



City of Lansing
Building Safety Office

SPAN TABLES*
- For Residential Use Only -

Spans shown in feet-inches

SPF #2	FLOOR JOISTS						CEILING JOISTS						RAFTERS					
	Living Areas 40 PSF		Sleeping Areas 30 PSF		With Storage 20 PSF		Without Storage 10 PSF		Ceiling Attached 30 PSF snow load		Ceiling not Attached 30 PSF snow load		Ceiling Attached 30 PSF snow load		Ceiling not Attached 30 PSF snow load			
	12"	16"	24"	12"	16"	24"	12"	16"	24"	12"	16"	24"	12"	16"	24"	12"	16"	24"
2 x 4	--	--	--	--	--	--	9'03	8'07	7'02	11'10	10'09	9'05	8'03	7'06	6'06	9'01	8'02	6'08
2 x 6	10'03	9'04	8'01	11'03	10'03	8'11	14'09	12'10	10'06	18'08	16'11	14'09	12'11	11'09	9'09	13'09	11'11	9'09
2 x 8	13'06	12'03	10'03	14'11	13'06	11'06	18'09	16'03	13'03	24'07	22'04	18'09	17'00	15'01	12'04	17'05	15'01	12'04
2 x 10	17'03	15'05	12'07	19'00	17'02	14'01	22'11	19'10	16'03	26'+	26'+	22'11	21'04	18'05	15'01	21'04	18'05	15'01
2 x 12	20'07	17'10	14'07	23'00	19'11	16'03	--	--	--	--	--	--	24'08	21'05	17'06	--	21'05	17'06
S Pine #2																		
2 x 4	--	--	--	--	--	--	9'10	8'11	7'08	12'05	11'03	9'10	8'07	7'10	6'10	9'06	8'07	7'01
2 x 6	10'09	9'09	8'06	11'10	10'09	9'04	13'06	13'06	11'00	19'06	17'08	15'06	13'06	12'03	10'02	14'03	12'06	10'02
2 x 8	14'02	12'10	11'00	15'07	14'02	12'04	20'01	17'03	14'02	23'08	23'04	20'01	17'10	16'02	13'02	18'08	16'02	13'02
2 x 10	18'00	16'01	13'01	19'10	18'00	14'08	23'11	20'09	16'11	26'+	26'+	23'11	22'03	19'03	15'09	22'03	19'03	15'09
2 x 12	21'09	18'10	15'05	21'01	17'02	--	--	--	--	--	--	--	26'+	22'07	18'05	--	22'07	18'05
Hem-Fir #2																		
2 x 4	--	--	--	--	--	--	9'02	8'04	7'01	11'07	10'06	9'02	8'00	7'03	6'04	8'10	8'00	6'07
2 x 6	10'00	9'01	7'11	11'00	10'00	8'09	14'05	12'08	10'04	18'02	16'06	14'05	12'07	11'05	9'07	13'07	11'09	9'07
2 x 8	13'02	12'00	10'02	14'06	13'02	11'04	18'06	16'00	13'01	24'00	21'09	18'06	16'07	14'11	12'02	17'02	14'11	12'02
2 x 10	16'10	15'02	12'05	18'06	16'10	13'10	22'07	19'07	16'00	26'+	26'+	22'07	21'00	18'02	14'10	21'00	18'02	14'10
2 x 12	20'04	17'07	14'04	22'06	19'08	16'01	--	--	--	--	--	--	24'04	21'01	17'03	--	21'01	17'03
Doug-Fir-Larch #2																		
2 x 4	--	--	--	--	--	--	9'10	8'09	7'02	12'03	11'03	9'10	8'07	7'10	6'08	9'05	8'02	6'08
2 x 6	10'09	9'09	8'01	11'10	10'09	9'01	14'10	12'10	10'06	19'06	17'08	14'10	13'06	11'11	9'09	13'09	11'11	9'09
2 x 8	14'02	12'07	10'03	15'07	14'01	11'06	18'09	16'03	13'03	23'08	23'00	18'09	17'05	15'01	12'04	17'05	15'01	12'04
2 x 10	17'09	15'05	12'07	19'10	17'02	14'01	22'11	19'10	16'03	26'+	26'+	22'11	21'04	18'05	15'01	21'04	18'05	15'01
2 x 12	20'07	17'10	14'07	23'00	19'11	16'03	--	--	--	--	--	--	24'08	21'03	17'06	--	21'03	17'06

*data taken from tables in Michigan Residential Code, 2000 edition

-See reverse side for allowable cantilever spans
-Refer to table on back for rafters used without ceiling joists

Floor Joist Cantilever Spans
 - For residential use only -
 Supporting Bearing Wall and Roof Only
 Snow Load 30 psf

Member And Spacing	Roof Widths						
	24 ft	26 ft	28 ft	30 ft	32 ft	36 ft	40 ft
2 x 8 @16"	(13")	--	--	--	--	--	--
2 x 8 @12"	18"	--	--	--	--	--	--
2 x 10 @16"	26"	(24")	(22")	(20")	18"	--	--
2 x 10 @12"	34"	(31")	(28")	(25")	22"	(19")	16"
2 x 12 @16"	36"	(34")	(32")	(30")	29"	(25")	21"
2 x 12 @12"					37"	(32")	27"
2 x 12 @ 8"					48"	(43")	38"

-Data taken from Table R502.3.3 in Michigan Residential Code, 2000
 -Numbers in parentheses determined by linear interpolation

Refer to the following factors when installing rafters *without* ceiling joists or with rafter ties higher than supporting walls:

The tabulated rafter spans assume that ceiling joists are located at the bottom of the attic space or that some other method of resisting the outward push of the rafters on the bearing walls, such as rafter ties, is provided at that location. When ceiling joists or rafter ties are located higher in the attic space, the rafter spans shall be multiplied by the factors given below:

H_C/H_R	Rafter Span Adjustment Factor
2/3 or greater	0.50
1/2	0.58
1/3	0.67
1/4	0.76
1/5	0.83
1/6	0.90
1/7.5 and less	1.00

where: H_C = Height of ceiling joists or rafter ties measured vertically above the top of the rafter support walls.
 H_R = Height of roof ridge measured vertically above the top of the rafter support walls.

- from page 217 of Michigan Residential Code, 2000 edition