MC Section Typical Economic Usage Span Chart Guide

Size	D X B (mm)	t (mm)	Mass (kg/m)	TYPICAL SPANS (m) (Based on Deflection Limitation only) 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
MC 100/10	100 x 50	1.0		
MC 100/12	100 x 50	1.2		
MC100/16	100 x 50	1.6		
MC 100/19	100 x 50	1.85		
MC 150/12	150 x 65	1.15	2.72	
MC 150/15	150 x 65	1.45	3.4	
MC 150/19	150 x 65	1.85	4.29	
MC 150/24	150 x 65	2.4	5.48	
MC 200/15	200 x 75	1.45	4.35	
MC 200/19	200 x 75	1.85	5.51	
MC 200/24	200 x 75	2.4	7.06	
MC 250/15	250 x 85	1.45	5.1	
MC 250/19	250 x 85	1.85	6.47	
MC 250/24	250 x 85	2.4	8.32	
MC 300/24	300 x 90	2.4	9.42	
MC 300/24	300 x 100	2.4	9.82	
MC 300/30	300 x 90	3.0	11.7	
MC 300/30	300 x 100	3.0	12.3	
MC 400/24	400 x 100	2.4	12.0	
MC 400/30	400 x 100	3.0	15.0	

NOTE: This chart is a quick reference only. Each situation should be considered separately and designed using standard procedures

FOR FURTHER INFORMATION AND ORDERS CONTACT METALCRAFT INDUSTRIES LTD.

USE OF MC SECTION AS FLOOR JOISTS

The MC Section purlin single span charts can be readily adapted for floor joist design.

STRENGTH DESIGN

With screwed down sheet flooring the fully restrained condition would apply otherwise lateral braces are required. The purlin load span charts will apply for the calculated linear loadings on each joist.

Refer Page 3 for Producer Information.

Refer Pages 4 & 5 for Design Considerations

Refer Page 23 for Purlin Bracing Hole Sizes and Purlin Bracing Standard Hole Positions.

DEFLECTION DESIGN

The Ws value in the purlin charts is for a deflection limit of L/150 for serviceability loads. For floor joists this will require modification by the designer to a selected limit usually in the range $\frac{L}{250}$ to $\frac{L}{360}$

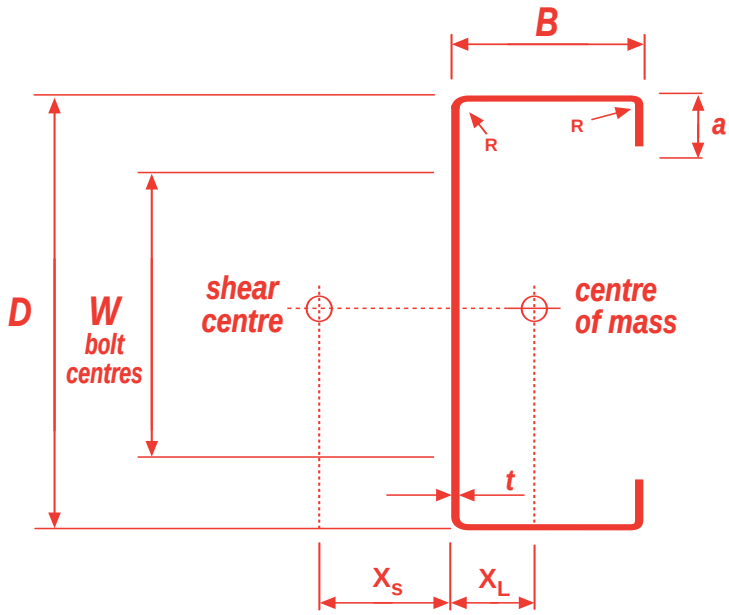
For example if a deflection limit of L/300 is required, then the Ws (serviceability linear loading) value in the chart (for L/150 deflection limit) would need to be halved.

CONTINUOUS SPANS

For continuity over two or more spans specific calculations would be required.

NOTES

MC SECTION PURLINS & GIRTS – SECTION GEOMETRY



MC SECTION PURLINS & GIRTS – SECTION GEOMETRY

CODE	D X B mm	t mm	Mass kg/m	Area mm^2	a mm	R mm	X_S mm	X_L mm	W mm
100/10	100 x 50	1.0	1.69	216	14	4	31.1	16.9	N/A
100/12	100 x 50	1.2	2.02	258	14	4	30.1	16.8	N/A
100/16	100 x 50	1.6	2.68	342	14	4	28.8	16.8	N/A
100/19	100 x 50	1.85	3.07	391	14	4	28.4	16.8	N/A
150/12	150 x 65	1.15	2.72	346	16	4	35.5	20.0	80
150/15	150 x 65	1.45	3.40	433	16	4	34.8	19.9	80
150/19	150 x 65	1.85	4.29	546	16	4	33.8	19.9	80
150/24	150 x 65	2.4	5.48	698	16	4	32.5	19.8	80
200/15	200 x 75	1.45	4.35	554	23	4	39.6	22.7	120
200/19	200 x 75	1.85	5.51	702	23	4	38.6	22.6	120
200/24	200 x 75	2.4	7.06	900	23	4	37.3	22.6	120
250/15	250 x 85	1.45	5.10	650	21	4	41.3	23.1	160
250/19	250 x 85	1.85	6.47	824	21	4	40.4	23.1	160
250/24	250 x 85	2.4	8.32	1060	21	4	39.0	23.0	160
300/24 (90)	300 x 90	2.4	9.42	1200	21	4	39.1	22.4	200
300/24 (100)	300 x 100	2.4	9.82	1254	21	4	43.7	25.9	200
300/30 (90)	300 x 90	3.0	11.7	1490	21	4	37.7	22.4	200
300/30 (100)	300 x 100	3.0	12.3	1566	21	4	41.7	26.0	200
400/24	400 x 100	2.4	12.0	1530	30	5	43.0	23.9	280
400/30	400 x 100	3.0	15.0	1910	30	5	41.2	24.1	280

NOTES:
1. All dimensions are nominal, (rolling tolerances to be considered).
2. W = standard hole centres
3. 300 x 90 not manufactured in South Island, (available ex Auckland)

MC SECTION PURLINS & GIRTS – SECTION PROPERTIES

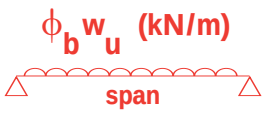
CODE	AREA	WEIGHT	SECOND MOMENT OF AREA		SECTION MODULUS		RADIUS OF GYRATION		TORSION CONSTANT	WARPING FACTOR
	mm^2	kN/m	I_x 10^6mm^4	I_y 10^6mm^4	Z_x 10^3mm^3	Z_y 10^3mm^3	r_x mm	r_y mm	J mm^4	Iw 10^9mm^6
MC 100/10	216	0.017	0.350	0.080	7.03	2.29	40.3	18.7	188	0.206
MC 100/12	258	0.020	0.420	0.090	8.35	2.71	40.2	18.6	269	0.240
MC 100/16	342	0.027	0.550	0.120	10.9	3.50	40.0	18.4	598	0.294
MC 100/19	391	0.030	0.620	0.130	12.4	3.96	39.9	18.4	446	0.315
MC 150/12	346	0.027	1.25	0.200	16.6	4.42	60.0	24.0	152	1.09
MC 150/15	433	0.033	1.55	0.240	20.6	5.44	59.8	23.8	303	1.30
MC 150/19	546	0.042	1.94	0.300	25.8	6.71	59.6	23.6	623	1.54
MC 150/24	698	0.054	2.44	0.380	32.6	8.30	59.2	23.2	1340	1.79
MC 200/15	554	0.043	3.44	0.440	34.4	8.34	78.8	28.1	389	4.23
MC 200/19	702	0.054	4.32	0.540	43.2	10.4	78.5	27.8	800	5.09
MC 200/24	900	0.069	5.49	0.680	54.9	13.0	78.1	27.5	1730	6.10
MC 250/15	650	0.050	6.19	0.610	49.5	9.85	97.6	30.6	456	8.48
MC 250/19	824	0.063	7.79	0.760	62.3	12.2	97.3	30.3	940	10.3
MC 250/24	1060	0.082	9.92	0.950	79.4	15.4	96.8	30.0	2030	12.4
MC 300/24 (90)	1200	0.092	15.8	1.16	105	17.1	115	31.0	2310	21.4
MC 300/24 (100)	1254	0.098	16.9	1.51	11.3	20.4	116	34.7	2890	27.6
MC 300/30 (90)	1490	0.115	19.4	1.40	129	20.6	114	30.6	4460	24.9
MC 300/30 (100)	1566	0.123	21.1	1.87	141	25.2	116	34.5	5430	32.7
MC 400/24	1530	0.118	34.5	1.86	173	24.4	150	34.9	2930	62.6
MC 400/30	1910	0.150	43.0	2.30	215	30.3	150	34.7	6550	74.7

NOTES: Section Properties (Based on full unreduced sections)

NOTES

MC STRENGTH LOAD SPAN TABLE

UNIFORMLY DISTRIBUTED LOAD = $\phi_b w_u$ (kN/m)



SINGLE SPAN

Span	MC 100/10				MC 100/12				MC 100/16				MC 100/19				MC 150/12			
	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m
m	1B	2B	FR		1B	2B	FR		1B	2B	FR		1B	2B	FR		1B	2B	FR	
2.0	5.77	5.77	5.77	4.59	7.35	7.35	7.35	5.51	9.63	9.63	9.63	7.22								
2.5	3.69	3.69	3.69	2.35	4.70	4.70	4.7	2.82	6.00	6.16	6.16	3.69								
3.0	2.56	2.56	2.56	1.36	2.92	3.27	3.27	1.63	3.94	4.28	4.28	2.14	11.3	11.3	11.3	8.13				
3.5	1.55	1.88	1.88	0.86	1.99	2.40	2.40	1.03	2.70	3.09	3.14	1.35	6.97	7.23	7.23	4.16				
4.0	1.09	1.44	1.44	0.57	1.39	1.69	1.84	0.69	1.90	2.28	2.41	0.90	4.53	5.02	5.02	2.41	5.35	5.35	5.35	4.86
4.5	0.77	1.00	1.14	0.40	0.98	1.28	1.45	0.48	1.36	1.73	1.90	0.63	3.06	3.59	3.69	1.52	3.93	3.93	3.93	3.06
5.0	0.54	0.77	0.92	0.29	0.69	0.99	1.18	0.35	0.97	1.33	1.54	0.46	2.12	2.64	2.82	1.02	3.01	3.01	3.01	2.05
5.5	0.39	0.60	0.76	0.22	0.49	0.77	0.97	0.26	0.69	1.04	1.27	0.35	1.47	1.98	2.23	0.71	1.90	2.38	2.38	1.44
6.0	0.29	0.47	0.64	0.17	0.36	0.60	0.82	0.20	0.50	0.82	1.07	0.27	1.01	1.52	1.81	0.52	1.43	1.93	1.93	1.05
6.5	0.22	0.37	0.55	0.13	0.27	0.47	0.70	0.16	0.37	0.65	0.91	0.21	0.69	1.17	1.49	0.39	1.09	1.59	1.59	0.79
7.0	0.17	0.29	0.47	0.11	0.21	0.37	0.60	0.13	0.28	0.51	0.79	0.17	0.49	0.91	1.26	0.30	0.82	1.12	1.34	0.61
7.5	0.13	0.23	0.41	0.09	0.16	0.29	0.52	0.10	0.22	0.40	0.68	0.14	0.35	0.70	1.07	0.24	0.62	0.92	1.14	0.48
8.0	0.10	0.18	0.36	0.07	0.13	0.23	0.46	0.09	0.17	0.32	0.60	0.11	0.26	0.54	0.92	0.19	0.48	0.75	0.98	0.38
8.5	0.08	0.15	0.32	0.06	0.10	0.18	0.41	0.07	0.14	0.25	0.53	0.09	0.20	0.41	0.80	0.15	0.38	0.62	0.86	0.31
9.0	0.07	0.12	0.28	0.05	0.08	0.15	0.36	0.06	0.11	0.20	0.48	0.08	0.15	0.32	0.71	0.13	0.30	0.51	0.75	0.26
9.5					0.07	0.12	0.33	0.05	0.09	0.16	0.43	0.07	0.12	0.25	0.63	0.11	0.24	0.42	0.67	0.21
10.0													0.10	0.20	0.56	0.09	0.20	0.35	0.59	0.18
10.5													0.08	0.16	0.50	0.08	0.16	0.29	0.53	0.15
11.0																	0.13	0.24	0.48	0.13
11.5																	0.11	0.20	0.44	0.11
12.0																				
12.5																				
13.0																				
13.5																				
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15.0																				
15.5																				
16.0																				
16.5																				
17.0																				
17.5																				
18.0																				
$\phi_b M_u$	2.88				3.69				4.81				5.67				6.03			
$\phi_v V_u$	10.4				18.1				35.9				49.2				11.0			

1B = One brace mid span

2B = Two braces within the span

3B = Three braces within the span

FR = Assumes compression flange fully restrained

ws = Uniformly distributed serviceability load for deflection limit = $Span_{/150}$ (kN/m)

$\phi_b w_u$ = Strength load resistance applied at the centroid (kN/m)

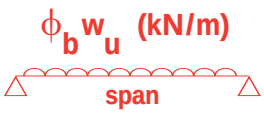
$\phi_b M_u$ = Section strength in bending at the F.R. condition (kN.m.)

$\phi_v V_u$ = Section strength in shear (kN)

MC STRENGTH LOAD SPAN TABLE

UNIFORMLY DISTRIBUTED LOAD = $\phi_b w_u$ (kN/m)

SINGLE SPAN



Span	MC 150/15				MC 150/19				MC 150/24				MC 200/15				MC 200/19			
	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)			w_s kN/m
m	1B	2B	FR		1B	2B	FR		1B	2B	FR		1B	2B	FR		1B	2B	FR	
2.0																				
2.5																				
3.0													11.2	11.2	11.2	13.4	14.9	14.9	14.9	16.8
3.5													8.23	8.23	8.23	8.42	10.9	10.9	10.9	10.6
4.0	7.56	7.56	7.56	6.03	9.40	9.66	9.66	7.54	12.7	13.1	13.1	9.49	6.30	6.30	6.30	5.64	7.86	8.37	8.37	7.08
4.5	5.55	5.55	5.55	3.79	6.61	7.10	7.10	4.75	8.89	9.60	9.60	5.97	4.98	4.98	4.98	3.96	6.00	6.61	6.61	4.98
5.0	3.66	4.25	4.25	2.54	4.80	5.43	5.43	3.18	6.41	7.31	7.35	4.00	3.36	4.03	4.03	2.89	4.67	5.36	5.36	3.63
5.5	2.72	3.36	3.36	1.79	3.56	4.15	4.29	2.23	4.71	5.61	5.81	2.81	2.64	3.33	3.33	2.17	3.67	4.43	4.43	2.73
6.0	2.05	2.72	2.72	1.30	2.67	3.26	3.48	1.63	3.50	4.39	4.70	2.05	2.08	2.80	2.80	1.67	2.92	3.47	3.72	2.10
6.5	1.52	1.98	2.25	0.98	2.01	2.61	2.87	1.22	2.60	3.49	3.89	1.54	1.65	2.39	2.39	1.31	2.31	2.89	3.17	1.65
7.0	1.13	1.61	1.89	0.75	1.50	2.11	2.41	0.94	1.92	2.80	3.27	1.19	1.30	1.75	2.06	1.05	1.82	2.42	2.73	1.32
7.5	0.85	1.31	1.61	0.59	1.12	1.72	2.06	0.74	1.40	2.27	2.78	0.93	1.03	1.47	1.79	0.86	1.42	2.05	2.38	1.07
8.0	0.65	1.08	1.39	0.47	0.85	1.41	1.77	0.59	1.04	1.84	2.40	0.75	0.82	1.25	1.58	0.71	1.12	1.74	2.09	0.89
8.5	0.50	0.88	1.21	0.39	0.65	1.16	1.55	0.48	0.79	1.50	2.09	0.61	0.67	1.06	1.40	0.59	0.90	1.48	1.85	0.74
9.0	0.40	0.72	1.06	0.32	0.51	0.95	1.36	0.40	0.61	1.22	1.84	0.50	0.54	0.90	1.24	0.50	0.72	1.27	1.65	0.62
9.5	0.32	0.59	0.94	0.26	0.40	0.78	1.20	0.33	0.48	0.99	1.63	0.42	0.45	0.77	1.12	0.42	0.59	1.08	1.48	0.53
10.0	0.25	0.48	0.84	0.22	0.32	0.63	1.07	0.28	0.38	0.79	1.45	0.35	0.37	0.65	1.01	0.36	0.48	0.92	1.34	0.45
10.5	0.21	0.39	0.75	0.19	0.26	0.52	0.96	0.24	0.31	0.64	1.30	0.30	0.31	0.55	0.91	0.31	0.40	0.77	1.21	0.39
11.0	0.17	0.33	0.68	0.16	0.21	0.42	0.87	0.20	0.25	0.52	1.18	0.26	0.26	0.47	0.83	0.27	0.33	0.65	1.11	0.34
11.5		0.27	0.62	0.14	0.17	0.35	0.79	0.18	0.20	0.42	1.07	0.22								
12.0		0.23	0.56	0.12	0.14	0.29	0.72	0.15	0.17	0.35	0.97	0.19								
12.5																				
13.0																				
13.5																				
14.0																				
14.5																				
15.0																				
15.5																				
16.0																				
16.5																				
17.0																				
17.5																				
18.0																				
$\phi_b M_u$	8.51				10.8				14.7				12.6				16.7			
$\phi_v V_u$	22.2				46.5				82.8				16.4				34.1			

1B = One brace mid span

2B = Two braces within the span

3B = Three braces within the span

FR = Assumes compression flange fully restrained

ws = Uniformly distributed serviceability load for deflection limit = $Span_{/150}$ (kN/m)

$\phi_b w_u$ = Strength load resistance applied at the centroid (kN/m)

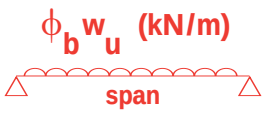
$\phi_b M_u$ = Section strength in bending at the F.R. condition (kN.m.)

$\phi_v V_u$ = Section strength in shear (kN)

MC STRENGTH LOAD SPAN TABLE

UNIFORMLY DISTRIBUTED LOAD = $\phi_b w_u$ (kN/m)

SINGLE SPAN



Span	MC 200/24				MC 250/15					MC 250/19					MC 250/24					MC 300/24(90)				
	$\phi_b w_u$ (kN/m)			w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m
m	1B	2B	FR		1B	2B	3B	FR		1B	2B	3B	FR		1B	2B	3B	FR		1B	2B	3B	FR	
2.0																								
2.5																								
3.0	21.1	21.1	21.1	21.3	14.4	14.4	14.4	14.4	24.1	19.3	19.3	19.3	19.3	30.3	28.4	28.4	28.4	28.4	38.6	35.3	35.3	35.3	35.3	61.4
3.5	15.2	15.5	15.5	13.4	10.6	10.6	10.6	10.6	15.1	14.2	14.2	14.2	14.2	19.1	20.9	20.9	20.9	20.9	24.3	25.9	25.9	25.9	25.9	38.7
4.0	11.2	11.9	11.9	9.00	8.10	8.10	8.10	8.10	10.1	10.9	10.9	10.9	10.9	12.8	15.4	16.0	16.0	16.0	16.3	19.8	19.8	19.8	19.8	25.9
4.5	8.50	9.41	9.41	6.32	6.40	6.40	6.40	6.40	7.10	8.60	8.60	8.60	8.60	8.97	11.8	12.6	12.6	12.6	11.4	14.7	15.7	15.7	15.7	18.2
5.0	6.54	7.49	7.61	4.61	5.20	5.20	5.20	5.20	5.20	6.17	6.95	6.95	6.95	6.54	9.22	10.2	10.2	10.2	8.30	11.6	12.7	12.7	12.7	13.3
5.5	5.09	6.05	6.29	3.46	3.48	4.28	4.28	4.28	3.90	4.91	5.74	5.74	5.74	4.91	1.31	8.24	8.45	8.45	6.26	9.23	10.5	10.5	10.5	9.97
6.0	3.98	4.95	5.28	2.67	2.78	3.59	3.59	3.59	3.00	3.95	4.83	4.83	4.83	3.79	5.85	6.80	7.10	7.10	4.82	7.43	8.82	8.82	8.82	7.68
6.5	3.12	4.09	4.50	2.10	2.24	3.06	3.06	3.06	2.37	3.20	4.11	4.11	4.11	2.98	4.70	5.67	6.05	6.05	3.79	6.03	7.09	7.51	7.51	6.04
7.0	2.43	3.41	3.88	1.68	1.80	2.64	2.64	2.64	1.89	2.59	3.19	3.55	3.55	2.38	3.76	4.78	5.22	5.22	3.04	4.91	5.99	6.48	6.48	4.83
7.5	1.88	2.86	3.38	1.37	1.45	2.30	2.30	2.30	1.54	2.10	2.72	3.09	3.09	1.94	2.99	4.05	4.55	4.55	2.47	3.99	5.10	5.64	5.64	3.93
8.0	1.46	2.41	2.97	1.13	1.17	1.65	2.02	2.02	1.27	1.70	2.32	2.71	2.71	1.60	2.36	3.46	3.99	3.99	2.03	3.23	4.37	4.96	4.96	3.24
8.5	1.15	2.03	2.63	0.94	0.95	1.41	1.79	1.79	1.06	1.38	2.00	2.40	2.40	1.33	1.88	2.96	3.43	3.54	1.70	2.62	3.76	4.39	4.39	2.70
9.0	0.92	1.72	2.35	0.79	0.79	1.21	1.60	1.60	0.89	1.13	1.73	2.14	2.14	1.12	1.51	2.55	3.02	3.16	1.43	2.11	3.25	3.92	3.92	2.27
9.5		1.45	2.11	0.67	0.66	1.05	1.43	1.43	0.76	0.93	1.49	1.93	1.93	0.95	1.23	2.19	2.67	2.83	1.21	1.72	2.82	3.34	3.52	1.93
10.0	0.74	1.22	1.90	0.58	0.55	0.90	1.29	1.29	0.65	0.77	1.29	1.74	1.74	0.82	1.01	1.88	2.38	2.56	1.04	1.42	2.45	2.98	3.17	1.66
10.5		1.02	1.73	0.50	0.47	0.78	1.17	1.17	0.56	0.64	1.12	1.42	1.58	0.71	0.83	1.61	2.12	2.32	0.90	1.17	2.12	2.66	2.88	1.43
11.0		0.85	1.57	0.43	0.40	0.67	1.07	1.07	0.49	0.54	0.97	1.27	1.44	0.61	0.69	1.37	1.90	2.11	0.78	0.98	1.84	2.39	2.62	1.25
11.5		0.72	1.44	0.38	0.34	0.58	0.98	0.98	0.43	0.46	0.84	1.15	1.31	0.54	0.58	1.16	1.71	1.93	0.68	0.82	1.59	2.15	2.40	1.09
12.0		0.61	1.32	0.33	0.29	0.50	0.73	0.90	0.38	0.39	0.72	1.03	1.21	0.47	0.49	0.99	1.54	1.78	0.60	0.69	1.38	1.94	2.20	0.96
12.5					0.25	0.44	0.66	0.83	0.33	0.33	0.63	0.93	1.11	0.42	0.41	0.85	1.39	1.64	0.53	0.59	1.19	1.76	2.03	0.85
13.0					0.22	0.38	0.60	0.77	0.30	0.28	0.55	0.85	1.03	0.37	0.35	0.73	1.25	1.51	0.47	0.50	1.03	1.59	1.88	0.75
13.5					0.19	0.34	0.54	0.71	0.26	0.25	0.48	0.77	0.95	0.33	0.30	0.63	1.13	1.40	0.42	0.43	0.89	1.44	1.74	0.67
14.0					0.17	0.30	0.49	0.66	0.24	0.21	0.42	0.70	0.89	0.30	0.26	0.55	1.03	1.30	0.38	0.37	0.77	1.31	1.62	0.60
14.5															0.22	0.48	0.93	1.22	0.34	0.32	0.68	1.19	1.51	0.54
15.0															0.19	0.42	0.84	1.14	0.31	0.28	0.59	1.09	1.41	0.49
15.5															0.17	0.37	0.75	1.06	0.28	0.24	0.52	0.99	1.32	0.45
16.0															0.15	0.32	0.68	1.00	0.25	0.21	0.46	0.90	1.24	0.40
16.5															0.13	0.28	0.61	0.94	0.23	0.19	0.41	0.82	1.17	0.37
17.0															0.12	0.25	0.55	0.88	0.21	0.16	0.36	0.74	1.10	0.34
17.5															0.11	0.22	0.49	0.83	0.15	0.15	0.32	0.67	1.04	0.31
18.0															0.09	0.20	0.44	0.79	0.18	0.13	0.29	0.61	0.98	0.28
$\phi_b M_u$	23.8				16.2					21.7					32.0					39.7				
$\phi_v V_u$	74.9				12.9					27.0					59.1					48.8				

1B = One brace mid span

2B = Two braces within the span

3B = Three braces within the span

FR = Assumes compression flange fully restrained

ws = Uniformly distributed serviceability load for deflection limit = $Span_{/150}$ (kN/m)

$\phi_b w_u$ = Strength load resistance applied at the centroid (kN/m)

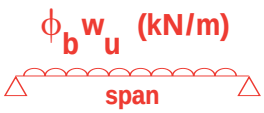
$\phi_b M_u$ = Section strength in bending at the F.R. condition (kN.m.)

$\phi_v V_u$ = Section strength in shear (kN)

MC STRENGTH LOAD SPAN TABLE

UNIFORMLY DISTRIBUTED LOAD = $\phi_b w_u$ (kN/m)

SINGLE SPAN



Span	MC 300/24(100)					MC 300/30(90)					MC 300/30(100)					MC 400/24					MC 400/30				
	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m	$\phi_b w_u$ (kN/m)				w_s kN/m
m	1B	2B	3B	FR		1B	2B	3B	FR		1B	2B	3B	FR		1B	2B	3B	FR		1B	2B	3B	FR	
2.0																									
2.5																									
3.0	36.3	36.3	36.3	36.3	65.8	48.6	48.6	48.6	48.6	75.4	51.3	51.3	51.3	51.3	82.0	51.6	51.6	51.6	51.6	134	72.7	72.7	72.7	72.7	167
3.5	26.6	26.6	26.6	26.6	41.5	35.7	35.7	35.7	35.7	47.5	37.7	37.7	37.7	37.7	51.6	37.9	37.9	37.9	37.9	84.5	53.4	53.4	53.4	53.4	105
4.0	20.4	20.4	20.4	20.4	27.8	26.8	27.3	27.3	27.3	31.8	28.8	28.8	28.8	28.8	34.6	29.0	29.0	29.0	29.0	56.6	40.9	40.9	40.9	40.9	70.6
4.5	16.1	16.1	16.1	16.1	19.5	20.5	21.6	21.6	21.6	22.3	22.1	22.8	22.8	22.8	24.3	22.9	22.9	22.9	22.9	39.7	31.6	32.3	32.3	32.3	49.6
5.0	13.1	13.1	13.1	13.1	14.2	16.0	17.6	17.6	17.6	16.3	17.4	18.4	18.4	18.4	17.7	18.6	18.6	18.6	18.6	29.0	25.0	26.2	26.2	26.2	36.1
5.5	10.8	10.8	10.8	10.8	10.7	12.7	14.3	14.5	14.5	12.2	14.0	15.2	15.2	15.2	13.3	14.1	15.4	15.4	15.4	21.8	20.1	21.6	21.6	21.6	27.2
6.0	7.94	9.07	9.07	9.07	8.23	10.2	11.8	12.2	12.2	9.42	11.3	12.6	12.8	12.8	10.2	11.5	12.9	12.9	12.9	16.8	16.3	18.2	18.2	18.2	20.9
6.5	6.53	7.73	7.73	7.73	6.47	8.15	9.86	10.4	10.4	7.41	9.27	10.6	10.9	10.9	8.06	9.47	11.0	11.0	11.0	13.2	13.4	15.2	15.5	15.5	16.4
7.0	5.40	6.66	6.66	6.66	5.18	6.52	8.31	8.97	8.97	5.93	7.63	8.98	9.41	9.41	6.46	7.86	9.48	9.48	9.48	10.6	11.1	12.9	13.4	13.4	13.2
7.5	4.49	5.35	5.80	5.80	4.21	5.20	7.05	7.78	7.78	4.82	6.26	7.67	8.20	8.20	5.25	6.55	8.26	8.26	8.26	8.60	9.23	11.0	11.6	11.6	10.7
8.0	3.74	4.61	5.10	5.10	3.47	4.11	6.02	6.81	6.84	3.97	5.14	6.60	7.21	7.21	4.33	5.48	6.66	7.26	7.26	7.07	7.68	9.50	10.2	10.2	8.83
8.5	3.11	4.00	4.52	4.52	2.90	3.24	5.16	5.96	6.06	3.31	4.20	5.71	6.39	6.39	3.61	4.58	5.79	6.43	6.43	5.90	6.39	8.24	9.06	9.06	7.36
9.0	2.57	3.49	4.03	4.03	2.44	2.59	4.43	5.25	5.40	2.79	3.41	4.96	5.61	5.70	3.04	3.82	5.05	5.74	5.74	4.97	5.29	7.18	8.08	8.08	6.2
9.5	2.14	3.05	3.62	3.62	2.07	2.09	3.80	4.65	4.85	2.37	2.78	4.33	4.99	5.11	2.58	3.18	4.43	5.15	5.15	4.22	4.37	6.28	7.14	7.26	5.27
10.0	1.78	2.68	3.26	3.26	1.78	1.70	3.26	4.14	4.37	2.04	2.29	3.79	4.45	4.61	2.21	2.67	3.90	4.65	4.65	3.62	3.62	5.51	6.38	6.55	4.52
10.5	1.49	2.36	2.96	2.96	1.54	1.39	2.79	3.69	3.97	1.76	1.90	3.31	3.99	4.18	1.91	2.25	3.44	4.21	4.21	3.13	3.03	4.85	5.72	5.94	3.90
11.0	1.25	2.08	2.70	2.70	1.34	1.15	2.38	3.31	3.62	1.53	1.58	2.89	3.59	3.81	1.66	1.91	3.04	3.84	3.84	2.72	2.53	4.27	5.15	5.41	3.39
11.5	1.06	1.83	2.26	2.47	1.17	0.95	2.03	2.97	3.31	1.34	1.33	2.52	3.24	3.49	1.46	1.63	2.68	3.26	3.51	2.38	2.12	3.77	4.66	4.95	2.97
12.0	0.90	1.61	2.05	2.27	1.03	0.80	1.72	2.67	3.04	1.18	1.13	2.19	2.93	3.20	1.28	1.40	2.38	2.96	3.23	2.10	1.79	3.32	4.22	4.55	2.61
12.5	0.77	1.42	1.86	2.09	0.91	0.67	1.46	2.41	2.80	1.04	0.96	1.90	2.66	2.95	1.13	1.21	2.10	2.69	2.97	1.85	1.52	2.92	3.84	4.19	2.31
13.0	0.67	1.25	1.70	1.93	0.81	0.57	1.25	2.18	2.59	0.93	0.82	1.65	2.42	2.73	1.01	1.05	1.86	2.46	2.75	1.65	1.30	2.56	3.56	3.87	2.06
13.5	0.58	1.10	1.55	1.79	0.72	0.49	1.08	1.97	2.40	0.83	0.70	1.43	2.21	2.53	0.90	0.91	1.64	2.25	2.55	1.47	1.11	2.25	3.19	3.59	1.84
14.0	0.50	0.97	1.42	1.67	0.65	0.42	0.93	1.78	2.23	0.74	0.61	1.24	2.01	2.35	0.81	0.79	1.44	2.06	2.37	1.32	0.96	1.97	2.92	3.34	1.65
14.5	0.44	0.85	1.30	1.55	0.58	0.37	0.80	1.60	2.03	0.67	0.52	1.09	1.84	2.19	0.73	0.69	1.28	1.89	2.21	1.19	0.83	1.73	2.67	3.11	1.48
15.0	0.38	0.75	1.19	1.45	0.53	0.32	0.70	1.45	1.94	0.60	0.46	0.95	1.68	2.05	0.66	0.60	1.14	1.73	2.06	1.07	0.72	1.53	2.45	2.91	1.34
15.5	0.34	0.66	1.09	1.36	0.48	0.27	0.61	1.31	1.82	0.55	0.40	0.84	1.54	1.92	0.59	0.53	1.01	1.59	1.93	0.97	0.63	1.35	2.25	2.73	1.21
16.0	0.30	0.59	1.00	1.28	0.43	0.24	0.53	1.18	1.71	0.50	0.35	0.74	1.40	1.80	0.54	0.46	0.91	1.46	1.81	0.88	0.55	1.19	2.07	2.56	1.10
16.5	0.26	0.52	0.92	1.20	0.40	0.22	0.47	1.06	1.61	0.45	0.31	0.66	1.28	1.69	0.49	0.41	0.81	1.35	1.71	0.81	0.48	1.06	1.90	2.41	1.01
17.0	0.23	0.47	0.85	1.13	0.36	0.19	0.41	0.95	1.51	0.41	0.27	0.58	1.17	1.60	0.45	0.36	0.73	1.24	1.61	0.74	0.43	0.94	1.75	2.27	0.92
17.5	0.21	0.42	0.78	1.07	0.33	0.17	0.37	0.85	1.43	0.38	0.24	0.52	1.07	1.51	0.41	0.32	0.66	1.15	1.52	0.68	0.38	0.83	1.60	2.14	0.84
18.0	0.18	0.38	0.72	1.01	0.30	0.15	0.33	0.76	1.35	0.35	0.22	0.46	0.97	1.42	0.38	0.29	0.59	1.06	1.43	0.62	0.34	0.74	1.47	2.02	0.77
$\phi_b M_u$	40.8					54.7					57.7					58.1					81.8				
$\phi_v V_u$	46.2					95.8					90.4					36.4					67.3				

1B = One brace mid span

2B = Two braces within the span

3B = Three braces within the span

FR = Assumes compression flange fully restrained

ws = Uniformly distributed serviceability load for deflection limit = Span/150 (kN/m)

$\phi_b w_u$ = Strength load resistance applied at the centroid (kN/m)

$\phi_b M_u$ = Section strength in bending at the F.R. condition (kN.m.)

$\phi_v V_u$ = Section strength in shear (kN)