WJ24 Truss - Allowable Uniform Load Table (PLF) / Parallel Chord

Web Joist NW Corp.
Chehalis, WA ESR-2504

Clear Span (Ft.)	Depth 14" 100% TL ℓ/600 Δ	14" 115% TL ℓ/600 Δ	16" 100% TL ℓ/600 Δ	16" 115% TL ℓ/600 Δ	18" 100% TL ℓ/600 Δ	18" 115% TL ℓ/600 Δ	20" 100% TL ℓ/600 Δ	20" 115% TL ℓ/600 Δ	22" 100% TL ℓ/600 Δ	22" 115% TL ℓ/600 Δ	24" 100% TL ℓ/600 Δ	24" 115% TL ℓ/600 Δ	26" 100% TL ℓ/600 Δ	26" 115% TL ℓ/600 Δ	28" 100% TL ℓ/600 Δ	28" 115% TL ℓ/600 Δ	30" 100% TL ℓ/600 Δ	30" 115% TL ℓ/600 Δ	32" 100% TL ℓ/600 Δ	32" 115% TL ℓ/600 Δ	34" 100% TL ℓ/600 Δ	34" 115% TL ℓ/600 Δ	36" 100% TL ℓ/600 Δ	36" 115% TL ℓ/600 Δ	38" 100% TL ℓ/600 Δ	38" 115% TL ℓ/600 Δ	40" 100% TL ℓ/600 Δ	40" 115% TL ℓ/600 Δ	Clear Span (Ft.)
14	285	328	331	380	376	388	388	388	388	388	377	377	363	363	348	348	334	334	320	320	307	307	295	295	283	283	272	272	14
	258	356	347	388	449	388	565	388	693	388	835	377	990	363	1158	348	1339	334	1534	320	1741	307	1962	295	2196	283	2443	272	
16	219	251	254	292	289	332	324	342	342	342	342	342	342	342	338	338	325	325	313	313	301	301	289	289	278	278	268	268	16
	173	273	233	317	302	342	380	342	466	342	561	342	666	342	779	338	900	325	1031	313	1171	301	1319	289	1477	278	1643	268	
18	173	199	201	231	228	263	256	294	284	306	306	306	306	306	306	306	306	306	306	306	294	294	284	284	273	273	263	263	18
	122	216	164	251	213	285	267	306	328	306	395	306	469	306	548	306	634	306	726	306	825	294	929	284	1040	273	1157	263	
20	140	161	163	187	185	213	208	239	230	265	252	277	275	277	277	277	277	277	277	277	277	277	277	277	269	269	259	259	20
	89	175	120	203	155	231	195	260	240	277	289	277	342	277	401	277	463	277	531	277	603	277	679	277	760	269	846	259	
22	116	133	134	155	153	176	172	197	190	219	209	240	227	253	246	253	253	253	253	253	253	253	253	253	253	253	253	253	22
	67	145	90	168	117	191	147	215	180	238	217	253	258	253	301	253	349	253	399	253	454	253	511	253	572	253	636	253	
24	97	112	113	130	129	148	144	166	160	184	176	202	191	220	207	232	222	232	232	232	232	232	232	232	232	232	232	232	24
	52	122	69	141	90	161	113	180	139	200	168	220	199	232	232	232	269	232	308	232	350	232	394	232	441	232	491	232	
26	83	95	96	111	110	126	123	141	136	157	150	172	163	187	176	203	190	215	203	215	215	215	215	215	215	215	215	215	26
	40	104	55	120	71	137	89	154	109	170	132	187	156	204	183	215	212	215	243	215	275	215	310	215	347	215	387	215	
28	71	82	83	95	94	109	106	122	117	135	129	148	140	162	152	175	164	188	175	200	187	200	198	200	200	200	200	200	28
		89	44	104	57	118	71	133	88	147	106	161	125	176	147	190	170	200	194	200	221	200	249	200	278	200	310	200	
30	62	72	72	83	82	95	92	106	102	118	112	129	122	141	132	152	142	164	152	175	163	187	173	187	183	187	187	187	30
		78		90	46	103	58	115	71	128	86	141	102	153	119	166	138	178	158	187	180	187	202	187	227	187	252	187	
32	55	63	63	73	72	83	81	93	90	103	99	114	108	124	116	134	125	144	134	154	143	164	152	174	160	176	169	176	32
		68		79		90	48	101	59	113	71	124	84	135	98	146	114	157	130	168	148	176	167	176	187	176	208	176	
34		56	56	65	64	74	72	83	80	92	87	101	95	110	103	119	111	128	119	137	127	146	134	155	142	164	150	166	34
		61		70		80	40	90	49	100	59	109	70	119	82	129	95	139	109	149	123	158	139	166	156	166	173	166	
36		50		58	57	66	64	74	71	82	78	90	85	98	92	106	99	114	106	122	113	130	120	138	127	146	134	154	36
		51		63		71		80	41	89	50	98	59	106	69	115	80	124	91	132	104	141	117	150	131	157	146	157	
38		43		52		59	57	66	64	73	70	81	76	88	82	95	89	102	95	109	101	117	108	124	114	131	120	138	38
		43		56		64		72		80	42	88	50	95	59	103	68	111	78	119	88	127	100	135	112	142	124	149	
40				47		53		60	57	66	63	73	69	79	74	86	80	92	86	99	91	105	97	112	103	118	108	125	40
		37		50		58		65		72		79	43	86	50	93	58	100	67	107	76	114	85	121	96	128	106	136	
42				42		48		54		60	57	66	62	72	67	78	73	84	78	89	83	95	88	101	93	107	98	113	42
				43		52		59		65		72		78	43	84	50	91	58	97	65	104	74	110	83	117	92	123	
44						44		49		55		60	57	65	61	71	66	76	71	81	75	87	80	92	85	98	89	103	44
				38		48		54		59		65		71		77	44	83	50	89	57	94	64	100	72	106	80	112	
46						40		45		50		55		60	56	65	60	70	65	75	69	79	73	84	78	89	82	94	46
						43		49		54		60		65		70		76	44	81	50	86	56	92	63	97	70	102	
48								41		46		50		55		59	55	64	59	68	63	73	67	77	71	82	75	86	48
						38		45		50		55		60		65		69		74	44	79	49	84	55	89	62	94	
50										42		46		51		55		59	55	63	58	67	62	71	66	76	69	80	50
								41		46		50		55		59		64		69		73	44	78	49	82	54	87	
52												43		47		51		54		58		62	57	66	61	70	64	74	52
								37		42		47		51		55		59		63		68		72	43	76	48	80	
54												40		43		47		50		54		58		61	56	65	59	68	54
										39		43		47		51		55		59		63		66		70	43	74	
56														40		44		47		50		53		57		60	55	63	56
										36		40		44		47		51		55		58		62		65		69	
58																41		44		47		50		53		56		59	58
												37		41		44		47		51		54		58		61		64	
60																		41		44		47		49		52		55	60
												35		38		41		44		47		51		54		57		60	

Allowable Properties @ 100% per ESR-2504

Prop.	Depth (D) (In.) 14	16	18	20	22	24	26	28	30	32	34	36	38	40	Prop.
R	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	2,900.0	R
T	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	7,106.0	T
EI	8.2425E+08	1.1078E+09	1.4333E+09	1.8008E+09	2.2103E+09	2.6618E+09	3.1553E+09	3.6908E+09	4.2683E+09	4.8878E+09	5.5493E+09	6.2528E+09	6.9983E+09	7.7858E+09	EI
d	12.5000	14.5000	16.5000	18.5000	20.5000	22.5000	24.5000	26.5000	28.5000	30.5000	32.5000	34.5000	36.5000	38.5000	d
W	3.5	3.6	3.6	3.7	3.7	3.7	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	W

E (psi) = 2.00E+06 $I\ (In.^4)=I_1d^2+I_2$ I_1 = 2.625 I_2 = 1.969 d = Pin to Pin Depth (In.) = D - 1.500

R = Reaction (Lbs.) T = Tension (Lbs.) EI = MOE x I (Lbs.-In.^{2}) W = Approx. Truss Weight (plf) xx 7% Repetive use increase allowed for Trusses at 24" or less o/c

TERMS:

Clear Span is horizontal distance from indide face of bearing surface to inside face of bearing surface.
Depth is out to out depth.

ℓ/600 Δ column is PLF Load that will cause ℓ/600 Deflection.

For other deflection limits.

ℓ/180 Δ Load = ℓ/600 Δ value x 3.3333
ℓ/240 Δ Load = ℓ/600 Δ value x 2.5000
ℓ/360 Δ Load = ℓ/600 Δ value x 1.6667
ℓ/480 Δ Load = ℓ/600 Δ value x 1.2500

LOADS (PSF):

	Stress Level
D = Dead Load	
L = Live Load Floor* - - - - - - -	100%
S = Snow Load - - - - - - - - - - -	115%
Lr = Live Load Roof(≤20 PSF)	125%

P = Partition Load (Include with L)
* or Roof Live Load>20 PSF
Total Load (TL) = D + (L or S or Lr)
TL (PLF) = TL (PSF) x o/c"/12
o/c" = On center spacing (In.)

NOTES:

1. Total loads shown in table are maximum possible. Trusses will be custom designed to loads specified for project (not maximum shown in this table).
2. Deflection limits may control maximum load. Web Joist recommends the following deflection limits:
ℓ = Span in inches
ΔL = Deflection Load (L or S or Lr)
(exclude P in deflection limits)
Residential Floor:
ℓ/240 @ TL and/or ℓ/360 @ ΔL (min.) or
ℓ/360 @ TL and/or ℓ/480 @ ΔL (preferred)
Non-Residential Floor:
ℓ/360 @ TL and/or ℓ/480 @ ΔL (min.) or
ℓ/480 @ TL and/or ℓ/600 @ ΔL (preferred)
Roof:
ℓ/180 @ TL and/or ℓ/240 @ ΔL
With plaster or gyp ceiling use ℓ/360 @ ΔL
3. Allowable Total Load (TL) may be reduced at top chord bearings if bearing pin to end of chord is less than 3.50". See Table 6 of ESR-2504 for allowable reaction with reduced pin to end length.
4. The load table is limited to simple-span and uniform load. The table may also be used for bottom chord bearing and/or for cantilevers at both or either ends which do not exceed 1/3 of the main span length. For other conditions, inquire through your Web Joist representive.
5. Straight line interpretation may be made between depths and spans indicated.