

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 20												PWI 30							
	9½"				11½"				14"				9½"				11½"			
	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL
	L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360	
6	-	-	-	373	-	-	-	473	-	-	-	538	-	-	-	334	-	-	-	368
7	285	-	-	320	328	-	-	406	-	-	-	461	-	-	-	287	-	-	-	315
8	202	253	-	280	328	-	-	355	-	-	-	403	220	-	-	251	-	-	-	276
9	148	185	247	249	243	304	-	316	340	-	-	358	162	202	-	223	-	-	-	245
10	111	139	186	202	185	231	-	261	260	-	-	311	122	152	-	201	200	-	-	221
11	86	107	143	167	143	179	-	216	203	254	-	257	94	118	157	182	156	195	-	201
12	67	84	112	140	113	141	-	181	161	202	-	216	74	92	123	167	123	154	-	184
13	54	67	89	119	91	113	151	155	130	162	-	184	59	74	98	148	99	124	165	170
14	43	54	72	103	74	92	123	133	106	133	-	159	48	60	80	120	81	101	135	158
15	36	45	60	89	61	76	101	116	88	109	-	138	39	49	66	98	67	83	111	147
16	30	37	49	74	51	63	84	102	73	91	122	122	33	41	55	82	56	69	93	130
17					43	53	71	90	62	77	103	108					47	58	78	115
18					36	45	60	81	52	66	87	96					40	50	66	99
19					31	39	52	72	45	56	75	86					34	43	57	85
20					27	33	44	65	39	48	65	78					29	37	49	73
21									34	42	56	71								
22									29	37	49	64								
23									26	32	43	59								
24									23	29	38	54								
25																				
26																				
27																				
28																				
29																				
30																				

Notes:

1. Table values apply to uniformly loaded floor joists.
2. Span is measured to the center of each support.
3. Table values do not account for stiffness added by glued or nailed sheathing.
4. Provide at least 1¼" of bearing length at end supports and 3½" at intermediate supports.
5. Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. floor sheathing, gypsum board ceiling).
6. Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing lengths, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

HOW TO USE COMMERCIAL FLOOR LOAD TABLES

1. Choose a joist spacing and convert the live and total design loads specified in pounds per square foot (psf) to joist loads in pounds per lineal foot (plf).
Joist Spacing [ft] x Design Load [psf] = Joist Load [plf]

JOIST LOAD (PLF)

Joist Spacing		Design Load (psf)									
Inches	Feet	20	30	40	50	60	70	80	90	100	
12	1	20	30	40	50	60	70	80	90	100	
16	1.33	27	40	53	67	80	93	106	120	133	
19.2	1.6	32	48	64	80	96	112	128	144	160	
24	2	40	60	80	100	120	140	160	180	200	

2. Choose deflection limits. The values in the Total columns are based on L/240. Building codes typically require L/360 for live load. Experience has shown that live load deflection limits of L/480 at 40 psf for residential floors and L/600 at 50 psf for commercial floors do a better job than L/360 of meeting most performance expectations.
3. Choose a span and scan across the Span row to find a joist size with sufficient Live and Total load capacities. Both requirements must be satisfied. When no value is shown in a Live column, Total load governs.
4. Formatting in the Total column indicates where web stiffeners are required:
123 = All Supports 123 = Intermediate Supports Only 123 = End Supports Only 123 = Not Required
5. See *Web Stiffener Requirements* on page 93 for more details.

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 40																PWI 45																								
	9½"				11½"				14"				16"				9½"				11½"				14"				16"												
	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL													
	L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360	L/600	L/480	L/360	L/600	L/480	L/360	L/600	L/480	L/360	L/600
6	-	-	-	373	-	-	-	473	-	-	-	570	-	-	-	657	-	-	-	373	-	-	-	473	-	-	-	543	-	-	-	581									
7	-	-	-	320	-	-	-	406	-	-	-	489	-	-	-	563	-	-	-	320	-	-	-	406	-	-	-	466	-	-	-	498									
8	253	-	-	280	-	-	-	355	-	-	-	428	-	-	-	493	253	-	-	280	-	-	-	355	-	-	-	408	-	-	-	436									
9	187	234	-	249	298	-	-	316	-	-	-	380	-	-	-	438	187	234	-	249	298	-	-	316	-	-	-	362	-	-	-	387									
10	142	177	-	219	228	-	-	284	317	-	-	342	-	-	-	394	142	177	-	224	228	-	-	284	319	-	-	326	-	-	-	348									
11	110	137	-	181	178	223	-	234	249	-	-	282	325	-	-	327	110	137	183	204	178	223	-	258	251	-	-	296	-	-	-	317									
12	87	108	145	152	142	177	-	197	199	-	-	237	261	-	-	275	87	108	145	186	142	177	236	237	200	251	-	272	264	-	-	290									
13	70	87	116	129	114	143	-	168	161	202	-	202	213	-	-	234	70	87	116	158	114	143	190	204	162	203	-	243	215	-	-	268									
14	57	71	94	112	93	117	-	145	132	165	-	174	175	-	-	202	57	71	94	137	93	117	156	176	133	167	-	210	177	221	-	240									
15	47	58	78	97	77	96	-	126	110	137	-	152	146	-	-	176	47	58	78	116	77	96	129	153	111	138	-	183	147	184	-	209									
16	39	48	65	85	64	81	107	111	92	115	-	133	122	153	-	155	39	48	65	97	64	81	107	135	93	116	154	161	124	155	-	184									
17					54	68	91	98	78	97	-	118	104	130	-	137					54	68	91	119	78	98	130	142	105	131	-	163									
18					46	58	77	88	66	83	-	105	89	111	-	122					46	58	77	107	67	83	111	127	90	112	-	145									
19					40	50	66	79	57	71	95	95	76	95	-	110					40	50	66	96	57	72	96	114	77	96	128	130									
20					34	43	57	71	49	62	82	85	66	83	-	99					34	43	57	86	50	62	83	103	67	83	111	118									
21									43	54	71	77	58	72	-	90										43	54	72	93	58	73	97	107								
22									38	47	63	71	50	63	-	82										38	47	63	85	51	64	85	97								
23									33	41	55	65	44	56	74	75										33	42	55	78	45	56	75	89								
24									29	37	49	59	39	49	66	69										29	37	49	71	40	50	66	82								
25													35	44	58	63																		75							
26													31	39	52	59																		70							
27													28	35	47	54																		65							
28													25	32	42	51																		60							
29																																									
30																																									

See notes on page 24

Formatting in the Total column indicates where web stiffeners are required:

123 = All Supports

123 = Intermediate Supports Only

123 = End Supports Only

123 = Not Required

PSF TO PLF CONVERSION – LOAD IN POUNDS PER LINEAL FOOT (PLF)

O.C. Spacing		Load in Pounds per Square Foot (psf)																															
Inches	Feet	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150					
12	1.00	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150					
16	1.33	27	33	40	47	53	60	67	73	80	87	93	100	107	114	121	128	135	142	149	156	163	170	177	184	191	198	205	212	219	226	233	240
19.2	1.60	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	280
24	2.00	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350

o.c. spacing (ft) x load (psf) = load (plf)

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 47																												
	7½"				9½"				11½"				14"				16"				18"				20"				
	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL					
	L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		
6	370	-	-	373	-	-	-	418	-	-	-	485	-	-	-	543	-	-	-	598	-	-	-	653	-	-	-	710	
7	255	318	-	320	-	-	-	359	-	-	-	416	-	-	-	466	-	-	-	513	-	-	-	560	-	-	-	609	
8	182	227	-	280	265	-	-	314	-	-	-	364	-	-	-	408	-	-	-	449	-	-	-	490	-	-	-	533	
9	134	167	223	249	197	246	-	279	307	-	-	-	323	-	-	-	362	-	-	-	399	-	-	-	436	-	-	-	473
10	101	126	168	215	150	187	250	251	236	-	-	291	325	-	-	326	-	-	-	359	-	-	-	392	-	-	-	426	
11	78	97	129	178	116	145	194	220	184	231	-	265	256	-	-	296	-	-	-	326	-	-	-	356	-	-	-	387	
12	61	76	102	149	92	115	153	185	147	183	-	238	205	256	-	272	267	-	-	299	-	-	-	327	-	-	-	355	
13	49	61	81	122	74	92	123	158	118	148	197	203	166	207	-	240	217	271	-	274	274	-	-	302	-	-	-	328	
14					60	75	100	136	97	121	161	175	136	170	-	207	179	224	-	236	227	-	-	265	279	-	-	294	
15					49	62	82	119	80	100	133	152	113	141	-	180	149	186	-	206	189	-	-	231	234	-	-	256	
16					41	51	69	103	67	84	111	134	95	118	158	159	125	156	-	181	159	199	-	203	197	-	-	225	
17									56	71	94	118	80	100	134	140	106	133	-	160	135	169	-	180	168	-	-	199	
18									48	60	80	106	68	85	114	125	91	113	-	143	116	145	-	160	144	-	-	178	
19									41	51	69	95	59	73	98	112	78	98	-	128	100	125	-	144	124	156	-	160	
20									36	44	59	86	51	64	85	102	68	84	113	116	87	108	-	130	108	135	-	144	
21													44	55	74	92	59	74	98	105	76	95	-	118	95	118	-	131	
22													39	48	65	84	52	65	86	96	66	83	-	107	83	104	-	119	
23													34	43	57	77	46	57	76	88	59	73	98	98	73	92	-	109	
24													30	38	50	70	40	50	67	80	52	65	87	90	65	81	-	100	
25																	36	45	60	74	46	58	77	83	58	72	-	92	
26																	32	40	53	69	41	52	69	77	52	65	-	85	
27																	29	36	48	64	37	46	62	71	47	58	78	79	
28																	26	32	43	59	33	42	56	66	42	52	70	73	
29																					30	38	50	62	38	47	63	68	
30																					27	34	46	58	34	43	57	64	
31																					25	31	42	54	31	39	52	60	
32																									29	36	48	56	
33																									26	33	44	53	
34																									24	30	40	50	
35																									22	28	37	47	
36																													

Notes:

- Table values apply to uniformly loaded floor joists.
- Span is measured to the center of each support.
- Table values do not account for stiffness added by glued or nailed sheathing.
- Provide at least 1¾" of bearing length at end supports and 3½" at intermediate supports.
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. floor sheathing, gypsum board ceiling).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing lengths, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

Formatting in the Total column indicates where web stiffeners are required:

123 = All Supports

123 = Intermediate Supports Only

123 = End Supports Only

123 = Not Required

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 50																PWI 60																
	9½"				11½"				14"				16"				9½"				11½"				14"				16"				
	Live				Live				Live				Live				Live				Live				Live				Live				
	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	
6	-	-	-	350	-	-	-	383	-	-	-	392	-	-	-	412	-	-	-	373	-	-	-	473	-	-	-	570	-	-	-	657	
7	-	-	-	300	-	-	-	329	-	-	-	336	-	-	-	353	-	-	-	320	-	-	-	406	-	-	-	489	-	-	-	563	
8	246	-	-	263	-	-	-	288	-	-	-	294	-	-	-	309	-	-	-	280	-	-	-	355	-	-	-	428	-	-	-	493	
9	182	227	-	233	-	-	-	256	-	-	-	261	-	-	-	274	215	-	-	249	-	-	-	316	-	-	-	380	-	-	-	438	
10	138	172	-	210	224	-	-	230	-	-	-	235	-	-	-	247	164	205	-	224	262	-	-	284	-	-	-	342	-	-	-	394	
11	107	133	178	191	175	-	-	209	-	-	-	214	-	-	-	225	128	160	-	204	206	258	-	258	288	-	-	311	-	-	-	358	
12	84	105	140	175	139	174	-	192	-	-	-	196	-	-	-	206	101	127	169	187	165	206	-	237	232	-	-	285	303	-	-	328	
13	67	84	112	162	112	140	-	177	161	-	-	181	-	-	-	190	81	102	136	172	133	167	-	218	189	236	-	263	248	-	-	303	
14	55	68	91	137	91	114	152	164	132	165	-	168	-	-	-	176	66	83	111	154	109	137	182	200	155	194	-	241	205	257	-	279	
15	45	56	75	112	75	94	126	153	109	137	-	157	147	-	-	165	55	68	91	134	91	113	151	174	129	162	-	210	171	214	-	243	
16	37	47	62	94	63	79	105	144	92	114	-	147	123	-	-	154	46	57	76	114	76	95	126	153	109	136	181	184	144	181	-	214	
17					53	66	89	133	77	97	129	138	105	131	-	145					64	80	107	136	92	115	153	163	123	153	-	189	
18					45	57	75	113	66	82	110	131	89	112	-	137					55	68	91	121	79	98	131	146	105	131	-	169	
19					39	48	65	97	57	71	94	124	77	96	128	130					47	59	78	109	68	85	113	131	91	113	-	151	
20					33	42	56	84	49	61	82	117	67	83	111	124					41	51	68	98	59	73	98	118	79	98	131	137	
21									43	53	71	106	58	73	97	118									51	64	85	107	69	86	115	124	
22									37	47	62	93	51	64	85	111									45	56	75	97	60	75	101	113	
23									33	41	55	82	45	56	75	102									39	49	66	89	53	67	89	103	
24									29	36	48	73	40	50	66	93									35	44	58	82	47	59	79	95	
25													35	44	59	86													42	53	70	87	
26													32	39	53	79													38	47	63	81	
27													28	35	47	71													34	42	56	75	
28													25	32	42	64													30	38	51	70	
29																																	
30																																	
31																																	
32																																	
33																																	
34																																	
35																																	
36																																	

See notes on page 26

Formatting in the Total column indicates where web stiffeners are required:

123 = All Supports

123 = Intermediate Supports Only

123 = End Supports Only

123 = Not Required

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 70																			
	11½"				14"				16"				18"				20"			
	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL
	L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360	
6	-	-	-	473	-	-	-	548	-	-	-	585	-	-	-	664	-	-	-	668
7	-	-	-	406	-	-	-	469	-	-	-	501	-	-	-	569	-	-	-	572
8	-	-	-	355	-	-	-	411	-	-	-	439	-	-	-	498	-	-	-	501
9	-	-	-	316	-	-	-	365	-	-	-	390	-	-	-	443	-	-	-	445
10	283	-	-	284	-	-	-	329	-	-	-	351	-	-	-	399	-	-	-	401
11	224	-	-	258	-	-	-	299	-	-	-	319	-	-	-	362	-	-	-	364
12	179	224	-	237	250	-	-	274	-	-	-	292	-	-	-	332	-	-	-	334
13	145	182	-	218	204	-	-	253	265	-	-	270	-	-	-	307	-	-	-	308
14	119	149	199	203	168	210	-	235	220	-	-	251	278	-	-	285	-	-	-	286
15	99	124	165	189	140	175	-	219	184	230	-	234	233	-	-	266	-	-	-	267
16	83	104	139	178	118	148	197	205	155	194	-	219	197	247	-	249	243	-	-	250
17	70	88	117	167	100	125	167	193	132	165	-	206	169	211	-	234	208	-	-	236
18	60	75	100	150	86	107	143	183	113	142	189	195	145	181	-	221	179	-	-	223
19	52	64	86	129	74	92	123	173	98	122	163	185	125	157	209	210	156	194	-	211
20	45	56	74	112	64	80	107	160	85	106	142	175	109	136	182	199	136	170	-	200
21					56	70	93	140	74	93	124	167	95	119	159	188	119	149	-	191
22					49	61	82	122	65	82	109	152	84	105	140	171	105	131	175	182
23					43	54	72	108	58	72	96	139	74	93	124	157	93	116	155	174
24					38	48	64	96	51	64	85	128	66	82	110	144	82	103	137	160
25									46	57	76	114	59	73	98	133	74	92	123	147
26									41	51	68	102	53	66	88	123	66	82	110	136
27									37	46	61	92	47	59	79	114	59	74	99	126
28									33	41	55	82	43	53	71	106	54	67	89	117
29													39	48	64	97	48	61	81	109
30													35	44	58	88	44	55	73	102
31													32	40	53	80	40	50	67	96
32																	37	46	61	90
33																	34	42	56	84
34																	31	38	51	77
35																	28	35	47	71
36																				
37																				
38																				
39																				
40																				
41																				
42																				

Notes:

- Table values apply to uniformly loaded floor joists.
- Span is measured to the center of each support.
- Table values do not account for stiffness added by glued or nailed sheathing.
- Provide at least 1¼" of bearing length at end supports and 3½" at intermediate supports.
- Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. floor sheathing, gypsum board ceiling).
- Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing lengths, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

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123 = All Supports

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123 = Not Required

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 77																																				
	9½"				11¾"				14"				16"				18"				20"				22"				24"								
	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL	Live			TOTAL									
	L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360		L/600	L/480	L/360						
6	-	-	-	477	-	-	-	635	-	-	-	664	-	-	-	693	-	-	-	770	-	-	-	786	-	-	-	870	-	-	-	870					
7	-	-	-	409	-	-	-	544	-	-	-	569	-	-	-	594	-	-	-	660	-	-	-	674	-	-	-	745	-	-	-	745					
8	334	-	-	358	-	-	-	476	-	-	-	498	-	-	-	520	-	-	-	577	-	-	-	590	-	-	-	652	-	-	-	652					
9	248	310	-	318	390	-	-	423	-	-	-	442	-	-	-	462	-	-	-	513	-	-	-	524	-	-	-	580	-	-	-	580					
10	189	236	-	286	300	375	-	381	-	-	-	398	-	-	-	416	-	-	-	462	-	-	-	472	-	-	-	522	-	-	-	522					
11	147	183	244	260	235	294	-	346	328	-	-	362	-	-	-	378	-	-	-	420	-	-	-	429	-	-	-	474	-	-	-	474					
12	116	145	193	238	187	234	312	318	263	329	-	332	344	-	-	347	-	-	-	385	-	-	-	393	-	-	-	435	-	-	-	435					
13	93	116	155	220	151	189	252	293	213	267	-	306	280	-	-	320	354	-	-	355	-	-	-	363	-	-	-	401	-	-	-	401					
14	76	95	126	189	124	155	206	272	175	219	-	284	231	289	-	297	293	-	-	330	-	-	-	337	-	-	-	373	-	-	-	373					
15	62	78	104	156	102	128	171	237	146	182	243	265	193	241	-	277	245	307	-	308	303	-	-	315	-	-	-	348	-	-	-	348					
16	52	65	87	130	86	107	143	209	122	153	204	249	162	203	-	260	207	259	-	289	256	-	-	295	310	-	-	326	-	-	-	326					
17					72	90	120	181	103	129	172	220	138	172	229	245	176	220	-	272	219	273	-	278	265	-	-	307	-	-	-	307					
18					61	77	102	154	88	110	147	197	118	147	196	225	151	188	251	253	188	235	-	262	228	285	-	290	272	-	-	290					
19					53	66	88	132	76	95	126	176	101	127	169	202	130	163	217	227	162	203	-	248	198	247	-	275	236	-	-	275					
20					46	57	76	114	66	82	109	159	88	110	146	182	113	141	188	205	141	176	-	228	172	215	-	250	206	257	-	261					
21									57	71	95	143	77	96	128	165	99	123	164	186	123	154	206	207	151	188	-	227	181	226	-	247					
22									50	63	84	125	67	84	112	151	87	108	144	170	108	136	181	188	133	166	-	207	159	199	-	225					
23									44	55	74	110	59	74	99	138	76	96	127	155	96	120	160	172	117	147	-	189	141	176	-	206					
24									39	49	65	98	52	66	87	127	68	85	113	143	85	106	142	158	104	130	174	174	125	157	-	189					
25																	47	58	78	117	60	75	101	131	76	95	126	146	93	116	155	160	112	140	-	174	
26																	42	52	70	104	54	68	90	121	68	85	113	135	83	104	139	148	100	125	-	161	
27																	37	47	62	94	48	61	81	113	61	76	102	125	75	94	125	137	90	113	-	150	
28																	34	42	56	84	44	55	73	105	55	69	92	116	68	84	113	128	81	102	136	139	
29																					39	49	66	98	50	62	83	108	61	76	102	119	74	92	123	130	
30																					36	45	60	90	45	56	75	101	56	69	93	111	67	84	112	121	
31																					33	41	54	81	41	51	68	95	51	63	84	104	61	76	102	113	
32																																					
33																																					
34																																					
35																																					
36																																					
37																																					
38																																					
39																																					
40																																					
41																																					
42																																					

See notes on page 28

Formatting in the Total column indicates where web stiffeners are required:
123 = All Supports **123** = Intermediate Supports Only **123** = End Supports Only **123** = Not Required

COMMERCIAL FLOOR LOADS

SIMPLE-SPAN JOIST: COMMERCIAL—ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI 90																															
	9½"				11¾"				14"				16"				18"				20"				22"				24"			
	Live				Live				Live				Live				Live				Live				Live							
	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL	L/600	L/480	L/360	TOTAL
6	-	-	-	477	-	-	-	637	-	-	-	666	-	-	-	695	-	-	-	772	-	-	-	788	-	-	-	871	-	-	-	871
7	-	-	-	409	-	-	-	546	-	-	-	571	-	-	-	595	-	-	-	661	-	-	-	675	-	-	-	747	-	-	-	747
8	-	-	-	358	-	-	-	478	-	-	-	499	-	-	-	521	-	-	-	579	-	-	-	591	-	-	-	654	-	-	-	654
9	-	-	-	318	-	-	-	425	-	-	-	444	-	-	-	463	-	-	-	514	-	-	-	525	-	-	-	581	-	-	-	581
10	259	-	-	286	-	-	-	382	-	-	-	399	-	-	-	417	-	-	-	463	-	-	-	473	-	-	-	523	-	-	-	523
11	204	255	-	260	319	-	-	347	-	-	-	363	-	-	-	379	-	-	-	421	-	-	-	430	-	-	-	475	-	-	-	475
12	163	203	-	238	257	-	-	319	-	-	-	333	-	-	-	347	-	-	-	386	-	-	-	394	-	-	-	436	-	-	-	436
13	132	165	220	220	210	262	-	294	291	-	-	307	-	-	-	321	-	-	-	356	-	-	-	364	-	-	-	402	-	-	-	402
14	108	135	180	204	173	216	-	273	242	-	-	285	-	-	-	298	-	-	-	331	-	-	-	338	-	-	-	373	-	-	-	373
15	90	112	149	191	144	180	241	255	202	253	-	266	264	-	-	278	-	-	-	309	-	-	-	315	-	-	-	349	-	-	-	349
16	75	94	125	179	121	152	202	239	171	214	-	250	224	-	-	261	283	-	-	289	-	-	-	296	-	-	-	327	-	-	-	327
17					103	129	172	225	146	182	-	235	191	239	-	245	242	-	-	272	-	-	-	278	-	-	-	308	-	-	-	308
18					88	110	147	212	125	156	208	222	165	206	-	232	209	-	-	257	257	-	-	263	-	-	-	290	-	-	-	290
19					76	95	127	190	108	135	180	210	142	178	-	219	181	226	-	244	224	-	-	249	270	-	-	275	-	-	-	275
20					66	82	110	165	94	117	156	200	124	155	207	208	158	198	-	232	196	-	-	236	236	-	-	261	-	-	-	261
21									82	102	137	190	109	136	181	198	139	173	-	220	172	215	-	225	208	-	-	249	247	-	-	249
22									72	90	120	180	96	119	159	189	122	153	204	210	152	190	-	215	184	230	-	238	219	-	-	238
23									64	79	106	159	85	106	141	181	108	135	180	201	135	168	-	206	163	204	-	227	195	-	-	227
24									56	71	94	141	75	94	125	174	96	120	161	193	120	150	-	197	146	182	-	218	174	217	-	218
25													67	84	112	167	86	108	143	185	107	134	179	189	130	163	-	209	156	195	-	209
26													60	75	100	150	77	96	129	178	96	120	160	182	117	147	195	201	140	175	-	201
27													54	67	90	135	69	87	116	171	87	108	144	175	106	132	176	194	126	158	-	194
28													49	61	81	122	63	78	104	157	78	98	130	169	96	119	159	187	114	143	-	187
29																	57	71	95	142	71	89	118	163	87	108	144	180	104	130	173	180
30																	52	64	86	129	65	81	108	156	79	99	131	171	95	118	158	174
31																	47	59	78	117	59	74	98	146	72	90	120	160	86	108	144	169
32																					54	67	90	134	66	82	110	150	79	99	132	163
33																					49	62	82	123	60	75	101	141	72	91	121	154
34																					45	57	75	113	55	69	92	133	67	83	111	145
35																					42	52	69	104	51	64	85	126	61	77	102	137
36																									47	59	78	118	57	71	94	129
37																									44	54	73	109	52	66	87	122
38																									40	50	67	101	49	61	81	116
39																													45	56	75	110
40																													42	52	70	105
41																													39	49	65	98
42																													36	46	61	91

Notes:

1. Table values apply to uniformly loaded floor joists.
2. Span is measured to the center of each support.
3. Table values do not account for stiffness added by glued or nailed sheathing.
4. Provide at least 1¾" of bearing length at end supports and 3½" at intermediate supports.
5. Provide lateral restraint at supports (e.g. blocking panels, rim board) and along the compression flange of each joist (e.g. floor sheathing, gypsum board ceiling).
6. Use sizing software or consult a professional engineer to analyze conditions outside the scope of this table (e.g. different bearing lengths, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

Formatting in the Total column indicates where web stiffeners are required:

123 = All Supports

123 = Intermediate Supports Only

123 = End Supports Only

123 = Not Required