

# LVL FLANGE PWI JOIST REFERENCE DESIGN VALUES

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

Joist Series	Joist Depth	PWI Joist	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 20	9½"	PWI 2095	145	4.94	2520	1120	915	1990	2400
	11⅞"	PWI 2011	253	6.18	3265	1420	915	1990	2400
	14"	PWI 2014	373	7.28	3890	1710	915	1990	2400
PWI 30	9½"	PWI 3095	161	4.94	3225	1120	945	1905	2400
	11⅞"	PWI 3011	280	6.18	4170	1420	945	1905	2400
PWI 40	9½"	PWI 4095	193	4.94	2735	1120	1080	2160	2400
	11⅞"	PWI 4011	330	6.18	3545	1420	1200	2500	2400
	14"	PWI 4014	482	7.28	4270	1710	1200	2500	2400
	16"	PWI 4016	657	8.32	4950	1970	1200	2500	2400
PWI 50	9½"	PWI 5095	186	4.94	3800	1120	1015	2040	2400
	11⅞"	PWI 5011	322	6.18	4915	1420	1015	2040	2400
	14"	PWI 5014	480	7.28	5860	1710	1015	2040	2400
	16"	PWI 5016	663	8.32	6715	1970	1015	2040	2400
PWI 60	9½"	PWI 6095	231	4.94	3780	1120	1080	2160	2400
	11⅞"	PWI 6011	396	6.18	4900	1420	1200	2500	2400
	14"	PWI 6014	584	7.28	5895	1710	1200	2500	2400
	16"	PWI 6016	799	8.32	6835	1970	1200	2500	2400
PWI 70	11⅞"	PWI 7011	440	6.19	6730	1420	1160	2335	2400
	14"	PWI 7014	644	7.33	8030	1710	1160	2335	2400
	16"	PWI 7016	873	8.42	9200	1970	1160	2335	2400
	18"	PWI 7018	1141	9.53	10355	2239	1160	2335	1850
	20"	PWI 7020	1447	10.63	11495	2506	1160	2335	1850
PWI 77	9½"	PWI 7795	261	5.57	5155	1430	1285	2695	2850
	11⅞"	PWI 7711	442	6.92	6675	1925	1285	2695	2850
	14"	PWI 7714	648	8.17	7960	2125	1285	2695	2850
	16"	PWI 7716	881	9.35	9120	2330	1285	2695	2850
	18"	PWI 7718	1152	10.55	10265	2535	1285	2695	2300
	20"	PWI 7720	1463	11.76	11395	2740	1285	2695	2300
	22"	PWI 7722	1815	12.97	12520	2935	2390 <sup>(9)</sup>	4125 <sup>(9)</sup>	1700
	24"	PWI 7724	2209	14.18	13630	3060	2390 <sup>(9)</sup>	4125 <sup>(9)</sup>	1700
PWI 90	9½"	PWI 9095	392	5.57	7915	1430	1400	2860	2850
	11⅞"	PWI 9011	661	6.92	10255	1925	1400	3355	2850
	14"	PWI 9014	965	8.17	12235	2125	1400	3355	2850
	16"	PWI 9016	1306	9.35	14020	2330	1400	3355	2850
	18"	PWI 9018	1703	10.55	15780	2535	1400	3355	2300
	20"	PWI 9020	2155	11.76	17520	2740	1400	3355	2300
	22"	PWI 9022	2664	12.97	19245	2935	2400 <sup>(9)</sup>	4605 <sup>(9)</sup>	1700
	24"	PWI 9024	3232	14.18	20955	3060	2400 <sup>(9)</sup>	4605 <sup>(9)</sup>	1700

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:

$\delta$  = calculated deflection (in.)

w = uniform load (lb/in.)

L = design span (in.)

P = concentrated load (lb)

EI = bending stiffness of the joist (lb-in<sup>2</sup>)

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 1¼ inches.

7. Intermediate reaction capacity (IR) of the I-joist without web stiffeners and a minimum bearing length of 3½ inches.

8. Blocking panel and rim joist vertical load capacity.

9. Web stiffeners required. See *Web Stiffener Requirements* on page 81.