



# Wood Frame Span Tables

Note: These Tables summarize selected parts of Chapter 25 of the *Uniform Building Code*™ (U.B.C.). They are not intended to replace the U.B.C. where more detailed information is needed. These tables are based on the design properties of #2 doug fir which is the most common material used in residential construction in this area. Higher grades of material can often be purchased as can speciality materials such as glued-laminated beams and factory made trusses. Consult the U.B.C. for all other types of material. Building codes are available in many libraries and may be reviewed at your Building Department.

### APX WEIGHT OF MATERIALS, PSF

Dead weight of floor and roof assemblies equals the total of the weights of the components. Ask your supplier for weights of items not listed.

Framing & spacing	12"	16"	24"
2x6	2.50	1.90	1.30
2x8	3.40	2.50	1.70
2x10	4.30	3.20	2.20
2x12	5.20	3.90	2.60
2x14	6.10	4.60	3.10
Asphalt shingles			2.20
Spanish tile			19.00
Comp: 2-15# felt + 90# cap			2.00
Comp: 3-15# felt + 400# gravel			5.80
5/15" plywood			1.00
3/8" plywood			1.10
1/2" plywood			1.50
5/8" plywood			1.80
3/4" plywood			2.20
Fiberglass batt insulation per inch	0.1 X _____	" =	
Rigid insulation per inch	1.5 X _____	" =	
Drywall 1/2"			3.30
Drywall 5/8"			4.20
Lenoleum 1/4"			1.00
Carpet with pad			1.50

TOTAL

### ALLOWABLE SPANS FOR CEILING JOISTS

Lumber: #2 or better doug fir-larch or doug fir-larch (North)  
 Base fiber stress: 875 PSI. E: 1,600,000 PSI. Live load:  
 10 PSF (accessible attic). LL deflection: span/240 max.  
 (No plaster ceilings).

Joist Size	Spac -ing	Total weight of ceiling assembly in PSF				
		6	7	8	9	10
2x6	16"	15' - 0"	14' - 9"	14' - 6"	14' - 2"	13' - 11"
	24"	13' - 0"	12' - 10"	12' - 7"	12' - 5"	12' - 2"
2x8	16"	19' - 9"	19' - 5"	19' - 0"	18' - 7"	18' - 3"
	24"	17' - 3"	16' - 11"	16' - 3"	16' - 3"	16' - 0"

### ALLOWABLE SPANS FOR FLOOR JOISTS

Lumber: #2 or better douglas fir-larch. Max. fiber stress: 1450 PSI. Modulus of elasticity: 1,700,000 PSI. Live load: 40 PSF (residential only). LL deflection: span/360 max.

Size of Joists	Spacing of joists	Total weight of floor assembly in PSF				
		10	11	12	13	14
2x6	12"	10'-11"	10'-11"	10'-11"	10'-11"	10'-11"
	16"	9'-11"	9'-11"	9'-11"	9'-11"	9'-11"
	24"	8'-6"	8'-5"	8'-4"	8'-3"	8'-2"
2x8	12"	14'-5"	14'-5"	14'-5"	14'-5"	14'-5"
	16"	13'-0"	13'-0"	13'-0"	13'-0"	13'-0"
	24"	11'-3"	11'-2"	11'-0"	10'-11"	10'-10"
2x10	12"	18'-4"	18'-4"	18'-4"	18'-4"	18'-4"
	16"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"
	24"	14'-4"	14'-3"	14'-1"	13'-11"	13'-10"
2x12	12"	22'-4"	22'-4"	22'-4"	22'-4"	22'-4"
	16"	20'-2"	20'-2"	20'-2"	20'-2"	20'-2"
	24"	17'-5"	17'-3"	17'-1"	16'-11"	16'-9"
2x14	12"	26'-4"	26'-4"	26'-4"	26'-4"	26'-4"
	16"	23'-11"	23'-11"	23'-11"	23'-11"	23'-11"
	24"	20'-7"	20'-1"	20'-4"	20'-0"	19'-9"

### ALLOWABLE SPANS FOR ROOF RAFTERS

Lumber: #2 or better doug fir-larch or doug fir-larch (North)  
 Base fiber stress: 875 PSI. E: 1,600,000 PSI. Live load:  
 20 PSF. LL deflection: span/240 max.

RR Size	Spac -ing	Total weight of roof assembly in PSF				
		10	15	20	25	30
2x6	16"	12' - 3"	11' - 7"	11' - 3"	10' - 10"	10' - 5"
	24"	10' - 7"	10' - 1"	9' - 8"	9' - 2"	8' - 6"
2x8	16"	16' - 2"	15' - 4"	14' - 8"	14' - 0"	13' - 4"
	24"	14' - 1"	13' - 4"	12' - 5"	11' - 3"	10' - 7"
2x10	16"	20' - 6"	19' - 7"	18' - 8"	17' - 7"	16' - 2"
	24"	16' - 11"	16' - 2"	15' - 2"	14' - 4"	13' - 5"

### HEADER SPANS:

Design headers to support all loads imposed on them. A traditional rule of thumb often used to size headers is the "inch per foot" rule which will provide adequate strength in most cases with spans up to eight feet. For headers in single story dwellings supporting no point loads such as posts or beams, provide one inch of header depth for every foot of header length, min. 4 x 4.