

LVL FLANGE UTL JOIST REFERENCE DESIGN VALUES

REFERENCE DESIGN VALUES⁽¹⁾

Joist Series	Joist Depth	UTL Joist	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)
UTL 20	9½"	UTL 2095	145	4.94	2520	1120	915	1990	2400
	11⅞"	UTL 2011	253	6.18	3265	1420	915	1990	2400
	14"	UTL 2014	373	7.28	3890	1710	915	1990	2400
UTL 30	9½"	UTL 3095	161	4.94	3225	1120	945	1905	2400
	11⅞"	UTL 3011	280	6.18	4170	1420	945	1905	2400
	14"	UTL 3014	482	7.28	4270	1710	1200	2500	2400
UTL 40	9½"	UTL 4095	193	4.94	2735	1120	1080	2160	2400
	11⅞"	UTL 4011	330	6.18	3545	1420	1200	2500	2400
	14"	UTL 4014	482	7.28	4270	1710	1200	2500	2400
	16"	UTL 4016	657	8.32	4950	1970	1200	2500	2400
UTL 45	9½"	UTL 4595	193	4.94	3345	1120	980	2240	2400
	11⅞"	UTL 4511	330	6.18	4315	1420	980	2250	2400
	14"	UTL 4514	486	7.28	5140	1710	980	2250	2400
	16"	UTL 4516	665	8.32	5880	1970	980	2250	2400
UTL 50	9½"	UTL 5095	186	4.94	3800	1120	1015	2040	2400
	11⅞"	UTL 5011	322	6.18	4915	1420	1015	2040	2400
	14"	UTL 5014	480	7.28	5860	1710	1015	2040	2400
	16"	UTL 5016	663	8.32	6715	1970	1015	2040	2400
UTL 60	9½"	UTL 6095	231	4.94	3780	1120	1080	2160	2400
	11⅞"	UTL 6011	396	6.18	4900	1420	1200	2500	2400
	14"	UTL 6014	584	7.28	5895	1710	1200	2500	2400
	16"	UTL 6016	799	8.32	6835	1970	1200	2500	2400
UTL 70	11⅞"	UTL 7011	440	6.19	6730	1420	1160	2335	2400
	14"	UTL 7014	644	7.33	8030	1710	1160	2335	2400
	16"	UTL 7016	873	8.42	9200	1970	1160	2335	2400
	18"	UTL 7018	1141	9.53	10355	2239	1160	2335	1850
	20"	UTL 7020	1447	10.63	11495	2506	1160	2335	1850
UTL 77	9½"	UTL 7795	261	5.57	5155	1430	1285	2695	2850
	11⅞"	UTL 7711	442	6.92	6675	1925	1285	2695	2850
	14"	UTL 7714	648	8.17	7960	2125	1285	2695	2850
	16"	UTL 7716	881	9.35	9120	2330	1285	2695	2850
	18"	UTL 7718	1152	10.55	10265	2535	1285	2695	2300
	20"	UTL 7720	1463	11.76	11395	2740	1285	2695	2300
	22"	UTL 7722	1815	12.97	12520	2935	2390 ⁽⁹⁾	4125 ⁽⁹⁾	1700
	24"	UTL 7724	2209	14.18	13630	3060	2390 ⁽⁹⁾	4125 ⁽⁹⁾	1700
UTL 90	9½"	UTL 9095	392	5.57	7915	1430	1400	2860	2850
	11⅞"	UTL 9011	661	6.92	10255	1925	1400	3355	2850
	14"	UTL 9014	965	8.17	12235	2125	1400	3355	2850
	16"	UTL 9016	1306	9.35	14020	2330	1400	3355	2850
	18"	UTL 9018	1703	10.55	15780	2535	1400	3355	2300
	20"	UTL 9020	2155	11.76	17520	2740	1400	3355	2300
	22"	UTL 9022	2664	12.97	19245	2935	2400 ⁽⁹⁾	4605 ⁽⁹⁾	1700
	24"	UTL 9024	3232	14.18	20955	3060	2400 ⁽⁹⁾	4605 ⁽⁹⁾	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:

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 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 20.