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**SPAN TABLES
FOR WOOD JOISTS,
RAFTERS, TRUSSES AND
BEAMS**

1977

ARCHIVES

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PREFACE

The span tables for wood roof trusses have been calculated for the Associate Committee on the National Building Code by the Division of Building Research of the National Research Council of Canada from information supplied by the Division and by the Eastern Forest Products Laboratory of Environment Canada, Ottawa, and are designed to meet the performance criteria for roof trusses described in Part 9 of the National Building Code of Canada 1977.

The Tables of allowable spans for wood joists, rafters and beams have been prepared for the Associate Committee by the Canadian Wood Council and have been checked by the Eastern Forest Products Laboratory. These spans have been calculated in accordance with the requirements for loads in Part 9 of the National Building Code and with the design procedures in CSA O86-1976, "Code for the Engineering Design of Wood."

All span tables in this document apply to lumber manufactured to the standard sizes as specified in CSA O141-1970, "Softwood Lumber." They are based on grade descriptions contained in "1970 NLGA Standard Grading Rules for Canadian Lumber," published by the National Lumber Grades Authority. As a convenience to the users of these Tables, facsimiles of the latest grade stamps have been included.

The Associate Committee wishes to acknowledge the assistance of the agencies mentioned above in providing information for the development of this material.

It is not practical at this time to assign metric values to the imperial units of measure contained in this document, as the information required for a proper metric conversion is not yet available.

Le Code national du bâtiment, ses suppléments et les documents qui s'y rattachent sont disponibles en français. On peut se les procurer en s'adressant au Secrétaire, Comité associé du Code national du bâtiment, Conseil national de recherches du Canada, Ottawa, Ontario K1A 0R6.

SECTION 1

REQUIREMENTS CONCERNING SPAN TABLES AND THEIR USE

Scope

The spans for rafters, joists, beams and roof trusses in this publication apply to buildings covered by the requirements in Section 9.23, "Wood Frame Construction" of the National Building Code of Canada 1977.

The spans for roof trusses are applicable to roof trusses having a span of not more than 40 ft and spaced not more than 24 in. o.c. for the species and grades of lumber described in the roof truss Span Tables.

Floor joist spans are limited to floors that are not required to be designed to resist concentrated loads as specified in Section 9.4, "Loads," of the Code.

Wood-beam spans apply to built-up wood beams supporting 1 or 2 floors in houses.

Spans for wood joists, rafters and beams which fall outside the scope of these tables, including those for U.S. species and individual species not marketed in the commercial species combinations described in the Span Tables, can be calculated in conformance with CSA O86-1976, "Code for the Engineering Design of Wood."

Grade Marking of Lumber

Facsimiles of typical grade marks of lumber associations and grading agencies certified by the Canadian Lumber Standards (CLS) Administrative Board to grade mark lumber in Canada are shown in Table 1-B. Certification by the CLS Administrative Board applies to the inspection, grading and grade marking of lumber, including mill supervisory service, in accordance with CSA Standard O141-1970, "Softwood Lumber."

The grade mark of a CLS certified agency on a piece of lumber indicates its assigned grade, species or species combination, moisture condition at the time of surfacing, the responsible grader or mill of origin and the CLS certified agency under whose supervision the grading and marking was done.

Canadian lumber is graded to the NLGA Standard Grading Rules for Canadian Lumber, published by the National Lumber Grades Authority. The NLGA rules specify standard grade names and grade name abbreviations for use in grade marks to provide positive identification of lumber grades. In a similar fashion standard species names or standard species abbreviations, symbols or marks are provided in the rules for use in grade marks.

Grade marks denote the moisture content of lumber at the time of surfacing. "S-DRY" in the mark indicates the lumber was surfaced at a moisture content not exceeding 19 per cent. "MC 15" indicates a moisture content not exceeding 15 per cent. "S-GRN" in the grade mark signifies that the lumber was surfaced at a moisture content higher than 19 per cent at a size to allow for natural shrinkage during seasoning.

Each mill or grader is assigned a permanent number. The point of origin of lumber is identified in the grade mark by use of a mill or grader number or by the mill name or abbreviation. The CLS certified agency under whose supervision the lumber was grade marked is identified in the mark by the registered symbol of the agency.

Lumber species in Tables 1-A in Section 1 and 3-A to 3-F in Section 3 are identified by the standard commercial names for individual species given in CSA O141-1970, "Softwood Lumber." Lumber is generally marketed by grouping species in commercial species combinations as identified in Table 1-A. The maximum allowable spans for these combinations are listed in Tables 2-A to 2-K in Section 2. Some species of lumber are also marketed individually. Since the allowable span for a commercial species combination is based on the weakest species in the combination, the use of this span is permitted for any individual species included in the combination.

TABLE 1-A
SPECIES DESIGNATIONS AND ABBREVIATIONS

Commercial Designations of Species or Species Combinations	Abbreviation Permitted on Grade Stamps	Species Included
Douglas Fir-Larch	D Fir-L (N)	Douglas Fir, Western Larch
Hem-Fir	Hem-Fir (N)	Western Hemlock, Amabilis Fir
Spruce-Pine-Fir	S-P-F or Spruce-Pine-Fir	White Spruce, Engelmann Spruce, Black Spruce, Red Spruce, Lodgepole Pine, Jack Pine, Alpine Fir, Balsam Fir
Eastern Hemlock-Tamarack	Hem-Tam (N)	Eastern Hemlock, Tamarack
Western Cedars	W Cedar (N)	Pacific Coast Yellow Cedar, Western Red Cedar
Northern Aspen	N. Aspen	Aspen Poplar, Largetooth Aspen, Balsam Poplar
Coast Species	Coast Species	Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Coast Sitka Spruce
Northern Species	North Species	Any Canadian softwood covered by the NLGA Standard Grading Rules
Douglas Fir	D Fir (N)	Douglas Fir
Western Hemlock	W Hem (N)	Western Hemlock
Western Red Cedar	WR Cedar (N)	Western Red Cedar
Coast Sitka Spruce	C Sitka	Coast Sitka Spruce
Jack Pine	J Pine (N)	Jack Pine
Lodgepole Pine	L Pine (N)	Lodgepole Pine
Ponderosa Pine	P Pine	Ponderosa Pine
Red Pine	R Pine	Red Pine
Western White Pine	WW Pine	Western White Pine
Eastern White Pine	East Pine Pine (N) EW Pine (N)	Eastern White Pine
Alpine Fir	Alpine Fir (N)	Alpine Fir
Aspen Poplar	Aspen (N)	Aspen Poplar

TABLE 1-B
FACSIMILES OF GRADE MARKS USED BY CANADIAN LUMBER
MANUFACTURING ASSOCIATIONS AND AGENCIES AUTHORIZED
TO GRADE MARK LUMBER IN CANADA


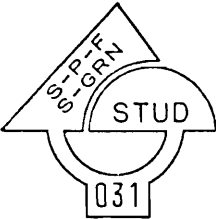

FACSIMILE OF GRADE MARK	ASSOCIATION OR AGENCY										
<p align="center">A.F.P.A.[®] 00 S—P—F S-DRY STAND</p>	<p>Alberta Forest Products Assoc. 204 - 11710 Kingsway Avenue Edmonton, Alberta T5G 0X5</p>										
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td align="center" colspan="2">SEL. STR.</td> </tr> <tr> <td align="center">SISA[®] EPINETTE PIN · SAPIN</td> <td align="center">ALIB[®] SPRUCE PINE · FIR</td> </tr> <tr> <td align="center" colspan="2">NOM ET/OU N° DU MOULIN MILL'S NAME AND/OR NUMBER</td> </tr> <tr> <td align="center">CLASS</td> <td align="center">R1-1108 GRDR</td> </tr> <tr> <td align="center">R VERT</td> <td align="center">S GRN</td> </tr> </table>	SEL. STR.		SISA [®] EPINETTE PIN · SAPIN	ALIB [®] SPRUCE PINE · FIR	NOM ET/OU N° DU MOULIN MILL'S NAME AND/OR NUMBER		CLASS	R1-1108 GRDR	R VERT	S GRN	<p>Service d'inspection des sciages de l'Atlantique Atlantic Lumber Inspection Bureau A Branch of Quebec Lumber Manufacturers Association 580 Grande-Allée Est Suite 540 Québec, Québec G1R 2K2</p>
SEL. STR.											
SISA [®] EPINETTE PIN · SAPIN	ALIB [®] SPRUCE PINE · FIR										
NOM ET/OU N° DU MOULIN MILL'S NAME AND/OR NUMBER											
CLASS	R1-1108 GRDR										
R VERT	S GRN										
<p align="center">CLA S-P-F 100 No. 1 S-GRN.</p>	<p>Canadian Lumbermen's Association 27 Goulburn Avenue Ottawa, Ontario K1N 8C7</p>										
<p align="center"> 1 S-GRN 1 D FIR-N</p>	<p>Cariboo Lumber Mfrs. Association 301 - 197 2nd Avenue North Williams Lake, B.C. V2G 1Z5</p>										
<p align="center"> W. CEDAR S-GRN.-(N) 100 No 3</p>	<p>Council of Forest Industries of British Columbia 1500 - 1055 West Hastings Street Vancouver, B.C. V6E 2H1</p>										

TABLE 1-B (Cont'd)
FACSIMILES OF GRADE MARKS USED BY CANADIAN LUMBER
MANUFACTURING ASSOCIATIONS AND AGENCIES AUTHORIZED
TO GRADE MARK LUMBER IN CANADA

FACSIMILE OF GRADE MARK	ASSOCIATION OR AGENCY
<p style="text-align: center;">®</p> <p>ILMA S-DRY 1 00 S-P-F</p>	<p>Interior Lumber Manufacturers Association 295 - 333 Martin Street Penticton, B.C. V2A 5K7</p>
<p>CFPA® 00 S-P-F S-DRY CONST</p>	<p>Central Forest Products Association 14-G 1975 Corydon Avenue Winnipeg, Manitoba R3P 0R1</p>
 <p>MILL 11 - 466</p>	<p>Maritime Lumber Bureau P.O. Box 459 Amherst, Nova Scotia. B4H 4A1</p>
<p>NILA® 278 S-P-F 1 S-DRY</p>	<p>Northern Interior Lumber Sector 514 - 550 Victoria Street Prince George, B.C. V2L 2K1</p>
<p>O.L.M.A.® 01-1 CONST. S-DRY SPRUCE - PINE - FIR</p>	<p>Ontario Lumber Manufacturers Association Suite 414 - 159 Bay Street Toronto, Ontario M5J 1J7</p>

TABLE 1-B (Cont'd)
FACSIMILES OF GRADE MARKS USED BY CANADIAN LUMBER
MANUFACTURING ASSOCIATIONS AND AGENCIES AUTHORIZED
TO GRADE MARK LUMBER IN CANADA

FACSIMILE OF GRADE MARK	ASSOCIATION OR AGENCY
<p>S. T. B. (R) 101 S-P-F CONST. S-GRN</p>	<p>Saskatchewan Forest Products Corporation 550 First Avenue East Prince Albert, Saskatchewan S6V 2A5</p>
	<p>L'association des manufacturiers de bois de sciage du Québec Quebec Lumber Manufacturers Association 580 Grande-Allée Est Suite 540 Québec, Québec G1R 2K2</p>
<p>00 (M) 2 COM S-DRY 113 S-P-F</p>	<p>MacDonald Inspection 125 East 4th Avenue Vancouver, B.C. V5T 1G4</p>
<p>PLB NLGA RULE No 1 00 S-GRN HEM-FIR-N</p>	<p>Pacific Lumber Inspection Bureau Suite 1130 - 1411 Fourth Avenue Bldg. Seattle, Washington 98101</p> <p>B.C. Division Office 1460-1055 West Hastings Street Vancouver, B.C. V6E 2G8</p>
 <p>10 CONST S-P-F S-GRN</p>	<p>N.W.T. Grade Stamping Agency P.O. Box 2157 Yellowknife, N.W.T. X0E 1J7</p>

SECTION 2

SPAN TABLES FOR WOOD JOISTS, RAFTERS AND BEAMS

General

In these span tables the term “rafter” refers to a sloping wood framing member which supports the roof sheathing and encloses an attic space but does not support a ceiling. The term “roof joist” refers to a horizontal or sloping wood framing member that supports the roof sheathing and the ceiling finish but does not enclose an attic space.

Where rafters or roof joists are intended for use in a locality having a higher design roof snow load than shown in the tables, the maximum member spacing may be calculated as the product of the member spacing and snow load shown in the span tables divided by the design roof snow load for the locality being considered. The following are examples of how this principle can be applied:

- (1) For a 60 psf design snow load, use spans for 30 psf and 24 in. o.c. spacing but space members 12 in. o.c., or use spans for 40 psf and 24 in. o.c. spacing but space members 16 in. o.c.
- (2) For a 70 psf design snow load, use spans for 50 psf and 24 in. o.c. spacing but space members 16 in. o.c.
- (3) For an 80 psf design snow load, use spans for 40 psf and 24 in. o.c. spacing but space members 12 in. o.c.

Design Basis

The design loads and deflection limits used in calculating the span tables are those specified in Section 9.4 of the National Building Code of Canada 1977.

The lumber sizes assumed in the calculations are those dressed to Canadian standard sizes for yard lumber in accordance with CSA O141-1970, “Softwood Lumber.” These sizes, based on lumber having a moisture content of 19 per cent, are as follows:

Nominal Size	Dressed Size at 19 per cent M.C.
2 in. x 4 in.	1½ in. x 3½ in.
2 in. x 6 in.	1½ in. x 5½ in.
2 in. x 8 in.	1½ in. x 7¼ in.
2 in. x 10 in.	1½ in. x 9¼ in.
2 in. x 12 in.	1½ in. x 11¼ in.

For moisture contents other than 19 per cent provision is made in CSA O141-1970, “Softwood Lumber” to allow for the size variations that occur as a result of changes in lumber moisture content.

The descriptions of the grades of lumber specified in the span tables are contained in the 1970 “NLGA Standard Grading Rules for Canadian Lumber” published by the National Lumber Grades Authority, Vancouver. The design stresses used in calculating the span tables have been determined in conformance with CSA O86-1976, “Code for the Engineering Design of Wood.”

Use of Tables

The allowable spans in the following tables are measured from face or edge of support to face or edge of support.

In the case of sloping roof framing members the spans are expressed in terms of the horizontal distance between supports rather than the length of the sloping member. The snow loads are also expressed in terms of the horizontal projection of the sloping roof. Spans for odd size lumber (i.e. 2 in. x 5 in., 2 in. x 7 in., etc.) may be estimated by straight line interpolation in the tables. Spans for 2-in. x 5-in. lumber of Construction, Standard or Utility grades may be 30 per cent greater than the spans listed for 2-in. x 4-in. lumber.

These span tables may be used where members support a uniform live load only. Where the members are required to be designed to support a concentrated load, the members must be designed in conformance with Section 4.3 of the National Building Code of Canada 1977.

Grade Marking of Lumber

Facsimiles are shown in Section 1 of typical grade marks of lumber, graded by associations and grading agencies certified by the Canadian Lumber Standards Administrative Board to grade mark lumber in Canada in accordance with the 1970 "NLGA Standard Grading Rules for Canadian Lumber."

TABLE 2-A
CEILING JOISTS — ATTIC NOT ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 10 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 10 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	11	3	10	2	9	6	8	11	12	10	11	8	10	10	10	2
		2 x 6	17	8	16	0	14	11	14	0	20	3	18	4	17	1	16	0
		2 x 8	23	3	21	2	19	8	18	6	26	8	24	3	22	6	21	2
		2 x 10	29	9	27	0	25	1	23	7	34	0	30	11	28	8	27	0
		2 x 12	36	2	32	10	30	6	28	8	41	5	37	7	34	11	32	10
	No. 1	2 x 4	11	3	10	2	9	6	8	11	12	10	11	8	10	10	10	2
		2 x 6	17	8	16	0	14	11	14	0	20	3	18	4	17	1	16	0
		2 x 8	23	3	21	2	19	8	18	6	26	8	24	3	22	6	21	2
		2 x 10	29	9	27	0	25	1	23	7	34	0	30	11	28	8	27	0
		2 x 12	36	2	32	10	30	6	28	8	41	5	37	7	34	11	32	10
	No. 2	2 x 4	10	10	9	10	9	2	8	7	12	5	11	3	10	5	9	10
		2 x 6	17	1	15	6	14	4	13	6	19	6	17	9	16	5	15	0
		2 x 8	22	6	20	5	19	0	17	10	25	9	23	5	21	8	19	9
		2 x 10	28	8	26	1	24	2	22	9	32	10	29	10	27	7	25	2
		2 x 12	34	11	31	9	29	5	27	8	40	0	36	4	33	7	30	8
	No. 3	2 x 4	10	5	9	5	8	5	7	8	10	11	9	5	8	5	7	8
		2 x 6	16	1	13	11	12	5	11	4	16	1	13	11	12	5	11	4
		2 x 8	21	3	18	4	16	5	15	0	21	3	18	4	16	5	15	0
2 x 10		27	1	23	5	21	0	19	2	27	1	23	5	21	0	19	2	
2 x 12		32	11	28	6	25	6	23	3	32	11	28	6	25	6	23	3	
Construction	2 x 4	10	5	9	6	8	9	8	3	11	11	10	9	9	7	8	9	
Standard	2 x 4	9	2	7	11	7	1	6	5	9	2	7	11	7	1	6	5	
Utility	2 x 4	6	5	5	7	5	0	4	7	6	5	5	7	5	0	4	7	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	10	10	9	10	9	2	8	7	12	5	11	3	10	5	9	10
		2 x 6	17	1	15	6	14	4	13	6	19	6	17	9	16	6	15	6
		2 x 8	22	6	20	5	19	0	17	10	25	9	23	5	21	8	20	5
		2 x 10	28	8	26	1	24	2	22	9	32	10	29	10	27	8	26	1
		2 x 12	34	11	31	9	29	5	27	8	40	0	36	4	33	8	31	9
	No. 1	2 x 4	10	10	9	10	9	2	8	7	12	5	11	3	10	5	9	8
		2 x 6	17	1	15	6	14	4	13	6	19	6	17	7	15	9	14	5
		2 x 8	22	6	20	5	19	0	17	10	25	9	23	3	20	9	19	0
		2 x 10	28	8	26	1	24	2	22	9	32	10	29	8	26	6	24	3
		2 x 12	34	11	31	9	29	5	27	8	40	0	36	1	32	3	29	5
	No. 2	2 x 4	10	5	9	6	8	10	8	3	11	11	10	10	9	10	8	11
		2 x 6	16	5	14	11	13	10	12	9	18	1	15	8	14	0	12	9
		2 x 8	21	8	19	8	18	3	16	10	23	11	20	8	18	6	16	10
		2 x 10	27	8	25	1	23	4	21	6	30	6	26	5	23	7	21	6
		2 x 12	33	8	30	7	28	4	26	2	37	1	32	1	28	9	26	2
	No. 3	2 x 4	9	2	7	11	7	1	6	5	9	2	7	11	7	1	6	5
		2 x 6	13	9	11	11	10	8	9	9	13	9	11	11	10	8	9	9
		2 x 8	18	2	15	9	14	1	12	10	18	2	15	9	14	1	12	10
2 x 10		23	2	20	1	17	11	16	5	23	2	20	1	17	11	16	5	
2 x 12		28	2	24	5	21	10	19	11	28	2	24	5	21	10	19	11	
Construction	2 x 4	10	0	9	1	8	2	7	5	10	7	9	2	8	2	7	5	
Standard	2 x 4	7	11	6	10	6	1	5	7	7	11	6	10	6	1	5	7	
Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8	

Continued on next page

TABLE 2-A (Cont'd)
CEILING JOISTS — ATTIC NOT ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 10 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 10 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	10	4	9	4	8	8	8	2	11	9	10	8	9	11	9	4
		2 x 6	16	2	14	9	13	8	12	10	18	7	16	10	15	8	14	9
		2 x 8	21	4	19	5	18	0	16	11	24	6	22	3	20	8	19	5
		2 x 10	27	3	24	9	23	0	21	8	31	3	28	4	26	4	24	9
		2 x 12	33	2	30	2	28	0	26	4	38	0	34	6	32	0	30	2
	No. 1	2 x 4	10	4	9	4	8	8	8	2	11	9	10	8	9	11	9	4
		2 x 6	16	2	14	9	13	8	12	10	18	7	16	10	15	8	14	9
		2 x 8	21	4	19	5	18	0	16	11	24	6	22	3	20	8	19	5
		2 x 10	27	3	24	9	23	0	21	8	31	3	28	4	26	4	24	9
		2 x 12	33	2	30	2	28	0	26	4	38	0	34	6	32	0	30	2
	No. 2	2 x 4	9	11	9	0	8	4	7	11	11	5	10	4	9	7	9	0
		2 x 6	15	8	14	2	13	2	12	5	17	11	16	3	15	1	14	2
		2 x 8	20	7	18	9	17	5	16	4	23	7	21	5	19	11	18	9
		2 x 10	26	4	23	11	22	2	20	11	30	2	27	5	25	5	23	11
2 x 12		32	0	29	1	27	0	25	5	36	8	33	4	30	11	29	1	
No. 3	2 x 4	9	7	8	8	8	1	7	5	10	7	9	2	8	2	7	5	
	2 x 6	15	0	13	5	12	0	11	0	15	6	13	5	12	0	11	0	
	2 x 8	19	10	17	9	15	10	14	6	20	6	17	9	15	10	14	6	
	2 x 10	25	4	22	8	20	3	18	6	26	2	22	8	20	3	18	6	
	2 x 12	30	9	27	7	24	8	22	6	31	10	27	7	24	8	22	6	
Construction	2 x 4	9	7	8	8	8	1	7	7	10	11	9	11	9	2	8	4	
Standard	2 x 4	8	9	7	7	6	9	6	2	8	9	7	7	6	9	6	2	
Utility	2 x 4	5	11	5	1	4	7	4	2	5	11	5	1	4	7	4	2	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	10	10	9	10	9	2	8	7	12	5	11	3	10	5	9	10
		2 x 6	17	1	15	6	14	4	13	6	19	6	17	9	16	6	15	3
		2 x 8	22	6	20	5	19	0	17	10	25	9	23	5	21	8	20	1
		2 x 10	28	8	26	1	24	2	22	9	32	10	29	10	27	8	25	8
		2 x 12	34	11	31	9	29	5	27	8	40	0	36	4	33	8	31	3
	No. 1	2 x 4	10	10	9	10	9	2	8	7	12	5	11	3	10	5	9	8
		2 x 6	17	1	15	6	14	4	13	6	19	6	17	3	15	5	14	1
		2 x 8	22	6	20	5	19	0	17	10	25	9	22	9	20	4	18	7
		2 x 10	28	8	26	1	24	2	22	9	32	10	29	0	26	0	23	8
		2 x 12	34	11	31	9	29	5	27	8	40	0	35	4	31	7	28	10
	No. 2	2 x 4	10	5	9	6	8	10	8	3	11	11	10	9	9	7	8	9
		2 x 6	16	5	14	11	13	10	12	9	18	1	15	8	14	0	12	9
		2 x 8	21	8	19	8	18	3	16	10	23	11	20	8	18	6	16	10
		2 x 10	27	8	25	1	23	4	21	6	30	6	26	5	23	7	21	6
2 x 12		33	8	30	7	28	4	26	2	37	1	32	1	28	9	26	2	
No. 3	2 x 4	9	2	7	11	7	1	6	5	9	2	7	11	7	1	6	5	
	2 x 6	13	9	11	11	10	8	9	9	13	9	11	11	10	8	9	9	
	2 x 8	18	2	15	9	14	1	12	10	18	2	15	9	14	1	12	10	
	2 x 10	23	2	20	1	17	11	16	5	23	2	20	1	17	11	16	5	
	2 x 12	28	2	24	5	21	10	19	11	28	2	24	5	21	10	19	11	
Construction	2 x 4	10	0	9	1	8	2	7	5	10	7	9	2	8	2	7	5	
Standard	2 x 4	7	11	6	10	6	1	5	7	7	11	6	10	6	1	5	7	
Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8	

Continued on next page

TABLE 2-A (Cont'd)
CEILING JOISTS — ATTIC NOT ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 10 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 10 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	10	2	9	3	8	7	8	1	11	8	10	7	9	10	9	3
		2 x 6	16	0	14	7	13	6	12	9	18	4	16	8	15	6	14	7
		2 x 8	21	2	19	3	17	10	16	9	24	3	22	0	20	5	19	3
		2 x 10	27	0	24	6	22	9	21	5	30	11	28	1	26	1	24	6
		2 x 12	32	10	29	10	27	8	26	1	37	7	34	2	31	9	29	10
	No. 1	2 x 4	10	2	9	3	8	7	8	1	11	8	10	7	9	10	9	3
		2 x 6	16	0	14	7	13	6	12	9	18	4	16	8	15	1	13	9
		2 x 8	21	2	19	3	17	10	16	9	24	3	22	0	19	11	18	2
		2 x 10	27	0	24	6	22	9	21	5	30	11	28	1	25	5	23	2
		2 x 12	32	10	29	10	27	8	26	1	37	7	34	2	30	11	28	2
	No. 2	2 x 4	9	10	8	11	8	4	7	10	11	3	10	3	9	4	8	7
		2 x 6	15	6	14	1	13	1	12	4	17	7	15	3	13	8	12	5
		2 x 8	20	5	18	7	17	3	16	3	23	3	20	1	18	0	16	5
		2 x 10	26	1	23	9	22	0	20	9	29	8	25	8	23	0	21	0
2 x 12		31	9	28	10	26	9	25	2	36	1	31	3	27	11	25	6	
No. 3	2 x 4	9	2	7	11	7	1	6	5	9	2	7	11	7	1	6	5	
	2 x 6	13	1	11	4	10	2	9	3	13	1	11	4	10	2	9	3	
	2 x 8	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3	
	2 x 10	22	1	19	2	17	1	15	7	22	1	19	2	17	1	15	7	
	2 x 12	26	11	23	3	20	10	19	0	26	11	23	3	20	10	19	0	
Construction	2 x 4	9	6	8	7	7	11	7	3	10	3	8	10	7	11	7	3	
Standard	2 x 4	7	11	6	10	6	1	5	7	7	11	6	10	6	1	5	7	
Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	9	10	8	11	8	3	7	9	11	3	10	3	9	6	8	11
		2 x 6	15	6	14	1	13	0	12	3	17	8	16	1	14	11	14	1
		2 x 8	20	5	18	6	17	2	16	2	23	4	21	3	19	8	18	6
		2 x 10	26	0	23	8	21	11	20	8	29	10	27	1	25	2	23	8
		2 x 12	31	8	28	9	26	9	25	2	36	3	32	11	30	7	28	9
	No. 1	2 x 4	9	10	8	11	8	3	7	9	11	3	10	3	9	6	8	11
		2 x 6	15	6	14	1	13	0	12	3	17	8	16	1	14	11	14	1
		2 x 8	20	5	18	6	17	2	16	2	23	4	21	3	19	8	18	6
		2 x 10	26	0	23	8	21	11	20	8	29	10	27	1	25	2	23	8
		2 x 12	31	8	28	9	26	9	25	2	36	3	32	11	30	7	28	9
	No. 2	2 x 4	9	6	8	7	8	0	7	6	10	10	9	10	9	2	8	7
		2 x 6	14	11	13	7	12	7	11	10	17	1	15	3	13	8	12	5
		2 x 8	19	8	17	11	16	7	15	8	22	7	20	1	18	0	16	5
		2 x 10	25	2	22	10	21	2	19	11	28	9	25	8	23	0	21	0
2 x 12		30	7	27	9	25	10	24	3	35	0	31	3	27	11	25	6	
No. 3	2 x 4	9	1	7	11	7	1	6	5	9	2	7	11	7	1	6	5	
	2 x 6	13	9	11	11	10	8	9	9	13	9	11	11	10	8	9	9	
	2 x 8	18	2	15	9	14	1	12	10	18	2	15	9	14	1	12	10	
	2 x 10	23	2	20	1	17	11	16	5	23	2	20	1	17	11	16	5	
	2 x 12	28	2	24	5	21	10	19	11	28	2	24	5	21	10	19	11	
Construction	2 x 4	9	1	8	3	7	8	7	3	10	5	9	2	8	2	7	5	
Standard	2 x 4	7	11	6	10	6	1	5	7	7	11	6	10	6	1	5	7	
Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8	

Continued on next page

TABLE 2-A (Cont'd)
CEILING JOISTS — ATTIC NOT ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 10 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 10 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	9	10	8	11	8	3	7	9	11	3	10	3	9	6	8	11
		2 x 6	15	6	14	1	13	0	12	3	17	8	16	1	14	11	14	1
		2 x 8	20	5	18	6	17	2	16	2	23	4	21	3	19	8	18	6
		2 x 10	26	0	23	8	21	11	20	8	29	10	27	1	25	2	23	8
		2 x 12	31	8	28	9	26	9	25	2	36	3	32	11	30	7	28	9
	No. 1	2 x 4	9	10	8	11	8	3	7	9	11	3	10	3	9	6	8	11
		2 x 6	15	6	14	1	13	0	12	3	17	8	16	1	14	9	13	5
		2 x 8	20	5	18	6	17	2	16	2	23	4	21	3	19	5	17	9
		2 x 10	26	0	23	8	21	11	20	8	29	10	27	1	24	10	22	8
		2 x 12	31	8	28	9	26	9	25	2	36	3	32	11	30	2	27	7
	No. 2	2 x 4	9	6	8	7	8	0	7	6	10	10	9	10	9	2	8	4
		2 x 6	14	11	13	7	12	7	11	10	17	1	14	10	13	3	12	1
		2 x 8	19	8	17	11	16	7	15	7	22	7	19	7	17	6	15	11
		2 x 10	25	2	22	10	21	2	19	11	28	9	25	0	22	4	20	4
		2 x 12	30	7	27	9	25	10	24	3	35	0	30	4	27	2	24	9
	No. 3	2 x 4	8	9	7	7	6	9	6	2	8	9	7	7	6	9	6	2
		2 x 6	13	1	11	4	10	2	9	3	13	1	11	4	10	2	9	3
		2 x 8	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3
Construction	2 x 4	9	1	8	3	7	8	7	0	9	10	8	7	7	8	7	0	
	Standard	2 x 4	7	5	6	5	5	9	5	3	7	5	6	5	5	9	5	3
	Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	10	0	9	1	8	5	7	11	11	5	10	4	9	7	9	1
		2 x 6	15	8	14	3	13	3	12	5	17	11	16	4	15	2	14	3
		2 x 8	20	8	18	9	17	5	16	5	23	8	21	6	20	0	18	9
		2 x 10	26	5	24	0	22	3	20	11	30	3	27	5	25	6	24	0
		2 x 12	32	1	29	2	27	1	25	6	36	9	33	5	31	0	29	2
	No. 1	2 x 4	10	0	9	1	8	5	7	11	11	5	10	4	9	7	9	1
		2 x 6	15	8	14	3	13	3	12	5	17	11	16	4	15	1	13	9
		2 x 8	20	8	18	9	17	5	16	5	23	8	21	6	19	11	18	2
		2 x 10	26	5	24	0	22	3	20	11	30	3	27	5	25	5	23	2
		2 x 12	32	1	29	2	27	1	25	6	36	9	33	5	30	11	28	2
	No. 2	2 x 4	9	7	8	9	8	1	7	7	11	0	10	0	9	3	8	7
		2 x 6	15	1	13	9	12	9	12	0	17	4	15	3	13	8	12	5
		2 x 8	19	11	18	1	16	10	15	10	22	10	20	1	18	0	16	5
		2 x 10	25	5	23	1	21	5	20	2	29	2	25	8	23	0	21	0
		2 x 12	31	0	28	1	26	1	24	7	35	5	31	3	27	11	25	6
	No. 3	2 x 4	9	2	7	11	7	1	6	5	9	2	7	11	7	1	6	5
		2 x 6	13	1	11	4	10	2	9	3	13	1	11	4	10	2	9	3
		2 x 8	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3
2 x 10		22	1	19	2	17	1	15	7	22	1	19	2	17	1	15	7	
2 x 12		26	11	23	3	20	10	19	0	26	11	23	3	20	10	19	0	
Construction	2 x 4	9	3	8	5	7	10	7	3	10	3	8	10	7	11	7	3	
	Standard	2 x 4	7	11	6	10	6	1	5	7	7	11	6	10	6	1	5	7
	Utility	2 x 4	5	3	4	7	4	1	3	8	5	3	4	7	4	1	3	8

TABLE 2-B
FLOOR JOISTS — LIVING QUARTERS
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 40 lb per sq ft							
			All Ceilings							
			Joist Spacing							
			12 in.		16 in.		20 in.		24 in.	
		<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	7	1	6	5	5	11	5	7
		2 x 6	11	1	10	1	9	4	8	10
		2 x 8	14	8	13	4	12	4	11	7
		2 x 10	18	9	17	0	15	9	14	10
		2 x 12	22	9	20	8	19	2	18	1
	No. 1	2 x 4	7	1	6	5	5	11	5	7
		2 x 6	11	1	10	1	9	4	8	10
		2 x 8	14	8	13	4	12	4	11	7
		2 x 10	18	9	17	0	15	9	14	10
		2 x 12	22	9	20	8	19	2	18	1
	No. 2	2 x 4	6	10	6	2	5	9	5	5
		2 x 6	10	9	9	9	9	0	8	5
		2 x 8	14	2	12	10	11	11	11	2
2 x 10		18	1	16	5	15	3	14	3	
2 x 12		22	0	20	0	18	6	17	4	
No. 3	2 x 4	6	2	5	4	4	9	4	4	
	2 x 6	9	1	7	10	7	0	6	5	
	2 x 8	12	0	10	4	9	3	8	6	
	2 x 10	15	4	13	3	11	10	10	10	
	2 x 12	18	7	16	1	14	5	13	2	
Construction	2 x 4	6	7	5	11	5	5	4	11	
Standard	2 x 4	5	2	4	5	4	0	3	8	
Utility	2 x 4	3	8	3	2	2	10	2	7	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	6	10	6	2	5	9	5	5
		2 x 6	10	9	9	9	9	0	8	6
		2 x 8	14	2	12	10	11	11	11	3
		2 x 10	18	1	16	5	15	3	14	4
		2 x 12	22	0	20	0	18	6	17	5
	No. 1	2 x 4	6	10	6	2	5	9	5	5
		2 x 6	10	9	9	9	8	11	8	1
		2 x 8	14	2	12	10	11	9	10	9
		2 x 10	18	1	16	5	15	0	13	8
		2 x 12	22	0	20	0	18	3	16	8
	No. 2	2 x 4	6	7	5	11	5	6	5	0
		2 x 6	10	3	8	10	7	11	7	3
		2 x 8	13	6	11	8	10	5	9	6
2 x 10		17	3	14	11	13	4	12	2	
2 x 12		20	11	18	2	16	3	14	10	
No. 3	2 x 4	5	2	4	5	4	0	3	8	
	2 x 6	7	9	6	9	6	0	5	6	
	2 x 8	10	3	8	10	7	11	7	3	
	2 x 10	13	1	11	4	10	2	9	3	
	2 x 12	15	11	13	10	12	4	11	3	
Construction	2 x 4	5	11	5	2	4	7	4	2	
Standard	2 x 4	4	5	3	10	3	5	3	2	
Utility	2 x 4	2	11	2	7	2	3	2	1	

Continued on next page

TABLE 2-B (Cont'd)
FLOOR JOISTS — LIVING QUARTERS
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 40 lb per sq ft							
			All Ceilings							
			Joist Spacing							
			12 in.		16 in.		20 in.		24 in.	
			in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	6	6	5	10	5	5	5	2
		2 x 6	10	2	9	3	8	7	8	1
		2 x 8	13	5	12	3	11	4	10	8
		2 x 10	17	2	15	7	14	6	13	7
		2 x 12	20	11	19	0	17	7	16	7
	No. 1	2 x 4	6	6	5	10	5	5	5	2
		2 x 6	10	2	9	3	8	7	8	1
		2 x 8	13	5	12	3	11	4	10	8
		2 x 10	17	2	15	7	14	6	13	7
		2 x 12	20	11	19	0	17	7	16	7
	No. 2	2 x 4	6	3	5	8	5	3	4	11
		2 x 6	9	10	8	11	8	3	7	10
		2 x 8	13	0	11	9	10	11	10	3
		2 x 10	16	7	15	1	14	0	13	2
		2 x 12	20	2	18	4	17	0	16	0
	No. 3	2 x 4	5	11	5	2	4	7	4	2
		2 x 6	8	9	7	7	6	9	6	2
		2 x 8	11	7	10	0	8	11	8	2
		2 x 10	14	9	12	10	11	5	10	5
		2 x 12	18	0	15	7	13	11	12	8
	Construction	2 x 4	6	0	5	5	5	1	4	8
Standard	2 x 4	4	11	4	3	3	10	3	6	
Utility	2 x 4	3	4	2	10	2	7	2	4	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	6	10	6	2	5	9	5	5
		2 x 6	10	9	9	9	9	0	8	6
		2 x 8	14	2	12	10	11	11	11	3
		2 x 10	18	1	16	5	15	3	14	4
		2 x 12	22	0	20	0	18	6	17	5
	No. 1	2 x 4	6	10	6	2	5	9	5	5
		2 x 6	10	9	9	9	8	8	7	11
		2 x 8	14	2	12	10	11	6	10	6
		2 x 10	18	1	16	5	14	8	13	5
		2 x 12	22	0	20	0	17	10	16	4
	No. 2	2 x 4	6	7	5	11	5	5	4	11
		2 x 6	10	3	8	10	7	11	7	3
		2 x 8	13	6	11	8	10	5	9	6
		2 x 10	17	3	14	11	13	4	12	2
		2 x 12	20	11	18	2	16	3	14	10
	No. 3	2 x 4	5	2	4	5	4	0	3	8
		2 x 6	7	9	6	9	6	0	5	6
		2 x 8	10	3	8	10	7	11	7	3
		2 x 10	13	1	11	4	10	2	9	3
		2 x 12	15	11	13	10	12	4	11	3
	Construction	2 x 4	5	11	5	2	4	7	4	2
Standard	2 x 4	4	5	3	10	3	5	3	2	
Utility	2 x 4	2	11	2	7	2	3	2	1	

Continued on next page

TABLE 2-B (Cont'd)
FLOOR JOISTS — LIVING QUARTERS
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size. <i>in.</i>	LIVE LOAD 40 lb per sq ft							
			All Ceilings							
			Joist Spacing							
			12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Spruce-Pine-Fir (includes Spruce (all Species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	6	5	5	10	5	5	5	1
		2 x 6	10	1	9	2	8	6	8	0
		2 x 8	13	4	12	1	11	3	10	7
		2 x 10	17	0	15	5	14	4	13	6
		2 x 12	20	8	18	9	17	5	16	5
	No. 1	2 x 4	6	5	5	10	5	5	5	1
		2 x 6	10	1	9	2	8	6	7	9
		2 x 8	13	4	12	1	11	3	10	3
		2 x 10	17	0	15	5	14	4	13	1
		2 x 12	20	8	18	9	17	5	15	11
	No. 2	2 x 4	6	2	5	7	5	3	4	10
		2 x 6	9	9	8	7	7	8	7	0
		2 x 8	12	10	11	4	10	2	9	3
2 x 10		16	5	14	6	13	0	11	10	
2 x 12		20	0	17	8	15	9	14	5	
No. 3	2 x 4	5	2	4	5	4	0	3	8	
	2 x 6	7	5	6	5	5	9	5	3	
	2 x 8	9	9	8	6	7	7	6	11	
	2 x 10	12	6	10	10	9	8	8	10	
	2 x 12	15	2	13	2	11	9	10	9	
Construction	2 x 4	5	9	5	0	4	5	4	1	
Standard	2 x 4	4	5	3	10	3	5	3	2	
Utility	2 x 4	2	11	2	7	2	3	2	1	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	6	2	5	7	5	2	4	11
		2 x 6	9	9	8	10	8	2	7	9
		2 x 8	12	10	11	8	10	10	10	2
		2 x 10	16	5	14	11	13	10	13	0
		2 x 12	19	11	18	1	16	10	15	10
	No. 1	2 x 4	6	2	5	7	5	2	4	11
		2 x 6	9	9	8	10	8	2	7	9
		2 x 8	12	10	11	8	10	10	10	2
		2 x 10	16	5	14	11	13	10	13	0
		2 x 12	19	11	18	1	16	10	15	10
	No. 2	2 x 4	6	0	5	5	5	0	4	9
		2 x 6	9	5	8	6	7	8	7	0
		2 x 8	12	5	11	3	10	2	9	3
2 x 10		15	10	14	4	13	0	11	10	
2 x 12		19	3	17	6	15	9	14	5	
No. 3	2 x 4	5	2	4	5	4	0	3	8	
	2 x 6	7	9	6	9	6	0	5	6	
	2 x 8	10	3	8	10	7	11	7	3	
	2 x 10	13	1	11	4	10	2	9	3	
	2 x 12	15	11	13	10	12	4	11	3	
Construction	2 x 4	5	9	5	2	4	7	4	2	
Standard	2 x 4	4	5	3	10	3	5	3	2	
Utility	2 x 4	2	11	2	7	2	3	2	1	

Continued on next page

TABLE 2-B (Cont'd)
FLOOR JOISTS — LIVING QUARTERS
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 40 lb per sq ft							
			All Ceilings							
			Joist Spacing							
			12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	6	2	5	7	5	2	4	11
		2 x 6	9	9	8	10	8	2	7	9
		2 x 8	12	10	11	8	10	10	10	2
		2 x 10	16	5	14	11	13	10	13	0
		2 x 12	19	11	18	1	16	10	15	10
	No. 1	2 x 4	6	2	5	7	5	2	4	11
		2 x 6	9	9	8	10	8	2	7	7
		2 x 8	12	10	11	8	10	10	10	0
		2 x 10	16	5	14	11	13	10	12	10
		2 x 12	19	11	18	1	16	10	15	7
	No. 2	2 x 4	6	0	5	5	5	0	4	8
		2 x 6	9	5	8	4	7	6	6	10
		2 x 8	12	5	11	1	9	10	9	0
		2 x 10	15	10	14	1	12	7	11	6
2 x 12		19	3	17	2	15	4	14	0	
No. 3	2 x 4	4	11	4	3	3	10	3	6	
	2 x 6	7	5	6	5	5	9	5	3	
	2 x 8	9	9	8	6	7	7	6	11	
	2 x 10	12	6	10	10	9	8	8	10	
	2 x 12	15	2	13	2	11	9	10	9	
Construction	2 x 4	5	7	4	10	4	4	3	11	
Standard	2 x 4	4	2	3	8	3	3	2	11	
Utility	2 x 4	2	11	2	7	2	3	2	1	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	6	3	5	8	5	3	5	0
		2 x 6	9	10	8	11	8	4	7	10
		2 x 8	13	0	11	10	11	0	10	4
		2 x 10	16	7	15	1	14	0	13	2
		2 x 12	20	3	18	4	17	0	16	0
	No. 1	2 x 4	6	3	5	8	5	3	5	0
		2 x 6	9	10	8	11	8	4	7	9
		2 x 8	13	0	11	10	11	0	10	3
		2 x 10	16	7	15	1	14	0	13	1
		2 x 12	20	3	18	4	17	0	15	11
	No. 2	2 x 4	6	0	5	6	5	1	4	9
		2 x 6	9	6	8	7	7	8	7	0
		2 x 8	12	7	11	4	10	2	9	3
		2 x 10	16	0	14	6	13	0	11	10
2 x 12		19	6	17	8	15	9	14	5	
No. 3	2 x 4	5	2	4	5	4	0	3	8	
	2 x 6	7	5	6	5	5	9	5	3	
	2 x 8	9	9	8	6	7	7	6	11	
	2 x 10	12	6	10	10	9	8	8	10	
	2 x 12	15	2	13	2	11	9	10	9	
Construction	2 x 4	5	9	5	0	4	5	4	1	
Standard	2 x 4	4	5	3	10	3	5	3	2	
Utility	2 x 4	2	11	2	7	2	3	2	1	

TABLE 2-C
FLOOR JOISTS — BEDROOMS AND ATTICS ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	1	10	4	9	8	14	0	12	9	11	10	11	1
		2 x 8	16	2	14	8	13	7	12	10	18	6	16	9	15	7	14	8
		2 x 10	20	7	18	9	17	4	16	4	23	7	21	5	19	11	18	9
		2 x 12	25	1	22	9	21	2	19	11	28	8	26	1	24	2	22	9
	No. 1	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	1	10	4	9	8	14	0	12	9	11	8	10	7
		2 x 8	16	2	14	8	13	7	12	10	18	6	16	9	15	4	14	0
		2 x 10	20	7	18	9	17	4	16	4	23	7	21	5	19	7	17	11
		2 x 12	25	1	22	9	21	2	19	11	28	8	26	1	23	10	21	9
	No. 2	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	8
		2 x 6	11	10	10	9	9	11	9	4	13	6	11	9	10	6	9	7
		2 x 8	15	7	14	2	13	2	12	4	17	10	15	6	13	10	12	8
		2 x 10	19	11	18	1	16	9	15	9	22	9	19	9	17	8	16	2
		2 x 12	24	2	22	0	20	5	19	2	27	8	24	1	21	6	19	7
	No. 3	2 x 4	6	11	6	0	5	5	4	11	6	11	6	0	5	5	4	11
		2 x 6	10	3	8	11	7	11	7	3	10	3	8	11	7	11	7	3
		2 x 8	13	7	11	9	10	6	9	7	13	7	11	9	10	6	9	7
		2 x 10	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3
		2 x 12	21	1	18	3	16	4	14	11	21	1	18	3	16	4	14	11
	Construction	2 x 4	7	3	6	7	6	1	5	7	7	11	6	10	6	1	5	7
Standard	2 x 4	5	10	5	1	4	6	4	1	5	10	5	1	4	6	4	1	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	9
		2 x 6	11	10	10	9	9	11	9	4	13	6	12	2	10	11	9	11
		2 x 8	15	7	14	2	13	2	12	4	17	10	16	1	14	4	13	1
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	6	18	4	16	9
		2 x 12	24	2	22	0	20	5	19	2	27	8	24	11	22	4	20	4
	No. 1	2 x 4	7	6	6	10	6	4	5	11	8	7	7	7	6	9	6	2
		2 x 6	11	10	10	9	9	11	9	2	13	0	11	3	10	1	9	2
		2 x 8	15	7	14	2	13	2	12	2	17	2	14	10	13	4	12	2
		2 x 10	19	11	18	1	16	9	15	6	21	11	19	0	17	0	15	6
		2 x 12	24	2	22	0	20	5	18	10	26	8	23	1	20	8	18	10
	No. 2	2 x 4	7	3	6	7	6	1	5	9	8	1	7	0	6	3	5	9
		2 x 6	11	5	10	0	9	0	8	2	11	7	10	0	9	0	8	2
		2 x 8	15	0	13	3	11	10	10	10	15	3	13	3	11	10	10	10
		2 x 10	19	2	16	11	15	1	13	9	19	6	16	11	15	1	13	9
		2 x 12	23	4	20	7	18	4	16	9	23	9	20	7	18	4	16	9
	No. 3	2 x 4	5	10	5	1	4	6	4	1	5	10	5	1	4	6	4	1
		2 x 6	8	10	7	7	6	10	6	3	8	10	7	7	6	10	6	3
		2 x 8	11	7	10	1	9	0	8	2	11	7	10	1	9	0	8	2
		2 x 10	14	10	12	10	11	6	10	6	14	10	12	10	11	6	10	6
		2 x 12	18	1	15	7	14	0	12	9	18	1	15	7	14	0	12	9
	Construction	2 x 4	6	9	5	10	5	3	4	9	6	9	5	10	5	3	4	9
Standard	2 x 4	5	1	4	4	3	11	3	7	5	1	4	4	3	11	3	7	
Utility	2 x 4	3	4	2	11	2	7	2	4	3	4	2	11	2	7	2	4	

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TABLE 2-C (Cont'd)
FLOOR JOISTS — BEDROOMS AND ATTICS ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	7	1	6	6	6	0	5	8	8	2	7	5	6	11	6	6
		2 x 6	11	3	10	2	9	5	8	11	12	10	11	8	10	10	10	2
		2 x 8	14	10	13	5	12	6	11	9	16	11	15	5	14	3	13	5
		2 x 10	18	11	17	2	15	11	15	0	21	8	19	8	18	3	17	2
	2 x 12	23	0	20	11	19	5	18	3	26	4	23	11	22	2	20	11	
	No. 1	2 x 4	7	1	6	6	6	0	5	8	8	2	7	5	6	11	6	6
		2 x 6	11	3	10	2	9	5	8	11	12	10	11	8	10	10	10	2
		2 x 8	14	10	13	5	12	6	11	9	16	11	15	5	14	3	13	5
		2 x 10	18	11	17	2	15	11	15	0	21	8	19	8	18	3	17	2
	2 x 12	23	0	20	11	19	5	18	3	26	4	23	11	22	2	20	11	
	No. 2	2 x 4	6	10	6	3	5	9	5	5	7	11	7	2	6	8	6	3
		2 x 6	10	10	9	10	9	1	8	7	12	5	11	3	10	1	9	2
		2 x 8	14	3	13	0	12	0	11	4	16	4	14	10	13	4	12	2
		2 x 10	18	3	16	7	15	4	14	6	20	11	19	0	17	0	15	6
2 x 12	22	2	20	2	18	8	17	7	25	5	23	1	20	8	18	10		
No. 3	2 x 4	6	7	5	10	5	3	4	9	6	9	5	10	5	3	4	9	
	2 x 6	9	11	8	7	7	8	7	0	9	11	8	7	7	8	7	0	
	2 x 8	13	1	11	4	10	2	9	3	13	1	11	4	10	2	9	3	
	2 x 10	16	9	14	6	12	11	11	10	16	9	14	6	12	11	11	10	
2 x 12	20	4	17	8	15	9	14	5	20	4	17	8	15	9	14	5		
Con- struction	2 x 4	6	7	6	0	5	7	5	3	7	7	6	6	5	10	5	4	
Standard	2 x 4	5	7	4	10	4	4	3	11	5	7	4	10	4	4	3	11	
Utility	2 x 4	3	9	3	3	2	11	2	8	3	9	3	3	2	11	2	8	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	9
		2 x 6	11	10	10	9	9	11	9	4	13	6	11	11	10	8	9	9
		2 x 8	15	7	14	2	13	2	12	4	17	10	15	9	14	1	12	10
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	2	18	0	16	5
	2 x 12	24	2	22	0	20	5	19	2	27	8	24	6	21	11	20	0	
	No. 1	2 x 4	7	6	6	10	6	4	5	11	8	7	7	7	6	9	6	2
		2 x 6	11	10	10	9	9	10	9	0	12	9	11	0	9	10	9	0
		2 x 8	15	7	14	2	13	0	11	11	16	10	14	7	13	0	11	11
		2 x 10	19	11	18	1	16	7	15	2	21	6	18	7	16	7	15	2
	2 x 12	24	2	22	0	20	3	18	5	26	1	22	7	20	3	18	5	
	No. 2	2 x 4	7	3	6	7	6	1	5	7	7	11	6	10	6	1	5	7
		2 x 6	11	5	10	0	9	0	8	2	11	7	10	0	9	0	8	2
		2 x 8	15	0	13	3	11	10	10	10	15	3	13	3	11	10	10	10
		2 x 10	19	2	16	11	15	1	13	9	19	6	16	11	15	1	13	9
2 x 12	23	4	20	7	18	4	16	9	23	9	20	7	18	4	16	9		
No. 3	2 x 4	5	10	5	1	4	6	4	1	5	10	5	1	4	6	4	1	
	2 x 6	8	10	7	7	6	10	6	3	8	10	7	7	6	10	6	3	
	2 x 8	11	7	10	1	9	0	8	2	11	7	10	1	9	0	8	2	
	2 x 10	14	10	12	10	11	6	10	6	14	10	12	10	11	6	10	6	
2 x 12	18	1	15	7	14	0	12	9	18	1	15	7	14	0	12	9		
Con- struction	2 x 4	6	9	5	10	5	3	4	9	6	9	5	10	5	3	4	9	
Standard	2 x 4	5	1	4	4	3	11	3	7	5	1	4	4	3	11	3	7	
Utility	2 x 4	3	4	2	11	2	7	2	4	3	4	2	11	2	7	2	4	

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TABLE 2-C (Cont'd)
FLOOR JOISTS — BEDROOMS AND ATTICS ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	7	1	6	5	5	11	5	7	8	1	7	4	6	10	6	5
		2 x 6	11	1	10	1	9	4	8	10	12	9	11	7	10	6	9	7
		2 x 8	14	8	13	4	12	4	11	7	16	9	15	3	13	10	12	8
		2 x 10	18	9	17	0	15	9	14	10	21	5	19	6	17	8	16	2
	2 x 12	22	9	20	8	19	2	18	1	26	1	23	8	21	6	19	7	
	No. 1	2 x 4	7	1	6	5	5	11	5	7	8	1	7	4	6	8	6	1
		2 x 6	11	1	10	1	9	4	8	10	12	6	10	9	9	8	8	10
		2 x 8	14	8	13	4	12	4	11	7	16	5	14	3	12	9	11	7
		2 x 10	18	9	17	0	15	9	14	10	21	0	18	2	16	3	14	10
		2 x 12	22	9	20	8	19	2	18	1	25	6	22	1	19	9	18	1
	No. 2	2 x 4	6	10	6	2	5	9	5	5	7	9	6	8	6	0	5	5
		2 x 6	10	9	9	9	8	9	7	11	11	3	9	9	8	9	7	11
		2 x 8	14	2	12	10	11	6	10	6	14	10	12	10	11	6	10	6
		2 x 10	18	1	16	5	14	8	13	5	19	0	16	5	14	8	13	5
		2 x 12	22	0	20	0	17	11	16	4	23	1	20	0	17	11	16	4
	No. 3	2 x 4	5	10	5	1	4	6	4	1	5	10	5	1	4	6	4	1
		2 x 6	8	5	7	3	6	6	5	11	8	5	7	3	6	6	5	11
2 x 8		11	1	9	7	8	7	7	10	11	1	9	7	8	7	7	10	
2 x 10		14	2	12	3	10	11	10	0	14	2	12	3	10	11	10	0	
2 x 12	17	2	14	11	13	4	12	2	17	2	14	11	13	4	12	2		
Construction	2 x 4	6	6	5	8	5	1	4	7	6	6	5	8	5	1	4	7	
Standard	2 x 4	5	1	4	4	3	11	3	7	5	1	4	4	3	11	3	7	
Utility	2 x 4	3	4	2	11	2	7	2	4	3	4	2	11	2	7	2	4	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	4	9	7
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	8	13	8	12	8
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	9	17	5	16	2
	2 x 12	21	11	19	11	18	6	17	5	25	2	22	10	21	2	19	7	
	No. 1	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	1
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	0	9	10	9	0
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	7	13	0	11	11
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	7	16	7	15	2
		2 x 12	21	11	19	11	18	6	17	5	25	2	22	7	20	3	18	5
	No. 2	2 x 4	6	7	6	0	5	6	5	2	7	6	6	10	6	1	5	7
		2 x 6	10	4	9	5	8	9	7	11	11	3	9	9	8	9	7	11
		2 x 8	13	8	12	5	11	6	10	6	14	10	12	10	11	6	10	6
		2 x 10	17	5	15	10	14	8	13	5	19	0	16	5	14	8	13	5
		2 x 12	21	2	19	3	17	10	16	4	23	1	20	0	17	11	16	4
	No. 3	2 x 4	5	10	5	1	4	6	4	1	5	10	5	1	4	6	4	1
		2 x 6	8	10	7	7	6	10	6	3	8	10	7	7	6	10	6	3
2 x 8		11	7	10	1	9	0	8	2	11	7	10	1	9	0	8	2	
2 x 10		14	10	12	10	11	6	10	6	14	10	12	10	11	6	10	6	
2 x 12		18	1	15	7	14	0	12	9	18	1	15	7	14	0	12	9	
Construction	2 x 4	6	4	5	9	5	3	4	9	6	9	5	10	5	3	4	9	
Standard	2 x 4	5	1	4	4	3	11	3	7	5	1	4	4	3	11	3	7	
Utility	2 x 4	3	4	2	11	2	7	2	4	3	4	2	11	2	7	2	4	

Continued on next page

TABLE 2-C (Cont'd)
FLOOR JOISTS — BEDROOMS AND ATTICS ACCESSIBLE BY A STAIRWAY
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size,	LIVE LOAD 30 lb per sq ft							
			Gypsum Board or Plastered Ceiling				Other Ceilings			
			Joist Spacing				Joist Spacing			
			12 in.	16 in.	20 in.	24 in.	12 in.	16 in.	20 in.	24 in.
			<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	6 10	6 2	5 9	5 5	7 9	7 1	6 7	6 2
		2 x 6	10 9	9 9	9 0	8 6	12 3	11 2	10 1	9 2
		2 x 8	14 2	12 10	11 11	11 2	16 2	14 8	13 4	12 2
		2 x 10	18 0	16 5	15 3	14 4	20 8	18 9	17 0	15 6
		2 x 12	21 11	19 11	18 6	17 5	25 2	22 10	20 8	18 10
	No. 1	2 x 4	6 10	6 2	5 9	5 5	7 9	7 1	6 5	5 10
		2 x 6	10 9	9 9	9 0	8 6	12 2	10 6	9 5	8 7
		2 x 8	14 2	12 10	11 11	11 2	16 1	13 11	12 5	11 4
		2 x 10	18 0	16 5	15 3	14 4	20 6	17 9	15 11	14 6
		2 x 12	21 11	19 11	18 6	17 5	24 11	21 7	19 4	17 8
	No. 2	2 x 4	6 7	6 0	5 6	5 2	7 6	6 6	5 10	5 4
		2 x 6	10 4	9 5	8 6	7 9	10 11	9 6	8 6	7 9
		2 x 8	13 8	12 5	11 2	10 2	14 5	12 6	11 2	10 2
		2 x 10	17 5	15 10	14 3	13 0	18 5	16 0	14 3	13 0
		2 x 12	21 2	19 3	17 5	15 10	22 5	19 5	17 5	15 10
	No. 3	2 x 4	5 7	4 10	4 4	3 11	5 7	4 10	4 4	3 11
		2 x 6	8 5	7 3	6 6	5 11	8 5	7 3	6 6	5 11
		2 x 8	11 1	9 7	8 7	7 10	11 1	9 7	8 7	7 10
		2 x 10	14 2	12 3	10 11	10 0	14 2	12 3	10 11	10 0
		2 x 12	17 2	14 11	13 4	12 2	17 2	14 11	13 4	12 2
	Construction	2 x 4	6 4	5 5	4 11	4 5	6 4	5 5	4 11	4 5
Standard	2 x 4	4 9	4 1	3 8	3 4	4 9	4 1	3 8	3 4	
Utility	2 x 4	3 4	2 11	2 7	2 4	3 4	2 11	2 7	2 4	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	6 11	6 3	5 10	5 6	7 11	7 2	6 8	6 3
		2 x 6	10 10	9 10	9 2	8 7	12 5	11 4	10 6	9 7
		2 x 8	14 4	13 0	12 1	11 4	16 5	14 11	13 10	12 8
		2 x 10	18 3	16 7	15 5	14 6	20 11	19 0	17 8	16 2
		2 x 12	22 3	20 3	18 9	17 8	25 6	23 2	21 6	19 7
	No. 1	2 x 4	6 11	6 3	5 10	5 6	7 11	7 2	6 8	6 1
		2 x 6	10 10	9 10	9 2	8 7	12 5	10 9	9 8	8 10
		2 x 8	14 4	13 0	12 1	11 4	16 5	14 3	12 9	11 7
		2 x 10	18 3	16 7	15 5	14 6	20 11	18 2	16 3	14 10
		2 x 12	22 3	20 3	18 9	17 8	25 6	22 1	19 9	18 1
	No. 2	2 x 4	6 8	6 0	5 7	5 3	7 7	6 8	6 0	5 5
		2 x 6	10 6	9 6	8 9	7 11	11 3	9 9	8 9	7 11
		2 x 8	13 10	12 7	11 6	10 6	14 10	12 10	11 6	10 6
		2 x 10	17 8	16 0	14 8	13 5	19 0	16 5	14 8	13 5
		2 x 12	21 5	19 6	17 11	16 4	23 1	20 0	17 11	16 4
	No. 3	2 x 4	5 10	5 1	4 6	4 1	5 10	5 1	4 6	4 1
		2 x 6	8 5	7 3	6 6	5 11	8 5	7 3	6 6	5 11
		2 x 8	11 1	9 7	8 7	7 10	11 1	9 7	8 7	7 10
		2 x 10	14 2	12 3	10 11	10 0	14 2	12 3	10 11	10 0
		2 x 12	17 2	14 11	13 4	12 2	17 2	14 11	13 4	12 2
	Construction	2 x 4	6 5	5 8	5 1	4 7	6 6	5 8	5 1	4 7
Standard	2 x 4	5 1	4 4	3 11	3 7	5 1	4 4	3 11	3 7	
Utility	2 x 4	3 4	2 11	2 7	2 4	3 4	2 11	2 7	2 4	

TABLE 2-D
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 50 lb per sq ft)

Commercial Designation	Grade	Nominal Size,	LIVE LOAD 50 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.	
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	6	7	5	11	5	6	5	2	7	6	6	10	6	4	5	11
		2 x 6	10	4	9	4	8	8	8	2	11	10	10	9	9	11	9	4
		2 x 8	13	7	12	4	11	6	10	9	15	7	14	2	13	2	12	4
		2 x 10	17	4	15	9	14	8	13	9	19	11	18	1	16	9	15	9
	2 x 12	21	2	19	2	17	10	16	9	24	2	22	0	20	5	19	2	
	No. 1	2 x 4	6	7	5	11	5	6	5	2	7	6	6	10	6	4	5	11
		2 x 6	10	4	9	4	8	8	8	2	11	10	10	9	9	11	9	2
		2 x 8	13	7	12	4	11	6	10	9	15	7	14	2	13	2	12	1
		2 x 10	17	4	15	9	14	8	13	9	19	11	18	1	16	9	15	6
	2 x 12	21	2	19	2	17	10	16	9	24	2	22	0	20	5	18	10	
No. 2	2 x 4	6	4	5	9	5	4	5	0	7	3	6	7	6	1	5	9	
	2 x 6	9	11	9	0	8	5	7	11	11	5	10	2	9	1	8	3	
	2 x 8	13	2	11	11	11	1	10	5	15	0	13	5	12	0	10	11	
	2 x 10	16	9	15	3	14	2	13	4	19	2	17	1	15	3	13	11	
2 x 12	20	5	18	6	17	2	16	2	23	4	20	9	18	7	17	0		
No. 3	2 x 4	6	0	5	2	4	8	4	3	6	0	5	2	4	8	4	3	
	2 x 6	8	11	7	8	6	10	6	3	8	11	7	8	6	10	6	3	
	2 x 8	11	9	10	2	9	1	8	3	11	9	10	2	9	1	8	3	
	2 x 10	15	0	13	0	11	7	10	7	15	0	13	0	11	7	10	7	
2 x 12	18	3	15	9	14	1	12	10	18	3	15	9	14	1	12	10		
Construction	2 x 4	6	1	5	6	5	1	4	10	6	10	5	11	5	3	4	10	
Standard	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	6	4	5	9	5	4	5	0	7	3	6	7	6	1	5	9
		2 x 6	9	11	9	0	8	5	7	11	11	5	10	4	9	5	8	7
		2 x 8	13	2	11	11	11	1	10	5	15	0	13	8	12	5	11	4
		2 x 10	16	9	15	3	14	2	13	4	19	2	17	5	15	10	14	6
	2 x 12	20	5	18	6	17	2	16	2	23	4	21	3	19	3	17	7	
	No. 1	2 x 4	6	4	5	9	5	4	5	0	7	3	6	7	5	10	5	4
		2 x 6	9	11	9	0	8	5	7	11	11	3	9	9	8	8	7	11
		2 x 8	13	2	11	11	11	1	10	5	14	10	12	10	11	6	10	6
		2 x 10	16	9	15	3	14	2	13	4	18	11	16	5	14	8	13	5
	2 x 12	20	5	18	6	17	2	16	2	23	1	20	0	17	10	16	4	
No. 2	2 x 4	6	1	5	6	5	2	4	10	7	0	6	1	5	5	4	11	
	2 x 6	9	7	8	8	7	9	7	1	10	0	8	8	7	9	7	1	
	2 x 8	12	8	11	5	10	3	9	4	13	2	11	5	10	3	9	4	
	2 x 10	16	2	14	7	13	1	11	11	16	10	14	7	13	1	11	11	
2 x 12	19	8	17	9	15	11	14	6	20	6	17	9	15	11	14	6		
No. 3	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7	
	2 x 6	7	7	6	7	5	11	5	4	7	7	6	7	5	11	5	4	
	2 x 8	10	0	8	8	7	9	7	1	10	0	8	8	7	9	7	1	
	2 x 10	12	10	11	1	9	11	9	1	12	10	11	1	9	11	9	1	
2 x 12	15	7	13	6	12	1	11	0	15	7	13	6	12	1	11	0		
Construction	2 x 4	5	10	5	0	4	6	4	1	5	10	5	0	4	6	4	1	
Standard	2 x 4	4	4	3	9	3	4	3	1	4	4	3	9	3	4	3	1	
Utility	2 x 4	2	11	2	6	2	3	2	0	2	11	2	6	2	3	2	0	

Continued on next page

TABLE 2-D (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 50 lb per sq ft)

Commercial Designation	Grade	Nominal Size,	LIVE LOAD 50 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	6 0	5 5	5 1	4 9	6 11	6 3	5 10	5 5								
		2 x 6	9 5	8 7	8 0	7 6	10 10	9 10	9 2	8 7								
		2 x 8	12 6	11 4	10 6	9 11	14 3	13 0	12 1	11 4								
		2 x 10	15 11	14 6	13 5	12 8	18 3	16 7	15 5	14 6								
		2 x 12	19 5	17 7	16 4	15 5	22 2	20 2	18 9	17 7								
	No. 1	2 x 4	6 0	5 5	5 1	4 9	6 11	6 3	5 10	5 5								
		2 x 6	9 5	8 7	8 0	7 6	10 10	9 10	9 2	8 7								
		2 x 8	12 6	11 4	10 6	9 11	14 3	13 0	12 1	11 4								
		2 x 10	15 11	14 6	13 5	12 8	18 3	16 7	15 5	14 6								
		2 x 12	19 5	17 7	16 4	15 5	22 2	20 2	18 9	17 7								
	No. 2	2 x 4	5 9	5 3	4 11	4 7	6 8	6 0	5 7	5 3								
		2 x 6	9 1	8 3	7 8	7 3	10 5	9 6	8 8	7 11								
		2 x 8	12 0	10 11	10 2	9 7	13 9	12 6	11 6	10 6								
		2 x 10	15 4	14 0	13 0	12 2	17 7	16 0	14 8	13 5								
		2 x 12	18 8	17 0	15 9	14 10	21 5	19 6	17 10	16 4								
	No. 3	2 x 4	5 7	5 0	4 6	4 1	5 10	5 0	4 6	4 1								
		2 x 6	8 7	7 5	6 8	6 1	8 7	7 5	6 8	6 1								
		2 x 8	11 4	9 10	8 9	8 0	11 4	9 10	8 9	8 0								
		2 x 10	14 6	12 6	11 2	10 3	14 6	12 6	11 2	10 3								
		2 x 12	17 7	15 3	13 8	12 5	17 7	15 3	13 8	12 5								
	Construction	2 x 4	5 7	5 1	4 8	4 5	6 5	5 8	5 0	4 7								
	Standard	2 x 4	4 10	4 2	3 9	3 5	4 10	4 2	3 9	3 5								
	Utility	2 x 4	3 3	2 10	2 6	2 3	3 3	2 10	2 6	2 3								
	Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	6 4	5 9	5 4	5 0	7 3	6 7	6 1	5 9							
2 x 6			9 11	9 0	8 5	7 11	11 5	10 4	9 3	8 5								
2 x 8			13 2	11 11	11 1	10 5	15 0	13 8	12 2	11 1								
2 x 10			16 9	15 3	14 2	13 4	19 2	17 5	15 7	14 2								
2 x 12			20 5	18 6	17 2	16 2	23 4	21 2	18 11	17 3								
No. 1		2 x 4	6 4	5 9	5 4	5 0	7 3	6 7	5 10	5 4								
		2 x 6	9 11	9 0	8 5	7 9	11 0	9 6	8 6	7 9								
		2 x 8	13 2	11 11	11 1	10 3	14 6	12 7	11 3	10 3								
		2 x 10	16 9	15 3	14 2	13 1	18 7	16 1	14 4	13 1								
		2 x 12	20 5	18 6	17 2	15 11	22 7	19 7	17 6	15 11								
No. 2		2 x 4	6 1	5 6	5 2	4 10	6 10	5 11	5 3	4 10								
		2 x 6	9 7	8 8	7 9	7 1	10 0	8 8	7 9	7 1								
		2 x 8	12 8	11 5	10 3	9 4	13 2	11 5	10 3	9 4								
		2 x 10	16 2	14 7	13 1	11 11	16 10	14 7	13 1	11 11								
		2 x 12	19 8	17 9	15 11	14 6	20 6	17 9	15 11	14 6								
No. 3		2 x 4	5 0	4 4	3 11	3 7	5 0	4 4	3 11	3 7								
		2 x 6	7 7	6 7	5 11	5 4	7 7	6 7	5 11	5 4								
		2 x 8	10 0	8 8	7 9	7 1	10 0	8 8	7 9	7 1								
		2 x 10	12 10	11 1	9 11	9 1	12 10	11 1	9 11	9 1								
		2 x 12	15 7	13 6	12 1	11 0	15 7	13 6	12 1	11 0								
Construction		2 x 4	5 10	5 0	4 6	4 1	5 10	5 0	4 6	4 1								
Standard		2 x 4	4 4	3 9	3 4	3 1	4 4	3 9	3 4	3 1								
Utility		2 x 4	2 11	2 6	2 3	2 0	2 11	2 6	2 3	2 0								

Continued on next page

TABLE 2-D (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 50 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 50 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	5	11	5	5	5	0	4	9	6	10	6	2	5	9	5	5
		2 x 6	9	4	8	6	7	11	7	5	10	9	9	9	9	0	8	3
		2 x 8	12	4	11	3	10	5	9	10	14	2	12	10	11	11	10	11
		2 x 10	15	9	14	4	13	4	12	6	18	1	16	5	15	3	13	11
		2 x 12	19	2	17	5	16	2	15	3	22	0	20	0	18	6	17	0
	No. 1	2 x 4	5	11	5	5	5	0	4	9	6	10	6	2	5	9	5	3
		2 x 6	9	4	8	6	7	11	7	5	10	9	9	4	8	4	7	7
		2 x 8	12	4	11	3	10	5	9	10	14	2	12	4	11	0	10	0
		2 x 10	15	9	14	4	13	4	12	6	18	1	15	8	14	1	12	10
		2 x 12	19	2	17	5	16	2	15	3	22	0	19	1	17	1	15	7
	No. 2	2 x 4	5	9	5	3	4	10	4	7	6	7	5	9	5	2	4	9
		2 x 6	9	1	8	3	7	6	6	10	9	9	8	5	7	6	6	10
		2 x 8	11	11	10	10	9	11	9	1	12	10	11	1	9	11	9	1
		2 x 10	15	3	13	10	12	8	11	7	16	5	14	2	12	8	11	7
		2 x 12	18	7	16	10	15	5	14	1	20	0	17	3	15	5	14	1
	No. 3	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7
		2 x 6	7	3	6	3	5	7	5	1	7	3	6	3	5	7	5	1
		2 x 8	9	7	8	3	7	5	6	9	9	7	8	3	7	5	6	9
		2 x 10	12	3	10	7	9	5	8	8	12	3	10	7	9	5	8	8
		2 x 12	14	10	12	10	11	6	10	6	14	10	12	10	11	6	10	6
	Construction	2 x 4	5	6	4	11	4	4	4	0	5	8	4	11	4	4	4	0
Standard	2 x 4	4	4	3	9	3	4	3	1	4	4	3	9	3	4	3	1	
Utility	2 x 4	2	11	2	6	2	3	2	0	2	11	2	6	2	3	2	0	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	5	9	5	2	4	10	4	6	6	7	6	0	5	6	5	2
		2 x 6	9	0	8	2	7	7	7	2	10	4	9	5	8	9	8	2
		2 x 8	11	11	10	10	10	0	9	5	13	8	12	5	11	6	10	10
		2 x 10	15	3	13	10	12	10	12	1	17	5	15	10	14	8	13	10
		2 x 12	18	6	16	10	15	7	14	8	21	2	19	3	17	10	16	10
	No. 1	2 x 4	5	9	5	2	4	10	4	6	6	7	6	0	5	6	5	2
		2 x 6	9	0	8	2	7	7	7	2	10	4	9	5	8	6	7	9
		2 x 8	11	11	10	10	10	0	9	5	13	8	12	5	11	3	10	3
		2 x 10	15	3	13	10	12	10	12	1	17	5	15	10	14	4	13	1
		2 x 12	18	6	16	10	15	7	14	8	21	2	19	3	17	6	15	11
	No. 2	2 x 4	5	6	5	0	4	8	4	5	6	4	5	9	5	3	4	10
		2 x 6	8	9	7	11	7	4	6	10	9	9	8	5	7	6	6	10
		2 x 8	11	6	10	5	9	8	9	1	12	10	11	1	9	11	9	1
		2 x 10	14	8	13	4	12	5	11	7	16	5	14	2	12	8	11	7
		2 x 12	17	10	16	3	15	1	14	1	20	0	17	3	15	5	14	1
	No. 3	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7
		2 x 6	7	7	6	7	5	11	5	4	7	7	6	7	5	11	5	4
		2 x 8	10	0	8	8	7	9	7	1	10	0	8	8	7	9	7	1
		2 x 10	12	10	11	1	9	11	9	1	12	10	11	1	9	11	9	1
		2 x 12	15	7	13	6	12	1	11	0	15	7	13	6	12	1	11	0
	Construction	2 x 4	5	4	4	10	4	6	4	1	5	10	5	0	4	6	4	1
Standard	2 x 4	4	4	3	9	3	4	3	1	4	4	3	9	3	4	3	1	
Utility	2 x 4	2	11	2	6	2	3	2	0	2	11	2	6	2	3	2	0	

Continued on next page

TABLE 2-D (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 50 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 50 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	5	9	5	2	4	10	4	6	6	7	6	0	5	6	5	2
		2 x 6	9	0	8	2	7	7	7	2	10	4	9	5	8	8	7	11
		2 x 8	11	11	10	10	10	0	9	5	13	8	12	5	11	6	10	6
		2 x 10	15	3	13	10	12	10	12	1	17	5	15	10	15	10	13	5
	2 x 12	18	6	16	10	15	7	14	8	21	2	19	3	17	10	16	4	
	No. 1	2 x 4	5	9	5	2	4	10	4	6	6	7	6	0	5	6	5	0
		2 x 6	9	0	8	2	7	7	7	2	10	4	9	1	8	2	7	5
		2 x 8	11	11	10	10	10	0	9	5	13	8	12	0	10	9	9	10
		2 x 10	15	3	13	10	12	10	12	1	17	5	15	4	13	9	12	6
	2 x 12	18	6	16	10	15	7	14	8	21	2	18	8	16	8	15	3	
	No. 2	2 x 4	5	6	5	0	4	8	4	5	6	4	5	8	5	0	4	7
		2 x 6	8	9	7	11	7	4	6	8	9	6	8	2	7	4	6	8
		2 x 8	11	6	10	5	9	8	8	10	12	6	10	10	9	8	8	10
		2 x 10	14	8	13	4	12	4	11	3	15	11	13	10	12	4	11	3
2 x 12	17	10	16	3	15	0	13	8	19	5	16	10	15	0	13	8		
No. 3	2 x 4	4	10	4	2	3	9	3	5	4	10	4	2	3	9	3	5	
	2 x 6	7	3	6	3	5	7	5	1	7	3	6	3	5	7	5	1	
	2 x 8	9	7	8	3	7	5	6	9	9	7	8	3	7	5	6	9	
	2 x 10	12	3	10	7	9	5	8	8	12	3	10	7	9	5	8	8	
2 x 12	14	10	12	10	11	6	0	6	14	10	12	10	11	6	10	6		
Construction	2 x 4	5	4	4	9	4	3	3	10	5	5	4	9	4	3	3	10	
Standard	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	
Utility	2 x 4	2	11	2	6	2	3	2	0	2	11	2	6	2	3	2	0	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	5	10	5	3	4	11	4	7	6	8	6	0	5	7	5	3
		2 x 6	9	2	8	4	7	9	7	3	10	6	9	6	8	10	8	3
		2 x 8	12	1	11	0	10	2	9	7	13	10	12	7	11	8	10	11
		2 x 10	15	5	14	0	13	0	12	3	17	8	16	0	14	11	13	11
	2 x 12	18	9	17	0	15	10	14	11	21	6	19	6	18	1	17	0	
	No. 1	2 x 4	5	10	5	3	4	11	4	7	6	8	6	0	5	7	5	3
		2 x 6	9	2	8	4	7	9	7	3	10	6	9	4	8	4	7	7
		2 x 8	12	1	11	0	10	2	9	7	13	10	12	4	11	0	10	0
		2 x 10	15	5	14	0	13	0	12	3	17	8	15	8	14	1	12	10
	2 x 12	18	9	17	0	15	10	14	11	21	6	19	1	17	1	15	7	
	No. 2	2 x 4	5	7	5	1	4	9	4	5	6	5	5	9	5	2	4	9
		2 x 6	8	10	8	0	7	5	6	10	9	9	8	5	7	6	6	10
		2 x 8	11	8	10	7	9	10	9	1	12	10	11	1	9	11	9	1
		2 x 10	14	10	13	6	12	6	11	7	16	5	14	2	12	8	11	7
2 x 12	18	1	16	5	15	3	14	1	20	0	17	3	15	5	14	1		
No. 3	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7	
	2 x 6	7	3	6	3	5	7	5	1	7	3	6	3	5	7	5	1	
	2 x 8	9	7	8	3	7	5	6	9	9	7	8	3	7	5	6	9	
	2 x 10	12	3	10	7	9	5	8	8	12	3	10	7	9	5	8	8	
2 x 12	14	10	12	10	11	6	10	6	14	10	12	10	11	6	10	6		
Construction	2 x 4	5	5	4	11	4	4	4	0	5	8	4	11	4	4	4	0	
Standard	2 x 4	4	4	3	9	3	4	3	1	4	4	3	9	3	4	3	1	
Utility	2 x 4	2	11	2	6	2	3	2	0	2	11	2	6	2	3	2	0	

TABLE 2-E
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 40 lb per sq ft							
			Gypsum Board or Plastered Ceiling				Other Ceilings			
			Joist Spacing				Joist Spacing			
			12 in.	16 in.	20 in.	24 in.	12 in.	16 in.	20 in.	24 in.
			<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	7 1	6 5	5 11	5 7	8 1	7 4	6 10	6 5
		2 x 6	11 1	10 1	9 4	8 10	12 9	11 7	10 9	10 1
		2 x 8	14 8	13 4	12 4	11 7	16 9	15 3	14 2	13 4
		2 x 10	18 9	17 0	15 9	14 10	21 5	19 6	18 1	17 0
	No. 1	2 x 12	22 9	20 8	19 2	18 1	26 1	23 8	22 0	20 8
		2 x 4	7 1	6 5	5 11	5 7	8 1	7 4	6 10	6 5
		2 x 6	11 1	10 1	9 4	8 10	12 9	11 7	10 9	10 1
		2 x 8	14 8	13 4	12 4	11 7	16 9	15 3	14 2	13 3
	No. 2	2 x 10	18 9	17 0	15 9	14 10	21 5	19 6	18 1	16 11
		2 x 12	22 9	20 8	19 2	18 1	26 1	23 8	22 0	20 7
		2 x 4	6 10	6 2	5 9	5 5	7 10	7 1	6 7	6 2
		2 x 6	10 9	9 9	9 0	8 6	12 3	11 1	9 11	9 1
	No. 3	2 x 8	14 2	12 10	11 11	11 3	16 2	14 8	13 1	12 0
		2 x 10	18 1	16 5	15 3	14 4	20 8	18 9	16 9	15 3
2 x 12		22 0	20 0	18 6	17 5	25 2	22 9	20 4	18 7	
2 x 4		6 7	5 8	5 1	4 8	6 7	5 8	5 1	4 8	
Con- struction	2 x 6	9 9	8 5	7 6	6 10	9 9	8 5	7 6	6 10	
	2 x 8	12 10	11 1	9 11	9 1	12 10	11 1	9 11	9 1	
	2 x 10	16 5	14 2	12 8	11 7	16 5	14 2	12 8	11 7	
	2 x 12	20 0	17 3	15 5	14 1	20 0	17 3	15 5	14 1	
Standard	2 x 4	6 7	5 11	5 6	5 2	7 6	6 6	5 10	5 3	
	2 x 4	5 6	4 9	4 3	3 11	5 6	4 9	4 3	3 11	
	2 x 4	3 11	3 4	3 0	2 9	3 11	3 4	3 0	2 9	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	6 10	6 2	5 9	5 5	7 10	7 1	6 7	6 2
		2 x 6	10 9	9 9	9 0	8 6	12 3	11 2	10 4	9 5
		2 x 8	14 2	12 10	11 11	11 3	16 2	14 9	13 7	12 5
		2 x 10	18 1	16 5	15 3	14 4	20 8	18 9	17 4	15 10
	No. 1	2 x 12	22 0	20 0	18 6	17 5	25 2	22 10	21 2	19 3
		2 x 4	6 10	6 2	5 9	5 5	7 10	7 1	6 5	5 10
		2 x 6	10 9	9 9	9 0	8 6	12 3	10 8	9 6	8 8
		2 x 8	14 2	12 10	11 11	11 3	16 2	14 1	12 7	11 6
	No. 2	2 x 10	18 1	16 5	15 3	14 4	20 8	18 0	16 1	14 8
		2 x 12	22 0	20 0	18 6	17 5	25 2	21 10	19 7	17 10
		2 x 4	6 7	5 11	5 6	5 2	7 6	6 8	5 11	5 5
		2 x 6	10 4	9 5	8 6	7 9	11 0	9 6	8 6	7 9
	No. 3	2 x 8	13 8	12 5	11 2	10 3	14 6	12 6	11 2	10 3
		2 x 10	17 5	15 10	14 4	13 1	18 6	16 0	14 4	13 1
2 x 12		21 2	19 3	17 5	15 11	22 6	19 5	17 5	15 11	
2 x 4		5 6	4 9	4 3	3 11	5 6	4 9	4 3	3 11	
Con- struction	2 x 6	8 4	7 3	6 5	5 11	8 4	7 3	6 5	5 11	
	2 x 8	11 0	9 6	8 6	7 9	11 0	9 6	8 6	7 9	
	2 x 10	14 1	12 2	10 10	9 11	14 1	12 2	10 10	9 11	
	2 x 12	17 1	14 10	13 3	12 1	17 1	14 10	13 3	12 1	
Standard	2 x 4	6 4	5 6	4 11	4 6	6 5	5 6	4 11	4 6	
	2 x 4	4 9	4 2	3 8	3 4	4 9	4 2	3 8	3 4	
	2 x 4	3 2	2 9	2 5	2 3	3 2	2 9	2 5	2 3	
Utility	2 x 4	3 2	2 9	2 5	2 3	3 2	2 9	2 5	2 3	

Continued on next page

TABLE 2-E (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 40 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	6	6	5	10	5	5	5	2	7	5	6	9	6	3	5	10
		2 x 6	10	2	9	3	8	7	8	1	11	8	10	7	9	10	9	3
		2 x 8	13	5	12	3	11	4	10	8	15	5	14	0	13	0	12	3
		2 x 10	17	2	15	7	14	6	13	7	19	8	17	10	16	7	15	7
	2 x 12	20	11	19	0	17	7	16	7	23	11	21	9	20	2	19	0	
	No. 1	2 x 4	6	6	5	10	5	5	5	2	7	5	6	9	6	3	5	10
		2 x 6	10	2	9	3	8	7	8	1	11	8	10	7	9	10	9	3
		2 x 8	13	5	12	3	11	4	10	8	15	5	14	0	13	0	12	3
		2 x 10	17	2	15	7	14	6	13	7	19	8	17	10	16	7	15	7
	2 x 12	20	11	19	0	17	7	16	7	23	11	21	9	20	2	19	0	
	No. 2	2 x 4	6	3	5	8	5	3	4	11	7	2	6	6	6	0	5	8
		2 x 6	9	10	8	11	8	3	7	10	11	3	10	3	9	6	8	8
		2 x 8	13	0	11	9	10	11	10	3	14	10	13	6	12	6	11	6
		2 x 10	16	7	15	1	14	0	13	2	19	0	17	3	16	0	14	8
2 x 12	20	2	18	4	17	0	16	0	23	1	21	0	19	6	17	10		
No. 3	2 x 4	6	0	5	5	4	11	4	6	6	5	5	6	4	11	4	6	
	2 x 6	9	5	8	2	7	3	6	8	9	5	8	2	7	3	6	8	
	2 x 8	12	5	10	9	9	7	8	9	12	5	10	9	9	7	8	9	
	2 x 10	15	10	13	9	12	3	11	2	15	10	13	9	12	3	11	2	
2 x 12	19	3	16	8	14	11	13	8	19	3	16	8	14	11	13	8		
Construction	2 x 4	6	0	5	5	5	1	4	9	6	10	6	2	5	6	5	0	
Standard	2 x 4	5	3	4	7	4	1	3	9	5	3	4	7	4	1	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	6	10	6	2	5	9	5	5	7	10	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	1	9	3
		2 x 8	14	2	12	10	11	11	11	3	16	2	14	9	13	4	12	2
		2 x 10	18	1	16	5	15	3	14	4	20	8	18	9	17	1	15	7
	2 x 12	22	0	20	0	18	6	17	5	25	2	22	10	20	9	18	11	
	No. 1	2 x 4	6	10	6	2	5	9	5	5	7	10	7	1	6	5	5	10
		2 x 6	10	9	9	9	9	0	8	6	12	1	10	5	9	4	8	6
		2 x 8	14	2	12	10	11	11	11	3	15	11	13	9	12	4	11	3
		2 x 10	18	1	16	5	15	3	14	4	20	4	17	7	15	9	14	4
	2 x 12	22	0	20	0	18	6	17	5	24	9	21	5	19	2	17	6	
	No. 2	2 x 4	6	7	5	11	5	6	5	2	7	6	6	6	5	10	5	3
		2 x 6	10	4	9	5	8	6	7	9	11	0	9	6	8	6	7	9
		2 x 8	13	8	12	5	11	2	10	3	14	6	12	6	11	2	10	3
		2 x 10	17	5	15	10	14	4	13	1	18	6	16	0	14	4	13	1
2 x 12	21	2	19	3	17	5	15	11	22	6	19	5	17	5	15	11		
No. 3	2 x 4	5	6	4	9	4	3	3	11	5	6	4	9	4	3	3	11	
	2 x 6	8	4	7	3	6	5	5	11	8	4	7	3	6	5	5	11	
	2 x 8	11	0	9	6	8	6	7	9	11	0	9	6	8	6	7	9	
	2 x 10	14	1	12	2	10	10	9	11	14	1	12	2	10	10	9	11	
2 x 12	17	1	14	10	13	3	12	1	17	1	14	10	13	3	12	1		
Construction	2 x 4	6	4	5	6	4	11	4	6	6	5	5	6	4	11	4	6	
Standard	2 x 4	4	9	4	2	3	8	3	4	4	9	4	2	3	8	3	4	
Utility	2 x 4	3	2	2	9	2	5	2	3	3	2	2	9	2	5	2	3	

Continued on next page

TABLE 2-E (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 40 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	6	5	5	10	5	5	5	1	7	4	6	8	6	2	5	10
		2 x 6	10	1	9	2	8	6	8	0	11	7	10	6	9	9	9	1
		2 x 8	13	4	12	1	11	3	10	7	15	3	13	10	12	10	12	0
		2 x 10	17	0	15	5	14	4	13	6	19	6	17	8	16	5	15	3
		2 x 12	20	8	18	9	17	5	16	5	23	8	21	6	20	0	18	7
	No. 1	2 x 4	6	5	5	10	5	5	5	1	7	4	6	8	6	2	5	9
		2 x 6	10	1	9	2	8	6	8	0	11	7	10	3	9	2	8	4
		2 x 8	13	4	12	1	11	3	10	7	15	3	13	6	12	1	11	0
		2 x 10	17	0	15	5	14	4	13	6	19	6	17	3	15	5	14	1
		2 x 12	20	8	18	9	17	5	16	5	23	8	20	11	18	9	17	1
	No. 2	2 x 4	6	2	5	7	5	3	4	11	7	1	6	4	5	8	5	2
		2 x 6	9	9	8	10	8	3	7	6	10	8	9	3	8	3	7	6
		2 x 8	12	10	11	8	10	10	9	11	14	1	12	2	10	11	9	11
2 x 10		16	5	14	11	13	10	12	8	18	0	15	7	13	11	12	8	
2 x 12		20	0	18	2	16	10	15	5	21	10	18	11	16	11	15	5	
No. 3	2 x 4	5	6	4	9	4	3	3	11	5	6	4	9	4	3	3	11	
	2 x 6	7	11	6	10	6	2	5	7	7	11	6	10	6	2	5	7	
	2 x 8	10	6	9	1	8	1	7	5	10	6	9	1	8	1	7	5	
	2 x 10	13	5	11	7	10	4	9	5	13	5	11	7	10	4	9	5	
	2 x 12	16	4	14	1	12	7	11	6	16	4	14	1	12	7	11	6	
Construction	2 x 4	5	11	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Standard	2 x 4	4	9	4	2	3	8	3	4	4	9	4	2	3	8	3	4	
Utility	2 x 4	3	2	2	9	2	5	2	3	3	2	2	9	2	5	2	3	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	6	2	5	7	5	2	4	11	7	1	6	5	6	0	5	7
		2 x 6	9	9	8	10	8	2	7	9	11	2	10	1	9	5	8	10
		2 x 8	12	10	11	8	10	10	10	2	14	8	13	4	12	5	11	8
		2 x 10	16	5	14	11	13	10	13	0	18	9	17	1	15	10	14	11
		2 x 12	19	11	18	1	16	10	15	10	22	10	20	9	19	3	18	1
	No. 1	2 x 4	6	2	5	7	5	2	4	11	7	1	6	5	6	0	5	7
		2 x 6	9	9	8	10	8	2	7	9	11	2	10	1	9	4	8	6
		2 x 8	12	10	11	8	10	10	10	2	14	8	13	4	12	4	11	3
		2 x 10	16	5	14	11	13	10	13	0	18	9	17	1	15	9	14	4
		2 x 12	19	11	18	1	16	10	15	10	22	10	20	9	19	2	17	6
	No. 2	2 x 4	6	0	5	5	5	0	4	9	6	10	6	2	5	9	5	3
		2 x 6	9	5	8	6	7	11	7	5	10	8	9	3	8	3	7	6
		2 x 8	12	5	11	3	10	5	9	10	14	1	12	2	10	11	9	11
2 x 10		15	10	14	4	13	4	12	7	18	0	15	7	13	11	12	8	
2 x 12		19	3	17	6	16	3	15	3	21	10	18	11	16	11	15	5	
No. 3	2 x 4	5	6	4	9	4	3	3	11	5	6	4	9	4	3	3	11	
	2 x 6	8	4	7	3	6	5	5	11	8	4	7	3	6	5	5	11	
	2 x 8	11	0	9	6	8	6	7	9	11	0	9	6	8	6	7	9	
	2 x 10	14	1	12	2	10	10	9	11	14	1	12	2	10	10	9	11	
	2 x 12	17	1	14	10	13	3	12	1	17	1	14	10	13	3	12	1	
Construction	2 x 4	5	9	5	2	4	10	4	6	6	5	5	6	4	11	4	6	
Standard	2 x 4	4	9	4	2	3	8	3	4	4	9	4	2	3	8	3	4	
Utility	2 x 4	3	2	2	9	2	5	2	3	3	2	2	9	2	5	2	3	

Continued on next page

TABLE 2-E (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 40 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	6	2	5	7	5	2	4	11	7	1	6	5	6	0	5	7
		2 x 6	9	9	8	10	8	2	7	9	11	2	10	1	9	5	8	8
		2 x 8	12	10	11	8	10	10	10	2	14	8	13	4	12	5	11	6
		2 x 10	16	5	14	11	13	10	13	0	18	9	17	1	15	10	14	8
		2 x 12	19	11	18	1	16	10	15	10	22	10	20	9	19	3	17	10
	No. 1	2 x 4	6	2	5	7	5	2	4	11	7	1	6	5	6	0	5	6
		2 x 6	9	9	8	10	8	2	7	9	11	2	10	0	8	11	8	2
		2 x 8	12	10	11	8	10	10	10	2	14	8	13	2	11	9	10	9
		2 x 10	16	5	14	11	13	10	13	0	18	9	16	10	15	0	13	9
		2 x 12	19	11	18	1	16	10	15	10	22	10	20	6	18	4	16	8
	No. 2	2 x 4	6	0	5	5	5	0	4	9	6	10	6	2	5	6	5	0
		2 x 6	9	5	8	6	7	11	7	4	10	4	9	0	8	0	7	4
		2 x 8	12	5	11	3	10	5	9	8	13	8	11	10	10	7	9	8
		2 x 10	15	10	14	4	13	4	12	4	17	6	15	1	13	6	12	4
		2 x 12	19	3	17	6	16	2	15	0	21	3	18	5	16	5	15	0
	No. 3	2 x 4	5	3	4	7	4	1	3	9	5	3	4	7	4	1	3	9
		2 x 6	7	11	6	10	6	2	5	7	7	11	6	10	6	2	5	7
		2 x 8	10	6	9	1	8	1	7	5	10	6	9	1	8	1	7	5
		2 x 10	13	5	11	7	10	4	9	5	13	5	11	7	10	4	9	5
		2 x 12	16	4	14	1	12	7	11	6	16	4	14	1	12	7	11	6
	Construction	2 x 4	5	9	5	2	4	7	4	3	6	0	5	2	4	7	4	3
Standard	2 x 4	4	6	3	11	3	6	3	2	4	6	3	11	3	6	3	2	
Utility	2 x 4	3	2	2	9	2	5	2	3	3	2	2	9	2	5	2	3	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	6	3	5	8	5	3	5	0	7	2	6	6	6	0	5	8
		2 x 6	9	10	8	11	8	4	7	10	11	4	10	3	9	6	8	11
		2 x 8	13	0	11	10	11	0	10	4	14	11	13	6	12	7	11	10
		2 x 10	16	7	15	1	14	0	13	2	19	0	17	3	16	0	15	1
		2 x 12	20	3	18	4	17	0	16	0	23	2	21	0	19	6	18	4
	No. 1	2 x 4	6	3	5	8	5	3	5	0	7	2	6	6	6	0	5	8
		2 x 6	9	10	8	11	8	4	7	10	11	4	10	3	9	2	8	4
		2 x 8	13	0	11	10	11	0	10	4	14	11	13	6	12	1	11	0
		2 x 10	16	7	15	1	14	0	13	2	19	0	17	3	15	5	14	1
		2 x 12	20	3	18	4	17	0	16	0	23	2	20	11	18	9	17	1
	No. 2	2 x 4	6	0	5	6	5	1	4	9	6	11	6	3	5	8	5	2
		2 x 6	9	6	8	8	8	0	7	6	10	8	9	3	8	3	7	6
		2 x 8	12	7	11	5	10	7	9	11	14	1	12	2	10	11	9	11
		2 x 10	16	0	14	7	13	6	12	8	18	0	15	7	13	11	12	8
		2 x 12	19	6	17	8	16	5	15	5	21	10	18	11	16	11	15	5
No. 3	2 x 4	5	6	4	9	4	3	3	11	5	6	4	9	4	3	3	11	
	2 x 6	7	11	6	10	6	2	5	7	7	11	6	10	6	2	5	7	
	2 x 8	10	6	9	1	8	1	7	5	10	6	9	1	8	1	7	5	
	2 x 10	13	5	11	7	10	4	9	5	13	5	11	7	10	4	9	5	
	2 x 12	16	4	14	1	12	7	11	6	16	4	14	1	12	7	11	6	
Construction	2 x 4	5	10	5	3	4	9	4	4	6	2	5	4	4	9	4	4	
Standard	2 x 4	4	9	4	2	3	8	3	4	4	9	4	2	3	8	3	4	
Utility	2 x 4	3	2	2	9	2	5	2	3	3	2	2	9	2	5	2	3	

TABLE 2-F
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size. in.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	1	10	4	9	8	14	0	12	9	11	10	11	1
		2 x 8	16	2	14	8	13	7	12	10	18	6	16	9	15	7	14	8
		2 x 10	20	7	18	9	17	4	16	4	23	7	21	5	19	11	18	9
		2 x 12	25	1	22	9	21	2	19	11	28	8	26	1	24	2	22	9
	No. 1	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	1	10	4	9	8	14	0	12	9	11	10	11	1
		2 x 8	16	2	14	8	13	7	12	10	18	6	16	9	15	7	14	8
		2 x 10	20	7	18	9	17	4	16	4	23	7	21	5	19	11	18	9
		2 x 12	25	1	22	9	21	2	19	11	28	8	26	1	24	2	22	9
	No. 2	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	10
		2 x 6	11	10	10	9	9	11	9	4	13	6	12	3	11	1	10	2
		2 x 8	15	7	14	2	13	2	12	4	17	10	16	2	14	8	13	5
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	8	18	9	17	1
		2 x 12	24	2	22	0	20	5	19	2	27	8	25	2	22	9	20	9
	No. 3	2 x 4	7	3	6	4	5	8	5	2	7	4	6	4	5	8	5	2
		2 x 6	10	11	9	5	8	5	7	8	10	11	9	5	8	5	7	8
		2 x 8	14	4	12	5	11	1	10	2	14	4	12	5	11	1	10	2
		2 x 10	18	4	15	11	14	2	13	0	18	4	15	11	14	2	13	0
		2 x 12	22	4	19	4	17	3	15	9	22	4	19	4	17	3	15	9
	Construction	2 x 4	7	3	6	7	6	1	5	9	8	3	7	3	6	6	5	11
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Utility	2 x 4	4	4	3	9	3	4	3	1	4	4	3	9	3	4	3	1	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	10
		2 x 6	11	10	10	9	9	11	9	4	13	6	12	3	11	5	10	6
		2 x 8	15	7	14	2	13	2	12	4	17	10	16	2	15	0	13	11
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	8	19	2	17	9
		2 x 12	24	2	22	0	20	5	19	2	27	8	25	2	23	4	21	7
	No. 1	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	2	6	7
		2 x 6	11	10	10	9	9	11	9	4	13	6	11	11	10	8	9	9
		2 x 8	15	7	14	2	13	2	12	4	17	10	15	9	14	1	12	10
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	1	18	0	16	5
		2 x 12	24	2	22	0	20	5	19	2	27	8	24	6	21	10	20	0
	No. 2	2 x 4	7	3	6	7	6	1	5	9	8	3	7	5	6	8	6	1
		2 x 6	11	5	10	4	9	6	8	8	12	3	10	7	9	6	8	8
		2 x 8	15	0	13	8	12	6	11	5	16	2	14	0	12	6	11	5
		2 x 10	19	2	17	5	16	0	14	7	20	8	17	11	16	0	14	7
		2 x 12	23	4	21	2	19	5	17	9	25	2	21	9	19	5	17	9
	No. 3	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4
		2 x 6	9	4	8	1	7	3	6	7	9	4	8	1	7	3	6	7
		2 x 8	12	4	10	8	9	6	8	8	12	4	10	8	9	6	8	8
		2 x 10	15	8	13	7	12	2	11	1	15	8	13	7	12	2	11	1
		2 x 12	19	1	16	7	14	10	13	6	19	1	16	7	14	10	13	6
	Construction	2 x 4	6	11	6	2	5	6	5	0	7	2	6	2	5	6	5	0
Standard	2 x 4	5	4	4	8	4	2	3	9	5	4	4	8	4	2	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	

Continued on next page

TABLE 2-F (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling				Other Ceilings											
			Joist Spacing				Joist Spacing											
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	7	1	6	6	6	0	5	8	8	2	7	5	6	11	6	6
		2 x 6	11	3	10	2	9	5	8	11	12	10	11	8	10	10	10	2
		2 x 8	14	10	13	5	12	6	11	9	16	11	15	5	14	3	13	5
		2 x 10	18	11	17	2	15	11	15	0	21	8	19	8	18	3	17	2
		2 x 12	23	0	20	11	19	5	18	3	26	4	23	11	22	2	20	11
	No. 1	2 x 4	7	1	6	6	6	0	5	8	8	2	7	5	6	11	6	6
		2 x 6	11	3	10	2	9	5	8	11	12	10	11	8	10	10	10	2
		2 x 8	14	10	13	5	12	6	11	9	16	11	15	5	14	3	13	5
		2 x 10	18	11	17	2	15	11	15	0	21	8	19	8	18	3	17	2
		2 x 12	23	0	20	11	19	5	18	3	26	4	23	11	22	2	20	11
	No. 2	2 x 4	6	10	6	3	5	9	5	5	7	11	7	2	6	8	6	3
		2 x 6	10	10	9	10	9	1	8	7	12	5	11	3	10	5	9	9
		2 x 8	14	3	13	0	12	0	11	4	16	4	14	10	13	9	12	10
		2 x 10	18	3	16	7	15	4	14	6	20	11	19	0	17	7	16	5
2 x 12		22	2	20	2	18	8	17	7	25	5	23	1	21	5	20	0	
No. 3	2 x 4	6	7	6	0	5	6	5	0	7	2	6	2	5	6	5	0	
	2 x 6	10	5	9	1	8	2	7	5	10	6	9	1	8	2	7	5	
	2 x 8	13	9	12	0	10	9	9	10	13	11	12	0	10	9	9	10	
	2 x 10	17	6	15	4	13	9	12	6	17	9	15	4	13	9	12	6	
	2 x 12	21	4	18	8	16	8	15	3	21	7	18	8	16	8	15	3	
Construction	2 x 4	6	7	6	0	5	7	5	3	7	7	6	10	6	2	5	8	
Standard	2 x 4	5	11	5	1	4	7	4	2	5	11	5	1	4	7	4	2	
Utility	2 x 4	4	0	3	5	3	1	2	10	4	0	3	5	3	1	2	10	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	3	6	10
		2 x 6	11	10	10	9	9	11	9	4	13	6	12	3	11	4	10	4
		2 x 8	15	7	14	2	13	2	12	4	17	10	16	2	14	11	13	8
		2 x 10	19	11	18	1	16	9	15	9	22	9	20	8	19	1	17	5
		2 x 12	24	2	22	0	20	5	19	2	27	8	25	2	23	2	21	2
	No. 1	2 x 4	7	6	6	10	6	4	5	11	8	7	7	10	7	2	6	7
		2 x 6	11	10	10	9	9	11	9	4	13	6	11	8	10	5	9	6
		2 x 8	15	7	14	2	13	2	12	4	17	10	15	5	13	9	12	7
		2 x 10	19	11	18	1	16	9	15	9	22	9	19	8	17	7	16	1
		2 x 12	24	2	22	0	20	5	19	2	27	8	23	11	21	5	19	7
	No. 2	2 x 4	7	3	6	7	6	1	5	9	8	3	7	3	6	6	5	11
		2 x 6	11	5	10	4	9	6	8	8	12	3	10	7	9	6	8	8
		2 x 8	15	0	13	8	12	6	11	5	16	2	14	0	12	6	11	5
		2 x 10	19	2	17	5	16	0	14	7	20	8	17	11	16	0	14	7
2 x 12		23	4	21	2	19	5	17	9	25	2	21	9	19	5	17	9	
No. 3	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
	2 x 6	9	4	8	1	7	3	6	7	9	4	8	1	7	3	6	7	
	2 x 8	12	4	10	8	9	6	8	8	12	4	10	8	9	6	8	8	
	2 x 10	15	8	13	7	12	2	11	1	15	8	13	7	12	2	11	1	
	2 x 12	19	1	16	7	14	10	13	6	19	1	16	7	14	10	13	6	
Construction	2 x 4	6	11	6	2	5	6	5	0	7	2	6	2	5	6	5	0	
Standard	2 x 4	5	4	4	8	4	2	3	9	5	4	4	8	4	2	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	

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TABLE 2-F (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	7	1	6	5	5	11	5	7	8	1	7	4	6	10	6	5
		2 x 6	11	1	10	1	9	4	8	10	12	9	11	7	10	9	10	1
		2 x 8	14	8	13	4	12	4	11	7	16	9	15	3	14	2	13	4
		2 x 10	18	9	17	0	15	9	14	10	21	5	19	6	18	1	17	0
		2 x 12	22	9	20	8	19	2	18	1	26	1	23	8	22	0	20	8
	No. 1	2 x 4	7	1	6	5	5	11	5	7	8	1	7	4	6	10	6	5
		2 x 6	11	1	10	1	9	4	8	10	12	9	11	5	10	3	9	4
		2 x 8	14	8	13	4	12	4	11	7	16	9	15	1	13	6	12	4
		2 x 10	18	9	17	0	15	9	14	10	21	5	19	3	17	3	15	8
		2 x 12	22	9	20	8	19	2	18	1	26	1	23	5	20	11	19	1
	No. 2	2 x 4	6	10	6	2	5	9	5	5	7	10	7	1	6	4	5	9
		2 x 6	10	9	9	9	9	1	8	5	11	11	10	4	9	3	8	5
		2 x 8	14	2	12	10	11	11	11	1	15	9	13	8	12	2	11	1
		2 x 10	18	1	16	5	15	3	14	2	20	1	17	5	15	7	14	2
2 x 12		22	0	20	0	18	7	17	3	24	6	21	2	18	11	17	3	
No. 3	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
	2 x 6	8	11	7	8	6	10	6	3	8	11	7	8	6	10	6	3	
	2 x 8	11	9	10	2	9	1	8	3	11	9	10	2	9	1	8	3	
	2 x 10	15	0	13	0	11	7	10	7	15	0	13	0	11	7	10	7	
	2 x 12	18	3	15	9	14	1	12	10	18	3	15	9	14	1	12	10	
Construction	2 x 4	6	7	5	11	5	4	4	11	6	11	6	0	5	4	4	11	
Standard	2 x 4	5	4	4	8	4	2	3	9	5	4	4	8	4	2	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	4	9	9
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	8	13	8	12	10
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	9	17	5	16	5
		2 x 12	21	11	19	11	18	6	17	5	25	2	22	10	21	2	19	11
	No. 1	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	4	9	9
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	8	13	8	12	10
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	9	17	5	16	5
		2 x 12	21	11	19	11	18	6	17	5	25	2	22	10	21	2	19	11
	No. 2	2 x 4	6	7	6	0	5	6	5	2	7	6	6	10	6	4	5	11
		2 x 6	10	4	9	5	8	9	8	2	11	10	10	4	9	3	8	5
		2 x 8	13	8	12	5	11	6	10	10	15	8	13	8	12	2	11	1
		2 x 10	17	5	15	10	14	8	13	10	19	11	17	5	15	7	14	2
2 x 12		21	2	19	3	17	10	16	10	24	3	21	2	18	11	17	3	
No. 3	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
	2 x 6	9	4	8	1	7	3	6	7	9	4	8	1	7	3	6	7	
	2 x 8	12	4	10	8	9	6	8	8	12	4	10	8	9	6	8	8	
	2 x 10	15	8	13	7	12	2	11	1	15	8	13	7	12	2	11	1	
	2 x 12	19	1	16	7	14	10	13	6	19	1	16	7	14	10	13	6	
Construction	2 x 4	6	4	5	9	5	4	5	0	7	2	6	2	5	6	5	0	
Standard	2 x 4	5	4	4	8	4	2	3	9	5	4	4	8	4	2	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	

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TABLE 2-F (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 30 lb per sq ft)

Commercial Designation	Grade	Nominal Size.	LIVE LOAD 30 lb per sq ft															
			Gypsum Board or Plastered Ceiling						Other Ceilings									
			Joist Spacing						Joist Spacing									
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	4	9	9
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	8	13	8	12	10
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	9	17	5	16	5
	2 x 12	21	11	19	11	18	6	17	5	25	2	22	10	21	2	19	11	
	No. 1	2 x 4	6	10	6	2	5	9	5	5	7	9	7	1	6	7	6	2
		2 x 6	10	9	9	9	9	0	8	6	12	3	11	2	10	0	9	1
		2 x 8	14	2	12	10	11	11	11	2	16	2	14	8	13	2	12	0
		2 x 10	18	0	16	5	15	3	14	4	20	8	18	9	16	10	15	4
	2 x 12	21	11	19	11	18	6	17	5	25	2	22	10	20	6	18	8	
	No. 2	2 x 4	6	7	6	0	5	6	5	2	7	6	6	10	6	2	5	8
		2 x 6	10	4	9	5	8	9	8	2	11	7	10	0	9	0	8	2
		2 x 8	13	8	12	5	11	6	10	10	15	4	13	3	11	10	10	10
		2 x 10	17	5	15	10	14	8	13	10	19	6	16	11	15	1	13	10
2 x 12	21	2	19	3	17	10	16	10	23	9	20	7	18	5	16	10		
No. 3	2 x 4	5	11	5	1	4	7	4	2	5	11	5	1	4	7	4	2	
	2 x 6	8	11	7	8	6	10	6	3	8	11	7	8	6	10	6	3	
	2 x 8	11	9	10	2	9	1	8	3	11	9	10	2	9	1	8	3	
	2 x 10	15	0	13	0	11	7	10	7	15	0	13	0	11	7	10	7	
2 x 12	18	3	15	9	14	1	12	10	18	3	15	9	14	1	12	10		
Construction	2 x 4	6	4	5	9	5	2	4	9	6	8	5	9	5	2	4	9	
Standard	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	6	11	6	3	5	10	5	6	7	11	7	2	6	8	6	3
		2 x 6	10	10	9	10	9	2	8	7	12	5	11	4	10	6	9	10
		2 x 8	14	4	13	0	12	1	11	4	16	5	14	11	13	10	13	0
		2 x 10	18	3	16	7	15	5	14	6	20	11	19	0	17	8	16	7
	2 x 12	22	3	20	3	18	9	17	8	25	6	23	2	21	6	20	3	
	No. 1	2 x 4	6	11	6	3	5	10	5	6	7	11	7	2	6	8	6	3
		2 x 6	10	10	9	10	9	2	8	7	12	5	11	4	10	3	9	4
		2 x 8	14	4	13	0	12	1	11	4	16	5	14	11	13	6	12	4
		2 x 10	18	3	16	7	15	5	14	6	20	11	19	0	17	3	15	8
	2 x 12	22	3	20	3	18	9	17	8	25	6	23	2	20	11	19	1	
	No. 2	2 x 4	6	8	6	0	5	7	5	3	7	7	6	11	6	4	5	9
		2 x 6	10	6	9	6	8	10	8	4	11	11	10	4	9	3	8	5
		2 x 8	13	10	12	7	11	8	10	11	15	9	13	8	12	2	11	1
		2 x 10	17	8	16	0	14	10	14	0	20	1	17	5	15	7	14	2
2 x 12	21	5	19	6	18	1	17	0	24	6	21	2	18	11	17	3		
No. 3	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
	2 x 6	8	11	7	8	6	10	6	3	8	11	7	8	6	10	6	3	
	2 x 8	11	9	10	2	9	1	8	3	11	9	10	2	9	1	8	3	
	2 x 10	15	0	13	0	11	7	10	7	15	0	13	0	11	7	10	7	
2 x 12	18	3	15	9	14	1	12	10	18	3	15	9	14	1	12	10		
Construction	2 x 4	6	5	5	10	5	4	4	11	6	11	6	0	5	4	4	11	
Standard	2 x 4	5	4	4	8	4	2	3	9	5	4	4	8	4	2	3	9	
Utility	2 x 4	3	7	3	1	2	9	2	6	3	7	3	1	2	9	2	6	

TABLE 2-G
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 20 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	8	11	8	1	7	6	7	1	10	2	9	3	8	7	8	1
		2 x 6	14	0	12	9	11	10	11	1	16	0	14	7	13	6	12	9
		2 x 8	18	6	16	9	15	7	14	8	21	2	19	3	17	10	16	9
		2 x 10	23	7	21	5	19	11	18	9	27	0	24	6	22	9	21	5
		2 x 12	28	8	26	1	24	2	22	9	32	10	29	10	27	8	26	1
	No. 1	2 x 4	8	11	8	1	7	6	7	1	10	2	9	3	8	7	8	1
		2 x 6	14	0	12	9	11	10	11	1	16	0	14	7	13	6	12	9
		2 x 8	18	6	16	9	15	7	14	8	21	2	19	3	17	10	16	9
		2 x 10	23	7	21	5	19	11	18	9	27	0	24	6	22	9	21	5
		2 x 12	28	8	26	1	24	2	22	9	32	10	29	10	27	8	26	1
	No. 2	2 x 4	8	7	7	10	7	3	6	10	9	10	8	11	8	4	7	10
		2 x 6	13	6	12	3	11	5	10	9	15	6	14	1	12	10	11	9
		2 x 8	17	10	16	2	15	0	14	2	20	5	18	7	16	11	15	5
		2 x 10	22	9	20	8	19	2	18	1	26	1	23	8	21	7	19	9
		2 x 12	27	8	25	2	23	4	22	0	31	9	28	10	26	4	24	0
	No. 3	2 x 4	8	3	7	4	6	7	6	0	8	6	7	4	6	7	6	0
		2 x 6	12	7	10	11	9	9	8	11	12	7	10	11	9	9	8	11
		2 x 8	16	7	14	4	12	10	11	9	16	7	14	4	12	10	11	9
	Construction	2 x 4	8	3	7	4	6	7	6	0	8	6	7	4	6	7	6	0
		2 x 6	12	7	10	11	9	9	8	11	12	7	10	11	9	9	8	11
	Standard	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0
2 x 6		11	1	10	1	9	1	8	1	11	1	10	1	9	1	8	1	
Utility	2 x 4	5	0	4	4	3	11	3	7	5	0	4	4	3	11	3	7	
	2 x 6	9	0	8	0	7	0	6	0	9	0	8	0	7	0	6	0	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	8	7	7	10	7	3	6	10	9	10	8	11	8	4	7	10
		2 x 6	13	6	12	3	11	5	10	9	15	6	14	1	13	1	12	2
		2 x 8	17	10	16	2	15	0	14	2	20	5	18	7	17	3	16	0
		2 x 10	22	9	20	8	19	2	18	1	26	1	23	8	22	0	20	6
		2 x 12	27	8	25	2	23	4	22	0	31	9	28	10	26	9	24	11
	No. 1	2 x 4	8	7	7	10	7	3	6	10	9	10	8	11	8	4	7	7
		2 x 6	13	6	12	3	11	5	10	9	15	6	13	9	12	4	11	3
		2 x 8	17	10	16	2	15	0	14	2	20	5	18	2	16	3	14	10
		2 x 10	22	9	20	8	19	2	18	1	26	1	23	3	20	9	18	11
		2 x 12	27	8	25	2	23	4	22	0	31	9	28	3	25	3	23	1
	No. 2	2 x 4	8	3	7	6	7	0	6	7	9	6	8	7	7	8	7	0
		2 x 6	13	0	11	10	11	0	10	0	14	2	12	3	11	0	10	0
		2 x 8	17	2	15	7	14	6	13	2	18	8	16	2	14	6	13	2
		2 x 10	22	11	19	11	18	6	16	10	23	10	20	8	18	6	16	10
		2 x 12	26	8	24	3	22	6	20	6	29	0	25	2	22	6	20	6
	No. 3	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0
		2 x 6	10	9	9	4	8	4	7	7	10	9	9	4	8	4	7	7
		2 x 8	14	3	12	4	11	0	10	0	14	3	12	4	11	0	10	0
		2 x 10	18	2	15	8	14	1	12	10	18	2	15	8	14	1	12	10
		2 x 12	22	1	19	1	17	1	15	7	22	1	19	1	17	1	15	7
	Construction	2 x 4	8	0	7	2	6	5	5	10	8	3	7	2	6	5	5	10
2 x 6		12	7	10	11	9	9	8	11	12	7	10	11	9	9	8	11	
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
	2 x 6	10	1	9	1	8	1	7	1	10	1	9	1	8	1	7	1	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	
	2 x 6	8	0	7	0	6	0	5	0	8	0	7	0	6	0	5	0	

Continued on next page

TABLE 2-G (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size,	LIVE LOAD 20 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	8	2	7	5	6	11	6	6	9	4	8	6	7	11	7	5
		2 x 6	12	10	11	8	10	10	10	2	14	9	13	4	12	5	11	8
		2 x 8	16	11	15	5	14	3	13	5	19	5	17	8	16	4	15	5
		2 x 10	21	8	19	8	18	3	17	2	24	9	22	6	20	11	19	8
		2 x 12	26	4	23	11	22	2	20	11	30	2	27	5	25	5	23	11
	No. 1	2 x 4	8	2	7	5	6	11	6	6	9	4	8	6	7	11	7	5
		2 x 6	12	10	11	8	10	10	10	2	14	9	13	4	12	5	11	8
		2 x 8	16	11	15	5	14	3	13	5	19	5	17	8	16	4	15	5
		2 x 10	21	8	19	8	18	3	17	2	24	9	22	6	20	11	19	8
		2 x 12	26	4	23	11	22	2	20	11	30	2	27	5	25	5	23	11
No. 2	2 x 4	7	11	7	2	6	8	6	3	9	0	8	2	7	7	7	2	
	2 x 6	12	5	11	3	10	5	9	10	14	2	12	11	12	0	11	3	
	2 x 8	16	4	14	10	13	9	13	0	18	9	17	0	15	10	14	10	
	2 x 10	20	11	19	0	17	7	16	7	23	11	21	9	20	2	18	11	
	2 x 12	25	5	23	1	21	5	20	2	29	1	26	5	24	6	23	1	
No. 3	2 x 4	7	7	6	10	6	5	5	10	8	3	7	2	6	5	5	10	
	2 x 6	11	11	10	6	9	5	8	7	12	2	10	6	9	5	8	7	
	2 x 8	15	9	13	11	12	5	11	4	16	0	13	11	12	5	11	4	
	2 x 10	20	1	17	9	15	10	14	6	20	6	17	9	15	10	14	6	
	2 x 12	24	5	21	7	19	3	17	7	24	11	21	7	19	3	17	7	
Construction	2 x 4	7	7	6	10	6	5	6	0	8	8	7	10	7	2	6	6	
Standard	2 x 4	6	10	5	11	5	3	4	10	6	10	5	11	5	3	4	10	
Utility	2 x 4	4	7	4	0	3	7	3	3	4	7	4	0	3	7	3	3	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	8	7	7	10	7	3	6	10	9	10	8	11	8	4	7	10
		2 x 6	13	6	12	3	11	5	10	9	15	6	14	1	13	1	11	11
		2 x 8	17	10	16	2	15	0	14	2	20	5	18	7	17	3	15	9
		2 x 10	22	9	20	8	19	2	18	1	26	1	23	8	23	0	20	1
		2 x 12	27	8	25	2	23	4	22	0	31	9	28	10	26	9	24	6
	No. 1	2 x 4	8	7	7	10	7	3	6	10	9	10	8	11	8	4	7	7
		2 x 6	13	6	12	3	11	5	10	9	15	6	13	6	12	1	11	0
		2 x 8	17	10	16	2	15	0	14	2	20	5	17	10	15	11	14	6
		2 x 10	22	9	20	8	19	2	18	1	26	1	22	9	20	4	18	7
		2 x 12	27	8	25	2	23	4	22	0	31	9	27	8	24	9	22	7
No. 2	2 x 4	8	3	7	6	7	0	6	7	9	6	8	5	7	6	6	10	
	2 x 6	13	0	11	10	11	0	10	0	14	2	12	3	11	0	10	0	
	2 x 8	17	2	15	7	14	6	13	2	18	8	16	2	14	6	13	2	
	2 x 10	21	11	19	11	18	6	16	10	23	10	20	8	18	6	16	10	
	2 x 12	26	8	24	3	22	6	20	6	29	0	25	2	22	6	20	6	
No. 3	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0	
	2 x 6	10	9	9	4	8	4	7	7	10	9	9	4	8	4	7	7	
	2 x 8	14	3	12	4	11	0	10	0	14	3	12	4	11	0	10	0	
	2 x 10	18	2	15	8	14	1	12	10	18	2	15	8	14	1	12	10	
	2 x 12	22	1	19	1	17	1	15	7	22	1	19	1	17	1	15	7	
Construction	2 x 4	8	0	7	2	6	5	5	10	8	3	7	2	6	5	5	10	
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	

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TABLE 2-G (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 20 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	8	1	7	4	6	10	6	5	9	3	8	5	7	10	7	4
		2 x 6	12	9	11	7	10	9	10	1	14	7	13	3	12	3	11	7
		2 x 8	16	9	15	3	14	2	13	4	19	3	17	5	16	2	15	3
		2 x 10	21	5	19	6	18	1	17	0	24	6	22	3	20	8	19	6
		2 x 12	26	1	23	8	22	0	20	8	29	10	27	1	25	2	23	8
	No. 1	2 x 4	8	1	7	4	6	10	6	5	9	3	8	5	7	10	7	4
		2 x 6	12	9	11	7	10	9	10	1	14	7	13	2	11	10	10	9
		2 x 8	16	9	15	3	14	2	13	4	19	3	17	5	15	7	14	3
		2 x 10	21	5	19	6	18	1	17	0	24	6	22	3	19	11	18	2
		2 x 12	26	1	23	8	22	0	20	8	29	10	27	1	24	2	22	1
	No. 2	2 x 4	7	10	7	1	6	7	6	2	8	11	8	2	7	4	6	8
		2 x 6	12	4	11	2	10	4	9	9	13	9	11	11	10	8	9	9
		2 x 8	16	3	14	9	13	8	12	10	18	2	15	9	14	1	12	10
		2 x 10	20	9	18	10	17	6	16	5	23	3	20	1	18	0	16	5
2 x 12		25	2	22	11	21	3	20	0	28	3	24	6	21	10	20	0	
No. 3	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0	
	2 x 6	10	3	8	11	7	11	7	3	10	3	8	11	7	11	7	3	
	2 x 8	13	7	11	9	10	6	9	7	13	7	11	9	10	6	9	7	
	2 x 10	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3	
	2 x 12	21	1	18	3	16	4	14	10	21	1	18	3	16	4	14	10	
Construction	2 x 4	7	6	6	10	6	2	5	8	8	0	6	11	6	2	5	8	
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	2	10	4	9	9	14	1	12	9	11	10	11	2
		2 x 8	16	2	14	8	13	8	12	10	18	6	16	10	15	7	14	8
		2 x 10	20	8	18	9	17	5	16	5	23	8	21	6	19	11	18	9
		2 x 12	25	2	22	10	21	2	19	11	28	9	26	2	24	3	22	10
	No. 1	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	2	10	4	9	9	14	1	12	9	11	10	11	0
		2 x 8	16	2	14	8	13	8	12	10	18	6	16	10	15	7	14	6
		2 x 10	20	8	18	9	17	5	16	5	23	8	21	6	19	11	18	7
		2 x 12	25	2	22	10	21	2	19	11	28	9	26	2	24	3	22	7
	No. 2	2 x 4	7	6	6	10	6	4	6	0	8	7	7	10	7	3	6	10
		2 x 6	11	10	10	9	10	0	9	5	13	7	11	11	10	8	9	9
		2 x 8	15	8	14	2	13	2	12	5	17	11	15	9	14	1	12	10
		2 x 10	19	11	18	1	16	10	15	10	22	10	20	1	18	0	16	5
2 x 12		24	3	22	1	20	6	19	3	27	9	24	6	21	10	20	0	
No. 3	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0	
	2 x 6	10	9	9	4	8	4	7	7	10	9	9	4	8	4	7	7	
	2 x 8	14	3	12	4	11	0	10	0	14	3	12	4	11	0	10	0	
	2 x 10	18	2	15	8	14	1	12	10	18	2	15	8	14	1	12	10	
	2 x 12	22	1	19	1	17	1	15	7	22	1	19	1	17	1	15	7	
Construction	2 x 4	7	3	6	7	6	1	5	9	8	3	7	2	6	5	5	10	
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	

Continued on next page

TABLE 2-G (Cont'd)
ROOF JOISTS — SUPPORTING CEILING
(LIVE LOAD 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 20 lb per sq ft															
			Gypsum Board or Plastered Ceiling					Other Ceilings										
			Joist Spacing					Joist Spacing										
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>	<i>ft.</i>	<i>in.</i>
Northern Species (includes all softwood species listed in Table I-A)	Select structural	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	2	10	4	9	9	14	1	12	9	11	10	11	2
		2 x 8	16	2	14	8	13	8	12	10	18	6	16	10	15	7	14	8
		2 x 10	20	8	18	9	17	5	16	5	23	8	21	6	19	11	18	9
		2 x 12	25	2	22	10	21	2	19	11	28	9	26	2	24	3	22	10
	No. 1	2 x 4	7	9	7	1	6	7	6	2	8	11	8	1	7	6	7	1
		2 x 6	12	3	11	2	10	4	9	9	14	1	12	9	11	6	10	6
		2 x 8	16	2	14	8	13	8	12	10	18	6	16	10	15	3	13	11
		2 x 10	20	8	18	9	17	5	16	5	23	8	21	6	19	5	17	9
		2 x 12	25	2	22	10	21	2	19	11	28	9	26	2	23	8	21	7
	No. 2	2 x 4	7	6	6	10	6	4	6	0	8	7	7	10	7	2	6	6
		2 x 6	11	10	10	9	10	0	9	5	13	5	11	7	10	4	9	6
		2 x 8	15	8	14	2	13	2	12	5	17	8	15	4	13	8	12	6
		2 x 10	19	11	18	1	16	10	15	10	22	7	19	6	17	6	15	11
		2 x 12	24	3	22	1	20	6	19	3	27	5	23	9	21	3	19	5
	No. 3	2 x 4	6	10	5	11	5	3	4	10	6	10	5	11	5	3	4	10
		2 x 6	10	3	8	11	7	11	7	3	10	3	8	11	7	11	7	3
		2 x 8	13	7	11	9	10	6	9	7	13	7	11	9	10	6	9	7
		2 x 10	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3
		2 x 12	21	1	18	3	16	4	14	10	21	1	18	3	16	4	14	10
	Construction	2 x 4	7	3	6	7	6	0	5	5	7	9	6	8	6	0	5	5
Standard	2 x 4	5	10	5	0	4	6	4	1	5	10	5	0	4	6	4	1	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	7	11	7	2	6	8	6	3	9	1	8	3	7	7	7	2
		2 x 6	12	5	11	4	10	6	9	10	14	3	12	11	12	0	11	4
		2 x 8	16	5	14	11	13	10	13	0	18	9	17	1	15	10	14	11
		2 x 10	20	11	19	0	17	8	16	7	24	0	21	9	20	3	19	0
		2 x 12	25	6	23	2	21	6	20	3	29	2	26	6	24	7	23	2
	No. 1	2 x 4	7	11	7	2	6	8	6	3	9	1	8	3	7	7	7	2
		2 x 6	12	5	11	4	10	6	9	10	14	3	12	11	11	10	10	9
		2 x 8	16	5	14	11	13	10	13	0	18	9	17	1	15	7	14	3
		2 x 10	20	11	19	0	17	8	16	7	24	0	21	9	19	11	18	2
		2 x 12	25	6	23	2	21	6	20	3	29	2	26	6	24	2	22	1
	No. 2	2 x 4	7	7	6	11	6	5	6	0	8	9	7	11	7	4	6	8
		2 x 6	12	0	10	11	10	1	9	6	13	9	11	11	10	8	9	9
		2 x 8	15	10	14	4	13	4	12	7	18	1	15	9	14	1	12	10
		2 x 10	20	2	18	4	17	0	16	0	23	1	20	1	18	0	16	5
		2 x 12	24	7	22	4	20	9	19	6	28	1	24	6	21	10	20	0
	No. 3	2 x 4	7	2	6	2	5	6	5	0	7	2	6	2	5	6	5	0
		2 x 6	10	3	8	11	7	11	7	3	10	3	8	11	7	11	7	3
		2 x 8	13	7	11	9	10	6	9	7	13	7	11	9	10	6	9	7
		2 x 10	17	4	15	0	13	5	12	3	17	4	15	0	13	5	12	3
		2 x 12	21	1	18	3	16	4	14	10	21	1	18	3	16	4	14	10
	Construction	2 x 4	7	4	6	8	6	2	5	8	8	0	6	11	6	2	5	8
Standard	2 x 4	6	2	5	4	4	9	4	4	6	2	5	4	4	9	4	4	
Utility	2 x 4	4	1	3	7	3	2	2	11	4	1	3	7	3	2	2	11	

TABLE 2-H
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 50 AND 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 50 lb per sq ft								LIVE LOAD 40 lb per sq ft							
			Rafter Spacing								Rafter Spacing							
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	8	3	7	6	7	0	6	7	8	11	8	1	7	6	7	1
		2 x 6	13	0	11	10	10	11	10	3	14	0	12	9	11	10	11	1
		2 x 8	17	2	15	7	14	6	13	6	18	6	16	9	15	7	14	8
		2 x 10	21	11	19	11	18	5	17	3	23	7	21	5	19	11	18	9
		2 x 12	26	8	24	2	22	5	20	11	28	8	26	1	24	2	22	9
	No. 1	2 x 4	8	3	7	6	7	0	6	6	8	11	8	1	7	6	7	1
		2 x 6	13	0	11	8	10	5	9	6	14	0	12	9	11	6	10	6
		2 x 8	17	2	15	4	13	9	12	6	18	6	16	9	15	2	13	10
		2 x 10	21	11	19	7	17	7	16	0	23	7	21	5	19	4	17	8
		2 x 12	26	8	23	10	21	4	19	6	28	8	26	1	23	7	21	6
	No. 2	2 x 4	8	0	7	3	6	6	5	11	8	7	7	10	7	2	6	7
		2 x 6	12	2	10	6	9	5	8	7	13	5	11	7	10	4	9	5
		2 x 8	16	0	13	10	12	5	11	4	17	8	15	3	13	8	12	6
		2 x 10	20	5	17	8	15	10	14	5	22	6	19	6	17	5	15	11
2 x 12		24	10	21	6	19	3	17	7	27	5	23	9	21	3	19	5	
No. 3	2 x 4	6	3	5	5	4	10	4	5	6	10	5	11	5	4	4	10	
	2 x 6	9	2	8	0	7	1	6	6	10	2	8	9	7	10	7	2	
	2 x 8	12	2	10	6	9	5	8	7	13	5	11	7	10	4	9	6	
	2 x 10	15	6	13	5	12	0	10	11	17	1	14	10	13	3	12	1	
	2 x 12	18	10	16	4	14	7	13	4	20	10	18	0	16	1	14	8	
Construction	2 x 4	7	1	6	2	5	6	5	0	7	10	6	9	6	1	5	6	
Standard	2 x 4	5	3	4	6	4	0	3	8	5	9	5	0	4	5	4	1	
Utility	2 x 4	3	8	3	2	2	10	2	7	4	1	3	6	3	2	2	10	
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	8	0	7	3	6	7	6	0	8	7	7	10	7	3	6	8
		2 x 6	12	7	10	11	9	9	8	11	13	6	12	0	10	9	9	10
		2 x 8	16	7	14	4	12	10	11	9	17	10	15	10	14	2	12	11
		2 x 10	21	2	18	4	16	5	15	0	22	9	20	3	18	1	16	6
		2 x 12	25	9	22	4	20	0	18	3	27	8	24	8	22	0	20	1
	No. 1	2 x 4	7	10	6	10	6	1	5	6	8	7	7	6	6	8	6	1
		2 x 6	11	8	10	1	9	0	8	3	12	10	11	2	9	11	9	1
		2 x 8	15	4	13	4	11	11	10	10	17	0	14	8	13	2	12	0
		2 x 10	19	7	17	0	15	2	13	10	21	8	18	9	16	9	15	4
		2 x 12	23	10	20	8	18	6	16	10	26	4	22	10	20	5	18	7
	No. 2	2 x 4	7	3	6	3	5	7	5	1	8	0	6	11	6	2	5	8
		2 x 6	10	4	9	0	8	0	7	4	11	5	9	11	8	10	8	1
		2 x 8	13	8	11	10	10	7	9	8	15	1	13	1	11	8	10	8
		2 x 10	17	5	15	1	13	6	12	4	19	3	16	8	14	11	13	7
2 x 12		21	3	18	5	16	5	15	0	23	5	20	3	18	2	16	7	
No. 3	2 x 4	5	3	4	6	4	0	3	8	5	9	5	0	4	5	4	1	
	2 x 6	7	10	6	10	6	1	5	7	8	8	7	6	6	9	6	2	
	2 x 8	10	5	9	0	8	0	7	4	11	6	9	11	8	10	8	1	
	2 x 10	13	3	11	6	10	3	9	4	14	8	12	8	11	4	10	4	
	2 x 12	16	2	14	0	12	6	11	5	17	10	15	5	13	10	12	7	
Construction	2 x 4	6	0	5	3	4	8	4	3	6	8	5	9	5	2	4	8	
Standard	2 x 4	4	6	3	11	3	6	3	2	5	0	4	4	3	10	3	6	
Utility	2 x 4	3	0	2	7	2	4	2	1	3	4	2	10	2	7	2	4	

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TABLE 2-H (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 50 AND 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 50 lb per sq ft				LIVE LOAD 40 lb per sq ft											
			Rafter Spacing				Rafter Spacing											
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	7	7	6	11	6	5	6	0	8	2	7	5	6	11	6	6
		2 x 6	11	11	10	10	10	1	9	5	12	10	11	8	10	10	10	2
		2 x 8	15	9	14	3	13	3	12	6	16	11	15	5	14	3	13	5
		2 x 10	20	1	18	3	16	11	15	11	21	8	19	8	18	3	17	2
		2 x 12	24	5	22	2	20	7	19	5	26	4	23	11	22	2	20	11
	No. 1	2 x 4	7	7	6	11	6	5	6	0	8	2	7	5	6	11	6	6
		2 x 6	11	11	10	10	10	1	9	2	12	10	11	8	10	10	10	2
		2 x 8	15	9	14	3	13	3	12	2	16	11	15	5	14	3	13	5
		2 x 10	20	1	18	3	16	11	15	6	21	8	19	8	18	3	17	1
		2 x 12	24	5	22	2	20	7	18	10	26	4	23	11	22	2	20	10
	No. 2	2 x 4	7	4	6	8	6	2	5	8	7	11	7	2	6	8	6	3
		2 x 6	11	6	10	1	9	0	8	3	12	5	11	2	9	11	9	1
		2 x 8	15	2	13	4	11	11	10	10	16	4	14	8	13	2	12	0
		2 x 10	19	5	17	0	15	2	13	10	20	11	18	9	16	9	15	4
		2 x 12	23	7	20	8	18	6	16	10	25	5	22	10	20	5	18	7
	No. 3	2 x 4	6	0	5	3	4	8	4	3	6	8	5	9	5	2	4	8
		2 x 6	8	11	7	8	6	10	6	3	9	10	8	6	7	7	6	11
		2 x 8	11	9	10	2	9	1	8	3	12	11	11	2	10	0	9	2
		2 x 10	15	0	13	0	11	7	10	7	16	6	14	4	12	10	11	8
		2 x 12	18	3	15	9	14	1	12	10	20	1	17	5	15	7	14	2
	Construction	2 x 4	6	9	5	10	5	3	4	9	7	5	6	5	5	9	5	3
Standard	2 x 4	5	0	4	4	3	10	3	6	5	6	4	9	4	3	3	11	
Utility	2 x 4	3	4	2	11	2	7	2	4	3	8	3	2	2	10	2	7	
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	8	0	7	3	6	7	6	0	8	7	7	10	7	3	6	8
		2 x 6	12	4	10	8	9	7	8	9	13	6	11	10	10	7	9	8
		2 x 8	16	4	14	1	12	7	11	6	17	10	15	7	13	11	12	9
		2 x 10	20	10	18	0	16	1	14	8	22	9	19	11	17	9	16	3
		2 x 12	25	4	21	11	19	7	17	11	27	8	24	2	21	8	19	9
	No. 1	2 x 4	7	10	6	10	6	1	5	6	8	7	7	6	6	8	6	1
		2 x 6	11	5	9	10	8	10	8	1	12	7	10	11	9	9	8	11
		2 x 8	15	1	13	0	11	8	10	8	16	7	14	4	12	10	11	9
		2 x 10	19	2	16	8	14	10	13	7	21	2	18	4	16	5	15	0
		2 x 12	23	4	20	3	18	1	16	6	25	9	22	4	20	0	18	3
	No. 2	2 x 4	7	1	6	2	5	6	5	0	7	10	6	9	6	1	5	6
		2 x 6	10	4	9	0	8	0	7	4	11	5	9	11	8	10	8	1
		2 x 8	13	8	11	10	10	7	9	8	15	1	13	1	11	8	10	8
		2 x 10	17	5	15	1	13	6	12	4	19	3	16	8	14	11	13	7
		2 x 12	21	3	18	5	16	5	15	0	23	5	20	3	18	2	16	7
	No. 3	2 x 4	5	3	4	6	4	0	3	8	5	9	5	0	4	5	4	1
		2 x 6	7	10	6	10	6	1	5	7	8	8	7	6	6	9	6	2
		2 x 8	10	5	9	0	8	0	7	4	11	6	9	11	8	10	8	1
		2 x 10	13	3	11	6	10	3	9	4	14	8	12	8	11	4	10	4
		2 x 12	16	2	14	0	12	6	11	5	17	10	15	5	13	10	12	7
	Construction	2 x 4	6	0	5	3	4	8	4	3	6	8	5	9	5	2	4	8
Standard	2 x 4	4	6	3	11	3	6	3	2	5	0	4	4	3	10	3	6	
Utility	2 x 4	3	0	2	7	2	4	2	1	3	4	2	10	2	7	2	4	

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TABLE 2-H (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 50 AND 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 50 lb per sq ft				LIVE LOAD 40 lb per sq ft											
			Rafter Spacing				Rafter Spacing											
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	7	6	6	10	6	4	5	10	8	1	7	4	6	10	6	5
		2 x 6	11	10	10	6	9	5	8	7	12	9	11	7	10	4	9	5
		2 x 8	15	7	13	10	12	5	11	4	16	9	15	3	13	8	12	6
		2 x 10	19	11	17	8	15	10	14	5	21	5	19	6	17	5	15	11
		2 x 12	24	2	21	6	19	3	17	7	26	1	23	8	21	3	19	5
	No. 1	2 x 4	7	6	6	8	5	11	5	5	8	1	7	4	6	7	6	0
		2 x 6	11	2	9	8	8	8	7	10	12	4	10	8	9	6	8	8
		2 x 8	14	9	12	9	11	5	10	5	16	3	14	1	12	7	11	6
		2 x 10	18	9	16	3	14	6	13	3	20	9	17	11	16	1	14	8
		2 x 12	22	10	19	9	17	8	16	2	25	3	21	10	19	6	17	10
	No. 2	2 x 4	6	11	6	0	5	4	4	11	7	8	6	7	5	11	5	5
		2 x 6	10	1	8	9	7	10	7	1	11	2	9	8	8	7	7	10
		2 x 8	13	4	11	6	10	4	9	5	14	8	12	9	11	4	10	4
2 x 10		17	0	14	8	13	2	12	0	18	9	16	3	14	6	13	3	
2 x 12		20	8	17	11	16	0	14	7	22	10	19	9	17	8	16	1	
No. 3	2 x 4	5	3	4	6	4	0	3	8	5	9	5	0	4	5	4	1	
	2 x 6	7	6	6	6	5	10	5	4	8	3	7	2	6	5	5	10	
	2 x 8	9	11	8	7	7	8	7	0	10	11	9	6	8	6	7	9	
	2 x 10	12	8	10	11	9	9	8	11	14	0	12	1	10	10	9	10	
	2 x 12	15	5	13	4	11	11	10	10	17	0	14	8	13	2	12	0	
Construction	2 x 4	5	10	5	1	4	6	4	1	6	5	5	7	5	0	4	7	
Standard	2 x 4	4	6	3	11	3	6	3	2	5	0	4	4	3	10	3	6	
Utility	2 x 4	3	0	2	7	2	4	2	1	3	4	2	10	2	7	2	4	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	7	3	6	7	6	1	5	9	7	9	7	1	6	7	6	2
		2 x 6	11	5	10	4	9	5	8	7	12	3	11	2	10	4	9	5
		2 x 8	15	0	13	8	12	5	11	4	16	2	14	8	13	8	12	6
		2 x 10	19	2	17	5	15	10	14	5	20	8	18	9	17	5	15	11
		2 x 12	23	4	21	2	19	3	17	7	25	2	22	10	21	2	19	5
	No. 1	2 x 4	7	3	6	7	5	11	5	5	7	9	7	1	6	7	6	0
		2 x 6	11	5	9	10	8	10	8	1	12	3	10	11	9	9	8	11
		2 x 8	15	0	13	0	11	8	10	8	16	2	14	4	12	10	11	9
		2 x 10	19	2	16	8	14	10	13	7	20	8	18	4	16	5	15	0
		2 x 12	23	4	20	3	18	1	16	6	25	2	22	4	20	0	18	3
	No. 2	2 x 4	7	0	6	2	5	6	5	0	7	6	6	9	6	1	5	6
		2 x 6	10	1	8	9	7	10	7	1	11	2	9	8	8	7	7	10
		2 x 8	13	4	11	6	10	4	9	5	14	8	12	9	11	4	10	4
2 x 10		17	0	14	8	13	2	12	0	18	9	16	3	14	6	13	3	
2 x 12		20	8	17	11	16	0	14	7	22	10	19	9	17	8	16	1	
No. 3	2 x 4	5	3	4	6	4	0	3	8	5	9	5	0	4	5	4	1	
	2 x 6	7	10	6	10	6	1	5	7	8	8	7	6	6	9	6	2	
	2 x 8	10	5	9	0	8	0	7	4	11	6	9	11	8	10	8	1	
	2 x 10	13	3	11	6	10	3	9	4	14	8	12	8	11	4	10	4	
	2 x 12	16	2	14	0	12	6	11	5	17	10	15	5	13	10	12	7	
Construction	2 x 4	6	0	5	3	4	8	4	3	6	8	5	9	5	2	4	8	
Standard	2 x 4	4	6	3	11	3	6	3	2	5	0	4	4	3	10	3	6	
Utility	2 x 4	3	0	2	7	2	4	2	1	3	4	2	10	2	7	2	4	

Continued on next page

TABLE 2-H (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 50 AND 40 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 50 lb per sq ft				LIVE LOAD 40 lb per sq ft			
			Rafter Spacing				Rafter Spacing			
			12 in.	16 in.	20 in.	24 in.	12 in.	16 in.	20 in.	24 in.
			<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>	<i>ft in.</i>
Northern Species (includes all softwood species listed in Table I-A)	Select structural	2 x 4	7 3	6 7	6 1	5 8	7 9	7 1	6 7	6 2
		2 x 6	11 5	10 1	9 0	8 3	12 3	11 2	9 11	9 1
		2 x 8	15 0	13 4	11 11	10 10	16 2	14 8	13 2	12 0
		2 x 10	19 2	17 0	15 2	13 10	20 8	18 9	16 9	15 4
		2 x 12	23 4	20 8	18 6	16 10	25 2	22 10	20 5	18 7
	No. 1	2 x 4	7 3	6 5	5 9	5 3	7 9	7 1	6 4	5 9
		2 x 6	10 11	9 5	8 5	7 8	12 0	10 5	9 4	8 6
		2 x 8	14 4	12 5	11 1	10 2	15 10	13 9	12 3	11 2
		2 x 10	18 4	15 11	14 2	13 0	20 3	17 6	15 8	14 4
		2 x 12	22 4	19 4	17 3	15 9	24 8	21 4	19 1	17 5
	No. 2	2 x 4	6 9	5 10	5 3	4 9	7 5	6 5	5 9	5 3
		2 x 6	9 10	8 6	7 7	6 11	10 10	9 4	8 4	7 8
		2 x 8	12 11	11 2	10 0	9 2	14 3	12 4	11 1	10 1
		2 x 10	16 6	14 3	12 9	11 8	18 3	15 9	14 1	12 10
		2 x 12	20 1	17 5	15 7	14 2	22 2	19 2	17 2	15 8
	No. 3	2 x 4	5 0	4 4	3 10	3 6	5 6	4 9	4 3	3 11
		2 x 6	7 6	6 6	5 10	5 4	8 3	7 2	6 5	5 10
		2 x 8	9 11	8 7	7 8	7 0	10 11	9 6	8 6	7 9
		2 x 10	12 8	10 11	9 9	8 11	14 0	12 1	10 10	9 10
		2 x 12	15 5	13 4	11 11	10 10	17 0	14 8	13 2	12 0
	Con- struction	2 x 4	5 8	4 11	4 4	4 0	6 3	5 5	4 10	4 5
Standard	2 x 4	4 3	3 8	3 3	3 0	4 8	4 1	3 8	3 4	
Utility	2 x 4	3 0	2 7	2 4	2 1	3 4	2 10	2 7	2 4	
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	7 4	6 8	6 2	5 10	7 11	7 2	6 8	6 3
		2 x 6	11 6	10 6	9 5	8 7	12 5	11 4	10 4	9 5
		2 x 8	15 3	13 10	12 5	11 4	16 5	14 11	13 8	12 6
		2 x 10	19 5	17 8	15 10	14 5	20 11	19 0	17 5	15 11
		2 x 12	23 8	21 6	19 3	17 7	25 6	23 2	21 3	19 5
	No. 1	2 x 4	7 4	6 8	5 11	5 5	7 11	7 2	6 7	6 0
		2 x 6	11 2	9 8	8 8	7 10	12 4	10 8	9 6	8 8
		2 x 8	14 9	12 9	11 5	10 5	16 3	14 1	12 7	11 6
		2 x 10	18 9	16 3	14 6	13 3	20 9	17 11	16 1	14 8
		2 x 12	22 10	19 9	17 8	16 2	25 3	21 10	19 6	17 10
	No. 2	2 x 4	6 11	6 0	5 4	4 11	7 7	6 7	5 11	5 5
		2 x 6	10 1	8 9	7 10	7 1	11 2	9 8	8 7	7 10
		2 x 8	13 4	11 6	10 4	9 5	14 8	12 9	11 4	10 4
		2 x 10	17 0	14 8	13 2	12 0	18 9	16 3	14 6	13 3
		2 x 12	20 8	17 11	16 0	14 7	22 10	19 9	17 8	16 1
	No. 3	2 x 4	5 3	4 6	4 0	3 8	5 9	5 0	4 5	4 1
		2 x 6	7 6	6 6	5 10	5 4	8 3	7 2	6 5	5 10
		2 x 8	9 11	8 7	7 8	7 0	10 11	9 6	8 6	7 9
		2 x 10	12 8	10 11	9 9	8 11	14 0	12 1	10 10	9 10
		2 x 12	15 5	13 4	11 11	10 10	17 0	14 8	13 2	12 0
	Con- struction	2 x 4	5 10	5 1	4 6	4 1	6 5	5 7	5 0	4 7
Standard	2 x 4	4 6	3 11	3 6	3 2	5 0	4 4	3 10	3 6	
Utility	2 x 4	3 0	2 7	2 4	2 1	3 4	2 10	2 7	2 4	

TABLE 2-I
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 30 AND 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 30 lb per sq ft								LIVE LOAD 20 lb per sq ft								
			Rafter Spacing								Rafter Spacing								
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.		
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	Select structural	2 x 4	9	10	8	11	8	3	7	9	11	3	10	2	9	6	8	11	
		2 x 6	15	5	14	0	13	0	12	3	17	8	16	0	14	11	14	0	
		2 x 8	20	4	18	6	17	2	16	2	23	3	21	2	19	8	18	6	
		2 x 10	26	0	23	7	21	11	20	7	29	9	27	0	25	1	23	7	
		2 x 12	31	7	28	8	26	8	25	1	36	2	32	10	30	6	28	8	
	No. 1	2 x 4	9	10	8	11	8	3	7	9	11	3	10	2	9	6	8	11	
		2 x 6	15	5	14	0	13	0	11	10	17	8	16	0	14	11	14	0	
		2 x 8	20	4	18	6	17	2	15	8	23	3	21	2	19	8	18	5	
		2 x 10	26	0	23	7	21	11	20	0	29	9	27	0	25	1	23	6	
		2 x 12	31	7	28	8	26	8	24	4	36	2	32	10	30	6	28	7	
	No. 2	2 x 4	9	6	8	7	8	0	7	5	10	10	9	10	9	2	8	7	
		2 x 6	14	11	13	1	11	9	10	8	17	1	15	5	13	9	12	7	
		2 x 8	19	8	17	3	15	5	14	1	22	6	20	4	18	2	16	7	
		2 x 10	25	1	22	1	19	9	18	0	28	8	26	0	23	3	21	2	
2 x 12		30	6	26	10	24	0	21	11	34	11	31	7	28	3	25	9		
No. 3	2 x 4	7	9	6	9	6	0	5	6	9	2	7	11	7	1	6	5		
	2 x 6	11	6	9	11	8	11	8	1	13	6	11	8	10	6	9	7		
	2 x 8	15	2	13	1	11	9	10	8	17	10	15	5	13	10	12	7		
Construction	2 x 4	8	10	7	8	6	10	6	3	10	5	9	0	8	1	7	4		
	Standard	2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5	
	Utility	2 x 4	4	7	4	0	3	7	3	3	5	5	4	8	4	2	3	10	
	Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	Select structural	2 x 4	9	6	8	7	8	0	7	6	10	10	9	10	9	2	8	7
			2 x 6	14	11	13	6	12	2	11	1	17	1	15	6	14	4	13	1
			2 x 8	19	8	17	10	16	0	14	8	22	6	20	5	18	11	17	3
			2 x 10	25	1	22	9	20	6	18	8	28	8	26	1	24	1	22	0
2 x 12			30	6	27	8	24	11	22	9	34	11	31	9	29	4	26	9	
No. 1		2 x 4	9	6	8	6	7	7	6	11	10	10	9	10	8	11	8	2	
		2 x 6	14	6	12	7	11	3	10	3	17	1	14	10	13	3	12	1	
		2 x 8	19	2	16	7	14	10	13	7	22	6	19	7	17	6	15	11	
		2 x 10	24	6	21	2	18	11	17	4	28	8	24	11	22	4	20	4	
		2 x 12	29	9	25	9	23	1	21	1	34	11	30	4	27	2	24	9	
No. 2	2 x 4	9	0	7	10	7	0	6	5	10	5	9	3	8	3	7	6		
	2 x 6	12	11	11	2	10	0	9	2	15	3	13	2	11	9	10	9		
	2 x 8	17	1	14	9	13	2	12	1	20	1	17	5	15	7	14	2		
	2 x 10	21	9	18	10	16	10	15	5	25	8	22	2	19	10	18	1		
	2 x 12	26	6	22	11	20	6	18	9	31	2	27	0	24	2	22	0		
No. 3	2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5		
	2 x 6	9	10	8	6	7	7	6	11	11	7	10	0	8	11	8	2		
	2 x 8	13	0	11	3	10	0	9	2	15	3	13	3	11	10	10	9		
	2 x 10	16	7	14	4	12	10	11	8	19	6	16	11	15	1	13	9		
	2 x 12	20	2	17	5	15	7	14	3	23	9	20	6	18	4	16	9		
Construction	2 x 4	7	6	6	6	5	10	5	4	8	10	7	8	6	10	6	3		
Standard	2 x 4	5	8	4	11	4	4	4	0	6	8	5	9	5	2	4	8		
Utility	2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1		

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TABLE 2-I (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 30 AND 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 30 lb per sq ft				LIVE LOAD 20 lb per sq ft											
			Rafter Spacing				Rafter Spacing											
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	Select structural	2 x 4	9	0	8	2	7	7	7	1	10	4	9	4	8	8	8	2
		2 x 6	14	2	12	10	11	11	11	3	16	2	14	9	13	8	12	10
		2 x 8	18	8	16	11	15	9	14	10	21	4	19	5	18	0	16	11
		2 x 10	23	10	21	8	20	1	18	11	27	3	24	9	23	0	21	8
		2 x 12	29	0	26	4	24	5	23	0	33	2	30	2	28	0	26	4
	No. 1	2 x 4	9	0	8	2	7	7	7	1	10	4	9	4	8	8	8	2
		2 x 6	14	2	12	10	11	11	11	3	16	2	14	9	13	8	12	10
		2 x 8	18	8	16	11	15	9	14	10	21	4	19	5	18	0	16	11
		2 x 10	23	10	21	8	20	1	18	11	27	3	24	9	23	0	21	8
		2 x 12	29	0	26	4	24	5	23	0	33	2	30	2	28	0	26	4
	No. 2	2 x 4	8	8	7	11	7	4	6	10	9	11	9	0	8	4	7	11
		2 x 6	13	8	12	5	11	3	10	3	15	8	14	2	13	2	12	1
		2 x 8	18	0	16	4	14	10	13	7	20	7	18	9	17	5	15	11
		2 x 10	23	0	20	11	18	11	17	4	26	4	23	11	22	2	20	4
2 x 12		28	0	25	5	23	1	21	1	32	0	29	1	27	0	24	9	
No. 3	2 x 4	7	6	6	6	5	10	5	4	8	10	7	8	6	10	6	3	
	2 x 6	11	1	9	7	8	7	7	10	13	1	11	4	10	1	9	3	
	2 x 8	14	8	12	8	11	4	10	4	17	3	14	11	13	4	12	2	
	2 x 10	18	8	16	2	14	6	13	2	22	0	19	1	17	0	15	6	
	2 x 12	22	9	19	8	17	7	16	1	26	9	23	2	20	9	18	11	
Construction	2 x 4	8	4	7	4	6	6	5	11	9	7	8	7	7	8	7	0	
Standard	2 x 4	6	3	5	5	4	10	4	5	7	4	6	4	5	8	5	2	
Utility	2 x 4	4	2	3	8	3	3	2	11	4	11	4	3	3	10	3	6	
Coast Species (includes Douglas Fir, Western Larch, Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	Select structural	2 x 4	9	6	8	7	8	0	7	6	10	10	9	10	9	2	8	7
		2 x 6	14	11	13	4	11	11	10	11	17	1	15	6	14	1	12	10
		2 x 8	19	8	17	7	15	9	14	4	22	6	20	5	18	6	16	11
		2 x 10	25	1	22	6	20	1	18	4	28	8	26	1	23	8	21	7
		2 x 12	30	6	27	4	24	6	22	4	34	11	31	9	28	9	26	3
	No. 1	2 x 4	9	6	8	6	7	7	6	11	10	10	9	10	8	11	8	2
		2 x 6	14	3	12	4	11	0	10	1	16	9	14	6	13	0	11	10
		2 x 8	18	9	16	3	14	6	13	3	22	1	19	2	17	1	15	7
		2 x 10	24	0	20	9	18	7	16	11	28	2	24	5	21	10	19	11
		2 x 12	29	2	25	3	22	7	20	7	34	4	29	9	26	7	24	3
	No. 2	2 x 4	8	10	7	8	6	10	6	3	10	5	9	0	8	1	7	4
		2 x 6	12	11	11	2	10	0	9	2	15	3	13	2	11	9	10	9
		2 x 8	17	1	14	9	13	2	12	1	20	1	17	5	15	7	14	2
		2 x 10	21	9	18	10	16	10	15	5	25	8	22	2	19	10	18	1
2 x 12		26	6	22	11	20	6	18	9	31	2	27	0	24	2	22	0	
No. 3	2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5	
	2 x 6	9	10	8	6	7	7	6	11	11	7	10	0	8	11	8	2	
	2 x 8	13	0	11	3	10	0	9	2	15	3	13	3	11	10	10	9	
	2 x 10	16	7	14	4	12	10	11	8	19	6	16	11	15	1	13	9	
	2 x 12	20	2	17	5	15	7	14	3	23	9	20	6	18	4	16	9	
Construction	2 x 4	7	6	6	6	5	10	5	4	8	10	7	8	6	10	6	3	
Standard	2 x 4	5	8	4	11	4	4	4	0	6	8	5	9	5	2	4	8	
Utility	2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1	

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TABLE 2-I (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 30 AND 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, in.	LIVE LOAD 30 lb per sq ft								LIVE LOAD 20 lb per sq ft							
			Rafter Spacing								Rafter Spacing							
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	Select structural	2 x 4	8	11	8	1	7	6	7	1	10	2	9	3	8	7	8	1
		2 x 6	14	0	12	9	11	9	10	8	16	0	14	7	13	6	12	7
		2 x 8	18	6	16	9	15	5	14	1	21	2	19	3	17	10	16	7
		2 x 10	23	7	21	5	19	9	18	0	27	0	24	6	22	9	21	2
		2 x 12	28	8	26	1	24	0	21	11	32	10	29	10	27	8	25	9
	No. 1	2 x 4	8	11	8	1	7	5	6	9	10	2	9	3	8	7	8	0
		2 x 6	13	11	12	1	10	9	9	10	16	0	14	2	12	8	11	7
		2 x 8	18	4	15	11	14	3	13	0	21	2	18	9	16	9	15	3
		2 x 10	23	5	20	3	18	2	16	7	27	0	23	11	21	4	19	6
		2 x 12	28	6	24	8	22	1	20	2	32	10	29	1	26	0	23	9
	No. 2	2 x 4	8	7	7	6	6	8	6	1	9	10	8	10	7	10	7	2
		2 x 6	12	7	10	11	9	9	8	11	14	10	12	10	11	6	10	6
		2 x 8	16	7	14	4	12	10	11	9	19	7	16	11	15	2	13	10
		2 x 10	21	2	18	4	16	5	15	0	24	11	21	7	19	4	17	8
2 x 12		25	9	22	4	20	0	18	3	30	4	26	3	23	6	21	5	
No. 3	2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5	
	2 x 6	9	4	8	1	7	3	6	7	11	0	9	7	8	6	7	9	
Construction	2 x 4	12	4	10	8	9	7	8	9	14	7	12	7	11	3	10	3	
	2 x 10	15	9	13	8	12	3	11	2	18	7	16	1	14	5	13	2	
	2 x 12	19	3	16	8	14	10	13	7	22	7	19	7	17	6	16	0	
Standard	2 x 4	7	4	6	4	5	8	5	2	8	7	7	5	6	8	6	1	
	2 x 4	5	8	4	11	4	4	4	0	6	8	5	9	5	2	4	8	
	2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1	
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	Select structural	2 x 4	8	7	7	9	7	3	6	10	9	10	8	11	8	3	7	9
		2 x 6	13	6	12	3	11	5	10	8	15	6	14	1	13	0	12	3
		2 x 8	17	10	16	2	15	0	14	1	20	5	18	6	17	2	16	2
		2 x 10	22	9	20	8	19	2	18	0	26	0	23	8	21	11	20	8
		2 x 12	27	8	25	2	23	4	21	11	31	8	28	9	26	9	25	2
	No. 1	2 x 4	8	7	7	9	7	3	6	9	9	10	8	11	8	3	7	9
		2 x 6	13	6	12	3	11	0	10	1	15	6	14	1	13	0	11	10
		2 x 8	17	10	16	2	14	6	13	3	20	5	18	6	17	1	15	7
		2 x 10	22	9	20	8	18	7	16	11	26	0	23	8	21	10	19	11
		2 x 12	27	8	25	2	22	7	20	7	31	8	28	9	26	7	24	3
	No. 2	2 x 4	8	3	7	6	6	10	6	3	9	6	8	7	8	0	7	4
		2 x 6	12	7	10	11	9	9	8	11	14	10	12	10	11	6	10	6
		2 x 8	16	7	14	4	12	10	11	9	19	7	16	11	15	2	13	10
		2 x 10	21	2	18	4	16	5	15	0	24	11	21	7	19	4	17	8
2 x 12		25	9	22	4	20	0	18	3	30	4	26	3	23	6	21	5	
No. 3	2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5	
	2 x 6	9	10	8	6	7	7	6	11	11	7	10	0	8	11	8	2	
	2 x 8	13	0	11	3	10	0	9	2	15	3	13	3	11	10	10	9	
	2 x 10	16	7	14	4	12	10	11	8	19	6	16	11	15	1	13	9	
	2 x 12	20	2	17	5	15	7	14	3	23	9	20	6	18	4	16	9	
Standard	2 x 4	7	6	6	6	5	10	5	4	8	10	7	8	6	10	6	3	
	2 x 4	5	8	4	11	4	4	4	0	6	8	5	9	5	2	4	8	
	2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1	

Continued on next page

TABLE 2-1 (Cont'd)
RAFTERS — NOT SUPPORTING CEILING
(LIVE LOADS 30 AND 20 lb per sq ft)

Commercial Designation	Grade	Nominal Size, <i>in.</i>	LIVE LOAD 30 lb per sq ft								LIVE LOAD 20 lb per sq ft							
			Rafter Spacing								Rafter Spacing							
			12 in.		16 in.		20 in.		24 in.		12 in.		16 in.		20 in.		24 in.	
			<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>	<i>ft</i>	<i>in.</i>
Northern Species (includes all softwood species listed in Table 1-A)	Select structural	2 x 4	8	7	7	9	7	3	6	10	9	10	8	11	8	3	7	9
		2 x 6	13	6	12	3	11	3	10	3	15	6	14	1	13	0	12	1
		2 x 8	17	10	16	2	14	10	13	7	20	5	18	6	17	2	15	11
		2 x 10	22	9	20	8	18	11	17	4	26	0	23	8	21	11	20	4
		2 x 12	27	8	25	2	23	1	21	1	31	8	28	9	26	9	24	9
	No. 1	2 x 4	8	7	7	9	7	2	6	6	9	10	8	11	8	3	7	8
		2 x 6	13	6	11	9	10	6	9	7	15	6	13	10	12	5	11	4
		2 x 8	17	10	15	6	13	11	12	8	20	5	18	3	16	4	14	11
		2 x 10	22	9	19	10	17	9	16	2	26	0	23	4	20	10	19	1
		2 x 12	27	8	24	1	21	7	19	8	31	8	28	5	25	5	23	2
	No. 2	2 x 4	8	3	7	4	6	6	5	11	9	6	8	7	7	8	7	0
		2 x 6	12	3	10	7	9	6	8	8	14	5	12	6	11	2	10	2
		2 x 8	16	2	14	0	12	6	11	5	19	0	16	5	14	8	13	5
		2 x 10	20	7	17	10	15	11	14	7	24	3	21	0	18	9	17	2
		2 x 12	25	1	21	8	19	5	17	8	29	6	25	6	22	10	20	10
	No. 3	2 x 4	6	3	5	5	4	10	4	5	7	4	6	4	5	8	5	2
		2 x 6	9	4	8	1	7	3	6	7	11	0	9	7	8	6	7	9
		2 x 8	12	4	10	8	9	7	8	9	14	7	12	7	11	3	10	3
		2 x 10	15	9	13	8	12	3	11	2	18	7	16	1	14	5	13	2
		2 x 12	19	3	16	8	14	10	13	7	22	7	19	7	17	6	16	0
	Construction	2 x 4	7	1	6	1	5	5	5	0	8	4	7	2	6	5	5	10
	Standard	2 x 4	5	4	4	7	4	1	3	9	6	3	5	5	4	10	4	5
	Utility	2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1
	Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	Select structural	2 x 4	8	8	7	11	7	4	6	11	10	0	9	1	8	5	7
2 x 6			13	8	12	5	11	6	10	8	15	8	14	3	13	3	12	5
2 x 8			18	1	16	5	15	3	14	1	20	8	18	9	17	5	16	5
2 x 10			23	1	20	11	19	5	18	0	26	5	24	0	22	3	20	11
2 x 12			28	0	25	6	23	8	21	11	32	1	29	2	27	1	25	6
No. 1		2 x 4	8	8	7	11	7	4	6	9	10	0	9	1	8	5	7	11
		2 x 6	13	8	12	1	10	9	9	10	15	8	14	2	12	8	11	7
		2 x 8	18	1	15	11	14	3	13	0	20	8	18	9	16	9	15	3
		2 x 10	23	1	20	3	18	2	16	7	26	5	23	11	21	4	19	6
		2 x 12	28	0	24	8	22	1	20	2	32	1	29	1	26	0	23	9
No. 2		2 x 4	8	5	7	6	6	8	6	1	9	7	8	9	7	10	7	2
		2 x 6	12	7	10	11	9	9	8	11	14	10	12	10	11	6	10	6
		2 x 8	16	7	14	4	12	10	11	9	19	7	16	11	15	2	13	10
		2 x 10	21	2	18	4	16	5	15	0	24	11	21	7	19	4	17	8
		2 x 12	25	9	22	4	20	0	18	3	30	4	26	3	23	6	21	5
No. 3		2 x 4	6	6	5	8	5	0	4	7	7	8	6	8	5	11	5	5
		2 x 6	9	4	8	1	7	3	6	7	11	0	9	7	8	6	7	9
		2 x 8	12	4	10	8	9	7	8	9	14	7	12	7	11	3	10	3
		2 x 10	15	9	13	8	12	3	11	2	18	7	16	1	14	5	13	2
		2 x 12	19	3	16	8	14	10	13	7	22	7	19	7	17	6	16	0
Construction		2 x 4	7	4	6	4	5	8	5	2	8	7	7	5	6	8	6	1
Standard		2 x 4	5	8	4	11	4	4	4	0	6	8	5	9	5	2	4	8
Utility		2 x 4	3	9	3	3	2	11	2	8	4	5	3	10	3	5	3	1

TABLE 2-J
MAXIMUM SPANS FOR BUILT-UP WOOD BEAMS
SUPPORTING NOT MORE THAN ONE FLOOR⁽²⁾ IN HOUSES

Commercial Designation	Grade ⁽¹⁾	Supported Joist Length, ft ^{(3),(4)}	Size of Built-Up Beam, in. ^{(5),(6)}											
			3-2 x 8		4-2 x 8		3-2 x 10		4-2 x 10		3-2 x 12		4-2 x 12	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	No. 1	8	12	0	13	10	15	4	17	8	18	7	21	6
		10	10	9	12	5	13	8	15	10	16	8	19	3
		12	9	9	11	4	12	6	14	5	15	2	17	7
		14	8	10	10	5	11	4	13	4	13	9	16	3
	16	7	10	9	9	10	1	12	6	12	3	15	2	
	No. 2	8	10	10	12	6	13	9	15	11	16	9	19	5
		10	9	8	11	2	12	4	14	3	15	0	17	4
		12	8	10	10	2	11	3	13	0	13	8	15	10
14		8	2	9	5	10	5	12	0	12	8	14	8	
16	7	8	8	10	9	9	11	3	11	10	13	8		
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	No. 1	8	10	4	12	0	13	3	15	4	16	1	18	7
		10	9	3	10	9	11	10	13	8	14	5	16	8
		12	8	2	9	9	10	5	12	6	12	8	15	2
		14	7	2	9	1	9	2	11	7	11	1	14	1
	16	6	5	8	2	8	2	10	5	10	0	12	8	
	No. 2	8	9	3	10	8	11	9	13	7	14	4	16	7
		10	8	3	9	6	10	6	12	2	12	10	14	10
		12	7	6	8	8	9	7	11	1	11	8	13	6
14		7	0	8	1	8	11	10	3	10	10	12	6	
16	6	5	7	6	8	2	9	7	10	0	11	8		
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	No. 1	8	11	7	13	5	14	10	17	1	18	0	20	10
		10	10	4	12	0	13	3	15	4	16	1	18	7
		12	9	6	10	11	12	1	14	0	14	9	17	0
		14	8	9	10	1	11	2	12	11	13	7	15	9
	16	7	11	9	6	10	1	12	1	12	3	14	9	
	No. 2	8	10	4	12	0	13	3	15	4	16	1	18	7
		10	9	3	10	9	11	10	13	8	14	5	16	8
		12	8	6	9	9	10	10	12	6	13	2	15	2
14		7	10	9	1	10	0	11	7	12	2	14	1	
16	7	4	8	6	9	4	10	10	11	5	13	2		
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	No. 1	8	10	2	11	9	12	11	15	0	15	9	18	3
		10	8	4	10	6	10	8	13	5	13	0	16	4
		12	7	2	9	2	9	2	11	8	11	1	14	3
		14	6	4	8	0	8	1	10	3	9	10	12	5
	16	5	8	7	2	7	3	9	2	8	10	11	1	
	No. 2	8	9	3	10	8	11	9	13	7	14	4	16	7
		10	8	3	9	6	10	6	12	2	12	10	14	10
		12	7	2	8	8	9	2	11	1	11	1	13	6
14		6	4	8	0	8	1	10	3	9	10	12	5	
16	5	8	7	2	7	3	9	2	8	10	11	1		
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	No. 1	8	9	11	11	6	12	8	14	8	15	5	17	10
		10	8	11	10	3	11	4	13	1	13	10	15	11
		12	7	8	9	4	9	9	11	11	11	11	14	7
		14	6	9	8	7	8	7	10	11	10	5	13	4
	16	6	0	7	8	7	8	9	9	9	5	11	11	
	No. 2	8	9	0	10	4	11	6	13	3	13	11	16	1
		10	8	0	9	3	10	3	11	10	12	6	14	5
		12	7	4	8	6	9	4	10	10	11	5	13	2
14		6	9	7	10	8	7	10	0	10	5	12	2	
16	6	0	7	4	7	8	9	4	9	5	11	5		
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	No. 1	8	10	2	11	9	13	0	15	0	15	9	18	3
		10	9	1	10	6	11	7	13	5	14	1	16	4
		12	8	2	9	7	10	5	12	3	12	8	14	10
		14	7	2	8	10	9	2	11	4	11	1	13	9
	16	6	5	8	2	8	2	10	5	10	0	12	8	
	No. 2	8	9	0	10	4	11	6	13	3	13	11	16	1
		10	8	0	9	3	10	3	11	10	12	6	14	5
		12	7	4	8	6	9	4	10	10	11	5	13	2
14		6	9	7	10	8	8	10	0	10	6	12	2	
16	6	4	7	4	8	1	9	4	9	10	11	5		

Continued on next page

TABLE 2-J (Cont'd)
MAXIMUM SPANS FOR BUILT-UP WOOD BEAMS
SUPPORTING NOT MORE THAN ONE FLOOR⁽²⁾ IN HOUSES

Commercial Designation	Grade ⁽¹⁾	Supported Joist Length, ft ⁽³⁾⁽⁴⁾	Size of Built-Up Beam, in. ⁽⁵⁾⁽⁶⁾											
			3-2 x 8		4-2 x 8		3-2 x 10		4-2 x 10		3-2 x 12		4-2 x 12	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Northern Species (includes all softwood species listed in Table 1-A)	No. 1	8	9	8	11	3	12	5	14	4	15	1	17	5
		10	8	4	10	0	10	8	12	10	13	0	15	7
		12	7	2	9	2	9	2	11	8	11	1	14	3
		14	6	4	8	0	8	1	10	3	9	10	12	5
		16	5	8	7	2	7	3	9	2	8	10	11	1
	No. 2	8	8	9	10	1	11	2	12	10	13	7	15	8
		10	7	10	9	0	10	0	11	6	12	1	14	0
		12	7	1	8	3	9	1	10	6	11	1	12	9
		14	6	4	7	7	8	1	9	9	9	10	11	10
		16	5	8	7	1	7	3	9	1	8	10	11	1
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	No. 1	8	9	11	11	6	12	8	14	8	15	5	17	10
		10	8	4	10	3	10	8	13	1	13	0	15	11
		12	7	2	9	2	9	2	11	8	11	1	14	3
		14	6	4	8	0	8	0	10	3	9	9	12	5
		16	5	8	7	2	7	3	9	2	8	10	11	1
	No. 2	8	9	0	10	4	11	6	13	3	13	11	16	1
		10	8	0	9	3	10	3	11	10	12	6	14	5
		12	7	2	8	6	9	2	10	10	11	1	13	2
		14	6	4	7	10	8	0	10	0	9	9	12	2
		16	5	8	7	2	7	3	9	2	8	10	11	1

Notes to Table 2-J:

- (1) Graded in conformance with 1970 "NLGA Standard Grading Rules for Canadian Lumber" published by the National Lumber Grades Authority, Vancouver.
- (2) These tables provide maximum allowable spans for main beams or girders which are built up from nominal 2-in. members in the species, sizes and grades indicated. Allowable spans for solid wood beams, glued-laminated wood beams or built-up beams in sizes or grades other than those shown shall be determined from standard engineering formulae.
- (3) Supported joist length means ½ the sum of the joist spans on both sides of the beam.
- (4) For supported joist lengths intermediate between those shown in the tables, straight line interpolation may be used in determining the maximum beam span.
- (5) Where built-up wood beams are employed over a single span, the length of each individual piece used to fabricate the beam shall equal the length of the beam.
- (6) Where built-up wood beams are continued over more than 1 span, and where lengths of individual pieces are less than the total length of the complete beam, the location of butt joints shall conform to Subsection 9.23.8. of the National Building Code of Canada 1977.

TABLE 2-K
MAXIMUM SPANS FOR BUILT-UP WOOD BEAMS
SUPPORTING NOT MORE THAN TWO FLOORS⁽²⁾ IN HOUSES

Commercial Designation	Grade ⁽¹⁾	Supported Joist Length, ft ^{(3),(4)}	Size of Built-Up Beam, in. ^{(5),(6)}											
			3-2 x 8		4-2 x 8		3-2 x 10		4-2 x 10		3-2 x 12		4-2 x 12	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Douglas Fir-Larch (includes Douglas Fir and Western Larch)	No. 1	8	8	10	10	5	11	4	13	4	13	9	16	3
		10	7	4	9	4	9	4	11	11	11	5	14	6
		12	6	4	8	0	8	0	10	3	9	9	12	5
		14	5	7	7	0	7	1	9	0	8	8	10	11
		16	5	0	6	4	6	5	8	0	7	10	9	9
	No. 2	8	8	2	9	5	10	5	12	0	12	8	14	8
		10	7	3	8	5	9	4	10	9	11	4	13	1
		12	6	4	7	8	8	0	9	10	9	9	11	11
		14	5	7	7	0	7	1	9	0	8	8	10	11
		16	5	0	6	4	6	5	8	0	7	10	9	9
Hem-Fir (includes Western Hemlock, Amabilis Fir and Grand Fir)	No. 1	8	7	2	9	0	9	2	11	7	11	1	14	1
		10	5	11	7	7	7	7	9	8	9	3	11	9
		12	5	2	6	6	6	7	8	3	8	0	10	1
		14	4	7	5	9	5	10	7	4	7	2	8	11
		16	4	2	5	2	5	4	6	7	6	6	8	0
	No. 2	8	7	0	8	1	8	11	10	3	10	10	12	6
		10	5	11	7	2	7	7	9	2	9	3	11	2
		12	5	2	6	6	6	7	8	3	8	0	10	1
		14	4	7	5	9	5	10	7	4	7	2	8	11
		16	4	2	5	2	5	4	6	7	6	6	8	0
Eastern Hemlock-Tamarack (includes Eastern Hemlock and Tamarack)	No. 1	8	8	9	10	1	11	2	12	11	13	7	15	9
		10	7	4	9	1	9	4	11	7	11	5	14	1
		12	6	4	8	0	8	1	10	3	9	10	12	5
		14	5	7	7	0	7	1	9	0	8	8	10	11
		16	5	0	6	4	6	5	8	1	7	10	9	10
	No. 2	8	7	10	9	1	10	0	11	7	12	2	14	1
		10	7	0	8	1	8	11	10	4	10	11	12	7
		12	6	4	7	5	8	1	9	5	9	10	11	6
		14	5	7	6	10	7	1	8	9	8	8	10	7
		16	5	0	6	4	6	5	8	1	7	10	9	10
Coast Species (includes Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir and Coast Sitka Spruce)	No. 1	8	6	4	8	0	8	1	10	3	9	10	12	5
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2
	No. 2	8	6	4	8	0	8	1	10	3	9	10	12	5
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2
Spruce-Pine-Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Ponderosa Pine, Balsam Fir and Alpine Fir)	No. 1	8	6	9	8	7	8	7	10	11	10	5	13	4
		10	5	7	7	1	7	2	9	1	8	9	11	0
		12	4	10	6	1	6	3	7	10	7	7	9	6
		14	4	4	5	5	5	7	6	11	6	9	8	5
		16	3	11	4	10	5	1	6	3	6	2	7	7
	No. 2	8	6	9	7	10	8	7	10	0	10	5	12	2
		10	5	7	7	0	7	2	8	11	8	9	10	11
		12	4	10	6	1	6	3	7	10	7	7	9	6
		14	4	4	5	5	5	7	6	11	6	9	8	5
		16	3	11	4	10	5	1	6	3	6	2	7	7
Western Cedars (includes Western Red Cedar and Pacific Coast Yellow Cedar)	No. 1	8	7	2	8	10	9	2	11	4	11	1	13	9
		10	5	11	7	7	7	7	9	8	9	3	11	9
		12	5	2	6	6	6	7	8	3	8	0	10	1
		14	4	7	5	9	5	10	7	4	7	2	8	11
		16	4	2	5	2	5	4	6	7	6	6	8	0
	No. 2	8	6	9	7	10	8	8	10	0	10	6	12	2
		10	5	11	7	0	7	7	8	11	9	3	10	11
		12	5	2	6	5	6	7	8	2	8	0	9	11
		14	4	7	5	9	5	10	7	4	7	2	8	11
		16	4	2	5	2	5	4	6	7	6	6	8	0

Continued on next page

TABLE 2-K (Cont'd)
MAXIMUM SPANS FOR BUILT-UP WOOD BEAMS
SUPPORTING NOT MORE THAN TWO FLOORS⁽²⁾ IN HOUSES

Commercial Designation	Grade ⁽¹⁾	Supported Joist Length, ft ^{(3),(4)}	Size of Built-Up Beam, in. ^{(5),(6)}											
			3-2 x 8		4-2 x 8		3-2 x 10		4-2 x 10		3-2 x 12		4-2 x 12	
			ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.
Northern Species (includes all softwood species listed in Table 1-A)	No. 1	8	6	4	8	0	8	1	10	3	9	10	12	5
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2
	No. 2	8	6	4	7	7	8	1	9	9	9	10	11	10
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2
Northern Aspen (includes Aspen Poplar, Large Tooth Aspen and Balsam Poplar)	No. 1	8	6	4	8	0	8	1	10	3	9	10	12	5
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2
	No. 2	8	6	4	7	10	8	1	10	0	9	10	12	2
		10	5	3	6	8	6	9	8	6	8	2	10	4
		12	4	7	5	9	5	10	7	4	7	2	8	11
		14	4	1	5	1	5	3	6	6	6	5	7	11
		16	3	9	4	7	4	9	5	10	5	10	7	2

Notes to Table 2-K:

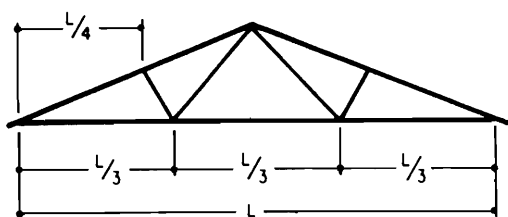
- ⁽¹⁾ Graded in conformance with 1970 "NLGA Standard Grading Rules for Canadian Lumber" published by the National Lumber Grades Authority, Vancouver.
- ⁽²⁾ These tables provide maximum allowable spans for main beams or girders which are built up from nominal 2-in. members in the species, sizes and grades indicated. Allowable spans for solid wood beams, glued-laminated wood beams or built-up beams in sizes or grades other than those shown shall be determined from standard engineering formulae.
- ⁽³⁾ Supported joist length means ½ the sum of the joist spans on both sides of the beam.
- ⁽⁴⁾ For supported joist lengths intermediate between those shown in the tables, straight line interpolation may be used in determining the maximum beam span.
- ⁽⁵⁾ Where built-up wood beams are employed over a single span, the length of each individual piece used to fabricate the beam shall equal the length of the beam.
- ⁽⁶⁾ Where built-up wood beams are continued over more than 1 span, and where lengths of individual pieces are less than the total length of the complete beam, the location of butt joints shall conform to Subsection 9.23.8. of the National Building Code of Canada 1977.

SECTION 3

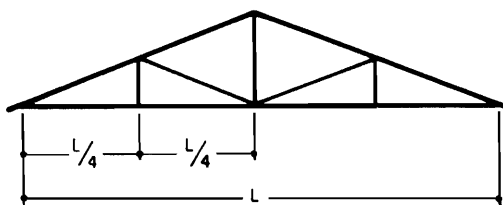
SPAN TABLES FOR WOOD ROOF TRUSSES

General

In these tables the term "Fink" truss refers to the common "W" type truss. The term "Howe" truss refers to the type which has a vertical member extending from the peak of the truss. Schematic drawings of the simplest version of each type are shown in the following diagrams. Each type may have web members additional to those shown, so that the distances between panel points are decreased in these cases.



Fink Truss



Howe Truss

The span tables in this Section have been calculated for wood species equivalent in strength to Spruce, Balsam Fir, Lodgepole Pine, Ponderosa Pine and Alpine Fir. The spans can therefore be safely used for the stronger species such as Douglas Fir, Western Larch, Western Hemlock, Amabilis Fir, Grand Fir, Pacific Coast Yellow Cedar, Tamarack, Jack Pine and Eastern Hemlock. The spans are not appropriate for the weaker species, which include Western Red Cedar, Red Pine, Western White Pine, Eastern White Pine, Poplar and Eastern White Cedar.

These spans are not intended to be the only spans permissible for Fink and Howe type trusses. Spans for such trusses may be designed in conformance with accepted timber design practices or be shown to be capable of conforming to the criteria described in Article 9.23.13.16. of the National Building Code of Canada 1977.

When the spans shown in this Section are used, the connecting plates must be designed in conformance with the requirements in CSA O86-1976, "Code for the Engineering Design of Wood."

The minimum web member sizes indicated in the notes to the span tables may be reduced provided such reductions can be justified on the basis of calculations.

Design Assumptions

The span tables for wood roof trusses have been calculated for 20, 30, 40 and 50 psf design roof snow loads assuming the design roof snow load to be 60 per cent of the ground snow load, and are designed to meet the performance criteria in Article 9.23.13.16. of the National Building Code of Canada 1977. Originally, the criteria were based on a design snow load of 80 per cent of the ground snow load, using a factor of safety of 2.0. Subsequent roof snow load observations indicated a factor of 60 per cent of the ground snow load to be more appropriate, and in order to maintain the same degree of safety, the factor of safety was increased from 2.0 to 2½. The following table provides a comparison between the ground snow load and the roof snow load.

Roof snow load, psf	20	30	40	50
Equivalent ground snow load, psf	33	50	67	83

Where wood roof trusses are intended for use in a locality having a design roof snow load higher than shown in the tables, the maximum truss spacing may be calculated as the product of the truss spacing and snow load in the span tables divided by the design snow load for the locality where the trusses are to be used. The following are examples of how this principle can be applied:

- (1) For 60 psf design snow load, use spans for 30 psf design snow load but space trusses 12 in. o.c., or use spans for 40 psf design snow load but space trusses 16 in. o.c.
- (2) For 70 psf design snow load, use spans for 50 psf design snow load but space trusses 16 in. o.c.
- (3) For 80 psf design snow load, use spans for 40 psf but space trusses 12 in. o.c.

Where wood roof trusses are to be used in an area where the design roof snow load falls between the values shown in the tables, the spans may be interpolated between the spans shown in the tables.

The truss spans in these tables are valid only where the design live load on the lower chord does not exceed 10 psf of ceiling area. This applies to trusses in buildings whose attics have limited access and not to attics that are accessible by stairways. The spans do not apply to trusses which may be subject to concentrated loads such as those required to support hoisting equipment. In addition the top members of the trusses must be constructed so as to prevent lateral buckling by the provision of roof sheathing or by other suitable bracing.

Lumber sizes referred to in this Section are nominal sizes. The corresponding actual sizes for such lumber are found in CSA O141-1970, "Softwood Lumber".

TABLE 3-A
MAXIMUM SPANS⁽¹⁾ FOR WOOD FINK TRUSSES
WITH 2-in. BY 4-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ^{(3),(4)}	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	22 — 2	16 — 0	—	—
		3/12	31 — 5	26 — 8	19 — 9	14 — 11
		4/12	31 — 6	29 — 0	25 — 0	22 — 2
		5/12	32 — 2	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	26 — 2	19 — 5	13 — 0	—
		3/12	31 — 5	28 — 5	23 — 7	18 — 3
		4/12	34 — 7	32 — 0	28 — 11	26 — 2
		5/12	36 — 9	32 — 6	31 — 8	29 — 2
	2 x 6	2½/12	29 — 2	22 — 1	15 — 6	—
		3/12	31 — 5	28 — 5	25 — 0	20 — 10
		4/12	34 — 7	32 — 0	28 — 11	26 — 2
		5/12	36 — 9	34 — 5	31 — 8	29 — 2
No. 2	2 x 4	2½/12	19 — 2	13 — 2	—	—
		3/12	26 — 4	23 — 5	17 — 0	12 — 5
		4/12	29 — 3	25 — 3	21 — 8	19 — 2
		5/12	29 — 11	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	22 — 10	16 — 6	—	—
		3/12	26 — 4	23 — 6	20 — 6	15 — 8
		4/12	29 — 5	26 — 11	24 — 0	21 — 7
		5/12	31 — 5	29 — 3	26 — 7	24 — 4
	2 x 6	2½/12	24 — 3	19 — 1	12 — 8	—
		3/12	26 — 4	23 — 6	20 — 6	18 — 0
		4/12	29 — 5	26 — 11	24 — 0	21 — 7
		5/12	31 — 5	29 — 3	26 — 7	24 — 4

Notes to Table 3-A:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.
- (4) Where a roof truss supports a ceiling and the unsupported length of the bottom members between the truss panel points exceeds 10 ft, the members shall be at least 2 in. by 5 in., and when the unsupported length of the bottom member exceeds 12 ft between panel points, the member shall be at least 2 in. by 6 in. in size.

TABLE 3-B
MAXIMUM SPANS⁽¹⁾ FOR WOOD FINK TRUSSES
WITH 2-in. BY 5-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ^{(3),(4)}	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	25 — 5	18 — 10	12 — 5	—
		3/12	30 — 5	28 — 0	23 — 2	18 — 0
		4/12	31 — 6	29 — 0	25 — 0	22 — 2
		5/12	32 — 2	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	30 — 5	22 — 11	16 — 3	10 — 10
		3/12	39 — 1	33 — 7	27 — 10	21 — 11
		4/12	40 — 0	34 — 11	30 — 0	28 — 5
		5/12	40 — 0	35 — 9	30 — 10	29 — 3
	2 x 6	2½/12	34 — 4	26 — 2	19 — 0	13 — 11
		3/12	40 — 0	36 — 6	31 — 7	25 — 1
		4/12	40 — 0	40 — 0	36 — 8	32 — 6
		5/12	40 — 0	40 — 0	37 — 8	33 — 5
No. 2	2 x 4	2½/12	22 — 2	15 — 11	—	—
		3/12	28 — 2	24 — 2	20 — 2	15 — 4
		4/12	29 — 3	25 — 3	21 — 8	19 — 2
		5/12	29 — 11	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	26 — 8	19 — 10	13 — 5	—
		3/12	33 — 10	30 — 4	24 — 5	19 — 0
		4/12	35 — 3	30 — 4	27 — 10	24 — 7
		5/12	36 — 1	31 — 2	28 — 7	25 — 5
	2 x 6	2½/12	30 — 3	22 — 10	16 — 2	10 — 9
		3/12	33 — 11	30 — 4	26 — 4	21 — 11
		4/12	37 — 9	34 — 7	30 — 11	27 — 9
		5/12	40 — 0	37 — 7	32 — 9	31 — 0

Notes to Table 3-B:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.
- (4) Where a roof truss supports a ceiling and the unsupported length of the bottom members between the truss panel points exceeds 10 ft, the members shall be at least 2 in. by 5 in., and when the unsupported length of the bottom member exceeds 12 ft between panel points, the member shall be at least 2 in. by 6 in. in size.

TABLE 3-C
MAXIMUM SPANS⁽¹⁾ FOR WOOD FINK TRUSSES
WITH 2-in. BY 6-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ⁽³⁾	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	27 — 11	20 — 10	14 — 5	—
		3/12	30 — 5	28 — 0	23 — 11	19 — 4
		4/12	31 — 6	29 — 0	25 — 0	22 — 2
		5/12	32 — 2	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	33 — 7	25 — 7	18 — 6	13 — 5
		3/12	39 — 1	33 — 7	29 — 11	23 — 9
		4/12	40 — 0	34 — 11	30 — 0	28 — 5
		5/12	40 — 0	35 — 9	30 — 10	29 — 3
	2 x 6	2½/12	38 — 4	29 — 5	21 — 8	16 — 5
		3/12	40 — 0	40 — 0	34 — 3	27 — 4
		4/12	40 — 0	40 — 0	36 — 8	32 — 6
		5/12	40 — 0	40 — 0	37 — 8	33 — 5
No. 2	2 x 4	2½/12	24 — 5	17 — 11	11 — 5	—
		3/12	28 — 2	24 — 2	20 — 8	16 — 8
		4/12	29 — 3	25 — 3	21 — 8	19 — 2
		5/12	29 — 11	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	29 — 7	22 — 3	15 — 8	—
		3/12	33 — 10	31 — 1	26 — 5	20 — 8
		4/12	35 — 3	31 — 1	27 — 10	24 — 7
		5/12	36 — 1	31 — 2	28 — 7	25 — 5
	2 x 6	2½/12	33 — 11	25 — 9	18 — 8	13 — 7
		3/12	40 — 0	35 — 6	30 — 3	24 — 0
		4/12	40 — 0	37 — 1	31 — 9	30 — 1
		5/12	40 — 0	38 — 1	32 — 9	31 — 0

Notes to Table 3-C:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.

TABLE 3-D
MAXIMUM SPANS⁽¹⁾ FOR WOOD HOWE TRUSSES
WITH 2-in. BY 4-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ⁽³⁾	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	31 — 0	24 — 0	18 — 0	13 — 11
		3/12	31 — 0	27 — 11	23 — 11	21 — 1
		4/12	31 — 5	29 — 0	24 — 11	22 — 1
		5/12	32 — 1	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	33 — 5	27 — 2	20 — 7	16 — 2
		3/12	36 — 9	32 — 4	27 — 9	24 — 1
		4/12	40 — 0	34 — 11	30 — 0	28 — 5
		5/12	40 — 0	35 — 9	30 — 9	29 — 2
	2 x 6	2½/12	33 — 5	28 — 8	22 — 8	17 — 11
		3/12	36 — 9	32 — 4	27 — 9	24 — 1
		4/12	40 — 0	37 — 8	33 — 2	29 — 5
		5/12	40 — 0	40 — 0	37 — 3	33 — 5
No. 2	2 x 4	2½/12	27 — 3	21 — 2	15 — 8	11 — 11
		3/12	28 — 1	24 — 2	20 — 7	18 — 2
		4/12	29 — 2	25 — 2	21 — 7	19 — 2
		5/12	29 — 10	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	27 — 5	23 — 6	18 — 0	14 — 0
		3/12	30 — 5	26 — 6	22 — 5	19 — 4
		4/12	34 — 11	30 — 3	27 — 2	23 — 11
		5/12	36 — 0	31 — 1	28 — 7	25 — 4
	2 x 6	2½/12	27 — 5	23 — 6	19 — 7	15 — 7
		3/12	30 — 5	26 — 6	22 — 5	19 — 4
		4/12	34 — 11	31 — 3	27 — 2	23 — 11
		5/12	38 — 1	34 — 9	30 — 10	27 — 7

Notes to Table 3-D:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.

TABLE 3-E
MAXIMUM SPANS⁽¹⁾ FOR WOOD HOWE TRUSSES
WITH 2-in. BY 5-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ⁽³⁾	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	31 — 7	26 — 9	20 — 3	15 — 10
		3/12	31 — 7	27 — 11	23 — 11	21 — 1
		4/12	31 — 7	29 — 0	24 — 11	22 — 1
		5/12	32 — 1	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	37 — 10	30 — 9	23 — 5	18 — 7
		3/12	39 — 0	33 — 6	30 — 9	27 — 2
		4/12	40 — 0	34 — 11	30 — 9	28 — 5
		5/12	40 — 0	35 — 9	30 — 9	29 — 2
	2 x 6	2½/12	40 — 0	33 — 10	25 — 11	20 — 8
		3/12	40 — 0	40 — 0	35 — 1	30 — 11
		4/12	40 — 0	40 — 0	36 — 8	32 — 6
		5/12	40 — 0	40 — 0	37 — 7	33 — 5
No. 2	2 x 4	2½/12	27 — 3	23 — 4	17 — 9	13 — 9
		3/12	28 — 1	24 — 2	20 — 7	18 — 2
		4/12	29 — 2	25 — 2	21 — 7	19 — 2
		5/12	29 — 10	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	32 — 8	27 — 3	20 — 7	16 — 2
		3/12	33 — 9	31 — 0	26 — 6	23 — 4
		4/12	35 — 2	31 — 0	27 — 9	24 — 7
		5/12	36 — 0	31 — 1	28 — 7	25 — 4
	2 x 6	2½/12	35 — 3	30 — 1	22 — 10	18 — 1
		3/12	39 — 1	34 — 1	28 — 10	24 — 11
		4/12	40 — 0	37 — 0	31 — 9	30 — 1
		5/12	40 — 0	38 — 0	32 — 8	31 — 0

Notes to Table 3-E:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.

TABLE 3-F
MAXIMUM SPANS⁽¹⁾ FOR WOOD HOWE TRUSSES
WITH 2-in. BY 6-in. BOTTOM MEMBER SIZE
FOR
SPECIES LISTED IN NOTE (2) AND WITH TRUSSES SPACED 24 in. o.c.

Lumber Grade	Top Member Size, in. ⁽³⁾	Roof Slope	Roof Snow Load, psf			
			20 ft in.	30 ft in.	40 ft in.	50 ft in.
No. 1	2 x 4	2½/12	31 — 7	27 — 1	23 — 1	18 — 6
		3/12	31 — 7	27 — 11	23 — 11	21 — 1
		4/12	31 — 7	29 — 0	24 — 11	22 — 1
		5/12	32 — 1	29 — 8	25 — 7	22 — 9
	2 x 5	2½/12	37 — 10	32 — 6	27 — 5	21 — 11
		3/12	39 — 0	33 — 6	30 — 9	27 — 2
		4/12	40 — 0	34 — 11	30 — 9	28 — 5
		5/12	40 — 0	35 — 9	30 — 9	29 — 2
	2 x 6	2½/12	40 — 0	39 — 8	30 — 8	24 — 8
		3/12	40 — 0	40 — 0	35 — 1	30 — 11
		4/12	40 — 0	40 — 0	36 — 8	32 — 6
		5/12	40 — 0	40 — 0	37 — 7	33 — 5
No. 2	2 x 4	2½/12	27 — 3	23 — 4	19 — 10	16 — 2
		3/12	28 — 1	24 — 2	20 — 7	18 — 2
		4/12	29 — 2	25 — 2	21 — 7	19 — 2
		5/12	29 — 10	25 — 10	22 — 3	19 — 9
	2 x 5	2½/12	32 — 8	30 — 0	24 — 3	19 — 3
		3/12	33 — 9	31 — 0	26 — 6	23 — 4
		4/12	35 — 2	31 — 0	27 — 9	24 — 7
		5/12	36 — 0	31 — 1	28 — 7	25 — 4
	2 x 6	2½/12	39 — 11	34 — 2	27 — 3	21 — 9
		3/12	40 — 0	35 — 5	30 — 2	28 — 6
		4/12	40 — 0	37 — 0	31 — 9	30 — 1
		5/12	40 — 0	38 — 0	32 — 8	31 — 0

Notes to Table 3-F:

- (1) Spans are measured as the clear span between the interior wall faces of the exterior wall supports.
- (2) Spans apply to all species except Poplar, Eastern White Pine, Western White Pine, Red Pine, Western Red Cedar and Eastern White Cedar.
- (3) Where the length of compression web members exceeds 6 ft, such web members shall be provided with continuous bracing to prevent buckling. Such bracing shall consist of not less than 1-in. by 4-in. lumber nailed at right angles to the web members near their centres with at least two 2½-in. nails for each member. Web members shall be at least 2-in. by 4-in. lumber of not less than No. 2 grade.