

INTRODUCING



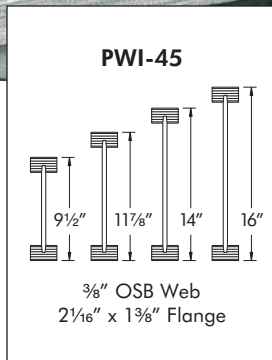
PWI-45 I-JOIST

WELCOME our newest PWI family member!



PWI-45

PWI-45



LVL FLANGE PWI-45 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-45	9 1/2"	193	4.94	3345	1120	980	2240	2400
	11 7/8"	330	6.18	4315	1420	980	2250	2400
	14"	486	7.28	5140	1710	980	2250	2400
	16"	665	8.32	5880	1970	980	2250	2400

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.)

w = uniform load (lb/in.)

l = design span (in.)

P = concentrated load (lb)

EI = bending stiffness of the joist (lb-in²)

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.

FLOOR SPANS

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

Joist Series	Joist Depth	Simple Span				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.
PWI-45	9½"	18'-0"	16'-5"	15'-6"	14'-6"	20'-0"	18'-3"	17'-3"	16'-1"
	11⅞"	21'-5"	19'-7"	18'-6"	17'-3"	23'-11"	21'-10"	20'-6"	17'-9"
	14"	24'-4"	22'-3"	21'-0"	19'-5"	27'-2"	24'-7"	22'-3"	17'-9"
	16"	27'-0"	24'-8"	23'-4"	19'-5"	30'-2"	26'-4"	22'-3"	17'-9"

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

Joist Series	Joist Depth	Simple Span				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.
PWI-45	9½"	18'-0"	16'-5"	15'-6"	14'-6"	20'-0"	18'-0"	16'-5"	14'-8"
	11⅞"	21'-5"	19'-7"	18'-6"	16'-2"	23'-9"	20'-6"	18'-6"	14'-9"
	14"	24'-4"	22'-3"	20'-3"	16'-2"	25'-11"	22'-3"	18'-6"	14'-9"
	16"	27'-0"	24'-1"	20'-3"	16'-2"	27'-9"	22'-3"	18'-6"	14'-9"

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 sheathing that is glued and nailed to the joists (23/32" panels for joists at 24" o.c. and 19/32" panels for joists at 19.2" o.c. and less). Reduce spans by 12" if sheathing is nailed only.
- 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. 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 LOADS FOR PWI JOISTS (PLF)

Joist Span (ft)	Simple Span								Multiple Span							
	PWI-45								PWI-45							
	9½"		11⅞"		14"		16"		9½"		11⅞"		14"		16"	
	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	-	327	-	327	-	327	-	327	-	299	-	300	-	300	-	300
7	-	280	-	280	-	280	-	280	-	256	-	257	-	257	-	257
8	-	245	-	245	-	245	-	245	-	224	-	225	-	225	-	225
9	-	218	-	218	-	218	-	218	-	199	-	200	-	200	-	200
10	177	196	-	196	-	196	-	196	-	179	-	180	-	180	-	180
11	137	178	-	178	-	178	-	178	-	163	-	164	-	164	-	164
12	108	163	-	163	-	163	-	163	144	149	-	150	-	150	-	150
13	87	151	143	151	-	151	-	151	116	138	-	138	-	138	-	138
14	71	137	117	140	-	140	-	140	95	128	-	129	-	129	-	129
15	58	116	96	131	-	131	-	131	79	119	-	120	-	120	-	120
16	48	97	81	123	116	123	-	123	66	105	108	113	-	113	-	113
17			68	115	98	115	-	115			92	106	-	106	-	106
18			58	107	83	109	-	109			78	100	-	100	-	100
19			50	96	72	103	96	103			67	95	-	95	-	95
20			43	86	62	98	83	98			58	86	84	90	-	90
21					54	93	73	93					73	86	-	86
22					47	85	64	89					64	82	-	82
23					42	78	56	85					57	78	76	78
24					37	71	50	82					50	71	68	75
25							44	75							61	72
26							40	70							54	69
27							35	65							49	65
28							32	60							44	60

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 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.