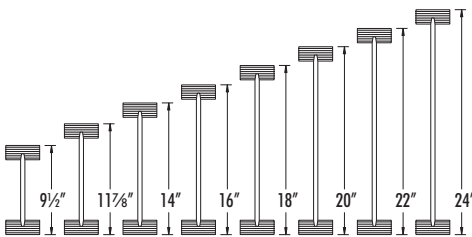




PWI 90



7/16" OSB Web
3 1/2" x 1 1/2" Flange

PWI-90 JOIST SERIES JOIST DIMENSIONS & VALUES

REFERENCE DESIGN VALUES ⁽¹⁾

Joist Series	Joist Depth	EI ⁽²⁾ (x 10 ⁶ lb-in ²)	k ⁽³⁾ (x 10 ⁶ lb)	M ⁽⁴⁾ (ft-lb)	V ⁽⁵⁾ (lb)	ER ⁽⁶⁾ (lb)	IR ⁽⁷⁾ (lb)	Vertical Load ⁽⁸⁾ (plf)
PWI-90	9 1/2"	392	6.08	7915	1430	1400	2860	2400
	11 3/8"	661	7.60	10255	1925	1400	3355	2400
	14"	965	8.96	12235	2125	1400	3355	2400
	16"	1306	10.24	14020	2330	1400	3355	2400
	18"	1703	11.52	15780	2535	1400	3355	1800
	20"	2155	12.80	17520	2740	1400	3355	1800
	22"	2664	14.08	19245	2935	2400 ⁽⁹⁾	4605 ⁽⁹⁾	1300
	24"	3232	15.36	20955	3060	2400 ⁽⁹⁾	4605 ⁽⁹⁾	1300

1. Values apply to normal load duration. All values except EI, k and Vertical Load may be adjusted for other load durations as permitted by the code.

2. Bending stiffness (EI).

3. Coefficient of shear deflection (k). Use Equations 1 or 2 to calculate uniform load or center point load deflections in a simple-span application.

Uniform Load: $[1] \delta = \frac{5wL^4}{384EI} + \frac{wl^2}{k}$ Center Point Load: $[2] \delta = \frac{Pl^3}{48EI} + \frac{2Pl}{k}$ Where:

δ = calculated deflection [in] P = concentrated load [lb]
w = uniform load [lb/in] EI = bending stiffness of the I-joist [lb-in²]
l = design span [in] k = coefficient of shear deflection [lb]

4. Moment capacity (M). The tabulated values shall not be increased by any code-allowed repetitive member factor.

5. Shear capacity (V).

6. End reaction capacity (ER) of the I-joist without web stiffeners and a minimum bearing length of 1 3/4 inches.

7. Intermediate reaction capacity (IR) of the I-joist without web stiffeners and a minimum bearing length of 3 1/2 inches.

8. Blocking panel and rim joist vertical load capacity.

9. Web stiffeners required. See *Web Stiffener Requirements* at

www.pacificwoodtech.com/uploads/PWI_Joist_Master_027_Web_Stiffener_Requirements.pdf.

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90



FLOOR SPANS

PWI-90

ALLOWABLE RESIDENTIAL FLOOR SPANS FOR PWI JOISTS – 40 PSF LIVE LOAD AND 10 PSF DEAD LOAD

Joist Series	Joist Depth	Simple Span					Multiple Span					Simple or Multiple Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.		
PWI-90	9 1/2"	22'-3"	20'-3"	19'-1"	17'-9"	24'-9"	22'-6"	21'-3"	19'-9"	22'-3"	20'-3"	19'-1"	17'-9"		
	11 7/8"	26'-5"	24'-1"	22'-8"	21'-2"	29'-6"	26'-10"	25'-3"	23'-6"	26'-5"	24'-1"	22'-8"	21'-2"		
	14"	30'-0"	27'-4"	25'-9"	24'-0"	33'-5"	30'-5"	28'-8"	26'-7"	30'-0"	27'-4"	25'-9"	24'-0"		
	16"	33'-2"	30'-3"	28'-6"	26'-6"	37'-0"	33'-8"	31'-9"	26'-7"	33'-2"	30'-3"	28'-6"	26'-6"		
	18"	36'-3"	33'-0"	31'-1"	27'-10"	40'-6"	36'-10"	33'-3"	26'-7"	36'-3"	33'-0"	31'-1"	26'-7"		
	20"	39'-3"	35'-9"	33'-8"	27'-10"	43'-9"	39'-10"	33'-3"	26'-7"	39'-3"	35'-9"	33'-8"	26'-7"		
	22"	42'-1"	38'-4"	36'-2"	33'-8"	47'-0"	42'-9"	40'-3"	36'-7"	42'-1"	38'-4"	36'-2"	33'-8"		
24"	44'-11"	40'-11"	38'-7"	35'-11"	50'-2"	45'-8"	43'-0"	36'-7"	44'-11"	40'-11"	38'-7"	35'-11"			

ALLOWABLE RESIDENTIAL FLOOR SPANS FOR PWI JOISTS – 40 PSF LIVE LOAD AND 20 PSF DEAD LOAD

Joist Series	Joist Depth	Simple Span					Multiple Span					Simple or Multiple Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.		
PWI-90	9 1/2"	22'-3"	20'-3"	19'-1"	17'-9"	24'-9"	22'-6"	21'-3"	18'-10"	22'-3"	20'-3"	19'-1"	17'-9"		
	11 7/8"	26'-5"	24'-1"	22'-8"	21'-2"	29'-6"	26'-10"	25'-3"	22'-1"	26'-5"	24'-1"	22'-8"	21'-2"		
	14"	30'-0"	27'-4"	25'-9"	23'-2"	33'-5"	30'-5"	27'-8"	22'-1"	30'-0"	27'-4"	25'-9"	22'-1"		
	16"	33'-2"	30'-3"	28'-6"	23'-2"	37'-0"	33'-3"	27'-8"	22'-1"	33'-2"	30'-3"	27'-8"	22'-1"		
	18"	36'-3"	33'-0"	29'-0"	23'-2"	40'-6"	33'-3"	27'-8"	22'-1"	36'-3"	33'-0"	27'-8"	22'-1"		
	20"	39'-3"	34'-10"	29'-0"	23'-2"	43'-9"	33'-3"	27'-8"	22'-1"	39'-3"	33'-3"	27'-8"	22'-1"		
	22"	42'-1"	38'-4"	36'-2"	33'-8"	47'-0"	42'-9"	38'-1"	30'-5"	42'-1"	38'-4"	36'-2"	30'-5"		
24"	44'-11"	40'-11"	38'-7"	35'-11"	50'-2"	45'-6"	38'-1"	30'-5"	44'-11"	40'-11"	38'-7"	30'-5"			

- Notes:**
- Table values apply to uniformly loaded, residential floor joists.
 - Span is measured from face to face of supports.
 - Deflection is limited to L/240 at total load and L/480 at live load.
 - Table values are based on glued and nailed sheathing panels (23/32" for 24" o.c., 19/32" otherwise). Use an ASTM D3498 adhesive in accordance with the manufacturer's recommendations. Reduce spans by 12" if sheathing is nailed only.
 - Provide at least 1 3/4" of bearing length at end supports and 3 1/2" 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. commercial floors, different bearing conditions, concentrated loads) or for multiple span joists if the length of any span is less than half the length of an adjacent span.

FLOOR LOADS

ALLOWABLE UNIFORM FLOOR LOAD (PLF)

Joist Span (ft)	PWI-90 — Simple Span Joist																PWI-90 — Multiple Span Joist															
	9 1/2"		11 7/8"		14"		16"		18"		20"		22"		24"		9 1/2"		11 7/8"		14"		16"		18"		20"		22"		24"	
	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%	Live L/480	Total 100%		
6	467	467	467	467	467	467	467	467	467	800	800	381	447	447	447	447	447	447	447	447	614	614	614	614	614	614	614	614	614	614		
7	400	400	400	400	400	400	400	400	400	686	686	327	383	383	383	383	383	383	383	383	526	526	526	526	526	526	526	526	526	526		
8	350	350	350	350	350	350	350	350	350	600	600	286	336	336	336	336	336	336	336	336	461	461	461	461	461	461	461	461	461	461		
9	311	311	311	311	311	311	311	311	311	533	533	254	298	298	298	298	298	298	298	298	409	409	409	409	409	409	409	409	409	409		
10	280	280	280	280	280	280	280	280	280	480	480	229	268	268	268	268	268	268	268	268	368	368	368	368	368	368	368	368	368	368		
11	255	255	255	255	255	255	255	255	255	436	436	208	244	244	244	244	244	244	244	244	335	335	335	335	335	335	335	335	335	335		
12	203	233	233	233	233	233	233	233	233	400	400	191	224	224	224	224	224	224	224	224	307	307	307	307	307	307	307	307	307	307		
13	165	215	215	215	215	215	215	215	215	369	369	176	206	206	206	206	206	206	206	206	283	283	283	283	283	283	283	283	283	283		
14	135	200	200	200	200	200	200	200	200	343	343	163	192	192	192	192	192	192	192	192	263	263	263	263	263	263	263	263	263	263		
15	112	187	187	187	187	187	187	187	187	320	320	148	179	179	179	179	179	179	179	179	246	246	246	246	246	246	246	246	246	246		
16	94	175	175	175	175	175	175	175	175	300	300	125	143	143	143	143	143	143	143	143	230	230	230	230	230	230	230	230	230	230		
17			129	165	165	165	165	165	165	282	282			158	158	158	158	158	158	158	217	217	217	217	217	217	217	217	217	217		
18			110	156	156	156	156	156	156	267	267			146	149	149	149	149	149	149	205	205	205	205	205	205	205	205	205	205		
19			95	147	147	147	147	147	147	253	253			126	141	141	141	141	141	141	194	194	194	194	194	194	194	194	194	194		
20			82	140	140	140	140	140	140	240	240				134	134	134	134	134	134	184	184	184	184	184	184	184	184	184	184		
21				102	133	133	133	133	133	229	229					128	128	128	128	128	175	175	175	175	175	175	175	175	175	175		
22				90	127	127	127	127	127	218	218					120	122	122	122	122	167	167	167	167	167	167	167	167	167	167		
23				79	122	122	122	122	122	204	209					107	117	117	117	117	160	160	160	160	160	160	160	160	160	160		
24				71	117	117	117	117	117	182	200					95	112	112	112	112	154	154	154	154	154	154	154	154	154	154		
25					84	112	112	112	112	163	192						107	127	127	127	147	147	147	147	147	147	147	147	147	147		
26					75	108	108	108	108	147	185						101	123	123	123	142	142	142	142	142	142	142	142	142	142		
27					67	104	104	104	104	132	178						91	109	109	109	136	136	136	136	136	136	136	136	136	136		
28					61	100	100	100	100	119	171						83	96	96	96	132	132	132	132	132	132	132	132	132	132		
29						71	97	97	97	108	166							93	93	93	127	127	127	127	127	127	127	127	127	127		
30						64	93	93	93	99	160								87	89	89	123	123	123	123	123	123	123	123	123		
31						59	90	90	90	90	155								80	87	87	119	119	119	119	119	119	119	119	119		
32							67	88	88	150	150										115	115	115	115	115	115	115	115	115	115		
33							62	85	85	141	145										102	102	102	102	102	102	102	102	102	102		
34							57	82	82	133	141										94	94	94	94	94	94	94	94	94	94		
35							52	80	80	126	137										87	87	87	87	87	87	87	87	87	87		
36								59	118	71	129											102	102	102	102	102	102	102	102	102	102	
37								54	109	66	122											94	94	94	94	94	94	94	94	94	94	
38								50	101	61	116											83	83	83	83	83	83	83	83	83	83	
39										56	110												77	77	77	77	77	77	77	77	77	
40										52	105												72	72	72	72	72	72	72	72	72	
41										49	98																					
42										46	91																					

- Notes:**
- Table values apply to uniformly loaded floor joists.
 - Span is measured to the center of each support.
 - The values in the Total columns are based on an L/240 total load deflection limit. Building codes typically require L/360 for live load. Experience has shown that a live load deflection limit of L/480 at 40 psf for residential floors does a better job than L/360 of meeting most performance expectations.
 - Table values do not account for stiffness added by glued or nailed sheathing.
 - Provide at least 1 3/4" of bearing length at end supports and 3 1/2" 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.



For information about our complete line of products, please scan this code or visit www.pacificwoodtech.com or call 1-888-707-2285.