

CHAPTER 14.64.050

DESIGN CRITERIA:

Deflection - For 40 lbs. per sq. ft. five load limited to span in inches divided by 360. Strength - Live Load of 40 lbs. per sq. ft. plus dead load of 10 lbs. per sq. ft. determines the required fiber stress value.

TABLE J-1

FLOOR JOISTS

40 Lbs. Per Sq. Ft. Live Load

(All rooms except those used for sleeping areas and attic floors.)

JOIST SIZE SPACING		Modulus of Elasticity, "E," in 1,000,000 psi																		
		(IN)	(IN)	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
2x4	12.0	6-9 450	7-3 520	7-9 590	8-2 660	8-6 720	8-10 780	9-2 830	9-6 890	9-9 940	10-0 990	10-3 1040	10-6 1090	10-9 1140	10-11 1190	11-2 1230	11-4 1280	11-7 1320	11-11 1410	12-3 1490
	13.7	6-6 470	7-0 550	7-5 620	7-9 690	8-2 750	8-6 810	8-9 870	9-1 930	9-4 980	9-7 1040	9-10 1090	10-0 1140	10-3 1190	10-6 1240	10-8 1290	10-10 1340	11-1 1380	11-5 1470	11-9 1560
	16.0	6-2 500	6-7 580	7-0 650		7-9 790	8-0 860	8-4 920	8-7 980	8-10 1040	9-1 1090	9-4 1150	9-6 1200	9-9 1250	9-11 1310	10-2 1360	10-4 1410	10-6 1460	10-10 1550	11-2 1640
	19.2	5-9 530	6-3 610	6-7 690	7-0 770	7-3 840	7-7 910	7-10 970	8-1 1040	8-4 1100	8-7 1160	8-9 1220	9-0 1280	9-2 1330	9-4 1390	9-6 1440	9-8 1500	9-10 1550	10-2 1650	10-6 1750
	24.0	5-4 570	5-9 660	6-2 750	6-6 830	6-9 900	7-0 980	7-3 1050	7-6 1120	7-9 1190	7-11 1250	8-2 1310	8-4 1380	8-6 1440	8-8 1500	8-10 1550	9-0 1610	9-2 1670	9-6 1780	9-9 1880
	32.0					6-2 1010	6-5 1090	6-7 1150	6-10 1230	7-0 1300	7-3 1390	7-5 1450	7-7 1520	7-9 1590	7-11 1660	8-0 1690	8-2 1760	8-4 1840	8-7 1950	8-10 2060
2x8	12.0	8-11 450	9-7 520	10-2 590	10-9 660	11-3 720	11-8 780	12-1 830	12-6 890	12-10 940	13-2 990	13-6 1040	13-10 1090	14-2 1140	14-5 1190	14-8 1230	15-0 1280	15-3 1320	15-9 1410	16-2 1490
	13.7	8-6 470	9-2 550	9-9 620	10-3 690	10-9 750	11-2 810	11-7 870	11-11 930	12-3 980	12-7 1040	12-11 1090	13-3 1140	13-6 1190	13-10 1240	14-1 1290	14-4 1340	14-7 1380	15-0 1470	15-6 1560
	16.0	8-1 500	8-9 580	9-3 650	9-9 720	10-2 790	10-7 850	11-0 920	11-4 980	11-8 1040	12-0 1090	12-3 1150	12-7 1200	12-10 1250	13-1 1310	13-4 1360	13-7 1410	13-10 1460	14-3 1550	14-8 1640
	19.2	7-7 530	8-2 610	8-9 690	9-2 770	9-7 840	10-0 910	10-4 970	10-8 1040	11-0 1100	11-3 1160	11-7 1220	11-10 1280	12-1 1330	12-4 1390	12-7 1440	12-10 1500	13-0 1550	13-5 1650	13-10 1750
	24.0	7-1 570	7-7 660	8-1 750	8-6 830	8-11 900	9-3 980	9-7 1050	9-11 1120	10-2 1190	10-6 1250	10-9 1310	11-0 1380	11-3 1440	11-5 1500	11-8 1550	11-11 1610	12-1 1670	12-6 1780	12-10 1880
	32.0					8-1 990	8-5 1080	8-9 1170	9-0 1230	9-3 1300	9-6 1370	9-9 1450	10-0 1520	10-2 1570	10-5 1650	10-7 1700	10-10 1790	11-0 1840	11-4 1950	11-8 2070

Note: The required extreme fiber stress in bending. "Fb", in pounds per square inch is shown below each span.

TABLE J-1 (cont'd)

JOIST SIZE SPACING		Modulus of Elasticity, "E," in 1,000,000 psi																																					
		(IN)	(IN)	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.4																	
2x10	12.0	11-4	12-3	13.0	13-8	14-4	14-11	15-5	15-11	16-5	16-10	17-3	17-8	18-0	18-5	18-9	19-1	19-5	20-1	20-8	450	520	590	660	720	780	830	890	940	990	1040	1090	1140	1190	1230	1280	1320	1410	1490
	13.7	10-10	11-8	12-5	13-1	13-8	14-3	14-9	15-3	15-8	16-1	16-6	16-11	17-3	17-7	17-11	18-3	18-7	19-2	19-9	470	550	620	690	750	810	870	930	980	1040	1090	1140	1190	1240	1290	1340	1380	1470	1560
	16.0	10-4	11-1	11-10	12-5	13-0	13-6	14-0	14-6	14-11	15-3	15-8	16-0	16-5	16-9	17-0	17-4	17-8	18-3	18-9	500	580	650	720	790	850	920	980	1040	1090	1150	1200	1250	1310	1360	1410	1460	1550	1640
	19.2	9-9	10-6	11-1	11-8	12-3	12-9	13-2	13-7	14-0	14-5	14-9	15-1	15-5	15-9	16-0	16-4	16-7	17-2	17-8	530	610	690	770	840	910	970	1040	1100	1160	1220	1280	1330	1390	1440	1500	1550	1650	1750
	24.0	9-0	9-9	10-4	10-10	11-4	11-10	12-3	12-8	13-0	13-4	13-8	14-0	14-4	14-7	14-11	15-2	15-5	15-11	16-5	570	660	750	830	900	980	1050	1120	1190	1250	1310	1380	1440	1500	1550	1610	1670	1780	1880
	32.0					10-4	10-9	11-1	11-6	11-10	12-2	12-5	12-9	13-0	13-3	13-6	13-9	14-0	14-6	14-11	1000	1080	1150	1240	1310	1380	1440	1520	1580	1640	1700	1770	1830	1970	2080				
2x12	12.0	13-10	14-11	15-10	16-8	17-5	18-1	18-9	19-4	19-11	20-6	21-0	21-6	21-11	22-5	22-10	23-3	23-7	24-5	25-1	450	520	590	660	720	780	830	890	940	990	1040	1090	1140	1190	1230	1280	1320	1410	1490
	13.7	13-3	14-3	15-2	15-11	16-8	17-4	17-11	18-6	19-1	19-7	20-1	20-6	21-0	21-5	21-10	22-3	22-7	23-4	24-0	470	550	620	690	750	810	870	930	980	1040	1090	1140	1190	1240	1290	1340	1380	1470	1560
	16.0	12-7	13-6	14-4	15-2	15-10	16-5	17-0	17-7	18-1	18-7	19-1	19-6	19-11	20-4	20-9	21-1	21-6	22-2	22-10	500	580	650	720	790	860	920	980	1040	1090	1150	1200	1250	1310	1360	1410	1460	1550	1640
	19.2	11-10	12-9	13-6	14-3	14-11	15-6	16-0	16-7	17-0	17-6	17-11	18-4	18-9	19-2	19-6	19-10	20-2	20-10	21-6	530	610	690	770	840	910	970	1040	1100	1160	1220	1280	1330	1390	1440	1500	1550	1650	1750
	24.0	11-0	11-10	12-7	13-3	13-10	14-4	14-11	15-4	15-10	16-3	16-8	17-0	17-5	17-9	18-1	18-5	18-9	19-4	19-11	570	660	750	830	900	980	1050	1120	1190	1250	1310	1380	1440	1500	1550	1610	1670	1780	1880
	32.0					12-7	13-1	13-6	13-11	14-4	14-9	15-2	15-6	15-10	16-2	16-5	16-9	17-0	17-7	18-1	1000	1080	1150	1220	1300	1380	1450	1520	1580	1650	1700	1770	1830	1950	2070				

Note: The required extreme fiber stress in bending. σ_{Fb} , in pounds per square inch is shown below each span.

(Part of Ord. passed 10/3/73).

CHAPTER 14.64.060

**TABLE J-4
CEILING JOISTS.**

DESIGN CRITERIA:

Deflection - For 20 lbs. per sq. ft. live load. Limited to span in inches divided by 240. Strength - Live Load of 20 lbs. per sq. ft. plus dead load of 10 lbs. per sq. ft. determines the required fiber stress value.

(Limited attic storage where development of future rooms is not possible)
(Drywall Ceiling)

JOIST SIZE SPACING		Modulus of Elasticity, "E," in 1,000,000 psi																		
		0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.4
(IN)	(IN)																			
2x4	12.0	6-2 560	6-8 660	7-1 740	7-6 820	7-10 900	8-1 970	8-5 1040	8-8 1110	8-11 1170	9-2 1240	9-5 1300	9-8 1360	9-10 1420	10-0 1480	10-3 1540	10-5 1600	10-7 1650	10-11 1760	11-3 1860
	13.7	5-11 590	6-5 690	6-9 770	7-2 860	7-6 940	7-9 1010	8-1 1090	8-4 1160	8-7 1230	8-9 1300	9-0 1360	9-3 1420	9-5 1490	9-7 1550	9-9 1610	10-0 1670	10-2 1730	10-6 1840	10-9 1950
	16.0	5-8 620	6-1 720	6-5 810	6-9 900	7-1 990	7-5 1070	7-8 1140	7-11 1220	8-1 1290	8-4 1360	8-7 1430	8-9 1500	8-11 1570	9-1 1630	9-4 1690	9-6 1760	9-8 1820	9-11 1940	10-3 2050
	19.2	5-4 660	5-9 770	6-1 870	6-5 960	6-8 1050	6-11 1130	7-2 1220	7-5 1300	7-8 1370	7-10 1450	8-1 1520	8-3 1590	8-5 1660	8-7 1730	8-9 1800	8-11 1870	9-1 1930	9-4 2060	9-8 2180
	24.0	4-11 710	5-4 830	5-8 930	5-11 1030	6-2 1130	6-5 1220	6-8 1310	6-11 1400	7-1 1480	7-3 1560	7-6 1640	7-8 1720	7-10 1790	8-0 1870	8-1 1940	8-3 2010	8-5 2080	8-8 2220	8-11 2350
2x6	12.0	9-9 560	10-6 660	11-2 740	11-9 820	12-3 900	12-9 970	13-3 1040	13-8 1110	14-1 1170	14-5 1240	14-9 1300	15-2 1360	15-6 1420	15-9 1480	16-1 1540	16-4 1600	16-8 1650	17-2 1760	17-8 1860
	13.7	9-4 590	10-0 690	10-8 770	11-3 860	11-9 940	12-3 1010	12-8 1090	13-1 1160	13-5 1230	13-10 1300	14-2 1360	14-6 1420	14-9 1490	15-1 1550	15-5 1610	15-8 1670	15-11 1730	16-5 1840	16-11 1950
	16.0	8-10 620	9-6 720	10-2 810	10-8 900	11-2 990	11-7 1070	12-0 1140	12-5 1220	12-9 1290	13-1 1360	13-5 1430	13-9 1500	14-1 1570	14-4 1630	14-7 1690	14-11 1760	15-2 1820	15-7 1940	16-1 2050
	19.2	8-4 660	9-0 770	9-6 870	10-0 960	10-6 1050	10-11 1130	11-4 1220	11-8 1300	12-0 1370	12-4 1450	12-8 1520	12-11 1590	13-3 1660	13-6 1730	13-9 1800	14-0 1870	14-3 1930	14-8 2060	15-2 2180
	24.0	7-9 710	8-4 830	8-10 930	9-4 1030	9-9 1130	10-2 1220	10-6 1310	10-10 1400	11-2 1480	11-5 1560	11-9 1640	12-0 1720	12-3 1790	12-6 1870	12-9 1940	13-0 2010	13-3 2080	13-8 2220	14-1 2350

Note: The required extreme fiber stress in bending, "Fb", in pounds per square inch is shown below each span.

TABLE J-4 (cont'd)

JOIST SIZE SPACING		Modulus of Elasticity, "E," in 1,000,000 psi																		
		(IN)	(IN)	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
2x8	12.0	12-10	13-10	14-8	15-6	16-2	16-10	17-5	18-0	18-6	19-0	19-6	19-11	20-5	20-10	21-2	21-7	21-11	22-8	23-4
		560	660	740	820	900	970	1040	1110	1170	1240	1300	1360	1420	1480	1540	1600	1650	1760	1860
	13.7	12-3	13-3	14-1	14-10	15-6	16-1	16-8	17-2	17-9	18-2	18-8	19-1	19-6	19-11	20-3	20-8	21-0	21-8	22.4
		590	690	770	860	940	1010	1090	1160	1230	1300	1360	1420	1490	1550	1610	1670	1730	1840	1950
	16.0	11-8	12-7	13-4	14-1	14-8	15-3	15-10	16-4	16-10	17-3	17-9	18-2	18-6	18-11	19-3	19-7	19-11	20-7	21-2
	620	720	810	900	990	1070	1140	1220	1290	1360	1430	1500	1570	1630	1690	1760	1820	1940	2050	
	19.2	11-0	11-10	12-7	13-3	13-10	14-5	14-11	15-5	15-10	16-3	16-8	17-1	17-5	17-9	18-2	18-5	18-9	19-5	19-11
		660	770	870	960	1050	1130	1220	1300	1370	1450	1520	1590	1660	1730	1800	1870	1930	2060	2180
	24.0	10-2	11-0	11-8	12-3	12-10	13-4	13-10	14-3	14-8	15-1	15-6	15-10	16-2	16-6	16-10	17-2	17-5	18-0	18-6
		710	830	930	1030	1130	1220	1310	1400	1480	1560	1640	1720	1790	1870	1940	2010	2080	2220	2350
2x10	12.0	16-5	17-8	18-9	19-9	20-8	21-6	22-3	22-11	23-8	24-3	24-10	25-5	26-0	26-6	27-1	27-6	28-0	28-11	29-9
		560	660	740	820	900	970	1040	1110	1170	1240	1300	1360	1420	1480	1540	1600	1650	1760	1860
	13.7	15-8	16-11	17-11	18-11	19-9	20-6	21-3	21-11	22-7	23-3	23-9	24-4	24-10	25-5	25-10	26-4	26-10	27-8	28-6
		590	690	770	860	940	1010	1090	1160	1230	1300	1360	1420	1490	1550	1610	1670	1730	1840	1950
	16.0	14-11	16-0	17-0	17-11	18-9	19-6	20-2	20-10	21-6	22-1	22-7	23-2	23-8	24-1	24-7	25-0	25-5	26-3	27-1
	620	720	810	900	990	1070	1140	1220	1290	1360	1430	1500	1570	1630	1690	1760	1820	1940	2050	
	19.2	14-0	15-1	16-0	16-11	17-8	18-4	19-0	19-7	20-2	20-9	21-3	21-9	22-3	22-8	23-2	23-7	23-11	24-9	25-5
		660	770	870	960	1050	1130	1220	1300	1370	1450	1520	1590	1660	1730	1800	1870	1930	2060	2180
	24.0	13-0	14-0	14-11	15-8	16-5	17-0	17-8	18-3	18-9	19-3	19-9	20-2	20-8	21-1	21-6	21-10	22-3	22-11	23-8
		710	830	930	1030	1130	1220	1310	1400	1480	1560	1640	1720	1790	1870	1940	2010	2080	2220	2350

Note: The required extreme fiber stress in bending. "Fb", in pounds per square inch is shown below each span.

(Part of Ord. passed 10/3/73).

