	12 - 1	15 - 6	-	11 - 1	14 - 3	-	10 - 3	13 - 2	-	9 - 6	12 - 3	
	Spruce-Pine-Fir	#2	8 - 0	12 - 1	15 - 6	-	11 - 1	14 - 3	-	10 - 3	13 - 2	-	9 - 6	12 - 3	
	Spruce-Pine-Fir	#3/Stud	-	8 - 11	11 - 6	-	8 - 2	10 - 7	-	-	9 - 9	-	-	9 - 1	
	Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table A-3.20A are based on interior zone loads and assume that all studs are sheathed with minimum sheathing material. Studs within 4 feet of corner shall be sheathed on the exterior with a minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material, or stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements. The additional bending capacity provided by the wood structural panels or reduced stud spacing is assumed to be sufficient to resist the additional end zone loading requirements.

See Footnote 1.



**Table 3.20B Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure B**

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)<sup>a</sup>

Three Second Gust Wind Speed (mph)			85			90			100			110		
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>											
12	Douglas Fir-Larch	SS	17 - 4	†	†	16 - 7	†	†	15 - 5	†	†	14 - 5	†	†
	Douglas Fir-Larch	#1	16 - 8	†	†	16 - 0	†	†	14 - 10	†	†	13 - 11	†	†
	Douglas Fir-Larch	#2	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Douglas Fir-Larch	#3/Stud	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	19 - 0	†
	Douglas Fir-Larch	Standard	14 - 10	-	-	14 - 0	-	-	12 - 6	-	-	11 - 3	-	-
	Hem-Fir	SS	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Hem-Fir	#1	15 - 11	†	†	15 - 4	†	†	14 - 3	†	†	13 - 4	†	†
	Hem-Fir	#2	15 - 2	†	†	14 - 7	†	†	13 - 6	†	†	12 - 8	†	†
	Hem-Fir	#3/Stud	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	18 - 6	†
	Hem-Fir	Standard	14 - 6	-	-	13 - 8	-	-	12 - 2	-	-	11 - 0	-	-
	Southern Pine	SS	17 - 0	†	†	16 - 4	†	†	15 - 2	†	†	14 - 2	†	†
	Southern Pine	#1	16 - 3	†	†	15 - 8	†	†	14 - 6	†	†	13 - 7	†	†
	Southern Pine	#2	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†
	Southern Pine	#3	15 - 2	†	†	14 - 7	†	†	13 - 4	19 - 2	†	12 - 0	17 - 4	†
	Southern Pine	Stud	15 - 2	†	†	14 - 7	†	†	13 - 4	19 - 2	†	12 - 0	17 - 4	†
	Southern Pine	Standard	13 - 5	-	-	12 - 7	-	-	11 - 3	-	-	10 - 2	-	-
	Spruce-Pine-Fir	SS	15 - 11	†	†	15 - 4	†	†	14 - 3	†	†	13 - 4	†	†
	Spruce-Pine-Fir	#1	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†
Spruce-Pine-Fir	#2	15 - 7	†	†	14 - 11	†	†	13 - 11	†	†	13 - 0	†	†	
Spruce-Pine-Fir	#3/Stud	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	18 - 6	†	
Spruce-Pine-Fir	Standard	14 - 6	-	-	13 - 8	-	-	12 - 2	-	-	11 - 0	-	-	
16	Douglas Fir-Larch	SS	15 - 8	†	†	15 - 0	†	†	14 - 0	†	†	13 - 1	†	†
	Douglas Fir-Larch	#1	15 - 1	†	†	14 - 5	†	†	13 - 5	†	†	12 - 7	†	†
	Douglas Fir-Larch	#2	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Douglas Fir-Larch	#3/Stud	14 - 1	†	†	13 - 6	†	†	12 - 7	18 - 0	†	11 - 5	16 - 3	†
	Douglas Fir-Larch	Standard	12 - 9	-	-	12 - 0	-	-	10 - 8	-	-	9 - 8	-	-
	Hem-Fir	SS	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Hem-Fir	#1	14 - 5	†	†	13 - 10	†	†	12 - 10	†	†	12 - 0	19 - 4	†
	Hem-Fir	#2	13 - 8	†	†	13 - 2	†	†	12 - 3	19 - 8	†	11 - 5	18 - 5	†
	Hem-Fir	#3/Stud	13 - 4	†	†	12 - 10	19 - 8	†	11 - 11	17 - 6	†	11 - 2	15 - 10	19 - 7
	Hem-Fir	Standard	12 - 5	-	-	11 - 8	-	-	10 - 5	-	-	9 - 5	-	-
	Southern Pine	SS	15 - 4	†	†	14 - 9	†	†	13 - 8	†	†	12 - 10	†	†
	Southern Pine	#1	14 - 9	†	†	14 - 2	†	†	13 - 2	†	†	12 - 4	19 - 9	†
	Southern Pine	#2	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 10	†
	Southern Pine	#3	13 - 7	19 - 7	†	12 - 10	18 - 5	†	11 - 5	16 - 5	†	10 - 4	14 - 10	18 - 3
	Southern Pine	Stud	13 - 7	19 - 7	†	12 - 10	18 - 5	†	11 - 5	16 - 5	†	10 - 4	14 - 10	18 - 3
	Southern Pine	Standard	11 - 6	-	-	10 - 10	-	-	9 - 8	-	-	8 - 9	-	-
	Spruce-Pine-Fir	SS	14 - 5	†	†	13 - 10	†	†	12 - 10	†	†	12 - 0	19 - 4	†
	Spruce-Pine-Fir	#1	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 10	†
Spruce-Pine-Fir	#2	14 - 1	†	†	13 - 6	†	†	12 - 7	†	†	11 - 9	18 - 10	†	
Spruce-Pine-Fir	#3/Stud	13 - 4	†	†	12 - 10	19 - 8	†	11 - 11	17 - 6	†	11 - 2	15 - 10	19 - 7	
Spruce-Pine-Fir	Standard	12 - 5	-	-	11 - 8	-	-	10 - 5	-	-	9 - 5	-	-	
24	Douglas Fir-Larch	SS	13 - 7	†	†	13 - 1	†	†	12 - 1	19 - 6	†	11 - 4	18 - 3	†
	Douglas Fir-Larch	#1	13 - 1	†	†	12 - 7	†	†	11 - 8	18 - 9	†	10 - 11	17 - 6	†
	Douglas Fir-Larch	#2	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	18 - 4	†	10 - 8	17 - 2	†
	Douglas Fir-Larch	#3/Stud	12 - 2	17 - 3	†	11 - 5	16 - 3	†	10 - 2	14 - 6	17 - 11	9 - 2	13 - 1	16 - 2
	Douglas Fir-Larch	Standard	10 - 3	-	-	9 - 8	-	-	8 - 7	-	-	7 - 9	-	-
	Hem-Fir	SS	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	18 - 4	†	10 - 8	17 - 2	†
	Hem-Fir	#1	12 - 6	†	†	12 - 0	19 - 3	†	11 - 2	17 - 11	†	10 - 5	16 - 9	†
	Hem-Fir	#2	11 - 11	19 - 1	†	11 - 5	18 - 4	†	10 - 7	17 - 1	†	9 - 11	15 - 11	†
	Hem-Fir	#3/Stud	11 - 7	16 - 10	†	11 - 1	15 - 10	19 - 6	9 - 11	14 - 1	17 - 5	9 - 0	12 - 9	15 - 9
	Hem-Fir	Standard	10 - 0	-	-	9 - 5	-	-	8 - 5	-	-	-	-	-
	Southern Pine	SS	13 - 4	†	†	12 - 10	†	†	11 - 11	19 - 1	†	11 - 2	17 - 10	†
	Southern Pine	#1	12 - 9	†	†	12 - 3	19 - 9	†	11 - 5	18 - 4	†	10 - 8	17 - 2	†
	Southern Pine	#2	12 - 2	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	16 - 1	19 - 10
	Southern Pine	#3	10 - 11	15 - 9	19 - 4	10 - 4	14 - 9	18 - 2	9 - 2	13 - 3	16 - 3	8 - 4	11 - 11	14 - 8
	Southern Pine	Stud	10 - 11	15 - 9	19 - 4	10 - 4	14 - 9	18 - 2	9 - 2	13 - 3	16 - 3	8 - 4	11 - 11	14 - 8
	Southern Pine	Standard	9 - 3	-	-	8 - 9	-	-	7 - 9	-	-	-	-	-
	Spruce-Pine-Fir	SS	12 - 6	†	†	12 - 0	19 - 3	†	11 - 2	17 - 11	†	10 - 5	16 - 9	†
	Spruce-Pine-Fir	#1	12 - 2	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	16 - 4	†
Spruce-Pine-Fir	#2	12 - 2	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	16 - 4	†	
Spruce-Pine-Fir	#3/Stud	11 - 7	16 - 10	†	11 - 1	15 - 10	19 - 6	9 - 11	14 - 1	17 - 5	9 - 0	12 - 9	15 - 9	
Spruce-Pine-Fir	Standard	10 - 0	-	-	9 - 5	-	-	8 - 5	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table 3.20B are based on interior zone loads and assume that all studs are sheathed on the exterior with minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material. Stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements.

See Footnote 1.

**Table 3.20B Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure B (Cont.)**

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)<sup>a</sup>

Three Second Gust Wind Speed (mph)			120			130			140			150		
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>											
12	Douglas Fir-Larch	SS	13 - 7	†	†	12 - 10	†	†	12 - 2	19 - 7	†	11 - 8	18 - 8	†
	Douglas Fir-Larch	#1	13 - 1	†	†	12 - 4	19 - 10	†	11 - 9	18 - 10	†	11 - 2	18 - 0	†
	Douglas Fir-Larch	#2	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	18 - 6	†	11 - 0	17 - 7	†
	Douglas Fir-Larch	#3/Stud	12 - 2	17 - 3	†	11 - 2	15 - 10	19 - 7	10 - 4	14 - 8	18 - 1	9 - 7	13 - 7	16 - 10
	Douglas Fir-Larch	Standard	10 - 3	-	-	9 - 5	-	-	8 - 9	-	-	8 - 1	-	-
	Hem-Fir	SS	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	18 - 6	†	11 - 0	17 - 7	†
	Hem-Fir	#1	12 - 6	†	†	11 - 10	19 - 0	†	11 - 3	18 - 1	†	10 - 9	17 - 2	†
	Hem-Fir	#2	11 - 11	19 - 1	†	11 - 3	18 - 1	†	10 - 8	17 - 2	†	10 - 2	16 - 4	†
	Hem-Fir	#3/Stud	11 - 7	16 - 10	†	10 - 10	15 - 5	19 - 1	10 - 0	14 - 3	17 - 8	9 - 4	13 - 3	16 - 5
	Hem-Fir	Standard	10 - 0	-	-	9 - 3	-	-	8 - 6	-	-	7 - 11	-	-
	Southern Pine	SS	13 - 4	†	†	12 - 7	†	†	12 - 0	19 - 3	†	11 - 5	18 - 4	†
	Southern Pine	#1	12 - 10	†	†	12 - 1	19 - 5	†	11 - 6	18 - 6	†	11 - 0	17 - 7	†
	Southern Pine	#2	12 - 3	19 - 7	†	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 6	16 - 8	†
	Southern Pine	#3	11 - 0	15 - 9	19 - 4	10 - 1	14 - 6	17 - 9	9 - 4	13 - 4	16 - 5	8 - 8	12 - 5	15 - 3
	Southern Pine	Stud	11 - 0	15 - 9	19 - 4	10 - 1	14 - 6	17 - 9	9 - 4	13 - 4	16 - 5	8 - 8	12 - 5	15 - 3
	Southern Pine	Standard	9 - 3	-	-	8 - 6	-	-	7 - 10	-	-	-	-	-
	Spruce-Pine-Fir	SS	12 - 6	†	†	11 - 10	19 - 0	†	11 - 3	18 - 1	†	10 - 9	17 - 2	†
	Spruce-Pine-Fir	#1	12 - 3	19 - 7	†	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 6	16 - 9	†
Spruce-Pine-Fir	#2	12 - 3	19 - 7	†	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 6	16 - 9	†	
Spruce-Pine-Fir	#3/Stud	11 - 7	16 - 10	†	10 - 10	15 - 5	19 - 1	10 - 0	14 - 3	17 - 8	9 - 4	13 - 3	16 - 5	
Spruce-Pine-Fir	Standard	10 - 0	-	-	9 - 3	-	-	8 - 6	-	-	7 - 11	-	-	
16	Douglas Fir-Larch	SS	12 - 4	19 - 9	†	11 - 8	18 - 8	†	11 - 1	17 - 9	†	10 - 6	16 - 11	†
	Douglas Fir-Larch	#1	11 - 10	19 - 0	†	11 - 2	18 - 0	†	10 - 7	17 - 1	†	10 - 1	16 - 3	†
	Douglas Fir-Larch	#2	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 5	16 - 8	†	9 - 11	15 - 7	19 - 3
	Douglas Fir-Larch	#3/Stud	10 - 5	14 - 10	18 - 4	9 - 7	13 - 7	16 - 10	8 - 10	12 - 7	15 - 6	8 - 3	11 - 8	14 - 5
	Douglas Fir-Larch	Standard	8 - 10	-	-	8 - 1	-	-	-	-	-	-	-	-
	Hem-Fir	SS	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 5	16 - 8	†	9 - 11	15 - 11	†
	Hem-Fir	#1	11 - 4	18 - 2	†	10 - 9	17 - 2	†	10 - 2	16 - 4	†	9 - 8	15 - 7	†
	Hem-Fir	#2	10 - 9	17 - 4	†	10 - 2	16 - 4	†	9 - 8	15 - 6	†	9 - 3	14 - 10	18 - 8
	Hem-Fir	#3/Stud	10 - 2	14 - 5	17 - 10	9 - 4	13 - 3	16 - 4	8 - 7	12 - 3	15 - 1	8 - 0	11 - 4	14 - 0
	Hem-Fir	Standard	8 - 7	-	-	7 - 11	-	-	-	-	-	-	-	-
	Southern Pine	SS	12 - 1	19 - 5	†	11 - 5	18 - 4	†	10 - 10	17 - 5	†	10 - 4	16 - 7	†
	Southern Pine	#1	11 - 7	18 - 7	†	11 - 0	17 - 7	†	10 - 5	16 - 8	†	9 - 11	15 - 11	†
	Southern Pine	#2	11 - 1	17 - 9	†	10 - 5	16 - 8	†	9 - 11	15 - 5	19 - 1	9 - 6	14 - 4	17 - 8
	Southern Pine	#3	9 - 5	13 - 6	16 - 7	8 - 8	12 - 5	15 - 3	8 - 0	11 - 5	14 - 1	-	10 - 8	13 - 1
	Southern Pine	Stud	9 - 5	13 - 6	16 - 7	8 - 8	12 - 5	15 - 3	8 - 0	11 - 5	14 - 1	-	10 - 8	13 - 1
	Southern Pine	Standard	8 - 0	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	11 - 4	18 - 2	†	10 - 9	17 - 2	†	10 - 2	16 - 4	†	9 - 8	15 - 7	†
	Spruce-Pine-Fir	#1	11 - 1	17 - 9	†	10 - 5	16 - 9	†	9 - 11	15 - 11	†	9 - 6	15 - 2	19 - 0
Spruce-Pine-Fir	#2	11 - 1	17 - 9	†	10 - 5	16 - 9	†	9 - 11	15 - 11	†	9 - 6	15 - 2	19 - 0	
Spruce-Pine-Fir	#3/Stud	10 - 2	14 - 5	17 - 10	9 - 4	13 - 3	16 - 4	8 - 7	12 - 3	15 - 1	8 - 0	11 - 4	14 - 0	
Spruce-Pine-Fir	Standard	8 - 7	-	-	7 - 11	-	-	-	-	-	-	-	-	
24	Douglas Fir-Larch	SS	10 - 8	17 - 2	†	10 - 1	16 - 2	†	9 - 7	15 - 5	†	9 - 2	14 - 8	19 - 7
	Douglas Fir-Larch	#1	10 - 3	16 - 6	†	9 - 9	15 - 5	19 - 1	9 - 3	14 - 3	17 - 8	8 - 9	13 - 3	16 - 5
	Douglas Fir-Larch	#2	10 - 1	15 - 11	19 - 8	9 - 6	14 - 7	18 - 1	9 - 0	13 - 6	16 - 8	8 - 7	12 - 6	15 - 6
	Douglas Fir-Larch	#3/Stud	8 - 5	11 - 11	14 - 9	-	10 - 11	13 - 6	-	10 - 1	12 - 6	-	9 - 5	11 - 7
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Hem-Fir	SS	10 - 1	16 - 2	†	9 - 6	15 - 3	†	9 - 0	14 - 6	19 - 4	8 - 7	13 - 10	18 - 5
	Hem-Fir	#1	9 - 10	15 - 9	†	9 - 4	14 - 11	18 - 10	8 - 10	14 - 1	17 - 5	8 - 5	13 - 1	16 - 2
	Hem-Fir	#2	9 - 4	15 - 0	19 - 1	8 - 10	14 - 2	17 - 6	8 - 5	13 - 1	16 - 2	8 - 0	12 - 2	15 - 0
	Hem-Fir	#3/Stud	8 - 2	11 - 7	14 - 4	-	10 - 8	13 - 2	-	9 - 10	12 - 2	-	9 - 2	11 - 4
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Southern Pine	SS	10 - 6	16 - 10	†	9 - 11	15 - 11	†	9 - 5	15 - 1	†	9 - 0	14 - 5	19 - 3
	Southern Pine	#1	10 - 1	16 - 2	†	9 - 6	15 - 3	19 - 6	9 - 0	14 - 6	18 - 0	8 - 7	13 - 6	16 - 9
	Southern Pine	#2	9 - 7	14 - 7	18 - 1	9 - 1	13 - 5	16 - 7	8 - 6	12 - 5	15 - 4	7 - 11	11 - 6	14 - 3
	Southern Pine	#3	-	10 - 10	13 - 4	-	10 - 0	12 - 3	-	9 - 3	11 - 4	-	8 - 7	10 - 6
	Southern Pine	Stud	-	10 - 10	13 - 4	-	10 - 0	12 - 3	-	9 - 3	11 - 4	-	8 - 7	10 - 6
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-
	Spruce-Pine-Fir	SS	9 - 10	15 - 9	†	9 - 4	14 - 11	19 - 11	8 - 10	14 - 2	18 - 11	8 - 5	13 - 6	18 - 0
	Spruce-Pine-Fir	#1	9 - 7	15 - 5	19 - 4	9 - 1	14 - 4	17 - 9	8 - 7	13 - 3	16 - 5	8 - 3	12 - 4	15 - 3
Spruce-Pine-Fir	#2	9 - 7	15 - 5	19 - 4	9 - 1	14 - 4	17 - 9	8 - 7	13 - 3	16 - 5	8 - 3	12 - 4	15 - 3	
Spruce-Pine-Fir	#3/Stud	8 - 2	11 - 7	14 - 4	-	10 - 8	13 - 2	-	9 - 10	12 - 2	-	9 - 2	11 - 4	
Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table 3.20B are based on interior zone loads and assume that all studs are sheathed on the exterior with minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material. Stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements.

See Footnote 1.

**Table A-3.20B Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure C**

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)<sup>a</sup>

Three Second Gust Wind Speed (mph)			85			90			100			110			
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>												
12	Douglas Fir-Larch	SS	15 - 5	†	†	14 - 10	†	†	13 - 9	†	†	12 - 11	†	†	
	Douglas Fir-Larch	#1	14 - 10	†	†	14 - 3	†	†	13 - 3	†	†	12 - 5	19 - 11	†	
	Douglas Fir-Larch	#2	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Douglas Fir-Larch	#3/Stud	13 - 10	†	†	13 - 4	19 - 9	†	12 - 5	17 - 7	†	11 - 2	15 - 11	19 - 8	
	Douglas Fir-Larch	Standard	12 - 6	-	-	11 - 9	-	-	10 - 6	-	-	9 - 5	-	-	
	Hem-Fir	SS	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Hem-Fir	#1	14 - 2	†	†	13 - 8	†	†	12 - 8	†	†	11 - 10	19 - 1	†	
	Hem-Fir	#2	13 - 6	†	†	13 - 0	†	†	12 - 1	19 - 4	†	11 - 3	18 - 1	†	
	Hem-Fir	#3/Stud	13 - 2	†	†	12 - 7	19 - 3	†	11 - 9	17 - 2	†	10 - 11	15 - 6	19 - 2	
	Hem-Fir	Standard	12 - 2	-	-	11 - 5	-	-	10 - 3	-	-	9 - 3	-	-	
	Southern Pine	SS	15 - 2	†	†	14 - 6	†	†	13 - 6	†	†	12 - 8	†	†	
	Southern Pine	#1	14 - 6	†	†	14 - 0	†	†	13 - 0	†	†	12 - 2	19 - 6	†	
	Southern Pine	#2	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	18 - 7	†	
	Southern Pine	#3	13 - 4	19 - 2	†	12 - 6	18 - 0	†	11 - 2	16 - 1	19 - 9	10 - 1	14 - 6	17 - 10	
	Southern Pine	Stud	13 - 4	19 - 2	†	12 - 6	18 - 0	†	11 - 2	16 - 1	19 - 9	10 - 1	14 - 6	17 - 10	
	Southern Pine	Standard	11 - 3	-	-	10 - 7	-	-	9 - 5	-	-	8 - 6	-	-	
	Spruce-Pine-Fir	SS	14 - 2	†	†	13 - 8	†	†	12 - 8	†	†	11 - 10	19 - 1	†	
	Spruce-Pine-Fir	#1	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	18 - 7	†	
	Spruce-Pine-Fir	#2	13 - 10	†	†	13 - 4	†	†	12 - 5	19 - 10	†	11 - 7	18 - 7	†	
	Spruce-Pine-Fir	#3/Stud	13 - 2	†	†	12 - 7	19 - 3	†	11 - 9	17 - 2	†	10 - 11	15 - 6	19 - 2	
	Spruce-Pine-Fir	Standard	12 - 2	-	-	11 - 5	-	-	10 - 3	-	-	9 - 3	-	-	
	16	Douglas Fir-Larch	SS	13 - 11	†	†	13 - 5	†	†	12 - 5	20 - 0	†	11 - 8	18 - 8	†
		Douglas Fir-Larch	#1	13 - 5	†	†	12 - 11	†	†	12 - 0	19 - 3	†	11 - 2	18 - 0	†
		Douglas Fir-Larch	#2	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 10	†	11 - 0	17 - 7	†
Douglas Fir-Larch		#3/Stud	12 - 6	18 - 0	†	11 - 11	16 - 11	†	10 - 7	15 - 1	18 - 8	9 - 7	13 - 8	16 - 10	
Douglas Fir-Larch		Standard	10 - 8	-	-	10 - 1	-	-	9 - 0	-	-	8 - 1	-	-	
Hem-Fir		SS	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 10	†	11 - 0	17 - 7	†	
Hem-Fir		#1	12 - 10	†	†	12 - 4	19 - 10	†	11 - 6	18 - 5	†	10 - 9	17 - 3	†	
Hem-Fir		#2	12 - 3	19 - 7	†	11 - 9	18 - 10	†	10 - 11	17 - 6	†	10 - 2	16 - 5	†	
Hem-Fir		#3/Stud	11 - 11	17 - 6	†	11 - 5	16 - 6	†	10 - 4	14 - 8	18 - 2	9 - 4	13 - 3	16 - 5	
Hem-Fir		Standard	10 - 5	-	-	9 - 10	-	-	8 - 9	-	-	7 - 11	-	-	
Southern Pine		SS	13 - 8	†	†	13 - 2	†	†	12 - 3	19 - 7	†	11 - 5	18 - 4	†	
Southern Pine		#1	13 - 2	†	†	12 - 7	†	†	11 - 9	18 - 10	†	11 - 0	17 - 7	†	
Southern Pine		#2	12 - 6	†	†	12 - 1	19 - 4	†	11 - 2	18 - 0	†	10 - 6	16 - 9	†	
Southern Pine		#3	11 - 5	16 - 5	†	10 - 9	15 - 5	19 - 0	9 - 7	13 - 9	16 - 11	8 - 8	12 - 5	15 - 3	
Southern Pine		Stud	11 - 5	16 - 5	†	10 - 9	15 - 5	19 - 0	9 - 7	13 - 9	16 - 11	8 - 8	12 - 5	15 - 3	
Southern Pine		Standard	9 - 8	-	-	9 - 1	-	-	8 - 1	-	-	-	-	-	
Spruce-Pine-Fir		SS	12 - 10	†	†	12 - 4	19 - 10	†	11 - 6	18 - 5	†	10 - 9	17 - 3	†	
Spruce-Pine-Fir		#1	12 - 6	†	†	12 - 1	19 - 4	†	11 - 2	18 - 0	†	10 - 6	16 - 10	†	
Spruce-Pine-Fir		#2	12 - 6	†	†	12 - 1	19 - 4	†	11 - 2	18 - 0	†	10 - 6	16 - 10	†	
Spruce-Pine-Fir		#3/Stud	11 - 11	17 - 6	†	11 - 5	16 - 6	†	10 - 4	14 - 8	18 - 2	9 - 4	13 - 3	16 - 5	
Spruce-Pine-Fir		Standard	10 - 5	-	-	9 - 10	-	-	8 - 9	-	-	7 - 11	-	-	
24		Douglas Fir-Larch	SS	12 - 1	19 - 5	†	11 - 8	18 - 8	†	10 - 10	17 - 4	†	10 - 1	16 - 3	†
		Douglas Fir-Larch	#1	11 - 8	18 - 8	†	11 - 2	18 - 0	†	10 - 5	16 - 8	†	9 - 9	15 - 6	19 - 2
		Douglas Fir-Larch	#2	11 - 5	18 - 4	†	11 - 0	17 - 7	†	10 - 2	16 - 3	†	9 - 6	14 - 8	18 - 1
	Douglas Fir-Larch	#3/Stud	10 - 2	14 - 5	17 - 11	9 - 7	13 - 7	16 - 10	8 - 7	12 - 2	15 - 0	-	11 - 0	13 - 7	
	Douglas Fir-Larch	Standard	8 - 7	-	-	8 - 1	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	11 - 5	18 - 4	†	11 - 0	17 - 7	†	10 - 2	16 - 4	†	9 - 6	15 - 3	†	
	Hem-Fir	#1	11 - 2	17 - 11	†	10 - 9	17 - 2	†	10 - 0	16 - 0	†	9 - 4	14 - 11	18 - 11	
	Hem-Fir	#2	10 - 7	17 - 0	†	10 - 2	16 - 4	†	9 - 6	15 - 2	19 - 5	8 - 10	14 - 2	17 - 7	
	Hem-Fir	#3/Stud	9 - 11	14 - 1	17 - 5	9 - 4	13 - 3	16 - 5	8 - 4	11 - 10	14 - 7	-	10 - 8	13 - 2	
	Hem-Fir	Standard	8 - 5	-	-	7 - 11	-	-	-	-	-	-	-	-	
	Southern Pine	SS	11 - 11	19 - 1	†	11 - 5	18 - 4	†	10 - 7	17 - 0	†	9 - 11	15 - 11	†	
	Southern Pine	#1	11 - 5	18 - 4	†	11 - 0	17 - 7	†	10 - 2	16 - 4	†	9 - 6	15 - 3	19 - 7	
	Southern Pine	#2	10 - 11	17 - 6	†	10 - 6	16 - 8	†	9 - 9	14 - 11	18 - 5	9 - 1	13 - 5	16 - 8	
	Southern Pine	#3	9 - 2	13 - 2	16 - 2	8 - 8	12 - 5	15 - 3	-	11 - 1	13 - 7	-	10 - 0	12 - 4	
	Southern Pine	Stud	9 - 2	13 - 2	16 - 2	8 - 8	12 - 5	15 - 3	-	11 - 1	13 - 7	-	10 - 0	12 - 4	
	Southern Pine	Standard	7 - 9	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	11 - 2	17 - 11	†	10 - 9	17 - 2	†	10 - 0	16 - 0	†	9 - 4	14 - 11	20 - 0	
	Spruce-Pine-Fir	#1	10 - 11	17 - 6	†	10 - 6	16 - 9	†	9 - 9	15 - 7	19 - 9	9 - 1	14 - 5	17 - 10	
	Spruce-Pine-Fir	#2	10 - 11	17 - 6	†	10 - 6	16 - 9	†	9 - 9	15 - 7	19 - 9	9 - 1	14 - 5	17 - 10	
	Spruce-Pine-Fir	#3/Stud	9 - 11	14 - 1	17 - 5	9 - 4	13 - 3	16 - 5	8 - 4	11 - 10	14 - 7	-	10 - 8	13 - 2	
	Spruce-Pine-Fir	Standard	8 - 5	-	-	7 - 11	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table A-3.20B are based on interior zone loads and assume that all studs are sheathed on the exterior with minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material. Stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements.

See Footnote 1.

**Table A-3.20B Maximum Exterior Loadbearing and Non-Loadbearing Stud Lengths for Common Lumber Species Resisting Interior Zone Wind Loads - Exposure C (Cont.)**

(Fully Sheathed with a Minimum of 3/8" Wood Structural Panels)<sup>a</sup>

Three Second Gust Wind Speed (mph)			120			130			140			150			
Stud Spacing (in.)	Species	Grade	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	2x4	2x6	2x8	
			Maximum Allowable Stud Length (ft.-in.) <sup>1</sup>												
12	Douglas Fir-Larch	SS	12 - 1	19 - 6	†	11 - 6	18 - 5	†	10 - 11	17 - 6	†	10 - 5	16 - 8	†	
	Douglas Fir-Larch	#1	11 - 8	18 - 9	†	11 - 0	17 - 8	†	10 - 6	16 - 10	†	10 - 0	16 - 0	19 - 11	
	Douglas Fir-Larch	#2	11 - 5	18 - 4	†	10 - 10	17 - 4	†	10 - 3	16 - 5	†	9 - 9	15 - 3	18 - 10	
	Douglas Fir-Larch	#3/Stud	10 - 2	14 - 6	17 - 11	9 - 4	13 - 3	16 - 5	8 - 8	12 - 3	15 - 2	8 - 0	11 - 5	14 - 1	
	Douglas Fir-Larch	Standard	8 - 7	-	-	7 - 11	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	11 - 5	18 - 4	†	10 - 10	17 - 4	†	10 - 3	16 - 5	†	9 - 9	15 - 8	†	
	Hem-Fir	#1	11 - 2	17 - 11	†	10 - 7	16 - 11	†	10 - 0	16 - 1	†	9 - 7	15 - 4	19 - 8	
	Hem-Fir	#2	10 - 7	17 - 1	†	10 - 1	16 - 1	†	9 - 6	15 - 4	19 - 8	9 - 1	14 - 7	18 - 3	
	Hem-Fir	#3/Stud	9 - 11	14 - 1	17 - 5	9 - 1	12 - 11	16 - 0	8 - 5	12 - 0	14 - 9	7 - 10	11 - 1	13 - 9	
	Hem-Fir	Standard	8 - 5	-	-	-	-	-	-	-	-	-	-	-	
	Southern Pine	SS	11 - 11	19 - 1	†	11 - 3	18 - 1	†	10 - 8	17 - 2	†	10 - 2	16 - 4	†	
	Southern Pine	#1	11 - 5	18 - 4	†	10 - 10	17 - 4	†	10 - 3	16 - 5	†	9 - 9	15 - 8	†	
	Southern Pine	#2	10 - 11	17 - 6	†	10 - 4	16 - 4	†	9 - 9	15 - 1	18 - 8	9 - 4	14 - 0	17 - 4	
	Southern Pine	#3	9 - 2	13 - 3	16 - 3	8 - 5	12 - 2	14 - 11	7 - 10	11 - 2	13 - 9	-	10 - 5	12 - 9	
	Southern Pine	Stud	9 - 2	13 - 3	16 - 3	8 - 5	12 - 2	14 - 11	7 - 10	11 - 2	13 - 9	-	10 - 5	12 - 9	
	Southern Pine	Standard	7 - 9	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	11 - 2	17 - 11	†	10 - 7	16 - 11	†	10 - 0	16 - 1	†	9 - 7	15 - 4	†	
	Spruce-Pine-Fir	#1	10 - 11	17 - 6	†	10 - 4	16 - 7	†	9 - 9	15 - 8	20 - 0	9 - 4	15 - 0	18 - 6	
	Spruce-Pine-Fir	#2	10 - 11	17 - 6	†	10 - 4	16 - 7	†	9 - 9	15 - 8	20 - 0	9 - 4	15 - 0	18 - 6	
	Spruce-Pine-Fir	#3/Stud	9 - 11	14 - 1	17 - 5	9 - 1	12 - 11	16 - 0	8 - 5	12 - 0	14 - 9	7 - 10	11 - 1	13 - 9	
	Spruce-Pine-Fir	Standard	8 - 5	-	-	-	-	-	-	-	-	-	-	-	
	16	Douglas Fir-Larch	SS	11 - 0	17 - 7	†	10 - 4	16 - 8	†	9 - 10	15 - 10	†	9 - 5	15 - 1	†
		Douglas Fir-Larch	#1	10 - 7	16 - 11	†	10 - 0	16 - 0	19 - 11	9 - 6	14 - 10	18 - 5	9 - 0	13 - 10	17 - 1
		Douglas Fir-Larch	#2	10 - 4	16 - 7	†	9 - 9	15 - 3	18 - 10	9 - 3	14 - 1	17 - 4	8 - 10	13 - 1	16 - 2
Douglas Fir-Larch		#3/Stud	8 - 9	12 - 5	15 - 4	8 - 0	11 - 5	14 - 1	-	10 - 6	13 - 0	-	9 - 9	12 - 1	
Douglas Fir-Larch		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Hem-Fir		SS	10 - 4	16 - 7	†	9 - 9	15 - 8	†	9 - 3	14 - 11	19 - 11	8 - 10	14 - 2	18 - 11	
Hem-Fir		#1	10 - 1	16 - 2	†	9 - 7	15 - 4	19 - 8	9 - 1	14 - 7	18 - 2	8 - 8	13 - 7	16 - 10	
Hem-Fir		#2	9 - 7	15 - 5	19 - 11	9 - 1	14 - 7	18 - 3	8 - 8	13 - 7	16 - 10	8 - 3	12 - 8	15 - 8	
Hem-Fir		#3/Stud	8 - 6	12 - 1	14 - 11	7 - 10	11 - 1	13 - 9	-	10 - 3	12 - 8	-	9 - 6	11 - 9	
Hem-Fir		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Southern Pine		SS	10 - 9	17 - 3	†	10 - 2	16 - 4	†	9 - 8	15 - 6	†	9 - 3	14 - 9	19 - 9	
Southern Pine		#1	10 - 4	16 - 7	†	9 - 9	15 - 8	†	9 - 3	14 - 11	18 - 9	8 - 10	14 - 1	17 - 5	
Southern Pine		#2	9 - 10	15 - 3	18 - 10	9 - 4	14 - 0	17 - 4	8 - 10	12 - 11	16 - 0	8 - 3	12 - 0	14 - 10	
Southern Pine		#3	7 - 11	11 - 4	13 - 11	-	10 - 5	12 - 9	-	9 - 7	11 - 10	-	8 - 11	11 - 0	
Southern Pine		Stud	7 - 11	11 - 4	13 - 11	-	10 - 5	12 - 9	-	9 - 7	11 - 10	-	8 - 11	11 - 0	
Southern Pine		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
Spruce-Pine-Fir		SS	10 - 1	16 - 2	†	9 - 7	15 - 4	†	9 - 1	14 - 7	19 - 5	8 - 8	13 - 10	18 - 6	
Spruce-Pine-Fir		#1	9 - 10	15 - 10	†	9 - 4	15 - 0	18 - 6	8 - 10	13 - 10	17 - 1	8 - 5	12 - 10	15 - 11	
Spruce-Pine-Fir		#2	9 - 10	15 - 10	†	9 - 4	15 - 0	18 - 6	8 - 10	13 - 10	17 - 1	8 - 5	12 - 10	15 - 11	
Spruce-Pine-Fir		#3/Stud	8 - 6	12 - 1	14 - 11	7 - 10	11 - 1	13 - 9	-	10 - 3	12 - 8	-	9 - 6	11 - 9	
Spruce-Pine-Fir		Standard	-	-	-	-	-	-	-	-	-	-	-	-	
24		Douglas Fir-Larch	SS	9 - 6	15 - 3	†	9 - 0	14 - 5	19 - 4	8 - 7	13 - 9	18 - 4	8 - 2	13 - 1	17 - 1
		Douglas Fir-Larch	#1	9 - 2	14 - 1	17 - 5	8 - 8	12 - 11	16 - 0	8 - 3	12 - 0	14 - 9	7 - 10	11 - 1	13 - 9
		Douglas Fir-Larch	#2	9 - 0	13 - 4	16 - 6	8 - 6	12 - 3	15 - 2	8 - 0	11 - 4	14 - 0	-	10 - 6	13 - 0
	Douglas Fir-Larch	#3/Stud	-	10 - 0	12 - 4	-	9 - 2	11 - 4	-	8 - 6	10 - 6	-	7 - 10	9 - 9	
	Douglas Fir-Larch	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Hem-Fir	SS	9 - 0	14 - 5	19 - 3	8 - 6	13 - 7	18 - 2	8 - 1	12 - 11	17 - 3	-	12 - 4	16 - 5	
	Hem-Fir	#1	8 - 9	13 - 11	17 - 3	8 - 4	12 - 9	15 - 10	7 - 11	11 - 10	14 - 7	-	11 - 0	13 - 7	
	Hem-Fir	#2	8 - 4	12 - 11	16 - 0	7 - 11	11 - 10	14 - 8	-	11 - 0	13 - 7	-	10 - 2	12 - 7	
	Hem-Fir	#3/Stud	-	9 - 9	12 - 0	-	8 - 11	11 - 0	-	8 - 3	10 - 2	-	-	9 - 6	
	Hem-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Southern Pine	SS	9 - 4	15 - 0	†	8 - 10	14 - 2	18 - 11	8 - 5	13 - 6	18 - 0	8 - 0	12 - 10	17 - 2	
	Southern Pine	#1	9 - 0	14 - 5	17 - 10	8 - 6	13 - 3	16 - 4	8 - 1	12 - 2	15 - 1	-	11 - 4	14 - 0	
	Southern Pine	#2	8 - 5	12 - 3	15 - 2	-	11 - 3	13 - 11	-	10 - 5	12 - 10	-	9 - 8	11 - 11	
	Southern Pine	#3	-	9 - 1	11 - 2	-	8 - 4	10 - 3	-	-	9 - 6	-	-	8 - 10	
	Southern Pine	Stud	-	9 - 1	11 - 2	-	8 - 4	10 - 3	-	-	9 - 6	-	-	8 - 10	
	Southern Pine	Standard	-	-	-	-	-	-	-	-	-	-	-	-	
	Spruce-Pine-Fir	SS	8 - 9	14 - 1	18 - 9	8 - 4	13 - 4	17 - 9	7 - 11	12 - 8	16 - 8	-	12 - 0	15 - 6	
	Spruce-Pine-Fir	#1	8 - 7	13 - 2	16 - 3	8 - 1	12 - 1	14 - 11	-	11 - 2	13 - 9	-	10 - 4	12 - 9	
	Spruce-Pine-Fir	#2	8 - 7	13 - 2	16 - 3	8 - 1	12 - 1	14 - 11	-	11 - 2	13 - 9	-	10 - 4	12 - 9	
	Spruce-Pine-Fir	#3/Stud	-	9 - 9	12 - 0	-	8 - 11	11 - 0	-	8 - 3	10 - 2	-	-	9 - 6	
	Spruce-Pine-Fir	Standard	-	-	-	-	-	-	-	-	-	-	-	-	

† Allowable stud length exceeds 20 feet.

- Lumber grade not available or allowable stud length is less than 7 ft. - 9 in. (for 8 ft. wall height).

<sup>a</sup> Maximum stud lengths in Table A-3.20B are based on interior zone loads and assume that all studs are sheathed on the exterior with minimum of 3/8 inch wood structural panels and on the interior with minimum sheathing material. Stud spacings shall be multiplied by 0.85 for framing located within 4 feet of corners to account for the additional end zone loading requirements.

See Footnote 1.

**Table 3.25A Ceiling Joist Spans for Common Lumber Species**

(Uninhabitable Attics Without Storage, Live Load = 10 psf, L/Δ = 240)

		Dead Load = 10 psf			
		2x4	2x6	2x8	2x10
		Maximum Ceiling Joist Spans <sup>1</sup>			
Joist Spacing	Species and Grade	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	13 - 2	20 - 8	*	*
	Douglas Fir-Larch #1	12 - 8	19 - 11	*	*
	Douglas Fir-Larch #2	12 - 5	19 - 6	25 - 8	*
	Douglas Fir-Larch #3	11 - 1	16 - 3	20 - 7	25 - 2
	Hem-Fir SS	12 - 5	19 - 6	25 - 8	*
	Hem-Fir #1	12 - 2	19 - 1	25 - 2	*
	Hem-Fir #2	11 - 7	18 - 2	24 - 0	*
	Hem-Fir #3	10 - 10	15 - 10	20 - 1	24 - 6
	Southern Pine SS	12 - 11	20 - 3	*	*
	Southern Pine #1	12 - 5	19 - 6	25 - 8	*
	Southern Pine #2	11 - 10	18 - 8	24 - 7	*
	Southern Pine #3	10 - 1	14 - 11	18 - 9	22 - 9
	Spruce-Pine Fir SS	12 - 2	19 - 1	25 - 2	*
	Spruce-Pine Fir #1	11 - 10	18 - 8	24 - 7	*
	Spruce-Pine Fir #2	11 - 10	18 - 8	24 - 7	*
	Spruce-Pine Fir #3	10 - 10	15 - 10	20 - 1	24 - 6
16 in.	Douglas Fir-Larch SS	11 - 11	18 - 9	24 - 8	*
	Douglas Fir-Larch #1	11 - 6	18 - 1	23 - 10	*
	Douglas Fir-Larch #2	11 - 3	17 - 8	23 - 4	*
	Douglas Fir-Larch #3	9 - 7	14 - 1	17 - 10	21 - 9
	Hem-Fir SS	11 - 3	17 - 8	23 - 4	*
	Hem-Fir #1	11 - 0	17 - 4	22 - 10	*
	Hem-Fir #2	10 - 6	16 - 6	21 - 9	*
	Hem-Fir #3	9 - 5	13 - 9	17 - 5	21 - 3
	Southern Pine SS	11 - 9	18 - 5	24 - 3	*
	Southern Pine #1	11 - 3	17 - 8	23 - 4	*
	Southern Pine #2	10 - 9	16 - 11	21 - 7	25 - 7
	Southern Pine #3	8 - 9	12 - 11	16 - 3	19 - 9
	Spruce-Pine Fir SS	11 - 0	17 - 4	22 - 10	*
	Spruce-Pine Fir #1	10 - 9	16 - 11	22 - 4	*
	Spruce-Pine Fir #2	10 - 9	16 - 11	22 - 4	*
	Spruce-Pine Fir #3	9 - 5	13 - 9	17 - 5	21 - 3
19.2 in.	Douglas Fir-Larch SS	11 - 3	17 - 8	23 - 3	*
	Douglas Fir-Larch #1	10 - 10	17 - 0	22 - 5	*
	Douglas Fir-Larch #2	10 - 7	16 - 8	21 - 4	*
	Douglas Fir-Larch #3	8 - 9	12 - 10	16 - 3	19 - 10
	Hem-Fir SS	10 - 7	16 - 8	22 - 0	*
	Hem-Fir #1	10 - 4	16 - 4	21 - 6	*
	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	*
	Southern Pine #1	10 - 7	16 - 8	22 - 0	*
	Southern Pine #2	10 - 2	15 - 7	19 - 8	23 - 5
	Southern Pine #3	8 - 0	11 - 9	14 - 10	18 - 0
	Spruce-Pine Fir SS	10 - 4	16 - 4	21 - 6	*
	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 in.	Douglas Fir-Larch SS	10 - 5	16 - 4	21 - 7	*
	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	*
	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
	Southern Pine SS	10 - 3	16 - 1	21 - 2	*
	Southern Pine #1	9 - 10	15 - 6	20 - 5	24 - 0
	Southern Pine #2	9 - 3	13 - 11	17 - 7	20 - 11
	Southern Pine #3	7 - 2	10 - 6	13 - 3	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

<sup>1</sup> Bracing shall be provided in accordance with 3.3.1.4.

\* Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

**Table 3.25B Ceiling Joist Spans for Common Lumber Species**

(Uninhabitable Attics With Limited Storage, Live Load = 20 psf, L/Δ = 240)

		Dead Load = 10 psf			
		2x4	2x6	2x8	2x10
		Maximum Ceiling Joist Spans <sup>1</sup>			
Joist Spacing	Species and Grade	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	10 - 5	16 - 4	21 - 7	*
	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	*
	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
	Southern Pine SS	10 - 3	16 - 1	21 - 2	*
	Southern Pine #1	9 - 10	15 - 6	20 - 5	24 - 0
	Southern Pine #2	9 - 3	13 - 11	17 - 7	20 - 11
	Southern Pine #3	7 - 2	10 - 6	13 - 3	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 in.	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
	Southern Pine SS	9 - 4	14 - 7	19 - 3	24 - 7
	Southern Pine #1	8 - 11	14 - 0	17 - 9	20 - 9
	Southern Pine #2	8 - 0	12 - 0	15 - 3	18 - 1
	Southern Pine #3	6 - 2	9 - 2	11 - 6	14 - 0
	Spruce-Pine Fir SS	8 - 9	13 - 9	18 - 2	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
19.2 in.	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
	Southern Pine SS	8 - 9	13 - 9	18 - 2	23 - 1
	Southern Pine #1	8 - 5	12 - 9	16 - 2	18 - 11
	Southern Pine #2	7 - 4	11 - 0	13 - 11	16 - 6
	Southern Pine #3	5 - 8	8 - 4	10 - 6	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 in.	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
	Southern Pine SS	8 - 1	12 - 9	16 - 10	21 - 6
	Southern Pine #1	7 - 8	11 - 5	14 - 6	16 - 11
	Southern Pine #2	6 - 7	9 - 10	12 - 6	14 - 9
	Southern Pine #3	5 - 1	7 - 5	9 - 5	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

<sup>1</sup> Bracing shall be provided in accordance with 3.3.1.4.

\* Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

**Table 3.26A Rafter Spans for Common Lumber Species**

(Ceiling Not Attached to Rafters, Live Load = 20 psf, L/Δ = 180)

		Dead Load = 10 psf					Dead Load = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum Rafter Spans <sup>1,2,3</sup>									
Joist Spacing	Species and Grade	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	11 - 6	18 - 0	23 - 9	*	*	11 - 6	18 - 0	23 - 9	*	*
	Douglas Fir-Larch #1	11 - 1	17 - 4	22 - 5	*	*	10 - 6	15 - 4	19 - 5	23 - 9	*
	Douglas Fir-Larch #2	10 - 10	16 - 10	21 - 4	*	*	10 - 0	14 - 7	18 - 5	22 - 6	*
	Douglas Fir-Larch #3	8 - 9	12 - 10	16 - 3	19 - 10	23 - 0	7 - 7	11 - 1	14 - 1	17 - 2	19 - 11
	Hem-Fir SS	10 - 10	17 - 0	22 - 5	*	*	10 - 10	17 - 0	22 - 5	*	*
	Hem-Fir #1	10 - 7	16 - 8	22 - 0	*	*	10 - 4	15 - 2	19 - 2	23 - 5	*
	Hem-Fir #2	10 - 1	15 - 11	20 - 8	25 - 3	*	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	*	*	11 - 3	17 - 8	23 - 4	*	*
	Southern Pine #1	10 - 10	17 - 0	22 - 5	*	*	10 - 6	15 - 8	19 - 10	23 - 2	*
	Southern Pine #2	10 - 4	15 - 7	19 - 8	23 - 5	*	9 - 0	13 - 6	17 - 1	20 - 3	23 - 10
	Southern Pine #3	8 - 0	11 - 9	14 - 10	18 - 0	21 - 4	6 - 11	10 - 2	12 - 10	15 - 7	18 - 6
	Spruce-Pine Fir SS	10 - 7	16 - 8	22 - 0	*	*	10 - 7	16 - 8	21 - 9	*	*
	Spruce-Pine Fir #1	10 - 4	16 - 3	21 - 0	25 - 8	*	9 - 10	14 - 4	18 - 2	22 - 3	25 - 9
	Spruce-Pine Fir #2	10 - 4	16 - 3	21 - 0	25 - 8	*	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 in.	Douglas Fir-Larch SS	10 - 5	16 - 4	21 - 7	*	*	10 - 5	16 - 3	20 - 7	25 - 2	*
	Douglas Fir-Larch #1	10 - 0	15 - 4	19 - 5	23 - 9	*	9 - 1	13 - 3	16 - 10	20 - 7	23 - 10
	Douglas Fir-Larch #2	9 - 10	14 - 7	18 - 5	22 - 6	*	8 - 7	12 - 7	16 - 0	19 - 6	22 - 7
	Douglas Fir-Larch #3	7 - 7	11 - 1	14 - 1	17 - 2	19 - 11	6 - 7	9 - 8	12 - 2	14 - 11	17 - 3
	Hem-Fir SS	9 - 10	15 - 6	20 - 5	*	*	9 - 10	15 - 6	19 - 11	24 - 4	*
	Hem-Fir #1	9 - 8	15 - 2	19 - 2	23 - 5	*	9 - 0	13 - 1	16 - 7	20 - 4	23 - 7
	Hem-Fir #2	9 - 2	14 - 2	17 - 11	21 - 11	25 - 5	8 - 5	12 - 3	15 - 6	19 - 0	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	*	*	10 - 3	16 - 1	21 - 2	25 - 7	*
	Southern Pine #1	9 - 10	15 - 6	19 - 10	23 - 2	*	9 - 1	13 - 7	17 - 2	20 - 1	23 - 10
	Southern Pine #2	9 - 0	13 - 6	17 - 1	20 - 3	23 - 10	7 - 9	11 - 8	14 - 9	17 - 6	20 - 8
	Southern Pine #3	6 - 11	10 - 2	12 - 10	15 - 7	18 - 6	6 - 0	8 - 10	11 - 2	13 - 6	16 - 0
	Spruce-Pine Fir SS	9 - 8	15 - 2	19 - 11	25 - 5	*	9 - 8	14 - 10	18 - 10	23 - 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
19.2 in.	Douglas Fir-Larch SS	9 - 10	15 - 5	20 - 4	25 - 11	*	9 - 10	14 - 10	18 - 10	23 - 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	9 - 1	13 - 3	16 - 10	20 - 7	23 - 10	7 - 10	11 - 6	14 - 7	17 - 10	20 - 8
	Douglas Fir-Larch #3	6 - 11	10 - 2	12 - 10	15 - 8	18 - 3	6 - 0	8 - 9	11 - 2	13 - 7	15 - 9
	Hem-Fir SS	9 - 3	14 - 7	19 - 2	24 - 6	*	9 - 3	14 - 4	18 - 2	22 - 3	25 - 9
	Hem-Fir #1	9 - 1	13 - 10	17 - 6	21 - 5	24 - 10	8 - 2	12 - 0	15 - 2	18 - 6	21 - 6
	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	*	9 - 8	15 - 2	19 - 7	23 - 4	*
	Southern Pine #1	9 - 3	14 - 3	18 - 1	21 - 2	25 - 2	8 - 4	12 - 4	15 - 8	18 - 4	21 - 9
	Southern Pine #2	8 - 2	12 - 3	15 - 7	18 - 6	21 - 9	7 - 1	10 - 8	13 - 6	16 - 0	18 - 10
	Southern Pine #3	6 - 4	9 - 4	11 - 9	14 - 3	16 - 10	5 - 6	8 - 1	10 - 2	12 - 4	14 - 7
	Spruce-Pine Fir SS	9 - 1	14 - 3	18 - 9	24 - 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 in.	Douglas Fir-Larch SS	9 - 1	14 - 4	18 - 10	23 - 9	*	9 - 1	13 - 3	16 - 10	20 - 7	23 - 10
	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 - 2	11 - 11	15 - 1	18 - 5	21 - 4	7 - 0	10 - 4	13 - 0	15 - 11	18 - 6
	Douglas Fir-Larch #3	6 - 2	9 - 1	11 - 6	14 - 1	16 - 3	5 - 4	7 - 10	10 - 0	12 - 2	14 - 1
	Hem-Fir SS	8 - 7	13 - 6	17 - 10	22 - 9	*	8 - 7	12 - 10	16 - 3	19 - 10	23 - 0
	Hem-Fir #1	8 - 5	12 - 4	15 - 8	19 - 2	22 - 2	7 - 4	10 - 9	13 - 7	16 - 7	19 - 3
	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	*	8 - 11	13 - 10	17 - 6	20 - 10	24 - 8
	Southern Pine #1	8 - 7	12 - 9	16 - 2	18 - 11	22 - 6	7 - 5	11 - 1	14 - 0	16 - 5	19 - 6
	Southern Pine #2	7 - 4	11 - 0	13 - 11	16 - 6	19 - 6	6 - 4	9 - 6	12 - 1	14 - 4	16 - 10
	Southern Pine #3	5 - 8	8 - 4	10 - 6	12 - 9	15 - 1	4 - 11	7 - 3	9 - 1	11 - 0	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

\* Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

See footnotes 1-3.



**Table 3.26B Rafter Spans for Common Lumber Species**

(Ceiling Attached to Rafters, Live Load = 20 psf, L/Δ = 240)

Joist Spacing	Species and Grade		Dead Load = 10 psf					Dead Load = 20 psf				
			2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
			Maximum Rafter Spans <sup>1,2,3</sup>									
			(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch	SS	10 - 5	16 - 4	21 - 7	*	*	10 - 5	16 - 4	21 - 7	*	*
	Douglas Fir-Larch	#1	10 - 0	15 - 9	20 - 10	*	*	10 - 0	15 - 4	19 - 5	23 - 9	*
	Douglas Fir-Larch	#2	9 - 10	15 - 6	20 - 5	*	*	9 - 10	14 - 7	18 - 5	22 - 6	*
	Douglas Fir-Larch	#3	8 - 9	12 - 10	16 - 3	19 - 10	23 - 0	7 - 7	11 - 1	14 - 1	17 - 2	19 - 11
	Hem-Fir	SS	9 - 10	15 - 6	20 - 5	*	*	9 - 10	15 - 6	20 - 5	*	*
	Hem-Fir	#1	9 - 8	15 - 2	19 - 11	25 - 5	*	9 - 8	15 - 2	19 - 2	23 - 5	*
	Hem-Fir	#2	9 - 2	14 - 5	19 - 0	24 - 3	*	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	*	*	10 - 3	16 - 1	21 - 2	*	*
	Southern Pine	#1	9 - 10	15 - 6	20 - 5	*	*	9 - 10	15 - 6	19 - 10	23 - 2	*
	Southern Pine	#2	9 - 5	14 - 9	19 - 6	23 - 5	*	9 - 0	13 - 6	17 - 1	20 - 3	23 - 10
	Southern Pine	#3	8 - 0	11 - 9	14 - 10	18 - 0	21 - 4	6 - 11	10 - 2	12 - 10	15 - 7	18 - 6
	Spruce-Pine Fir	SS	9 - 8	15 - 2	19 - 11	25 - 5	*	9 - 8	15 - 2	19 - 11	25 - 5	*
	Spruce-Pine Fir	#1	9 - 5	14 - 9	19 - 6	24 - 10	*	9 - 5	14 - 4	18 - 2	22 - 3	25 - 9
	Spruce-Pine Fir	#2	9 - 5	14 - 9	19 - 6	24 - 10	*	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 in.	Douglas Fir-Larch	SS	9 - 6	14 - 11	19 - 7	25 - 0	*	9 - 6	14 - 11	19 - 7	25 - 0	*
	Douglas Fir-Larch	#1	9 - 1	14 - 4	18 - 11	23 - 9	*	9 - 1	13 - 3	16 - 10	20 - 7	23 - 10
	Douglas Fir-Larch	#2	8 - 11	14 - 1	18 - 5	22 - 6	*	8 - 7	12 - 7	16 - 0	19 - 6	22 - 7
	Douglas Fir-Larch	#3	7 - 7	11 - 1	14 - 1	17 - 2	19 - 11	6 - 7	9 - 8	12 - 2	14 - 11	17 - 3
	Hem-Fir	SS	8 - 11	14 - 1	18 - 6	23 - 8	*	8 - 11	14 - 1	18 - 6	23 - 8	*
	Hem-Fir	#1	8 - 9	13 - 9	18 - 2	23 - 1	*	8 - 9	13 - 1	16 - 7	20 - 4	23 - 7
	Hem-Fir	#2	8 - 4	13 - 1	17 - 3	21 - 11	25 - 5	8 - 4	12 - 3	15 - 6	19 - 0	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	*	9 - 4	14 - 7	19 - 3	24 - 7	*
	Southern Pine	#1	8 - 11	14 - 1	18 - 6	23 - 2	*	8 - 11	13 - 7	17 - 2	20 - 1	23 - 10
	Southern Pine	#2	8 - 7	13 - 5	17 - 1	20 - 3	23 - 10	7 - 9	11 - 8	14 - 9	17 - 6	20 - 8
	Southern Pine	#3	6 - 11	10 - 2	12 - 10	15 - 7	18 - 6	6 - 0	8 - 10	11 - 2	13 - 6	16 - 0
	Spruce-Pine Fir	SS	8 - 9	13 - 9	18 - 2	23 - 1	*	8 - 9	13 - 9	18 - 2	23 - 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
19.2 in.	Douglas Fir-Larch	SS	8 - 11	14 - 0	18 - 5	23 - 7	*	8 - 11	14 - 0	18 - 5	23 - 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 - 3	16 - 10	20 - 7	23 - 10	7 - 10	11 - 6	14 - 7	17 - 10	20 - 8
	Douglas Fir-Larch	#3	6 - 11	10 - 2	12 - 10	15 - 8	18 - 3	6 - 0	8 - 9	11 - 2	13 - 7	15 - 9
	Hem-Fir	SS	8 - 5	13 - 3	17 - 5	22 - 3	*	8 - 5	13 - 3	17 - 5	22 - 3	25 - 9
	Hem-Fir	#1	8 - 3	12 - 11	17 - 1	21 - 5	24 - 10	8 - 2	12 - 0	15 - 2	18 - 6	21 - 6
	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	18 - 2	23 - 1	*	8 - 9	13 - 9	18 - 2	23 - 1	*
	Southern Pine	#1	8 - 5	13 - 3	17 - 5	21 - 2	25 - 2	8 - 4	12 - 4	15 - 8	18 - 4	21 - 9
	Southern Pine	#2	8 - 1	12 - 3	15 - 7	18 - 6	21 - 9	7 - 1	10 - 8	13 - 6	16 - 0	18 - 10
	Southern Pine	#3	6 - 4	9 - 4	11 - 9	14 - 3	16 - 10	5 - 6	8 - 1	10 - 2	12 - 4	14 - 7
	Spruce-Pine Fir	SS	8 - 3	12 - 11	17 - 1	21 - 9	*	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 in.	Douglas Fir-Larch	SS	8 - 3	13 - 0	17 - 2	21 - 10	*	8 - 3	13 - 0	16 - 10	20 - 7	23 - 10
	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 - 11	15 - 1	18 - 5	21 - 4	7 - 0	10 - 4	13 - 0	15 - 11	18 - 6
	Douglas Fir-Larch	#3	6 - 2	9 - 1	11 - 6	14 - 1	16 - 3	5 - 4	7 - 10	10 - 0	12 - 2	14 - 1
	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 - 8	19 - 2	22 - 2	7 - 4	10 - 9	13 - 7	16 - 7	19 - 3
	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	*	8 - 1	12 - 9	16 - 10	20 - 10	24 - 8
	Southern Pine	#1	7 - 10	12 - 3	16 - 2	18 - 11	22 - 6	7 - 5	11 - 1	14 - 0	16 - 5	19 - 6
	Southern Pine	#2	7 - 4	11 - 0	13 - 11	16 - 6	19 - 6	6 - 4	9 - 6	12 - 1	14 - 4	16 - 10
	Southern Pine	#3	5 - 8	8 - 4	10 - 6	12 - 9	15 - 1	4 - 11	7 - 3	9 - 1	11 - 0	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

\* Spans are limited to 26 feet in length. Check sources for availability of lumber in lengths greater than 20 feet.

See footnotes 1-3.

**Table 3.26C Rafter Spans for Common Lumber Species**

(Ceiling Not Attached to Rafters, Ground Snow Load = 30 psf, L/Δ = 180)

		Dead Load = 10 psf					Dead Load = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum Rafter Spans <sup>1,2</sup>									
Joist Spacing	Species and Grade	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	9-7	15-0	19-9	†	†	9-7	15-0	19-6	†	†
	Douglas Fir-Larch #1	9-2	13-11	17-8	†	†	8-7	12-7	15-11	19-6	†
	Douglas Fir-Larch #2	9-0	13-3	16-9	†	†	8-2	11-11	15-2	18-6	†
	Douglas Fir-Larch #3	6-11	10-1	12-9	15-7	18-1	6-3	9-2	11-7	14-1	16-4
	Hem-Fir SS	9-0	14-2	18-8	†	†	9-0	14-2	18-8	†	†
	Hem-Fir #1	8-10	13-9	17-5	†	†	8-6	12-5	15-9	19-3	†
	Hem-Fir #2	8-5	12-10	16-3	19-10	†	7-11	11-7	14-8	18-0	†
	Hem-Fir #3	6-9	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0
	Southern Pine SS	9-5	14-9	19-5	†	†	9-5	14-9	19-5	†	†
	Southern Pine #1	9-0	14-2	18-0	†	†	8-7	12-10	16-3	19-0	†
	Southern Pine #2	8-2	12-3	15-6	18-5	†	7-4	11-1	14-0	16-7	19-7
	Southern Pine #3	6-3	9-3	11-8	14-2	16-9	5-8	8-5	10-7	12-10	15-2
	Spruce-Pine Fir SS	8-10	13-10	18-3	†	†	8-10	13-10	17-10	†	†
	Spruce-Pine Fir #1	8-7	13-0	16-6	†	†	8-1	11-9	14-11	18-3	†
	Spruce-Pine Fir #2	8-7	13-0	16-6	†	†	8-1	11-9	14-11	18-3	†
Spruce-Pine Fir #3	6-9	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0	
16 in.	Douglas Fir-Larch SS	8-8	13-8	18-0	†	†	8-8	13-4	16-11	†	†
	Douglas Fir-Larch #1	8-3	12-1	15-3	18-8	†	7-5	10-11	13-10	16-10	19-7
	Douglas Fir-Larch #2	7-10	11-5	14-6	17-9	†	7-1	10-4	13-1	16-0	18-7
	Douglas Fir-Larch #3	6-0	8-9	11-1	13-6	15-8	5-5	7-11	10-0	12-3	14-2
	Hem-Fir SS	8-2	12-10	17-0	†	†	8-2	12-10	16-4	20-0	†
	Hem-Fir #1	8-0	11-11	15-1	18-5	†	7-4	10-9	13-8	16-8	19-4
	Hem-Fir #2	7-7	11-1	14-1	17-3	20-0	6-10	10-1	12-9	15-7	18-0
	Hem-Fir #3	5-10	8-6	10-10	13-2	15-4	5-3	7-9	9-9	11-11	13-10
	Southern Pine SS	8-6	13-5	17-8	†	†	8-6	13-5	17-7	†	†
	Southern Pine #1	8-2	12-4	15-7	18-3	†	7-5	11-1	14-1	16-6	19-7
	Southern Pine #2	7-1	10-7	13-5	15-11	18-9	6-5	9-7	12-2	14-5	16-11
	Southern Pine #3	5-5	8-0	10-1	12-3	14-6	4-11	7-3	9-2	11-1	13-2
	Spruce-Pine Fir SS	8-0	12-7	16-7	†	†	8-0	12-2	15-5	18-10	†
	Spruce-Pine Fir #1	7-9	11-3	14-4	17-6	†	7-0	10-2	12-11	15-9	18-4
	Spruce-Pine Fir #2	7-9	11-3	14-4	17-6	†	7-0	10-2	12-11	15-9	18-4
Spruce-Pine Fir #3	5-10	8-6	10-10	13-2	15-4	5-3	7-9	9-9	11-11	13-10	
19.2 in.	Douglas Fir-Larch SS	8-2	12-10	16-11	†	†	8-2	12-2	15-5	18-10	†
	Douglas Fir-Larch #1	7-6	11-0	14-0	17-0	19-9	6-10	10-0	12-7	15-5	17-10
	Douglas Fir-Larch #2	7-2	10-5	13-3	16-2	18-9	6-5	9-5	12-0	14-7	16-11
	Douglas Fir-Larch #3	5-5	8-0	10-1	12-4	14-4	4-11	7-3	9-2	11-2	12-11
	Hem-Fir SS	7-9	12-1	16-0	†	†	7-9	11-9	14-11	18-3	†
	Hem-Fir #1	7-5	10-11	13-9	16-10	19-6	6-9	9-10	12-5	15-3	17-8
	Hem-Fir #2	6-11	10-2	12-10	15-9	18-3	6-3	9-2	11-8	14-2	16-6
	Hem-Fir #3	5-4	7-9	9-10	12-1	14-0	4-10	7-0	8-11	10-11	12-8
	Southern Pine SS	8-0	12-7	16-7	†	†	8-0	12-7	16-1	19-2	†
	Southern Pine #1	7-6	11-3	14-3	16-8	19-9	6-10	10-2	12-10	15-1	17-10
	Southern Pine #2	6-5	9-8	12-3	14-6	17-1	5-10	8-9	11-1	13-2	15-6
	Southern Pine #3	5-0	7-4	9-3	11-2	13-3	4-6	6-7	8-4	10-1	12-0
	Spruce-Pine Fir SS	7-7	11-10	15-7	19-1	†	7-7	11-2	14-1	17-3	20-0
	Spruce-Pine Fir #1	7-1	10-4	13-1	15-11	18-6	6-4	9-4	11-10	14-5	16-8
	Spruce-Pine Fir #2	7-1	10-4	13-1	15-11	18-6	6-4	9-4	11-10	14-5	16-8
Spruce-Pine Fir #3	5-4	7-9	9-10	12-1	14-0	4-10	7-0	8-11	10-11	12-8	
24 in.	Douglas Fir-Larch SS	7-7	11-11	15-3	18-8	†	7-5	10-11	13-10	16-10	19-7
	Douglas Fir-Larch #1	6-9	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0
	Douglas Fir-Larch #2	6-5	9-4	11-10	14-6	16-9	5-9	8-5	10-8	13-1	15-2
	Douglas Fir-Larch #3	4-11	7-2	9-0	11-1	12-10	4-5	6-5	8-2	10-0	11-7
	Hem-Fir SS	7-2	11-3	14-9	18-0	†	7-2	10-6	13-4	16-4	18-11
	Hem-Fir #1	6-8	9-9	12-4	15-1	17-5	6-0	8-10	11-2	13-7	15-9
	Hem-Fir #2	6-3	9-1	11-6	14-1	16-4	5-7	8-3	10-5	12-8	14-9
	Hem-Fir #3	4-9	7-0	8-10	10-9	12-6	4-4	6-4	8-0	9-9	11-4
	Southern Pine SS	7-5	11-8	15-5	18-11	†	7-5	11-4	14-5	17-2	†
	Southern Pine #1	6-9	10-0	12-9	14-11	17-8	6-1	9-1	11-6	13-6	16-0
	Southern Pine #2	5-9	8-8	11-0	13-0	15-4	5-3	7-10	9-11	11-9	13-10
	Southern Pine #3	4-5	6-7	8-3	10-0	11-10	4-0	5-11	7-6	9-1	10-9
	Spruce-Pine Fir SS	7-0	11-0	14-0	17-0	19-9	6-10	10-0	12-7	15-5	17-10
	Spruce-Pine Fir #1	6-4	9-3	11-8	14-3	16-6	5-8	8-4	10-7	12-11	14-11
	Spruce-Pine Fir #2	6-4	9-3	11-8	14-3	16-6	5-8	8-4	10-7	12-11	14-11
Spruce-Pine Fir #3	4-9	7-0	8-10	10-9	12-6	4-4	6-4	8-0	9-9	11-4	

† Spans are limited to 20 feet in length.  
See footnotes 1-3.

**Table 3.26D Rafter Spans for Common Lumber Species**

(Ceiling Attached to Rafters, Ground Snow Load = 30 psf, L/Δ = 240)

Joist Spacing	Species and Grade	Dead Load = 10 psf					Dead Load = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum Rafter Spans <sup>1,2</sup>									
		(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	8-8	13-8	18-0	†	†	8-8	13-8	18-0	†	†
	Douglas Fir-Larch #1	8-4	13-2	17-4	†	†	8-4	12-7	15-11	19-6	†
	Douglas Fir-Larch #2	8-2	12-10	16-9	†	†	8-2	11-11	15-2	18-6	†
	Douglas Fir-Larch #3	6-11	10-1	12-9	15-7	18-1	6-3	9-2	11-7	14-1	16-4
	Hem-Fir SS	8-2	12-10	17-0	†	†	8-2	12-10	17-0	†	†
	Hem-Fir #1	8-0	12-7	16-7	†	†	8-0	12-5	15-9	19-3	†
	Hem-Fir #2	7-8	12-0	15-10	19-10	†	7-8	11-7	14-8	18-0	†
	Hem-Fir #3	6-9	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0
	Southern Pine SS	8-6	13-5	17-8	†	†	8-6	13-5	17-8	†	†
	Southern Pine #1	8-2	12-10	17-0	†	†	8-2	12-10	16-3	19-0	†
	Southern Pine #2	7-10	12-3	15-6	18-5	†	7-4	11-1	14-0	16-7	19-7
	Southern Pine #3	6-3	9-3	11-8	14-2	16-9	5-8	8-5	10-7	12-10	15-2
	Spruce-Pine Fir SS	8-0	12-7	16-7	†	†	8-0	12-7	16-7	†	†
	Spruce-Pine Fir #1	7-10	12-4	16-3	†	†	7-10	11-9	14-11	18-3	†
	Spruce-Pine Fir #2	7-10	12-4	16-3	†	†	7-10	11-9	14-11	18-3	†
	Spruce-Pine Fir #3	6-9	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0
16 in.	Douglas Fir-Larch SS	7-11	12-5	16-4	†	†	7-11	12-5	16-4	†	†
	Douglas Fir-Larch #1	7-7	11-11	15-3	18-8	†	7-5	10-11	13-10	16-10	19-7
	Douglas Fir-Larch #2	7-5	11-5	14-6	17-9	†	7-1	10-4	13-1	16-0	18-7
	Douglas Fir-Larch #3	6-0	8-9	11-1	13-6	15-8	5-5	7-11	10-0	12-3	14-2
	Hem-Fir SS	7-5	11-8	15-5	19-8	†	7-5	11-8	15-5	19-8	†
	Hem-Fir #1	7-3	11-5	15-1	18-5	†	7-3	10-9	13-8	16-8	19-4
	Hem-Fir #2	6-11	10-11	14-1	17-3	20-0	6-10	10-1	12-9	15-7	18-0
	Hem-Fir #3	5-10	8-6	10-10	13-2	15-4	5-3	7-9	9-9	11-11	13-10
	Southern Pine SS	7-9	12-2	16-0	†	†	7-9	12-2	16-0	†	†
	Southern Pine #1	7-5	11-8	15-5	18-3	†	7-5	11-1	14-1	16-6	19-7
	Southern Pine #2	7-1	10-7	13-5	15-11	18-9	6-5	9-7	12-2	14-5	16-11
	Southern Pine #3	5-5	8-0	10-1	12-3	14-6	4-11	7-3	9-2	11-1	13-2
	Spruce-Pine Fir SS	7-3	11-5	15-1	19-3	†	7-3	11-5	15-1	18-10	†
	Spruce-Pine Fir #1	7-1	11-2	14-4	17-6	†	7-0	10-2	12-11	15-9	18-4
	Spruce-Pine Fir #2	7-1	11-2	14-4	17-6	†	7-0	10-2	12-11	15-9	18-4
	Spruce-Pine Fir #3	5-10	8-6	10-10	13-2	15-4	5-3	7-9	9-9	11-11	13-10
19.2 in.	Douglas Fir-Larch SS	7-5	11-8	15-4	19-7	†	7-5	11-8	15-4	18-10	†
	Douglas Fir-Larch #1	7-2	11-0	14-0	17-0	19-9	6-10	10-0	12-7	15-5	17-10
	Douglas Fir-Larch #2	7-0	10-5	13-3	16-2	18-9	6-5	9-5	12-0	14-7	16-11
	Douglas Fir-Larch #3	5-5	8-0	10-1	12-4	14-4	4-11	7-3	9-2	11-2	12-11
	Hem-Fir SS	7-0	11-0	14-6	18-6	†	7-0	11-0	14-6	18-3	†
	Hem-Fir #1	6-10	10-9	13-9	16-10	19-6	6-9	9-10	12-5	15-3	17-8
	Hem-Fir #2	6-6	10-2	12-10	15-9	18-3	6-3	9-2	11-8	14-2	16-6
	Hem-Fir #3	5-4	7-9	9-10	12-1	14-0	4-10	7-0	8-11	10-11	12-8
	Southern Pine SS	7-3	11-5	15-1	19-3	†	7-3	11-5	15-1	19-2	†
	Southern Pine #1	7-0	11-0	14-3	16-8	19-9	6-10	10-2	12-10	15-1	17-10
	Southern Pine #2	6-5	9-8	12-3	14-6	17-1	5-10	8-9	11-1	13-2	15-6
	Southern Pine #3	5-0	7-4	9-3	11-2	13-3	4-6	6-7	8-4	10-1	12-0
	Spruce-Pine Fir SS	6-10	10-9	14-2	18-1	†	6-10	10-9	14-1	17-3	20-0
	Spruce-Pine Fir #1	6-8	10-4	13-1	15-11	18-6	6-4	9-4	11-10	14-5	16-8
	Spruce-Pine Fir #2	6-8	10-4	13-1	15-11	18-6	6-4	9-4	11-10	14-5	16-8
	Spruce-Pine Fir #3	5-4	7-9	9-10	12-1	14-0	4-10	7-0	8-11	10-11	12-8
24 in.	Douglas Fir-Larch SS	6-11	10-10	14-3	18-2	†	6-11	10-10	13-10	16-10	19-7
	Douglas Fir-Larch #1	6-8	9-10	12-6	15-3	17-8	6-1	8-11	11-3	13-9	16-0
	Douglas Fir-Larch #2	6-5	9-4	11-10	14-6	16-9	5-9	8-5	10-8	13-1	15-2
	Douglas Fir-Larch #3	4-11	7-2	9-0	11-1	12-10	4-5	6-5	8-2	10-0	11-7
	Hem-Fir SS	6-6	10-3	13-6	17-2	†	6-6	10-3	13-4	16-4	18-11
	Hem-Fir #1	6-4	9-9	12-4	15-1	17-5	6-0	8-10	11-2	13-7	15-9
	Hem-Fir #2	6-1	9-1	11-6	14-1	16-4	5-7	8-3	10-5	12-8	14-9
	Hem-Fir #3	4-9	7-0	8-10	10-9	12-6	4-4	6-4	8-0	9-9	11-4
	Southern Pine SS	6-9	10-8	14-0	17-10	†	6-9	10-8	14-0	17-2	†
	Southern Pine #1	6-6	10-0	12-9	14-11	17-8	6-1	9-1	11-6	13-6	16-0
	Southern Pine #2	5-9	8-8	11-0	13-0	15-4	5-3	7-10	9-11	11-9	13-10
	Southern Pine #3	4-5	6-7	8-3	10-0	11-10	4-0	5-11	7-6	9-1	10-9
	Spruce-Pine Fir SS	6-4	10-0	13-2	16-10	19-9	6-4	10-0	12-7	15-5	17-10
	Spruce-Pine Fir #1	6-3	9-3	11-8	14-3	16-6	5-8	8-4	10-7	12-11	14-11
	Spruce-Pine Fir #2	6-3	9-3	11-8	14-3	16-6	5-8	8-4	10-7	12-11	14-11
	Spruce-Pine Fir #3	4-9	7-0	8-10	10-9	12-6	4-4	6-4	8-0	9-9	11-4

† Spans are limited to 20 feet in length.  
See footnotes 1-3.

3 PRESCRIPTIVE DESIGN

**Table 3.26E Rafter Spans for Common Lumber Species**

(Ceiling Not Attached to Rafters, Ground Snow Load = 50 psf, L/Δ = 180)

Joist Spacing	Species and Grade	Dead Load = 10 psf					Dead Load = 20 psf					
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12	
		Maximum Rafter Spans <sup>1,2</sup>										
		(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	
12 in.	Douglas Fir-Larch SS	8-1	12-8	16-8	†	†	8-1	12-8	16-5	†	†	
	Douglas Fir-Larch #1	7-9	11-4	14-4	17-6	†	7-3	10-7	13-4	16-4	18-11	
	Douglas Fir-Larch #2	7-4	10-9	13-7	16-7	19-3	6-10	10-0	12-8	15-6	18-0	
	Douglas Fir-Larch #3	5-7	8-2	10-5	12-8	14-8	5-3	7-8	9-8	11-10	13-9	
	Hem-Fir SS	7-7	12-0	15-9	†	†	7-7	12-0	15-9	19-4	†	
	Hem-Fir #1	7-5	11-2	14-2	17-3	†	7-2	10-5	13-2	16-2	18-8	
	Hem-Fir #2	7-1	10-5	13-2	16-2	18-8	6-8	9-9	12-4	15-1	17-6	
	Hem-Fir #3	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5	
	Southern Pine SS	7-11	12-5	16-5	†	†	7-11	12-5	16-5	†	†	
	Southern Pine #1	7-7	11-6	14-7	17-1	†	7-3	10-9	13-8	16-0	18-11	
	Southern Pine #2	6-7	9-11	12-7	14-11	17-7	6-2	9-3	11-9	13-11	16-5	
	Southern Pine #3	5-1	7-6	9-6	11-6	13-7	4-9	7-0	8-10	10-9	12-8	
	Spruce-Pine Fir SS	7-5	11-8	15-5	19-7	†	7-5	11-8	15-0	18-3	†	
	Spruce-Pine Fir #1	7-3	10-7	13-5	16-4	19-0	6-9	9-11	12-6	15-3	17-9	
	Spruce-Pine Fir #2	7-3	10-7	13-5	16-4	19-0	6-9	9-11	12-6	15-3	17-9	
	Spruce-Pine Fir #3	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5	
	16 in.	Douglas Fir-Larch SS	7-4	11-6	15-2	18-7	†	7-4	11-2	14-2	17-4	†
		Douglas Fir-Larch #1	6-8	9-10	12-5	15-2	17-7	6-3	9-2	11-7	14-2	16-5
Douglas Fir-Larch #2		6-4	9-4	11-9	14-5	16-8	5-11	8-8	11-0	13-5	15-7	
Douglas Fir-Larch #3		4-10	7-1	9-0	11-0	12-9	4-6	6-8	8-5	10-3	11-11	
Hem-Fir SS		6-11	10-10	14-4	17-11	†	6-11	10-10	13-8	16-9	19-5	
Hem-Fir #1		6-7	9-8	12-3	15-0	17-4	6-2	9-0	11-5	14-0	16-2	
Hem-Fir #2		6-2	9-0	11-5	14-0	16-2	5-9	8-5	10-8	13-1	15-1	
Hem-Fir #3		4-9	6-11	8-9	10-9	12-5	4-5	6-6	8-2	10-0	11-7	
Southern Pine SS		7-2	11-4	14-11	18-10	†	7-2	11-4	14-9	17-7	†	
Southern Pine #1		6-8	10-0	12-8	14-10	17-7	6-3	9-4	11-10	13-10	16-5	
Southern Pine #2		5-9	8-7	10-11	12-11	15-3	5-4	8-0	10-2	12-1	14-2	
Southern Pine #3		4-5	6-6	8-2	10-0	11-9	4-1	6-1	7-8	9-4	11-0	
Spruce-Pine Fir SS		6-9	10-8	13-10	16-11	19-8	6-9	10-3	12-11	15-10	18-4	
Spruce-Pine Fir #1		6-3	9-2	11-7	14-2	16-5	5-10	8-7	10-10	13-3	15-4	
Spruce-Pine Fir #2		6-3	9-2	11-7	14-2	16-5	5-10	8-7	10-10	13-3	15-4	
Spruce-Pine Fir #3		4-9	6-11	8-9	10-9	12-5	4-5	6-6	8-2	10-0	11-7	
19.2 in.		Douglas Fir-Larch SS	6-11	10-10	13-10	16-11	19-8	6-11	10-3	12-11	15-10	18-4
		Douglas Fir-Larch #1	6-1	8-11	11-4	13-10	16-1	5-8	8-4	10-7	12-11	15-0
	Douglas Fir-Larch #2	5-10	8-6	10-9	13-1	15-3	5-5	7-11	10-0	12-3	14-2	
	Douglas Fir-Larch #3	4-5	6-6	8-2	10-0	11-7	4-2	6-1	7-8	9-4	10-10	
	Hem-Fir SS	6-6	10-3	13-5	16-4	19-0	6-6	9-11	12-6	15-3	17-9	
	Hem-Fir #1	6-0	8-10	11-2	13-8	15-10	5-8	8-3	10-5	12-9	14-9	
	Hem-Fir #2	5-8	8-3	10-5	12-9	14-9	5-3	7-8	9-9	11-11	13-10	
	Hem-Fir #3	4-4	6-4	8-0	9-9	11-4	4-0	5-11	7-6	9-2	10-7	
	Southern Pine SS	6-9	10-8	14-0	17-2	†	6-9	10-7	13-6	16-1	18-11	
	Southern Pine #1	6-1	9-1	11-7	13-6	16-1	5-8	8-6	10-9	12-7	15-0	
	Southern Pine #2	5-3	7-10	9-11	11-10	13-11	4-11	7-4	9-3	11-0	13-0	
	Southern Pine #3	4-0	5-11	7-6	9-1	10-9	3-9	5-7	7-0	8-6	10-1	
	Spruce-Pine Fir SS	6-4	10-0	12-8	15-6	17-11	6-4	9-4	11-10	14-5	16-9	
	Spruce-Pine Fir #1	5-9	8-4	10-7	12-11	15-0	5-4	7-10	9-11	12-1	14-0	
	Spruce-Pine Fir #2	5-9	8-4	10-7	12-11	15-0	5-4	7-10	9-11	12-1	14-0	
	Spruce-Pine Fir #3	4-4	6-4	8-0	9-9	11-4	4-0	5-11	7-6	9-2	10-7	
	24 in.	Douglas Fir-Larch SS	6-5	9-10	12-5	15-2	17-7	6-3	9-2	11-7	14-2	16-5
		Douglas Fir-Larch #1	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5
Douglas Fir-Larch #2		5-2	7-7	9-7	11-9	13-7	4-10	7-1	9-0	11-0	12-8	
Douglas Fir-Larch #3		4-0	5-10	7-4	9-0	10-5	3-8	5-5	6-10	8-4	9-8	
Hem-Fir SS		6-0	9-6	12-0	14-8	17-0	6-0	8-10	11-2	13-8	15-10	
Hem-Fir #1		5-5	7-11	10-0	12-3	14-2	5-0	7-4	9-4	11-5	13-3	
Hem-Fir #2		5-0	7-4	9-4	11-5	13-3	4-8	6-11	8-9	10-8	12-4	
Hem-Fir #3		3-10	5-8	7-2	8-9	10-2	3-7	5-3	6-8	8-2	9-6	
Southern Pine SS		6-3	9-10	12-11	15-5	18-2	6-3	9-6	12-1	14-4	16-11	
Southern Pine #1		5-6	8-2	10-4	12-1	14-4	5-1	7-7	9-8	11-3	13-5	
Southern Pine #2		4-8	7-0	8-11	10-7	12-5	4-4	6-7	8-4	9-10	11-7	
Southern Pine #3		3-7	5-4	6-8	8-2	9-8	3-4	5-0	6-3	7-7	9-0	
Spruce-Pine Fir SS		5-11	8-11	11-4	13-10	16-1	5-8	8-4	10-7	12-11	15-0	
Spruce-Pine Fir #1		5-1	7-6	9-6	11-7	13-5	4-9	7-0	8-10	10-10	12-6	
Spruce-Pine Fir #2		5-1	7-6	9-6	11-7	13-5	4-9	7-0	8-10	10-10	12-6	
Spruce-Pine Fir #3		3-10	5-8	7-2	8-9	10-2	3-7	5-3	6-8	8-2	9-6	

† Spans are limited to 20 feet in length.

See footnotes 1-3.

**Table 3.26F Rafter Spans for Common Lumber Species**

(Ceiling Attached to Rafters, Ground Snow Load = 50 psf, L/Δ = 240)

Joist Spacing	Species and Grade	Dead Load = 10 psf					Dead Load = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum Rafter Spans <sup>1,2</sup>									
		(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	7-4	11-6	15-2	19-4	†	7-4	11-6	15-2	19-4	†
	Douglas Fir-Larch #1	7-1	11-1	14-4	17-6	†	7-1	10-7	13-4	16-4	18-11
	Douglas Fir-Larch #2	6-11	10-9	13-7	16-7	19-3	6-10	10-0	12-8	15-6	18-0
	Douglas Fir-Larch #3	5-7	8-2	10-5	12-8	14-8	5-3	7-8	9-8	11-10	13-9
	Hem-Fir SS	6-11	10-10	14-4	18-3	†	6-11	10-10	14-4	18-3	†
	Hem-Fir #1	6-9	10-8	14-0	17-3	†	6-9	10-5	13-2	16-2	18-8
	Hem-Fir #2	6-5	10-2	13-2	16-2	18-8	6-5	9-9	12-4	15-1	17-6
	Hem-Fir #3	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5
	Southern Pine SS	7-2	11-4	14-11	19-0	†	7-2	11-4	14-11	19-0	†
	Southern Pine #1	6-11	10-10	14-4	17-1	†	6-11	10-9	13-8	16-0	18-11
	Southern Pine #2	6-7	9-11	12-7	14-11	17-7	6-2	9-3	11-9	13-11	16-5
	Southern Pine #3	5-1	7-6	9-6	11-6	13-7	4-9	7-0	8-10	10-9	12-8
	Spruce-Pine Fir SS	6-9	10-8	14-0	17-10	†	6-9	10-8	14-0	17-10	†
	Spruce-Pine Fir #1	6-7	10-5	13-5	16-4	19-0	6-7	9-11	12-6	15-3	17-9
	Spruce-Pine Fir #2	6-7	10-5	13-5	16-4	19-0	6-7	9-11	12-6	15-3	17-9
Spruce-Pine Fir #3	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5	
16 in.	Douglas Fir-Larch SS	6-8	10-5	13-9	17-7	†	6-8	10-5	13-9	17-4	†
	Douglas Fir-Larch #1	6-5	9-10	12-5	15-2	17-7	6-3	9-2	11-7	14-2	16-5
	Douglas Fir-Larch #2	6-3	9-4	11-9	14-5	16-8	5-11	8-8	11-0	13-5	15-7
	Douglas Fir-Larch #3	4-10	7-1	9-0	11-0	12-9	4-6	6-8	8-5	10-3	11-11
	Hem-Fir SS	6-3	9-10	13-0	16-7	†	6-3	9-10	13-0	16-7	19-5
	Hem-Fir #1	6-2	9-8	12-3	15-0	17-4	6-2	9-0	11-5	14-0	16-2
	Hem-Fir #2	5-10	9-0	11-5	14-0	16-2	5-9	8-5	10-8	13-1	15-1
	Hem-Fir #3	4-9	6-11	8-9	10-9	12-5	4-5	6-6	8-2	10-0	11-7
	Southern Pine SS	6-6	10-3	13-6	17-3	†	6-6	10-3	13-6	17-3	†
	Southern Pine #1	6-3	9-10	12-8	14-10	17-7	6-3	9-4	11-10	13-10	16-5
	Southern Pine #2	5-9	8-7	10-11	12-11	15-3	5-4	8-0	10-2	12-1	14-2
	Southern Pine #3	4-5	6-6	8-2	10-0	11-9	4-1	6-1	7-8	9-4	11-0
	Spruce-Pine Fir SS	6-2	9-8	12-9	16-3	19-8	6-2	9-8	12-9	15-10	18-4
	Spruce-Pine Fir #1	6-0	9-2	11-7	14-2	16-5	5-10	8-7	10-10	13-3	15-4
	Spruce-Pine Fir #2	6-0	9-2	11-7	14-2	16-5	5-10	8-7	10-10	13-3	15-4
Spruce-Pine Fir #3	4-9	6-11	8-9	10-9	12-5	4-5	6-6	8-2	10-0	11-7	
19.2 in.	Douglas Fir-Larch SS	6-3	9-10	13-0	16-6	19-8	6-3	9-10	12-11	15-10	18-4
	Douglas Fir-Larch #1	6-0	8-11	11-4	13-10	16-1	5-8	8-4	10-7	12-11	15-0
	Douglas Fir-Larch #2	5-10	8-6	10-9	13-1	15-3	5-5	7-11	10-0	12-3	14-2
	Douglas Fir-Larch #3	4-5	6-6	8-2	10-0	11-7	4-2	6-1	7-8	9-4	10-10
	Hem-Fir SS	5-11	9-3	12-3	15-7	19-0	5-11	9-3	12-3	15-3	17-9
	Hem-Fir #1	5-9	8-10	11-2	13-8	15-10	5-8	8-3	10-5	12-9	14-9
	Hem-Fir #2	5-6	8-3	10-5	12-9	14-9	5-3	7-8	9-9	11-11	13-10
	Hem-Fir #3	4-4	6-4	8-0	9-9	11-4	4-0	5-11	7-6	9-2	10-7
	Southern Pine SS	6-2	9-8	12-9	16-3	19-9	6-2	9-8	12-9	16-1	18-11
	Southern Pine #1	5-11	9-1	11-7	13-6	16-1	5-8	8-6	10-9	12-7	15-0
	Southern Pine #2	5-3	7-10	9-11	11-10	13-11	4-11	7-4	9-3	11-0	13-0
	Southern Pine #3	4-0	5-11	7-6	9-1	10-9	3-9	5-7	7-0	8-6	10-1
	Spruce-Pine Fir SS	5-9	9-1	12-0	15-3	17-11	5-9	9-1	11-10	14-5	16-9
	Spruce-Pine Fir #1	5-8	8-4	10-7	12-11	15-0	5-4	7-10	9-11	12-1	14-0
	Spruce-Pine Fir #2	5-8	8-4	10-7	12-11	15-0	5-4	7-10	9-11	12-1	14-0
Spruce-Pine Fir #3	4-4	6-4	8-0	9-9	11-4	4-0	5-11	7-6	9-2	10-7	
24 in.	Douglas Fir-Larch SS	5-10	9-2	12-0	15-2	17-7	5-10	9-2	11-7	14-2	16-5
	Douglas Fir-Larch #1	5-6	8-0	10-2	12-4	14-4	5-1	7-6	9-5	11-7	13-5
	Douglas Fir-Larch #2	5-2	7-7	9-7	11-9	13-7	4-10	7-1	9-0	11-0	12-8
	Douglas Fir-Larch #3	4-0	5-10	7-4	9-0	10-5	3-8	5-5	6-10	8-4	9-8
	Hem-Fir SS	5-6	8-7	11-4	14-6	17-0	5-6	8-7	11-2	13-8	15-10
	Hem-Fir #1	5-4	7-11	10-0	12-3	14-2	5-0	7-4	9-4	11-5	13-3
	Hem-Fir #2	5-0	7-4	9-4	11-5	13-3	4-8	6-11	8-9	10-8	12-4
	Hem-Fir #3	3-10	5-8	7-2	8-9	10-2	3-7	5-3	6-8	8-2	9-6
	Southern Pine SS	5-8	9-0	11-10	15-1	18-2	5-8	9-0	11-10	14-4	16-11
	Southern Pine #1	5-6	8-2	10-4	12-1	14-4	5-1	7-7	9-8	11-3	13-5
	Southern Pine #2	4-8	7-0	8-11	10-7	12-5	4-4	6-7	8-4	9-10	11-7
	Southern Pine #3	3-7	5-4	6-8	8-2	9-8	3-4	5-0	6-3	7-7	9-0
	Spruce-Pine Fir SS	5-4	8-5	11-1	13-10	16-1	5-4	8-4	10-7	12-11	15-0
	Spruce-Pine Fir #1	5-1	7-6	9-6	11-7	13-5	4-9	7-0	8-10	10-10	12-6
	Spruce-Pine Fir #2	5-1	7-6	9-6	11-7	13-5	4-9	7-0	8-10	10-10	12-6
Spruce-Pine Fir #3	3-10	5-8	7-2	8-9	10-2	3-7	5-3	6-8	8-2	9-6	

† Spans are limited to 20 feet in length.  
See footnotes 1-3.

**Table 3.26G Rafter Spans for Common Lumber Species**(Ceiling Not Attached to Rafters, Ground Snow Load = 70 psf,  $L/\Delta = 180$ )

Joist Spacing		Species and Grade		Dead Load = 10 psf					Dead Load = 20 psf				
				2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
				Maximum Rafter Spans <sup>1,2</sup>									
		(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	
12 in.	Douglas Fir-Larch	SS	7-2	11-4	14-11	18-6	†	7-2	11-4	14-5	17-7	†	
	Douglas Fir-Larch	#1	6-8	9-9	12-4	15-1	17-6	6-4	9-3	11-9	14-4	16-8	
	Douglas Fir-Larch	#2	6-4	9-3	11-9	14-4	16-7	6-0	8-10	11-2	13-7	15-9	
	Douglas Fir-Larch	#3	4-10	7-1	9-0	10-11	12-8	4-7	6-9	8-6	10-5	12-1	
	Hem-Fir	SS	6-10	10-8	14-1	17-11	†	6-10	10-8	13-11	17-0	19-8	
	Hem-Fir	#1	6-7	9-8	12-3	14-11	17-4	6-3	9-2	11-7	14-2	16-5	
	Hem-Fir	#2	6-2	9-0	11-5	13-11	16-2	5-10	8-7	10-10	13-3	15-4	
	Hem-Fir	#3	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9	
	Southern Pine	SS	7-1	11-1	14-8	18-8	†	7-1	11-1	14-8	17-10	†	
	Southern Pine	#1	6-8	10-0	12-8	14-9	17-6	6-4	9-5	12-0	14-0	16-8	
	Southern Pine	#2	5-9	8-7	10-10	12-11	15-2	5-5	8-2	10-4	12-3	14-5	
	Southern Pine	#3	4-5	6-6	8-2	9-11	11-9	4-2	6-2	7-9	9-5	11-2	
	Spruce-Pine Fir	SS	6-8	10-5	13-9	16-11	19-7	6-8	10-4	13-2	16-0	18-7	
	Spruce-Pine Fir	#1	6-3	9-2	11-7	14-2	16-5	5-11	8-8	11-0	13-5	15-7	
	Spruce-Pine Fir	#2	6-3	9-2	11-7	14-2	16-5	5-11	8-8	11-0	13-5	15-7	
	Spruce-Pine Fir	#3	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9	
16 in.	Douglas Fir-Larch	SS	6-6	10-3	13-1	16-0	18-7	6-6	9-10	12-5	15-3	17-8	
	Douglas Fir-Larch	#1	5-9	8-6	10-9	13-1	15-2	5-6	8-0	10-2	12-5	14-5	
	Douglas Fir-Larch	#2	5-6	8-0	10-2	12-5	14-5	5-2	7-7	9-8	11-9	13-8	
	Douglas Fir-Larch	#3	4-2	6-2	7-9	9-6	11-0	4-0	5-10	7-4	9-0	10-5	
	Hem-Fir	SS	6-2	9-8	12-8	15-6	18-0	6-2	9-6	12-0	14-8	17-1	
	Hem-Fir	#1	5-9	8-4	10-7	12-11	15-0	5-5	7-11	10-0	12-3	14-3	
	Hem-Fir	#2	5-4	7-10	9-11	12-1	14-0	5-1	7-5	9-4	11-5	13-3	
	Hem-Fir	#3	4-1	6-0	7-7	9-3	10-9	3-11	5-8	7-2	8-9	10-2	
	Southern Pine	SS	6-5	10-1	13-4	16-3	19-2	6-5	10-1	13-0	15-5	18-3	
	Southern Pine	#1	5-9	8-7	10-11	12-9	15-2	5-6	8-2	10-5	12-2	14-5	
	Southern Pine	#2	5-0	7-5	9-5	11-2	13-2	4-8	7-1	8-11	10-7	12-6	
	Southern Pine	#3	3-10	5-8	7-1	8-7	10-2	3-7	5-4	6-9	8-2	9-8	
	Spruce-Pine Fir	SS	6-1	9-5	12-0	14-8	17-0	6-1	9-0	11-4	13-11	16-1	
	Spruce-Pine Fir	#1	5-5	7-11	10-0	12-3	14-2	5-2	7-6	9-6	11-7	13-6	
	Spruce-Pine Fir	#2	5-5	7-11	10-0	12-3	14-2	5-2	7-6	9-6	11-7	13-6	
	Spruce-Pine Fir	#3	4-1	6-0	7-7	9-3	10-9	3-11	5-8	7-2	8-9	10-2	
19.2 in.	Douglas Fir-Larch	SS	6-2	9-5	12-0	14-8	17-0	6-2	9-0	11-4	13-11	16-1	
	Douglas Fir-Larch	#1	5-3	7-9	9-9	11-11	13-10	5-0	7-4	9-3	11-4	13-2	
	Douglas Fir-Larch	#2	5-0	7-4	9-3	11-4	13-2	4-9	7-0	8-10	10-9	12-6	
	Douglas Fir-Larch	#3	3-10	5-7	7-1	8-8	10-0	3-8	5-4	6-9	8-3	9-6	
	Hem-Fir	SS	5-10	9-2	11-7	14-2	16-5	5-10	8-8	11-0	13-5	15-7	
	Hem-Fir	#1	5-3	7-7	9-8	11-10	13-8	4-11	7-3	9-2	11-2	13-0	
	Hem-Fir	#2	4-10	7-1	9-0	11-0	12-9	4-7	6-9	8-7	10-5	12-1	
	Hem-Fir	#3	3-9	5-6	6-11	8-5	9-10	3-7	5-2	6-7	8-0	9-4	
	Southern Pine	SS	6-1	9-6	12-6	14-10	17-6	6-1	9-4	11-10	14-1	16-8	
	Southern Pine	#1	5-3	7-10	10-0	11-8	13-10	5-0	7-6	9-6	11-1	13-2	
	Southern Pine	#2	4-6	6-9	8-7	10-2	12-0	4-3	6-5	8-2	9-8	11-5	
	Southern Pine	#3	3-6	5-2	6-6	7-10	9-4	3-4	4-10	6-2	7-5	8-10	
	Spruce-Pine Fir	SS	5-8	8-8	10-11	13-4	15-6	5-7	8-2	10-5	12-8	14-8	
	Spruce-Pine Fir	#1	4-11	7-3	9-2	11-2	13-0	4-8	6-10	8-8	10-7	12-4	
	Spruce-Pine Fir	#2	4-11	7-3	9-2	11-2	13-0	4-8	6-10	8-8	10-7	12-4	
	Spruce-Pine Fir	#3	3-9	5-6	6-11	8-5	9-10	3-7	5-2	6-7	8-0	9-4	
24 in.	Douglas Fir-Larch	SS	5-9	8-6	10-9	13-1	15-2	5-6	8-0	10-2	12-5	14-5	
	Douglas Fir-Larch	#1	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9	
	Douglas Fir-Larch	#2	4-6	6-7	8-4	10-2	11-9	4-3	6-3	7-11	9-7	11-2	
	Douglas Fir-Larch	#3	3-5	5-0	6-4	7-9	9-0	3-3	4-9	6-0	7-4	8-6	
	Hem-Fir	SS	5-5	8-2	10-4	12-8	14-8	5-4	7-9	9-10	12-0	13-11	
	Hem-Fir	#1	4-8	6-10	8-8	10-7	12-3	4-5	6-6	8-2	10-0	11-7	
	Hem-Fir	#2	4-4	6-4	8-1	9-10	11-5	4-2	6-1	7-8	9-4	10-10	
	Hem-Fir	#3	3-4	4-11	6-2	7-7	8-9	3-2	4-8	5-10	7-2	8-4	
	Southern Pine	SS	5-7	8-9	11-2	13-3	15-8	5-7	8-4	10-7	12-7	14-11	
	Southern Pine	#1	4-9	7-0	8-11	10-5	12-5	4-6	6-8	8-6	9-11	11-9	
	Southern Pine	#2	4-1	6-1	7-8	9-1	10-9	3-10	5-9	7-3	8-8	10-2	
	Southern Pine	#3	3-1	4-7	5-9	7-0	8-4	2-11	4-4	5-6	6-8	7-11	
	Spruce-Pine Fir	SS	5-3	7-9	9-9	11-11	13-10	5-0	7-4	9-3	11-4	13-2	
	Spruce-Pine Fir	#1	4-5	6-6	8-2	10-0	11-7	4-2	6-2	7-9	9-6	11-0	
	Spruce-Pine Fir	#2	4-5	6-6	8-2	10-0	11-7	4-2	6-2	7-9	9-6	11-0	
	Spruce-Pine Fir	#3	3-4	4-11	6-2	7-7	8-9	3-2	4-8	5-10	7-2	8-4	

† Spans are limited to 20 feet in length.

See footnotes 1-3.

**Table 3.26H Rafter Spans for Common Lumber Species**

(Ceiling Attached to Rafters, Ground Snow Load = 70 psf, L/Δ = 240)

Joist Spacing	Species and Grade	Dead Load = 10 psf					Dead Load = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum Rafter Spans <sup>1,2</sup>									
		(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)	(ft.-in.)
12 in.	Douglas Fir-Larch SS	6-6	10-3	13-7	17-3	†	6-6	10-3	13-7	17-3	†
	Douglas Fir-Larch #1	6-4	9-9	12-4	15-1	17-6	6-4	9-3	11-9	14-4	16-8
	Douglas Fir-Larch #2	6-2	9-3	11-9	14-4	16-7	6-0	8-10	11-2	13-7	15-9
	Douglas Fir-Larch #3	4-10	7-1	9-0	10-11	12-8	4-7	6-9	8-6	10-5	12-1
	Hem-Fir SS	6-2	9-8	12-10	16-4	19-10	6-2	9-8	12-10	16-4	19-8
	Hem-Fir #1	6-1	9-6	12-3	14-11	17-4	6-1	9-2	11-7	14-2	16-5
	Hem-Fir #2	5-9	9-0	11-5	13-11	16-2	5-9	8-7	10-10	13-3	15-4
	Hem-Fir #3	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9
	Southern Pine SS	6-5	10-1	13-4	17-0	†	6-5	10-1	13-4	17-0	†
	Southern Pine #1	6-2	9-8	12-8	14-9	17-6	6-2	9-5	12-0	14-0	16-8
	Southern Pine #2	5-9	8-7	10-10	12-11	15-2	5-5	8-2	10-4	12-3	14-5
	Southern Pine #3	4-5	6-6	8-2	9-11	11-9	4-2	6-2	7-9	9-5	11-2
	Spruce-Pine Fir SS	6-1	9-6	12-6	16-0	19-5	6-1	9-6	12-6	16-0	18-7
	Spruce-Pine Fir #1	5-11	9-2	11-7	14-2	16-5	5-11	8-8	11-0	13-5	15-7
	Spruce-Pine Fir #2	5-11	9-2	11-7	14-2	16-5	5-11	8-8	11-0	13-5	15-7
	Spruce-Pine Fir #3	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9
16 in.	Douglas Fir-Larch SS	5-11	9-4	12-4	15-8	18-7	5-11	9-4	12-4	15-3	17-8
	Douglas Fir-Larch #1	5-9	8-6	10-9	13-1	15-2	5-6	8-0	10-2	12-5	14-5
	Douglas Fir-Larch #2	5-6	8-0	10-2	12-5	14-5	5-2	7-7	9-8	11-9	13-8
	Douglas Fir-Larch #3	4-2	6-2	7-9	9-6	11-0	4-0	5-10	7-4	9-0	10-5
	Hem-Fir SS	5-7	8-10	11-8	14-10	18-0	5-7	8-10	11-8	14-8	17-1
	Hem-Fir #1	5-6	8-4	10-7	12-11	15-0	5-5	7-11	10-0	12-3	14-3
	Hem-Fir #2	5-3	7-10	9-11	12-1	14-0	5-1	7-5	9-4	11-5	13-3
	Hem-Fir #3	4-1	6-0	7-7	9-3	10-9	3-11	5-8	7-2	8-9	10-2
	Southern Pine SS	5-10	9-2	12-1	15-5	18-9	5-10	9-2	12-1	15-5	18-3
	Southern Pine #1	5-7	8-7	10-11	12-9	15-2	5-6	8-2	10-5	12-2	14-5
	Southern Pine #2	5-0	7-5	9-5	11-2	13-2	4-8	7-1	8-11	10-7	12-6
	Southern Pine #3	3-10	5-8	7-1	8-7	10-2	3-7	5-4	6-9	8-2	9-8
	Spruce-Pine Fir SS	5-6	8-8	11-5	14-6	17-0	5-6	8-8	11-4	13-11	16-1
	Spruce-Pine Fir #1	5-4	7-11	10-0	12-3	14-2	5-2	7-6	9-6	11-7	13-6
	Spruce-Pine Fir #2	5-4	7-11	10-0	12-3	14-2	5-2	7-6	9-6	11-7	13-6
	Spruce-Pine Fir #3	4-1	6-0	7-7	9-3	10-9	3-11	5-8	7-2	8-9	10-2
19.2 in.	Douglas Fir-Larch SS	5-7	8-9	11-7	14-8	17-0	5-7	8-9	11-4	13-11	16-1
	Douglas Fir-Larch #1	5-3	7-9	9-9	11-11	13-10	5-0	7-4	9-3	11-4	13-2
	Douglas Fir-Larch #2	5-0	7-4	9-3	11-4	13-2	4-9	7-0	8-10	10-9	12-6
	Douglas Fir-Larch #3	3-10	5-7	7-1	8-8	10-0	3-8	5-4	6-9	8-3	9-6
	Hem-Fir SS	5-3	8-4	10-11	14-0	16-5	5-3	8-4	10-11	13-5	15-7
	Hem-Fir #1	5-2	7-7	9-8	11-10	13-8	4-11	7-3	9-2	11-2	13-0
	Hem-Fir #2	4-10	7-1	9-0	11-0	12-9	4-7	6-9	8-7	10-5	12-1
	Hem-Fir #3	3-9	5-6	6-11	8-5	9-10	3-7	5-2	6-7	8-0	9-4
	Southern Pine SS	5-6	8-8	11-5	14-6	17-6	5-6	8-8	11-5	14-1	16-8
	Southern Pine #1	5-3	7-10	10-0	11-8	13-10	5-0	7-6	9-6	11-1	13-2
	Southern Pine #2	4-6	6-9	8-7	10-2	12-0	4-3	6-5	8-2	9-8	11-5
	Southern Pine #3	3-6	5-2	6-6	7-10	9-4	3-4	4-10	6-2	7-5	8-10
	Spruce-Pine Fir SS	5-2	8-1	10-8	13-4	15-6	5-2	8-1	10-5	12-8	14-8
	Spruce-Pine Fir #1	4-11	7-3	9-2	11-2	13-0	4-8	6-10	8-8	10-7	12-4
	Spruce-Pine Fir #2	4-11	7-3	9-2	11-2	13-0	4-8	6-10	8-8	10-7	12-4
	Spruce-Pine Fir #3	3-9	5-6	6-11	8-5	9-10	3-7	5-2	6-7	8-0	9-4
24 in.	Douglas Fir-Larch SS	5-2	8-2	10-9	13-1	15-2	5-2	8-0	10-2	12-5	14-5
	Douglas Fir-Larch #1	4-9	6-11	8-9	10-8	12-5	4-6	6-7	8-4	10-2	11-9
	Douglas Fir-Larch #2	4-6	6-7	8-4	10-2	11-9	4-3	6-3	7-11	9-7	11-2
	Douglas Fir-Larch #3	3-5	5-0	6-4	7-9	9-0	3-3	4-9	6-0	7-4	8-6
	Hem-Fir SS	4-11	7-8	10-2	12-8	14-8	4-11	7-8	9-10	12-0	13-11
	Hem-Fir #1	4-8	6-10	8-8	10-7	12-3	4-5	6-6	8-2	10-0	11-7
	Hem-Fir #2	4-4	6-4	8-1	9-10	11-5	4-2	6-1	7-8	9-4	10-10
	Hem-Fir #3	3-4	4-11	6-2	7-7	8-9	3-2	4-8	5-10	7-2	8-4
	Southern Pine SS	5-1	8-0	10-7	13-3	15-8	5-1	8-0	10-7	12-7	14-11
	Southern Pine #1	4-9	7-0	8-11	10-5	12-5	4-6	6-8	8-6	9-11	11-9
	Southern Pine #2	4-1	6-1	7-8	9-1	10-9	3-10	5-9	7-3	8-8	10-2
	Southern Pine #3	3-1	4-7	5-9	7-0	8-4	2-11	4-4	5-6	6-8	7-11
	Spruce-Pine Fir SS	4-10	7-6	9-9	11-11	13-10	4-10	7-4	9-3	11-4	13-2
	Spruce-Pine Fir #1	4-5	6-6	8-2	10-0	11-7	4-2	6-2	7-9	9-6	11-0
	Spruce-Pine Fir #2	4-5	6-6	8-2	10-0	11-7	4-2	6-2	7-9	9-6	11-0
	Spruce-Pine Fir #3	3-4	4-11	6-2	7-7	8-9	3-2	4-8	5-10	7-2	8-4

† Spans are limited to 20 feet in length.  
See footnotes 1-3.

PRESCRIPTIVE DESIGN