



### P4100 - BEAM LOADING

Span In	Max Allowable Uniform Load Lbs	Defl. at Uniform Load In	Uniform Loading at Deflection		
			Span/180 Lbs	Span/240 Lbs	Span/360 Lbs
24	450	0.11	450	420	280
36	300	0.24	250	190	130
48	230	0.44	140	110	70
60	180	0.67	90	70	50
72	150	0.96	60	50	30
84	130	1.32	50	30	20
96	110	1.67	40	30	20
108	100	2.16	30	20	10
120	90	2.67	20	20	10
144	80	4.09	20	NR	NR
168	60	4.88	NR	NR	NR
192	60	7.28	NR	NR	NR
216	50	8.64	NR	NR	NR
240	50	11.85	NR	NR	NR

### P4101 - BEAM LOADING

Span In	Max Allowable Uniform Load Lbs	Defl. at Uniform Load In	Uniform Loading at Deflection		
			Span/180 Lbs	Span/240 Lbs	Span/360 Lbs
24	1,090*	0.06	1,090*	1,090*	1,090*
36	800	0.14	800	800	570
48	600	0.25	600	480	320
60	480	0.39	410	310	200
72	400	0.57	280	210	140
84	340	0.76	210	160	100
96	300	1.00	160	120	80
108	270	1.29	130	90	60
120	240	1.57	100	80	50
144	200	2.26	70	50	40
168	170	3.05	50	40	30
192	150	4.02	40	NR	NR
216	130	4.96	NR	NR	NR
240	120	6.28	NR	NR	NR

### P4100 - COLUMN LOADING

Unbraced Height In	Maximum Allowable Load at Slot Face Lbs	Maximum Column Load Applied at C.G.			
		K = 0.65 Lbs	K = 0.80 Lbs	K = 1.0 Lbs	K = 1.2 Lbs
24	1,840	5,610	5,210	4,570	3,850
36	1,640	4,660	3,850	2,800	1,960
48	1,310	3,490	2,480	1,590	1,100
60	1,000	2,400	1,590	**	**
72	770	1,670	1,100	**	**

### P4101 - COLUMN LOADING

Unbraced Height In	Maximum Allowable Load at Slot Face Lbs	Maximum Column Load Applied at C.G.			
		K = 0.65 Lbs	K = 0.80 Lbs	K = 1.0 Lbs	K = 1.2 Lbs
24	3,240	12,370	11,950	11,370	10,540
36	3,120	11,470	10,540	9,160	7,720
48	2,940	10,090	8,680	6,770	4,980
60	2,680	8,560	6,770	4,590	3,190
72	2,310	7,010	4,980	3,190	2,220
84	1,950	5,530	3,660	2,340	**
96	1,650	4,250	2,800	**	**
108	1,410	3,360	2,220	**	**

### P4100/P4101 - ELEMENTS OF SECTION

Parameter	P4100		P4101	
Area of Section	0.290	In <sup>2</sup>	0.579	In <sup>2</sup>
Axis 1-1				
Moment of Inertia (I)	0.026	In <sup>4</sup>	0.117	In <sup>4</sup>
Section Modulus (S)	0.054	In <sup>3</sup>	0.143	In <sup>3</sup>
Radius of Gyration (r)	0.298	In	0.449	In
Axis 2-2				
Moment of Inertia (I)	0.107	In <sup>4</sup>	0.214	In <sup>4</sup>
Section Modulus (S)	0.132	In <sup>3</sup>	0.264	In <sup>3</sup>
Radius of Gyration (r)	0.609	In	0.608	In

Notes:

\* Load limited by spot weld shear.

\*\* KL/r > 200

NR = Not Recommended.

- Beam loads are given in total uniform load (W Lbs) not uniform load (w lbs/ft or w lbs/in).
- Beam loads are based on a simple span and assumed to be adequately laterally braced. Unbraced spans can reduce beam load carrying capacity. Refer to Page 56 for reduction factors for unbraced lengths.
- For pierced channel, multiply beam loads by the following factor:  

"KO" Series .....	95%	"T" Series .....	85%
"HS" Series .....	90%	"SL" Series .....	85%
"H3" Series .....	90%	"DS" Series .....	70%
- Deduct channel weight from the beam loads.
- For concentrated midspan point loads, multiply beam loads by 50% and the corresponding deflection by 80%. For other load conditions refer to page 18.
- All beam loads are for bending about Axis 1-1.

**P4100 - BEAM LOADING (METRIC)**

Span mm	Max Allowable Uniform Load kN	Defl. at Uniform Load mm	Uniform Loading at Deflection		
			Span/180 kN	Span/240 kN	Span/360 kN
600	2.0	3	2.0	2.0	1.3
750	1.6	4	1.6	1.2	0.8
1,000	1.2	7	0.9	0.7	0.4
1,250	1.0	11	0.6	0.4	0.3
1,500	0.8	16	0.4	0.3	0.2
1,750	0.7	23	0.3	0.2	0.1
2,000	0.6	30	0.2	0.2	0.1
2,500	0.5	46	0.1	0.1	0.1
3,000	0.4	65	0.1	0.1	NR

**P4101 - BEAM LOADING (METRIC)**

Span mm	Max Allowable Uniform Load kN	Defl. at Uniform Load mm	Uniform Loading at Deflection		
			Span/180 kN	Span/240 kN	Span/360 kN
600	4.8 *	1	4.8 *	4.8 *	4.8 *
750	4.4	2	4.4	4.4	3.7
1,000	3.2	4	3.2	3.2	2.1
1,250	2.6	7	2.6	2.0	1.3
1,500	2.2	10	1.9	1.4	0.9
1,750	1.9	13	1.4	1.0	0.7
2,000	1.6	17	1.1	0.8	0.5
2,500	1.3	27	0.7	0.5	0.4
3,000	1.1	38	0.5	0.4	0.2
3,500	0.9	53	0.4	0.3	0.2

**P4100 - COLUMN LOADING (METRIC)**

Unbraced Height mm	Maximum Allowable Load at Slot Face kN	Maximum Column Load Applied at C.G.			
		K = 0.65 kN	K = 0.80 kN	K = 1.0 kN	K = 1.2 kN
600	8.2	25.1	23.3	20.6	17.4
750	7.8	23.2	20.6	16.6	12.8
1,000	6.9	19.3	15.3	10.5	7.3
1,250	5.6	15.0	10.5	6.7	4.7
1,500	4.5	11.0	7.3	4.7	**
1,750	3.6	8.1	5.3	**	**

**P4101 - COLUMN LOADING (METRIC)**

Unbraced Height mm	Maximum Allowable Load at Slot Face kN	Maximum Column Load Applied at C.G.			
		K = 0.65 kN	K = 0.80 kN	K = 1.0 kN	K = 1.2 kN
600	14.4	55.1	53.3	50.8	47.2
750	14.2	53.2	50.8	46.3	41.2
1,000	13.7	49.4	44.7	37.8	30.8
1,250	13.0	44.2	37.8	29.1	21.1
1,500	12.0	38.7	30.8	21.1	14.6
1,750	10.7	33.0	24.2	15.5	10.8
2,000	9.3	27.4	18.5	11.9	**
2,250	8.1	22.2	14.6	9.4	**

**P4100/P4101 - ELEMENTS OF SECTION (METRIC)**

Parameter	P4100	P4101
Area of Section	1.87 cm <sup>2</sup>	3.74 cm <sup>2</sup>
Axis 1-1		
Moment of Inertia (I)	1.07 cm <sup>4</sup>	4.85 cm <sup>4</sup>
Section Modulus (S)	0.88 cm <sup>3</sup>	2.35 cm <sup>3</sup>
Radius of Gyration (r)	0.76 cm	1.14 cm
Axis 2-2		
Moment of Inertia (I)	4.46 cm <sup>4</sup>	8.93 cm <sup>4</sup>
Section Modulus (S)	2.16 cm <sup>3</sup>	4.32 cm <sup>3</sup>
Radius of Gyration (r)	1.55 cm	1.55 cm

Notes:

\* Load limited by spot weld shear.

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