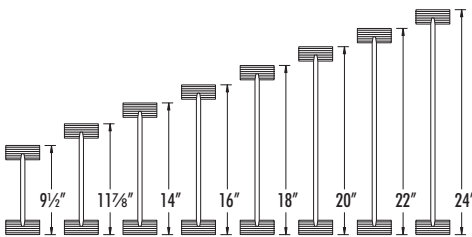




PWI 90



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 7/8"	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.

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90

PWI-90



FLOOR SPANS

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'-1"	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	447	447	447	447	447	447	447	447	447	447	447	
7	400	400	400	400	400	400	400	400	400	686	686	327	383	383	383	383	383	383	383	383	383	383	383	383	383	383	383	383	383	383		
8	350	350	350	350	350	350	350	350	350	600	600	286	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336		
9	311	311	311	311	311	311	311	311	311	533	533	254	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298		
10	280	280	280	280	280	280	280	280	280	480	480	229	268	268	268	268	268	268	268	268	268	268	268	268	268	268	268	268	268	268		
11	255	255	255	255	255	255	255	255	255	436	436	208	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244		
12	203	233	233	233	233	233	233	233	233	400	400	191	224	224	224	224	224	224	224	224	224	224	224	224	224	224	224	224	224	224		
13	165	215	215	215	215	215	215	215	215	369	369	176	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206		
14	135	200	200	200	200	200	200	200	200	343	343	163	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192		
15	112	187	187	187	187	187	187	187	187	320	320	148	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179		
16	94	175	175	175	175	175	175	175	175	300	300	125	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143		
17		129	165	165	165	165	165	165	165	282	282		158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158		
18		110	156	156	156	156	156	156	156	267	267		146	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149	149		
19		95	147	147	147	147	147	147	147	253	253		126	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141		
20		82	140	140	140	140	140	140	140	240	240		110	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134		
21			102	133	133	133	133	133	133	229	229			128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128		
22			90	127	127	127	127	127	127	218	218			120	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122		
23			79	122	122	122	122	122	122	204	209			107	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117		
24			71	117	117	117	117	117	117	182	200			95	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112		
25				84	112	108	112	112	112	163	192				107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107		
26				75	108	96	108	108	108	147	185				101	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103		
27				67	104	87	104	104	104	132	178				91	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99		
28				61	100	78	100	98	100	119	171				83	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96		
29					71	97	89	97	108	166	130					93	93	93	93	93	93	93	93	93	93	93	93	93	93	93		
30					64	93	81	93	99	160	118					87	89	89	89	89	89	89	89	89	89	89	89	89	89	89		
31					59	90	74	90	90	155	108					80	87	87	87	87	87	87	87	87	87	87	87	87	87	87		
32						67	88	82	150	99	150																					
33						62	85	75	141	91	145																					
34						57	82	69	133	83	141																					
35						52	80	64	126	77	137																					
36							59	118	71	129																						
37							54	109	66	122																						
38							50	101	61	116																						
39										56	110																					
40										52	105																					
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.



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