

CEILING JOISTS

Minimum Loads: Live Load 10#, Dead Load 5#, Deflection (LL), L (inches) / 240							Limited Storage (10# sq. ft.) Load Allowed: Live Load 10#, Dead Load 10#, Deflection (LL), L (inches) / 240			
Size	Spacing		Hem Fir (HF)	Spruce/ Pine Fir (SPF)	Douglas Fir & Larch (DFL)	Southern Yellow Pine (SYP)	Hem Fir (HF)	Spruce/ Pine Fir (SPF)	Douglas Fir & Larch (DFL)	Southern Yellow Pine (SYP)
2 x 4	12" o.c.	#1	12'-2"	11'-10"	12'-8"	12'-8"	9'-8"	9'-5"	10'-0"	10'-0"
		#2	11'-7"	11'-10"	12'-5"	12'-5"	9'-2"	9'-5"	9'-10"	9'-10"
	16" o.c.	#1	11'-0"	10'-9"	11'-6"	11'-6"	8'-9"	8'-7"	9'-1"	9'-1"
		#2	10'-6"	10'-9"	11'-3"	11'-3"	8'-4"	8'-7"	8'-9"	8'-11"
	24" o.c.	#1	9'-8"	9'-5"	10'-0"	10'-0"	7'-6"	7'-2"	7'-8"	8'-0"
		#2	9'-2"	9'-5"	9'-10"	9'-10"	7'-1"	7'-2"	7'-2"	7'-8"
2 x 6	12" o.c.	#1	19'-1"	18'-8"	19'-11"	19'-11"	15'-2"	14'-9"	15'-9"	15'-9"
		#2	18'-2"	18'-8"	19'-6"	19'-6"	14'-5"	14'-9"	14'-10"	15'-6"
	16" o.c.	#1	17'-4"	16'-11"	18'-1"	18'-1"	13'-5"	12'-10"	13'-9"	14'-4"
		#2	16'-6"	16'-11"	17'-8"	17'-8"	12'-8"	12'-10"	12'-10"	13'-6"
	24" o.c.	#1	15'-2"	14'-9"	15'-9"	15'-9"	10'-11"	10'-6"	11'-2"	12'-6"
		#2	14'-5"	14'-9"	14'-10"	15'-6"	10'-4"	10'-6"	10'-6"	11'-0"
2 x 8	12" o.c.	#1	25'-2"	24'-7"	26'-2"	26'-2"	19'-7"	18'-9"	20'-1"	20'-10"
		#2	24'-0"	24'-7"	25'-8"	25'-8"	18'-6"	18'-9"	18'-9"	20'-1"
	16" o.c.	#1	22'-10"	22'-4"	23'-10"	23'-10"	16'-10"	16'-3"	17'-5"	18'-11"
		#2	21'-9"	22'-4"	23'-0"	23'-4"	16'-0"	16'-3"	16'-3"	17'-5"
	24" o.c.	#1	19'-7"	18'-9"	20'-1"	20'-10"	13'-10"	13'-3"	14'-2"	15'-10"
		#2	18'-6"	18'-9"	18'-9"	20'-1"	13'-1"	13'-3"	13'-3"	14'-2"
2 x 10	12" o.c.	#1	32'-1"	31'-4"	33'-5"	33'-5"	23'-11"	22'-11"	24'-6"	26'-6"
		#2	30'-7"	31'-4"	32'-5"	32'-9"	22'-7"	22'-11"	22'-11"	23'-11"
	16" o.c.	#1	29'-2"	28'-2"	30'-1"	30'-5"	20'-8"	19'-10"	21'-3"	23'-1"
		#2	27'-8"	28'-2"	28'-2"	29'-5"	19'-7"	19'-10"	19'-10"	20'-9"
	24" o.c.	#1	23'-11"	22'-11"	24'-6"	26'-6"	16'-11"	16'-3"	17'-4"	18'-10"
		#2	22'-7"	22'-11"	22'-11"	23'-11"	16'-0"	16'-3"	16'-3"	16'-11"

o.c. = on center

All design values as per NDS & I.R.C. minimum requirements.

Updated 10/2025

SPAN TABLES FOR JOISTS & RAFTERS

PLANNING AND DEVELOPMENT SERVICES

555 S 10TH ST, STE 203
LINCOLN, NE 68508

402-441-7521

FLOOR JOISTS

Live Load 40#, Dead Load 10#
Deflection (LL), L (inches) / 360

Size	Spacing		DECKS *			
			Hem Fir (HF)	Spruce/ Pine Fir (SPF)	Douglas Fir & Larch (DFL)	Southern Yellow Pine (SYP)
2 x 4	12" o.c.	#1 #2				
	16" o.c.	#1 #2				
	24" o.c.	#1 #2				
2 x 6	12" o.c.	#1 #2	10'-6" 10'-0"	10'-3" 10'-3"	10'-11" 10'-9"	10'-11" 10'-9"
	16" o.c.	#1 #2	9'-6" 9'-1"	9'-4" 9'-4"	9'-11" 9'-9"	9'-11" 9'-9"
	24" o.c.	#1 #2	8'-4" 7'-11"	8'-1" 8'-1"	8'-8" 8'-1"	8'-8" 8'-6"
2 x 8	12" o.c.	#1 #2	13'-10" 13'-2"	13'-6" 13'-6"	14'-5" 14'-2"	14'-5" 14'-2"
	16" o.c.	#1 #2	12'-7" 12'-0"	12'-3" 12'-3"	13'-1" 12'-7"	13'-1" 12'-10"
	24" o.c.	#1 #2	10'-9" 10'-2"	10'-3" 10'-3"	11'-0" 10'-3"	11'-5" 11'-0"
2 x 10	12" o.c.	#1 #2	17'-8" 16'-10"	17'-3" 17'-3"	18'-5" 17'-9"	18'-5" 18'-0"
	16" o.c.	#1 #2	16'-0" 15'-2"	15'-5" 15'-5"	16'-5" 15'-5"	16'-9" 16'-1"
	24" o.c.	#1 #2	13'-1" 12'-5"	12'-7" 12'-7"	13'-5" 12'-7"	14'-7" 13'-1"
2 x 12	12" o.c.	#1 #2	21'-6" 20'-4"	20'-7" 20'-7"	22'-0" 20'-7"	22'-5" 21'-9"
	16" o.c.	#1 #2	18'-7" 17'-7"	17'-10" 17'-10"	19'-1" 17'-10"	20'-4" 18'-10"
	24" o.c.	#1 #2	15'-2" 14'-4"	14'-7" 14'-7"	15'-7" 14'-7"	17'-5" 15'-5"

ROOF RAFTERS

Live Load (Snow) 30#, Dead Load 10#
Deflection (LL), L (inches) / 240

Slope > 3 in 12

Hem Fir (HF)	Spruce/ Pine Fir (SPF)	Douglas Fir & Larch (DFL)	Southern Yellow Pine (SYP)
8'-5" 8'-0"	8'-3" 8'-3"	8'-9" 8'-7"	8'-9" 8'-7"
7'-8" 7'-3"	7'-6" 7'-6"	8'-0" 7'-10"	8'-0" 7'-10"
6'-8" 6'-4"	6'-6" 6'-6"	7'-0" 6'-8"	7'-0" 6'-10"
13'-3" 12'-7"	12'-11" 12'-11"	13'-9" 13'-6"	13'-9" 13'-6"
12'-0" 11'-5"	11'-9" 11'-9"	12'-6" 11'-11"	12'-6" 12'-3"
10'-2" 9'-7"	9'-9" 9'-9"	10'-5" 9'-9"	10'-11" 10'-2"
17'-5" 16'-7"	17'-0" 17'-0"	18'-2" 17'-5"	18'-2" 17'-10"
15'-9" 14'-11"	15'-1" 15'-1"	16'-2" 15'-1"	16'-6" 16'-2"
12'-10" 12'-2"	12'-4" 12'-4"	13'-2" 12'-4"	14'-5" 13'-2"
22'-2" 21'-0"	21'-4" 21'-4"	22'-9" 21'-4"	23'-2" 22'-3"
19'-3" 18'-2"	18'-5" 18'-5"	19'-9" 18'-5"	21'-1" 19'-3"
15'-8" 14'-10"	15'-1" 15'-1"	16'-1" 15'-1"	17'-6" 15'-9"
25'-9" 24'-4"	24'-8" 24'-8"	26'-5" 24'-8"	28'-2" 26'-1"
22'-3" 21'-1"	21'-5" 21'-5"	22'-10" 21'-5"	25'-7" 22'-7"
18'-2" 17'-3"	17'-6" 17'-6"	18'-8" 17'-6"	20'-10" 18'-5"

* DECKS: Cedar, & Treated Southern Pine are assumed for wet condition of use.

NOTE: Pre-engineered floor joists with spans greater than 16'-6" must use L/480 deflection tables.