

TOP NOTCH PURLIN SYSTEM LOAD SPAN TABLES

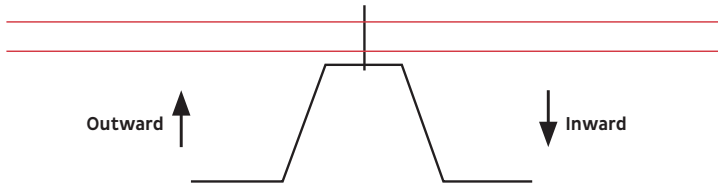
Uniformly loaded bending capacities (kN/m) are given for the Top Notch Purlin System for spans between 1.25m and 10.0m in the following configurations -

Inward Ultimate - Load pushing inward on the Top Flange

Outward Ultimate - Load pulling outward on the Top Flange

Ws Serviceability - Load at which midspan deflection equates to span/150.

As deflection is proportional to loading, Ws loads may be factored by the deflection ratio for any deflection within the limit of the linear load capacities.

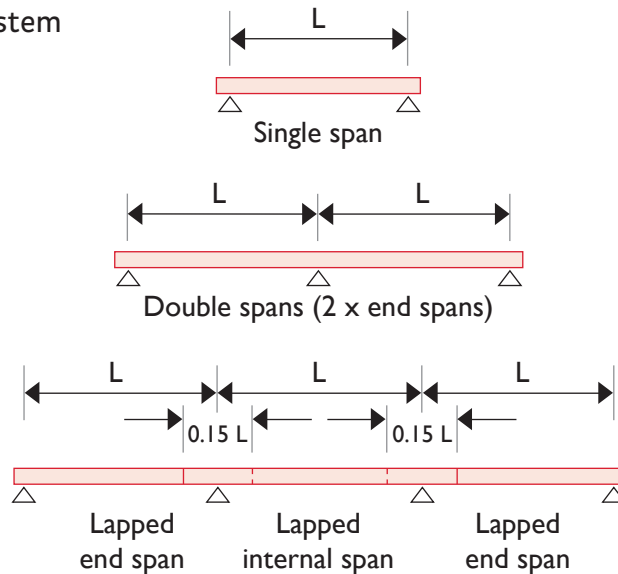


The following notes apply to the load tables in this section -

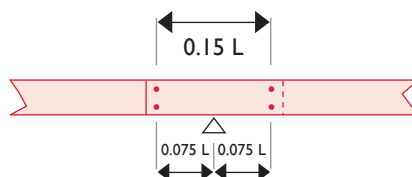
1. It is assumed that the top flange of the Top Notch purlin is continuously restrained by screw-fastened roof sheeting. If not, specific design to AS/NS 4600 is required.
2. Use of lapped end span tables with corresponding lapped internal span tables assumes that the lapped span is within plus 5% or minus 25% of the lapped internal spans, otherwise specific design to AS/NZS 4600 is required.
3. Outward loads are based on both section capability and the capability of the fastener connections, refer Connection Design in Section 2.4.2.
4. Shaded areas of the table relate to spans which will not support a point load of 1.4kN (refer AS/NZS 1170). This assumes no load sharing between purlins.
5. No member rotation has been allowed for at fixed ends.
6. Linear interpolation is permitted for Loads between intermediate Top Notch purlin spans.

Typical Top Notch Purlin System Span Configurations

L = Span length



All lap lengths are to be a minimum of 0.15 of the maximum span measured from fixing points each end of the lap, positioned equally each side of the portal rafter. Refer CAD Details on-line (www.diamondstructural.co.nz/products/top-notch-purlins).



TOP NOTCH PURLIN SYSTEM LOAD SPAN TABLES – SINGLE SPAN

Uniformly Loaded Bending Capacities (kN/m) $\phi_b W_{bx}$

Span (m)	60 x 0.75		60 x 0.95		100 x 0.75		100 x 0.95		120 x 0.75		120 x 0.95		150 x 0.95		150 x 1.15				
	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	
1.00																			
1.25	5.90	4.00	3.59																
1.50	4.10	2.78	2.08	5.48	3.76	2.75													
1.75	3.01	2.04	1.31	4.03	2.76	1.73													
2.00	2.30	1.56	0.88	3.08	2.11	1.16	4.54	3.22	3.90										
2.25	1.82	1.23	0.62	2.44	1.67	0.81	3.59	2.55	2.74	5.37	3.56	3.74							
2.50	1.47	1.00	0.45	1.97	1.35	0.59	2.91	2.06	2.00	4.35	2.88	2.73	3.52	2.46	2.95	5.24	3.68	4.20	
2.75	1.22	0.83	0.34	1.63	1.12	0.45	2.40	1.70	1.50	3.60	2.38	2.05	2.91	2.03	2.22	4.33	3.07	3.15	
3.00				1.37	0.94	0.34	2.02	1.43	1.16	3.02	2.00	1.58	2.45	1.71	1.71	3.64	2.58	2.43	
3.25							1.72	1.22	0.91	2.57	1.70	1.24	2.08	1.45	1.34	3.10	2.19	1.91	
3.50							1.48	1.05	0.73	2.22	1.47	0.99	1.80	1.25	1.08	2.68	1.89	1.53	
3.75							1.29	0.92	0.59	1.93	1.28	0.81	1.57	1.09	0.87	2.33	1.65	1.24	
4.00							1.14	0.81	0.49	1.70	1.13	0.67	1.38	0.96	0.72	2.05	1.45	1.02	
4.25							1.01	0.71	0.41	1.51	1.00	0.56	1.22	0.85	0.60	1.81	1.28	0.85	
4.50							0.90	0.64	0.34	1.34	0.89	0.47	1.09	0.76	0.51	1.62	1.14	0.72	
4.75										1.21	0.80	0.40	0.98	0.68	0.43	1.45	1.03	0.61	
5.00										1.09	0.72	0.34	0.88	0.61	0.37	1.31	0.93	0.52	
5.25													0.80	0.56	0.32	1.19	0.84	0.45	
5.50													1.08	0.77	0.39	1.36	0.94	0.63	
5.75													0.99	0.70	0.34	1.25	0.86	0.56	
6.00													0.91	0.64	0.30	1.14	0.79	0.49	
6.25																1.05	0.73	0.43	
6.50																0.97	0.67	0.38	
6.75																0.90	0.63	0.34	
7.00																0.84	0.58	0.31	
7.25																1.16	0.83	0.41	
7.50																1.01	0.72	0.33	
7.75																0.95	0.67	0.30	
8.00																			
8.25																			
8.50																			
8.75																			
9.00																			
9.25																			
9.50																			
9.75																			
10.00																			

1. Inward: Load pushing inward on the top flange.
2. Outward: Load pulling outward on the top flange.
3. Ws: Load at a deflection of span/150.
4. Shaded areas relate to spans which will not support a point load of 1.4kN (refer AS/NZS 1170).

TOP NOTCH PURLIN SYSTEM LOAD SPAN TABLES – DOUBLE SPAN

Uniformly Loaded Bending Capacities (kN/m) $\phi_b W_{bx}$

Span (m)	60 x 0.75		60 x 0.95		100 x 0.75		100 x 0.95		120 x 0.75		120 x 0.95		150 x 0.95		150 x 1.15				
	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	
1.00																			
1.25	5.90	3.73	7.88																
1.50	4.10	3.11	4.56	5.48	3.55	5.95													
1.75	3.01	2.66	2.87	4.03	3.04	3.75													
2.00	2.30	2.30	1.92	3.08	2.66	2.51													
2.25	1.82	1.82	1.35	2.44	2.37	1.76	5.09	2.99	5.92										
2.50	1.47	1.47	0.98	1.97	1.97	1.29	4.12	2.69	4.32	5.42	4.03	5.80	4.19	2.94	6.55				
2.75	1.22	1.22	0.74	1.63	1.63	0.97	3.41	2.40	3.24	4.48	3.60	4.35	3.81	2.68	4.92	5.82	4.01	6.73	
3.00	1.02	1.02	0.57	1.37	1.37	0.74	2.85	2.02	2.50	3.77	3.02	3.35	3.41	2.45	3.79	4.89	3.64	5.18	8.64
3.25	0.87	0.87	0.45	1.17	1.17	0.59	2.38	1.72	1.97	3.21	2.57	2.64	2.91	2.08	2.98	4.17	3.10	4.08	6.79
3.50	0.75	0.75	0.36	1.01	1.01	0.47	2.01	1.48	1.57	2.77	2.22	2.11	2.49	1.80	2.39	3.60	2.68	3.26	5.44
3.75				0.88	0.88	0.38	1.71	1.29	1.28	2.39	1.93	1.72	2.13	1.57	1.94	3.13	2.33	2.65	4.42
4.00				0.77	0.77	0.31	1.46	1.14	1.05	2.05	1.70	1.42	1.84	1.38	1.60	2.75	2.05	2.19	3.64
4.25							1.26	1.01	0.88	1.76	1.51	1.18	1.59	1.22	1.33	2.41	1.81	1.82	2.28
4.50							1.09	0.90	0.74	1.52	1.34	0.99	1.39	1.09	1.12	2.10	1.62	1.54	2.03
4.75							0.94	0.81	0.63	1.32	1.21	0.85	1.22	0.98	0.95	1.84	1.45	1.31	1.82
5.00							0.82	0.73	0.54	1.15	1.09	0.72	1.07	0.88	0.82	1.62	1.31	1.12	1.65
5.25							0.72	0.66	0.47	1.00	0.99	0.63	0.94	0.80	0.71	1.43	1.19	0.97	1.49
5.50							0.64	0.60	0.41	0.90	0.90	0.54	0.83	0.73	0.62	1.26	1.08	0.84	1.42
5.75							0.58	0.55	0.35	0.82	0.82	0.48	0.74	0.67	0.54	1.12	0.99	0.74	1.29
6.00							0.54	0.50	0.31	0.76	0.76	0.42	0.65	0.61	0.47	0.99	0.91	0.65	1.19
6.25										0.70	0.70	0.37	0.59	0.56	0.42	0.88	0.84	0.57	1.09
6.50										0.64	0.64	0.33	0.55	0.52	0.37	0.78	0.78	0.51	1.01
6.75												0.51	0.48	0.33	0.73	0.72	0.45	0.94	0.90
7.00												0.47	0.45	0.30	0.67	0.67	0.41	0.87	0.84
7.25												0.63	0.62	0.37	0.81	0.81	0.37	0.81	0.78
7.50												0.59	0.58	0.33	0.76	0.76	0.33	0.76	0.73
7.75												0.55	0.55	0.30	0.71	0.71	0.30	0.71	0.69
8.00															0.67	0.67	0.26	0.67	0.64
8.25															0.63	0.63	0.22	0.63	0.60
8.50															0.59	0.59	0.18	0.59	0.57
8.75															0.56	0.56	0.14	0.56	0.54
9.00															0.53	0.53	0.10	0.53	0.51
9.25																			
9.50																			
9.75																			
10.00																			

1. Inward: Load pushing inward on the top flange.
2. Outward: Load pulling outward on the top flange.
3. Ws: Load at a deflection of span/150.
4. Shaded areas relate to spans which will not support a point load of 1.4kN (refer AS/NZS 1170).

TOP NOTCH PURLIN SYSTEM LOAD SPAN TABLES – LAPPED END SPAN

Uniformly Loaded Bending Capacities (kN/m) $\phi_b W_{bx}$

Span (m)	60 x 0.75		60 x 0.95		100 x 0.75		100 x 0.95		120 x 0.75		120 x 0.95		150 x 0.95		150 x 1.15				
	Inward	Outward	W _s	Inward	Outward	W _s	Inward	Outward	W _s	Inward	Outward	W _s	Inward	Outward	W _s	Inward	Outward	W _s	
1.00																			
1.25																			
1.50	6.00	3.55	4.70																
1.75	4.34	3.04	2.96	5.88	3.04	3.87													
2.00	3.19	2.54	1.98	4.33	2.66	2.59													
2.25	2.40	2.00	1.39	3.26	2.37	1.82	5.84	4.48	5.50										
2.50	1.84	1.62	1.02	2.51	2.13	1.33	4.73	4.26	4.45										
2.75	1.43	1.34	0.76	1.95	1.82	1.00	3.91	3.67	3.34	5.84	4.49	4.01	4.42						
3.00	1.13	1.13	0.59	1.53	1.53	0.77	3.28	3.28	2.58	4.91	3.36	3.46	3.97	3.97	3.91	5.92	4.27	5.34	
3.25	0.96	0.96	0.46	1.30	1.30	0.60	2.80	2.80	2.03	4.18	3.10	2.72	3.39	3.39	3.07	5.04	3.40	4.20	
3.50	0.83	0.83	0.37	1.12	1.12	0.48	2.41	2.41	1.62	3.61	2.88	2.18	2.92	2.92	2.46	4.35	3.15	3.37	5.23
3.75				0.98	0.98	0.39	2.10	2.10	1.32	3.14	2.69	1.77	2.54	2.54	2.00	3.79	2.94	2.74	4.76
4.00				0.86	0.86	0.32	1.85	1.85	1.09	2.76	2.52	1.46	2.24	2.24	1.65	3.33	2.76	2.25	4.18
4.25				1.64	1.64	0.91	1.64	1.64	0.91	2.45	2.37	1.22	1.98	1.98	1.37	2.95	2.60	1.88	3.70
4.50				1.46	1.46	0.76	1.46	1.46	0.76	2.18	2.17	1.02	1.77	1.77	1.16	2.63	2.45	1.58	3.30
4.75				1.31	1.31	0.65	1.31	1.31	0.65	1.96	1.95	0.87	1.59	1.59	0.98	2.36	2.32	1.35	2.96
5.00				1.18	1.18	0.56	1.18	1.18	0.56	1.77	1.76	0.75	1.43	1.43	0.84	2.13	2.13	1.15	2.68
5.25				1.07	1.07	0.48	1.07	1.07	0.48	1.60	1.59	0.65	1.30	1.30	0.73	1.93	1.93	1.00	2.43
5.50				0.98	0.98	0.42	0.98	0.98	0.42	1.45	1.45	0.56	1.18	1.18	0.63	1.76	1.76	0.87	2.21
5.75				0.89	0.89	0.37	0.89	0.89	0.37	1.33	1.33	0.49	1.08	1.08	0.56	1.61	1.61	0.76	2.02
6.00				0.82	0.82	0.32	1.22	1.22	0.32	1.22	1.22	0.43	0.99	0.99	0.49	1.48	1.48	0.67	1.86
6.25							1.12	1.12		1.12	1.12	0.38	0.92	0.92	0.43	1.36	1.36	0.59	1.71
6.50							1.04	1.04		1.04	1.04	0.34	0.85	0.85	0.38	1.26	1.26	0.53	1.58
6.75							0.96	0.96		0.96	0.96	0.30	0.79	0.79	0.34	1.17	1.17	0.47	1.47
7.00													0.73	0.73	0.31	1.09	1.09	0.42	1.37
7.25																1.01	1.01	0.38	1.27
7.50																0.95	0.95	0.34	1.19
7.75																0.89	0.89	0.31	1.11
8.00																1.05	1.05	0.47	1.45
8.25																0.98	0.98	0.43	1.36
8.50																0.93	0.93	0.39	1.28
8.75																0.87	0.87	0.36	1.21
9.00																0.83	0.83	0.33	1.14
9.25																0.78	0.78	0.30	1.08
9.50																			1.03
9.75																			0.97
10.00																			0.93

1. Inward: Load pushing inward on the top flange.
2. Outward: Load pulling outward on the top flange.
3. W_s: Load at a deflection of span/150.
4. Shaded areas relate to spans which will not support a point load of 1.4kN (refer AS/NZS 1170).

TOP NOTCH PURLIN SYSTEM LOAD SPAN TABLES - LAPPED INTERNAL SPAN

Uniformly Loaded Bending Capacities (kN/m) $\phi_b W_{bx}$

Span (m)	60 x 0.75		60 x 0.95		100 x 0.75		100 x 0.95		120 x 0.75		120 x 0.95		150 x 0.95		150 x 1.15				
	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	Inward	Outward	Ws	
1.00																			
1.25																			
1.50																			
1.75	6.00	3.81	5.38																
2.00	4.42	3.33	3.61	5.99	3.33	4.71													
2.25	3.33	2.78	2.53	4.52	2.96	3.31													
2.50	2.55	2.25	1.85	3.47	2.66	2.41													
2.75	1.98	1.86	1.39	2.69	2.42	1.81	5.41	4.58	5.41										
3.00	1.56	1.56	1.07	2.11	2.11	1.39	4.54	4.20	4.54										
3.25	1.33	1.33	0.84	1.80	1.80	1.10	3.87	3.87	3.68										
3.50	1.15	1.15	0.67	1.55	1.55	0.88	3.34	3.34	2.95	5.79	3.88	4.95	4.03	4.03	4.03				
3.75	1.00	1.00	0.55	1.35	1.35	0.71	2.91	2.91	2.40	4.35	3.60	3.96	3.74	3.74	3.96	6.00	3.94	6.00	
4.00	0.88	0.88	0.45	1.19	1.19	0.59	2.56	2.56	1.98	3.82	3.15	2.65	3.10	3.10	3.00	4.61	3.68	4.97	5.60
4.25	0.78	0.78	0.38	1.05	1.05	0.49	2.26	2.26	1.65	3.39	2.96	2.21	2.74	2.74	2.50	4.08	3.25	3.45	5.25
4.50				0.94	0.94	0.41	2.02	2.02	1.39	3.02	2.80	1.86	2.45	2.45	2.11	3.64	3.07	2.88	4.57
4.75				0.84	0.84	0.35	1.81	1.81	1.18	2.71	2.65	1.58	2.20	2.20	1.79	3.27	2.91	2.45	4.10
5.00				0.76	0.76	0.30	1.64	1.64	1.01	2.45	2.43	1.36	1.98	1.98	1.54	2.95	2.76	2.10	3.70
5.25							1.48	1.48	0.87	2.22	2.20	1.17	1.80	1.80	1.33	2.68	2.63	1.81	3.36
5.50							1.35	1.35	0.76	2.01	2.01	1.02	1.64	1.64	1.15	2.44	2.44	1.58	3.06
5.75							1.24	1.24	0.67	1.84	1.84	0.89	1.50	1.50	1.01	2.23	2.23	1.38	2.80
6.00							1.14	1.14	0.59	1.69	1.69	0.79	1.38	1.38	0.89	2.05	2.05	1.21	2.57
6.25							1.05	1.05	0.52	1.56	1.56	0.70	1.27	1.27	0.79	1.89	1.89	1.07	2.37
6.50							0.97	0.97	0.46	1.44	1.44	0.62	1.17	1.17	0.70	1.75	1.75	0.96	2.19
6.75							0.90	0.90	0.41	1.33	1.33	0.55	1.09	1.09	0.62	1.62	1.62	0.85	2.03
7.00							0.83	0.83	0.37	1.24	1.24	0.50	1.01	1.01	0.56	1.50	1.50	0.76	1.89
7.25							0.78	0.78	0.33	1.16	1.16	0.45	0.94	0.94	0.50	1.40	1.40	0.69	1.76
7.50							0.73	0.73	0.30	1.08	1.08	0.40	0.88	0.88	0.45	1.31	1.31	0.62	1.65
7.75										1.01	1.01	0.36	0.82	0.82	0.41	1.23	1.23	0.56	1.54
8.00										0.95	0.95	0.33	0.77	0.77	0.37	1.15	1.15	0.51	1.45
8.25										0.89	0.89	0.30	0.73	0.73	0.34	1.08	1.08	0.47	1.36
8.50													0.69	0.69	0.31	1.02	1.02	0.43	1.28
8.75																0.96	0.96	0.39	1.21
9.00																0.91	0.91	0.36	1.14
9.25																0.86	0.86	0.33	1.08
9.50																0.82	0.82	0.31	1.03
9.75																			
10.00																			
																0.93	0.93	0.93	0.44
																1.28	1.28	1.28	0.56

- Inward: Load pushing inward on the top flange.
- Outward: Load pulling outward on the top flange.
- Ws: Load at a deflection of span/150.
- Shaded areas relate to spans which will not support a point load of 1.4kN (refer AS/NZS 1170).