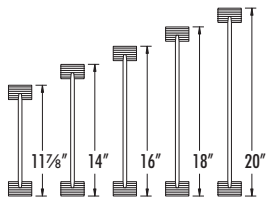




PWI-70



3/8" OSB Web  
2 5/8" x 1 1/2" Flange

## PWI-70 JOIST SERIES JOIST DIMENSIONS & VALUES

### REFERENCE DESIGN VALUES <sup>(1)</sup>

Joist Series	Joist Depth	EI <sup>(2)</sup> (x 10 <sup>6</sup> lb-in <sup>2</sup> )	k <sup>(3)</sup> (x 10 <sup>6</sup> lb)	M <sup>(4)</sup> (ft-lb)	V <sup>(5)</sup> (lb)	ER <sup>(6)</sup> (lb)	IR <sup>(7)</sup> (lb)	Vertical Load <sup>(8)</sup> (plf)
PWI-70	11 7/8"	440	6.18	6730	1705	1160	2460	2000
	14"	644	7.28	8030	1955	1160	2460	2000
	16"	873	8.32	9200	2190	1160	2460	2000
	18"	1141	9.36	10355	2425	1160	2460	1450
	20"	1447	10.40	11495	2660	1160	2460	1450

- 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.
- Bending stiffness (EI).
- 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:  
 $\delta$  = calculated deflection [in]      P = concentrated load [lb]  
 w = uniform load [lb/in]      EI = bending stiffness of the I-joist [lb-in<sup>2</sup>]  
 l = design span [in]      k = coefficient of shear deflection [lb]
- Moment capacity (M). The tabulated values shall not be increased by any code-allowed repetitive member factor.
- Shear capacity (V).
- End reaction capacity (ER) of the I-joist without web stiffeners and a minimum bearing length of 1 3/4 inches.
- Intermediate reaction capacity (IR) of the I-joist without web stiffeners and a minimum bearing length of 3 1/2 inches.
- Blocking panel and rim joist vertical load capacity.

PWI-70

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PWI-70



# FLOOR SPANS

# PWI-70

## 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-70	11 7/8"	23'-4"	21'-3"	20'-1"	18'-8"	25'-11"	23'-8"	22'-3"	19'-5"	23'-4"	21'-3"	20'-1"	18'-8"
	14"	26'-5"	24'-1"	22'-9"	21'-2"	29'-6"	26'-10"	24'-4"	19'-5"	26'-5"	24'-1"	22'-9"	19'-5"
	16"	29'-3"	26'-8"	25'-2"	23'-0"	32'-8"	29'-3"	24'-4"	19'-5"	29'-3"	26'-8"	24'-4"	19'-5"
	18"	32'-0"	29'-2"	27'-6"	23'-0"	35'-8"	29'-3"	24'-4"	19'-5"	32'-0"	29'-2"	24'-4"	19'-5"
	20"	34'-8"	31'-7"	28'-10"	23'-0"	38'-8"	29'-3"	24'-4"	19'-5"	34'-8"	29'-3"	24'-4"	19'-5"

## 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-70	11 7/8"	23'-4"	21'-3"	20'-1"	18'-8"	25'-11"	23'-8"	20'-3"	16'-2"	23'-4"	21'-3"	20'-1"	16'-2"
	14"	26'-5"	24'-1"	22'-9"	19'-2"	29'-6"	24'-4"	20'-3"	16'-2"	26'-5"	24'-1"	20'-3"	16'-2"
	16"	29'-3"	26'-8"	24'-0"	19'-2"	32'-6"	24'-4"	20'-3"	16'-2"	29'-3"	24'-4"	20'-3"	16'-2"
	18"	32'-0"	28'-10"	24'-0"	19'-2"	32'-6"	24'-4"	20'-3"	16'-2"	32'-0"	24'-4"	20'-3"	16'-2"
	20"	34'-8"	28'-10"	24'-0"	19'-2"	32'-6"	24'-4"	20'-3"	16'-2"	32'-6"	24'-4"	20'-3"	16'-2"

### 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 3/2" 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-70 — Simple Span Joist										PWI-70 — Multiple Span Joist										
	11 7/8"		14"		16"		18"		20"		11 7/8"		14"		16"		18"		20"		
	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	-	387	-	387	-	387	-	387	-	387	-	328	-	328	-	328	-	328	-	328	
7	-	331	-	331	-	331	-	331	-	331	-	281	-	281	-	281	-	281	-	281	
8	-	290	-	290	-	290	-	290	-	290	-	246	-	246	-	246	-	246	-	246	
9	-	258	-	258	-	258	-	258	-	258	-	219	-	219	-	219	-	219	-	219	
10	-	232	-	232	-	232	-	232	-	232	-	197	-	197	-	197	-	197	-	197	
11	-	211	-	211	-	211	-	211	-	211	-	179	-	179	-	179	-	179	-	179	
12	-	193	-	193	-	193	-	193	-	193	-	164	-	164	-	164	-	164	-	164	
13	-	178	-	178	-	178	-	178	-	178	-	151	-	151	-	151	-	151	-	151	
14	149	166	-	166	-	166	-	166	-	166	-	141	-	141	-	141	-	141	-	141	
15	124	155	-	155	-	155	-	155	-	155	-	131	-	131	-	131	-	131	-	131	
16	104	145	-	145	-	145	-	145	-	145	-	123	-	123	-	123	-	123	-	123	
17	88	136	125	136	-	136	-	136	-	136	-	116	-	116	-	116	-	116	-	116	
18	75	129	107	129	-	129	-	129	-	129	100	109	-	109	-	109	-	109	-	109	
19	64	122	92	122	-	122	-	122	-	122	87	104	-	104	-	104	-	104	-	104	
20	56	112	80	116	106	116	-	116	-	116	75	98	-	98	-	98	-	98	-	98	
21			70	110	93	110	-	110	-	110			94	94	-	94	-	94	-	94	
22			61	105	82	105	105	-	105	-	105			83	89	-	89	-	89	-	89
23			54	101	72	101	93	101	-	101			73	86	-	86	-	86	-	86	
24			48	96	64	97	82	97	-	97			65	82	-	82	-	82	-	82	
25					57	93	73	93	92	93				77	79	-	79	-	79	-	79
26					51	89	66	89	82	89				69	76	-	76	-	76	-	76
27					46	86	59	86	74	86				62	73	-	73	-	73	-	73
28					41	82	53	83	67	83				56	70	-	70	-	70	-	70
29							48	80	61	80						66	68	-	68	-	68
30							44	77	55	77						60	66	-	66	-	66
31							40	75	50	75						55	63	-	63	-	63
32									46	73								-	-	-	62
33									42	70										57	60
34									38	68										53	58
35									35	66										49	56

### 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 3/2" 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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