WJ21 Truss - Allowable Uniform Load Table (PLF) / Parallel Chord

Web Joist NW Corp.
Chehalis, WA ESR-2504

Clear Span (Ft.)	Depth 14"		16"		18"		20"		22"		24"		26"		28"		30"		32"		34"		36"		38"		40"		Clear Span (Ft.)
	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	100% TL ℓ/600 Δ	115% TL 125% TL	
14	233	268	270	311	308	354	345	362	362	362	362	362	362	362	348	348	334	334	320	320	307	307	295	295	283	283	272	272	14
	232	291	312	338	404	362	508	362	624	362	751	362	891	362	1042	348	1205	334	1380	320	1567	307	1766	295	1976	283	2199	272	
16	179	206	207	239	236	272	265	304	293	319	319	319	319	319	319	319	319	319	313	313	301	301	289	289	278	278	268	268	16
	156	223	210	259	272	295	342	319	419	319	505	319	599	319	701	319	810	319	928	313	1054	301	1187	289	1329	278	1479	268	
18	141	163	164	189	187	215	209	241	232	267	255	285	277	285	285	285	285	285	285	285	285	285	284	284	273	273	263	263	18
	110	177	148	205	191	233	241	262	295	285	356	285	422	285	493	285	571	285	654	285	742	285	836	284	936	273	1042	263	
20	114	132	133	153	151	174	170	195	188	216	206	238	225	258	243	258	258	258	258	258	258	258	258	258	258	258	258	258	20
	80	143	108	166	140	189	176	212	216	235	260	258	308	258	360	258	417	258	478	258	542	258	611	258	684	258	761	258	
22	95	109	110	126	125	144	140	161	156	179	171	196	186	214	201	231	216	235	232	235	235	235	235	235	235	235	235	235	22
	60	118	81	137	105	156	132	176	162	195	195	214	232	233	271	235	314	235	359	235	408	235	460	235	515	235	573	235	
24	80	92	92	106	105	121	118	136	131	150	144	165	156	180	169	195	182	209	195	216	208	216	216	216	216	216	216	216	24
	46	100	62	116	81	132	102	148	125	164	151	180	179	196	209	212	242	216	277	216	315	216	355	216	397	216	442	216	
26	68	78	79	91	90	103	100	116	111	128	122	141	133	153	144	166	155	178	166	191	177	200	188	200	199	200	200	200	26
		85	49	98	64	112	80	126	98	139	119	153	141	167	165	180	190	194	218	200	248	200	279	200	313	200	348	200	
28	58	67	68	78	77	89	87	100	96	111	105	121	115	132	124	143	134	154	143	165	153	175	162	186	171	186	181	186	28
		73		85	51	97	64	108	79	120	95	132	113	144	132	155	153	167	175	179	199	186	224	186	251	186	279	186	
30		58	59	68	67	77	75	87	84	96	92	106	100	115	108	125	116	134	125	143	133	153	141	162	149	172	158	174	30
		64		74	41	84	52	94	64	105	77	115	92	125	107	135	124	146	142	156	162	166	182	174	204	174	227	174	
32		51		60	59	68	66	76	73	85	81	93	88	101	95	109	102	118	110	126	117	134	124	143	131	151	138	159	32
		56		65		74	43	83	53	92	64	101	75	110	88	119	102	128	117	137	133	146	150	155	168	164	187	164	
34		45		53		60	59	68	65	75	71	82	78	90	84	97	91	104	97	112	103	119	110	126	116	134	123	141	34
		49		57		65		73	44	81	53	89	63	97	74	105	85	113	98	121	111	129	125	137	140	145	156	153	
36		41		47		54		60	58	67	64	73	69	80	75	86	81	93	87	100	92	106	98	113	104	119	109	126	36
		44		51		58		65		73	45	80	53	87	62	94	72	101	82	108	93	115	105	123	118	130	131	137	
38				42		48		54		60	57	66	62	72	67	78	73	83	78	89	83	95	88	101	93	107	98	113	38
		39		46		52		59		65		72	45	78	53	84	61	91	70	97	79	104	90	110	100	116	112	123	
40						43		49		54		59	56	65	61	70	65	75	70	81	75	86	79	91	84	97	89	102	40
				41		47		53		59		65		70	45	76	52	82	60	88	68	93	77	99	86	105	96	111	
42								44		49		54		59	55	63	59	68	63	73	68	78	72	83	76	88	80	92	42
				38		43		48		53		59		64		69	45	74	52	79	59	85	66	90	74	95	83	100	
44								40		45		49		53		58		62	58	67	62	71	65	75	69	80	73	84	44
						39		44		49		53		58		63		68	45	72	51	77	58	82	65	87	72	92	
46										41		45		49		53		57		61	56	65	60	69	63	73	67	77	46
						36		40		44		49		53		57		62		66	45	71	50	75	56	79	63	84	
48												41		45		48		52		56		60	55	63	58	67	61	71	48
								37		41		45		49		53		57		61		65	44	69	50	73	55	77	
50														41		45		48		51		55		58		62	57	65	50
										37		41		45		49		52		56		60		63	44	67	49	71	
52																41		44		48		51		54		57		60	52
										35		38		41		45		48		52		55		59		62	43	65	
54																		41		44		47		50		53		56	54
												35		38		42		45		48		51		54		57		61	
56																				41		44		46		49		52	56
														36		39		42		45		48		50		53		56	
58																						41		43		46		48	58
																36		39		42		44		47		50		53	
60																								40		43		45	60
																		36		39		41		44		46		49	

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	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	2,700.0	R
T	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	5,814.0	T
EI	7.4183E+08	9.9698E+08	1.2899E+09	1.6207E+09	1.9892E+09	2.3956E+09	2.8397E+09	3.3217E+09	3.8414E+09	4.3990E+09	4.9943E+09	5.6275E+09	6.2984E+09	7.0072E+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	3.4	3.4	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.9	3.9	W

E (psi) = 1.80E+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.