



**Cargowall Ltd.**

1 800 495-7676

Bowmanville, Ontario

## **Roll-formed Structural C-Sections and Channels**

Load Tables and Section Properties



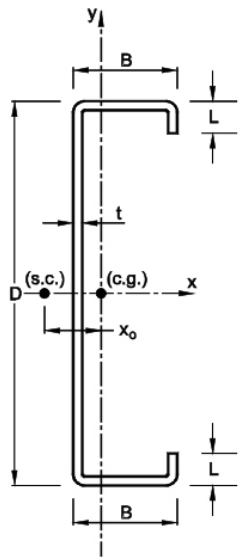
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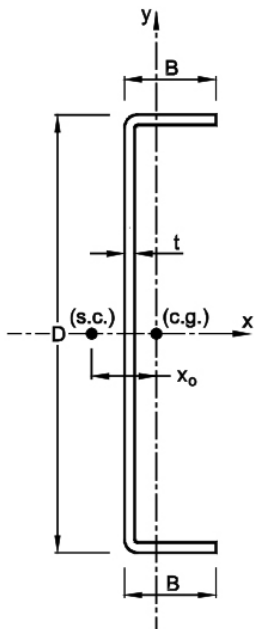


# PREFACE

The information contained herein is intended as a general guide to the design Professional. Anyone making use of the information contained in this catalogue assumes any and all liability from such use.



**C-SECTION**



**CHANNEL**

## THE COMPANY

Cargowall Ltd. has been in the business of custom roll forming for over 20 years, providing simple to highly complex and unique profiles for many industries. In addition to these customized products, Cargowall Ltd. is now offering cold formed steel structural C-and Channel sections.

## THE PRODUCT

The cold formed steel products presented in this catalogue can be used in various combinations to provide efficient, versatile and sound structural framing systems. They may be used as girts and purlins in Pre-engineered buildings, in storage mezzanine systems, to support in-plant office floors, as support equipment (HVAC, Conveyors..), in the elevator industry, in light truck frames, just to mention a few possible applications. Both C-section and channel profiles are offered in steel thicknesses ranging from 3.05 to 6.35 mm (0.120 to 0.25 in.). One of the great advantages of such cold formed steel profiles is that cold work of forming can be applied whenever applicable.

## STEEL

Conforms to ASTM A1011M/A1011 (Grade 340) [Grade 50], ( $F_y = 345$  MPa), [ $F_y = 50$  ksi]. This is an uncoated steel.

## DESIGN CONSIDERATIONS

The load tables are based on limit states design principles (LSD), considering flexure and shear. Web crippling must be checked and will require a small additional calculation as shown in the example. As well, deflection must also be checked.

## LIMIT STATES DESIGN

### Strength

LSD design principles were used in accordance with the National Building Code of Canada, 2005 and CSA S136-07, North American Specification for the Design of Cold Formed Steel Structural Members. The factored resistance under consideration,  $\Phi R$ , must be  $\geq$  than the effect of the factored loads, i.e.,  $\Phi R \geq$  FACTORED LOADS. Hence, the factored resistance load table values must be equal to or greater than the factored loads.

### Serviceability

The effective moment of inertia for deflection determination has been calculated based on an assumed specified live load stress of  $0.626F_y$ .

## VARIFICATION

The load tables and technical information contained in this catalogue were prepared by Dr. R.M. Schuster, P. Eng. and Professor Emeritus at the University of Waterloo.

## C-SECTION EXAMPLE (Imperial units)

### 1. Given

C-sections 22 ft in length and spaced 4 ft o.c.

### 2. Specified loads

$$DL = 20 \text{ psf}$$

$$LL = 60 \text{ psf}$$

$$w_D = 20(4) = 80 \text{ lb/ft}$$

$$w_L = 60(4) = 240 \text{ lb/ft}$$

### 3. Factored loads

$$w_f = 1.25(80) + 1.5(240) = 460 \text{ lb/ft}$$

$$W_f = 460(20)/1000 = 9.20 \text{ kips}$$

### 4. Consider strength

a) Flexure and shear (see Table)

Try a 10 x 3.50 x 0.135

$$W_f = 10.3 \text{ kips}$$

Since  $W_f > W_r$  ∴ OK

b) Check web crippling (assume  $n = 6$  in.)

$$P_r = P_{e1} + P_{e2} \sqrt{n/t}$$

$$= 1.75 + 0.614 \sqrt{6/0.135} = 5.84 \text{ kips}$$

$$W_f = 2P_r = 2(5.84) = 11.7 \text{ kips}$$

Since  $W_f > W_r$  ∴ OK

### 5. Consider deflection

Assume  $k = 180$

$$W_d = D_c(10)^3/k/L^2 = 571(10)^3/180/(22)^2 = 6.55 \text{ kips}$$

$$w_d = 6.55(1000)/22 = 298 \text{ lb/ft}$$

Since  $W_d > W_L$  ∴ OK

## DESIGN DATA NOTATIONS

Symbol	Definition
$L_u$	Maximum unbraced length of compression flange based on lateral torsional buckling
$L_{cr}$	Distance between discrete restraints that restrict distortional buckling
$M_r$	Factored moment resistance based on local buckling and the unbraced length $\leq L_u$
$M_{rd}$	Factored moment resistance based on distortional buckling and the unbraced length $\leq L_u$
$V_r$	Factored shear resistance
$D_c$	Deflection coefficient
$P_{e1}$	End web crippling coefficient
$P_{e2}$	End web crippling coefficient
$P_{i1}$	Interior web crippling coefficient
$P_{i2}$	Interior web crippling coefficient
$F_{ya}$	Average yield stress due to cold work of forming

## C-SECTION EXAMPLE (Metric units)

### 1. Given

C-sections 6 m in length and spaced 1.2 m o.c.

### Specified loads

$$DL = 1.0 \text{ kPa}$$

$$LL = 3.0 \text{ kPa}$$

$$w_D = 1.0(1.2) = 1.2 \text{ kN/m}$$

$$w_L = 3.0(1.2) = 3.6 \text{ kN/m}$$

### 3. Factored loads

$$w_f = 1.25(1.2) + 1.5(3.6) = 6.9 \text{ kN/m}$$

$$W_f = 6.9(6) = 41.4 \text{ kN}$$

### 4. Consider strength

a) Flexure and shear (see Table)

Try a 254 x 89 x 3.05

$$W_f = 43.8 \text{ kN}$$

Since  $W_f > W_r$  ∴ OK

b) Check web crippling (assume  $n = 150$  mm)

$$P_r = P_{e1} + P_{e2} \sqrt{n/t}$$

$$= 5.98 + 2.09 \sqrt{150/3.05} = 20.6 \text{ kN}$$

$$W_f = 2P_r = 2(20.6) = 41.4 \text{ kips}$$

Since  $W_f = W_r$  ∴ OK

### 5. Consider deflection

Assume  $k = 180$

$$W_d = D_c(10)^3/k/L^2 = 212(10)^3/180/(6)^2 = 32.7 \text{ kN}$$

$$w_d = 32.7/6 = 5.45 \text{ kN/m}$$

Since  $w_d > w_L$  ∴ OK

## PROPERTIES NOTATIONS

Symbol	Definition
$A$	Cross-sectional area of section
$S_x$	Full section modulus about x-axis
$r_x$	Radius of gyration about x-axis
$I_y$	Full moment of inertia about y-axis
$r_y$	Radius of gyration about y-axis
$J$	St. Venant torsion constant
$C_w$	Torsional warping constant
$j$	Flexural-torsional buckling parameter
$x_o$	Distance from shear center to centroid along principle x-axis
$r_o$	Polar radius of gyration about shear center
$S_{xe}$	Effective section modulus about x-axis
$I_{xd}$	Deflection moment of inertia at $0.626F_y$

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (IMPERIAL UNITS)**

<b>16 x 3.50 x 1.25</b>							
Thickness (in.)		0.120	0.135	0.150	0.164	0.188	0.250
Weight (lb/ft)		9.91	11.1	12.3	13.4	15.3	20.1
Span (ft)	15	21.8	25.8	29.9	33.0	38.4	60.1
	16	20.4	24.2	28.0	31.0	36.4	56.3
17	19.2	22.8	26.4	29.1	33.8	53.0	
18	18.2	21.5	24.9	27.5	32.0	50.0	
19	17.2	20.4	23.6	26.1	30.3	47.4	
20	16.3	19.4	22.4	24.8	28.8	45.0	
21	15.6	18.5	21.3	23.6	27.4	42.9	
22	14.9	17.6	20.4	22.5	26.2	40.9	
23	14.2	16.9	19.5	21.5	25.0	39.2	
24	13.6	16.2	18.7	20.6	24.0	37.5	
25	13.1	15.5	17.9	19.8	23.0	36.0	
26	12.6	14.9	17.2	19.0	22.1	34.6	
27	12.1	14.4	16.6	18.3	21.3	33.4	
28	11.7	13.8	16.0	17.7	20.6	32.2	
29	11.3	13.4	15.4	17.1	19.8	31.1	
30	10.9	12.9	14.9	16.5	19.2	30.0	
31	10.5	12.5	14.5	16.0	18.6	29.1	
32	10.2	12.1	14.0	15.5	18.0	28.1	
33	9.91	11.7	13.6	15.0	17.4	27.3	
34	9.62	11.4	13.2	14.6	16.9	26.5	
35	9.34	11.1	12.8	14.2	16.4	25.7	
36	9.08	10.8	12.4	13.8	16.0	25.0	
37	8.84	10.5	12.1	13.4	15.6	24.3	
38	8.60	10.2	11.8	13.0	15.1	23.7	
39	8.38	9.94	11.5	12.7	14.8	23.1	
40	8.17	9.69	11.2	12.4	14.4	22.5	

<b>14 x 3.50 x 1.25</b>							
Thickness (in.)		0.120	0.135	0.150	0.164	0.188	0.250
Weight (lb/ft)		9.09	10.2	11.3	12.3	14.0	18.4
Span (ft)	15	18.9	22.3	25.9	29.4	35.5	49.4
	16	17.7	21.0	24.3	27.5	33.2	46.3
17	16.7	19.7	22.9	25.9	31.3	43.6	
18	15.8	18.6	21.6	24.5	29.6	41.2	
19	14.9	17.6	20.5	23.2	28.0	39.0	
20	14.2	16.8	19.4	22.0	26.6	37.1	
21	13.5	16.0	18.5	21.0	25.3	35.3	
22	12.9	15.2	17.7	20.0	24.2	33.7	
23	12.3	14.6	16.9	19.2	23.1	32.2	
24	11.8	14.0	16.2	18.4	22.2	30.9	
25	11.3	13.4	15.6	17.6	21.3	29.6	
26	10.9	12.9	15.0	16.9	20.5	28.5	
27	10.5	12.4	14.4	16.3	19.7	27.4	
28	10.1	12.0	13.9	15.7	19.0	26.5	
29	9.78	11.6	13.4	15.2	18.3	25.6	
30	9.45	11.2	13.0	14.7	17.7	24.7	
31	9.15	10.8	12.5	14.2	17.2	23.9	
32	8.86	10.5	12.2	13.8	16.6	23.2	
33	8.59	10.2	11.8	13.3	16.1	22.5	
34	8.34	9.86	11.4	13.0	15.6	21.8	
35	8.10	9.58	11.1	12.6	15.2	21.2	
36	7.88	9.31	10.8	12.2	14.8	20.6	
37	7.67	9.06	10.5	11.9	14.4	20.0	
38	7.46	8.82	10.2	11.6	14.0	19.5	
39	7.27	8.60	10.0	11.3	13.6	19.0	
40	7.09	8.38	9.72	11.0	13.3	18.5	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	72.0	71.7	71.5	71.2	70.8	63.4	
<b>L<sub>cr</sub></b> (in.)	34.7	32.5	30.7	29.2	27.1	23.0	
<b>M<sub>r</sub></b> (kip-ft)	520	596	672	743	863	1351	
<b>M<sub>rd</sub></b> (kip-ft)	490	582	677	769	933	1351	
<b>V</b> (kip)	13.1	18.7	25.7	33.6	47.6	84.1	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	1555	1757	1955	2125	2411	3121	
<b>P<sub>et</sub></b> (kip)	1.26	1.65	2.10	2.57	3.50	6.57	
<b>P<sub>e2</sub></b> (kip)	0.442	0.579	0.736	0.901	1.22	2.30	
<b>P<sub>t1</sub></b> (kip)	3.95	5.23	6.70	8.25	11.3	21.6	
<b>P<sub>t2</sub></b> (kip)	0.553	0.732	0.938	1.16	1.58	3.02	
<b>F<sub>ya</sub></b> (ksi)	50.0	50.0	50.0	50.0	50.0	60.4	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	70.5	68.6	68.0	67.4	66.6	64.5	
<b>L<sub>cr</sub></b> (in.)	33.5	31.4	29.7	28.2	26.1	22.2	
<b>M<sub>r</sub></b> (kip-ft)	503	589	657	721	830	1112	
<b>M<sub>rd</sub></b> (kip-ft)	425	503	583	661	798	1112	
<b>V</b> (kip)	15.1	21.5	29.6	36.2	47.6	76.5	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	1145	1280	1412	1534	1739	2246	
<b>P<sub>et</sub></b> (kip)	1.26	1.68	2.14	2.62	3.55	6.66	
<b>P<sub>e2</sub></b> (kip)	0.450	0.590	0.749	0.915	1.24	2.33	
<b>P<sub>t1</sub></b> (kip)	3.98	5.27	6.75	8.31	11.4	21.7	
<b>P<sub>t2</sub></b> (kip)	0.557	0.738	0.945	1.16	1.59	3.04	
<b>F<sub>ya</sub></b> (ksi)	50.0	50.0	50.0	50.0	50.0	60.4	

**NOTE:** The inside bend radius was taken as 0.375 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (IMPERIAL UNITS)**

<b>12 x 3.50 x 1.25</b>							
Thickness (in.)		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.168</b>	<b>0.188</b>	<b>0.250</b>
Weight (lb/ft)		<b>8.28</b>	<b>9.28</b>	<b>10.3</b>	<b>11.2</b>	<b>12.8</b>	<b>16.7</b>
Span (ft)	<b>15</b>	15.9	18.8	21.7	24.5	29.4	39.6
	<b>16</b>	14.9	17.6	20.3	23.0	27.6	37.1
<b>17</b>	14.1	16.6	19.1	21.6	26.0	34.9	
<b>18</b>	13.3	15.6	18.1	20.4	24.5	33.0	
<b>19</b>	12.6	14.8	17.1	19.3	23.2	31.2	
<b>20</b>	11.9	14.1	16.3	18.4	22.1	29.7	
<b>21</b>	11.4	13.4	15.5	17.5	21.0	28.3	
<b>22</b>	10.9	12.8	14.8	16.7	20.1	27.0	
<b>23</b>	10.4	12.2	14.1	16.0	19.2	25.8	
<b>24</b>	10.0	11.7	13.6	15.3	18.4	24.7	
<b>25</b>	9.55	11.3	13.0	14.7	17.7	23.7	
<b>26</b>	9.19	10.8	12.5	14.1	17.0	22.8	
<b>27</b>	8.85	10.4	12.0	13.6	16.4	22.0	
<b>28</b>	8.53	10.0	11.6	13.1	15.8	21.2	
<b>29</b>	8.24	9.70	11.2	12.7	15.2	20.5	
<b>30</b>	7.96	9.38	10.8	12.2	14.7	19.8	
<b>31</b>	7.71	9.08	10.5	11.9	14.2	19.1	
<b>32</b>	7.46	8.79	10.2	11.5	13.8	18.5	
<b>33</b>	7.24	8.53	9.86	11.1	13.4	18.0	
<b>34</b>	7.03	8.28	9.57	10.8	13.0	17.5	
<b>35</b>	6.82	8.04	9.29	10.5	12.6	17.0	
<b>36</b>	6.64	7.82	9.04	10.2	12.3	16.5	
<b>37</b>	6.46	7.60	8.79	9.93	11.9	16.0	
<b>38</b>	6.29	7.40	8.56	9.67	11.6	15.6	
<b>39</b>	6.12	7.21	8.34	9.42	11.3	15.2	
<b>40</b>	5.97	7.03	8.13	9.19	11.0	14.8	

<b>10 x 3.50 x 1.25</b>							
Thickness (in.)		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.164</b>	<b>0.188</b>	<b>0.250</b>
Weight (lb/ft)		<b>7.46</b>	<b>8.36</b>	<b>9.25</b>	<b>10.1</b>	<b>11.5</b>	<b>15.0</b>
Span (ft)	<b>15</b>	12.9	15.2	17.5	19.7	22.9	30.5
	<b>16</b>	12.1	14.2	16.4	18.4	21.5	28.6
<b>17</b>	11.4	13.4	15.4	17.3	20.2	27.0	
<b>18</b>	10.8	12.6	14.5	16.4	19.1	25.5	
<b>19</b>	10.2	12.0	13.8	15.5	18.1	24.1	
<b>20</b>	9.68	11.4	13.1	14.7	17.2	22.9	
<b>21</b>	9.22	10.8	12.5	14.0	16.4	21.8	
<b>22</b>	8.80	10.3	11.9	13.4	15.6	20.8	
<b>23</b>	8.42	9.88	11.4	12.8	15.0	19.9	
<b>24</b>	8.07	9.47	10.9	12.3	14.3	19.1	
<b>25</b>	7.75	9.09	10.5	11.8	13.8	18.3	
<b>26</b>	7.45	8.74	10.1	11.3	13.2	17.6	
<b>27</b>	7.17	8.42	9.70	10.9	12.7	17.0	
<b>28</b>	6.92	8.12	9.35	10.5	12.3	16.4	
<b>29</b>	6.68	7.84	9.03	10.2	11.9	15.8	
<b>30</b>	6.46	7.58	8.73	9.83	11.5	15.3	
<b>31</b>	6.25	7.33	8.45	9.51	11.1	14.8	
<b>32</b>	6.05	7.10	8.18	9.21	10.8	14.3	
<b>33</b>	5.87	6.89	7.94	8.93	10.4	13.9	
<b>34</b>	5.70	6.69	7.70	8.67	10.1	13.5	
<b>35</b>	5.53	6.49	7.48	8.42	9.83	13.1	
<b>36</b>	5.38	6.31	7.27	8.19	9.56	12.7	
<b>37</b>	5.23	6.14	7.08	7.97	9.30	12.4	
<b>38</b>	5.10	5.98	6.89	7.76	9.05	12.1	
<b>39</b>	4.97	5.83	6.71	7.56	8.82	11.7	
<b>40</b>	4.84	5.68	6.55	7.37	8.60	11.5	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	71.5	69.6	69.0	68.5	67.7	65.8	
<b>L<sub>cr</sub></b> (in.)	32.2	30.2	28.5	27.1	25.1	21.3	
<b>M<sub>r</sub></b> (kip-ft)	405	474	529	579	666	890	
<b>M<sub>ra</sub></b> (kip-ft)	358	422	488	551	662	890	
<b>V</b> (kip)	17.8	24.5	30.3	36.2	47.6	64.5	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	791	883	973	1057	1197	1542	
<b>P<sub>et</sub></b> (kip)	1.31	1.72	2.18	2.66	3.61	6.75	
<b>P<sub>e2</sub></b> (kip)	0.460	0.601	0.763	0.931	1.26	2.36	
<b>P<sub>t1</sub></b> (kip)	4.02	5.32	6.81	8.38	11.5	21.8	
<b>P<sub>t2</sub></b> (kip)	0.563	0.744	0.953	1.17	1.61	3.05	
<b>F<sub>ya</sub></b> (ksi)	53.6	56.3	56.8	57.4	58.3	60.4	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	72.8	70.9	70.3	69.9	69.1	67.4	
<b>L<sub>cr</sub></b> (in.)	30.8	28.9	27.2	25.9	24	20.4	
<b>M<sub>r</sub></b> (kip-ft)	315	369	410	449	516	687	
<b>M<sub>ra</sub></b> (kip-ft)	291	341	393	442	516	687	
<b>V</b> (kip)	19.4	24.5	30.3	35.1	40.0	52.5	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	512	571	630	683	773	992	
<b>P<sub>et</sub></b> (kip)	1.34	1.75	2.22	2.71	3.67	6.85	
<b>P<sub>e2</sub></b> (kip)	0.470	0.614	0.778	0.949	1.28	2.40	
<b>P<sub>t1</sub></b> (kip)	4.06	5.37	6.87	8.45	11.6	22.0	
<b>P<sub>t2</sub></b> (kip)	0.568	0.751	0.962	1.18	1.62	3.08	
<b>F<sub>ya</sub></b> (ksi)	53.6	56.3	56.8	57.4	58.3	60.4	

**NOTE:** The inside bend radius was taken as 0.375 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (IMPERIAL UNITS)**

<b>8 x 2.75 x 1.25</b>							
Thickness (in.)		0.120	0.135	0.150	0.164	0.188	0.250
Weight (lb/ft)		5.92	6.62	7.32	7.97	9.06	11.8
Span (ft)	10	13.5	15.7	17.5	19.2	22.0	29.2
	11	12.2	14.3	15.9	17.5	20.0	26.6
12	11.2	13.1	14.6	16.0	18.3	24.4	
13	10.4	12.1	13.5	14.8	16.9	22.5	
14	9.6	11.2	12.5	13.7	15.7	20.9	
15	8.98	10.5	11.7	12.8	14.7	19.5	
16	8.42	9.83	11.0	12.0	13.8	18.3	
17	7.92	9.25	10.3	11.3	13.0	17.2	
18	7.48	8.74	9.75	10.7	12.2	16.2	
19	7.09	8.28	9.23	10.1	11.6	15.4	
20	6.73	7.87	8.77	9.60	11.0	14.6	
21	6.41	7.49	8.35	9.14	10.5	13.9	
22	6.12	7.15	7.97	8.73	10.0	13.3	
23	5.86	6.84	7.63	8.35	9.57	12.7	
24	5.61	6.55	7.31	8.00	9.17	12.2	
25	5.39	6.29	7.02	7.68	8.81	11.7	
26	5.18	6.05	6.75	7.38	8.47	11.2	
27	4.99	5.83	6.50	7.11	8.16	10.8	
28	4.81	5.62	6.27	6.86	7.86	10.4	
29	4.64	5.42	6.05	6.62	7.59	10.1	
30	4.49	5.24	5.85	6.40	7.34	9.75	

<b>6 x 2.75 x 1.00</b>							
Thickness (in.)		0.120	0.135	0.150	0.164	0.188	0.250
Weight (lb/ft)		5.10	5.70	6.30	6.85	7.78	10.1
Span (ft)	5	18.9	21.3	23.6	25.8	29.5	38.9
	6	15.8	17.7	19.7	21.5	24.6	32.4
7	13.5	15.2	16.9	18.4	21.1	27.8	
8	11.8	13.3	14.8	16.1	18.4	24.3	
9	10.5	11.8	13.1	14.3	16.4	21.6	
10	9.45	10.6	11.8	12.9	14.7	19.4	
11	8.59	9.67	10.7	11.7	13.4	17.7	
12	7.88	8.86	9.84	10.7	12.3	16.2	
13	7.27	8.18	9.08	9.92	11.3	14.9	
14	6.75	7.59	8.43	9.21	10.5	13.9	
15	6.30	7.09	7.87	8.60	9.83	13.0	
16	5.91	6.64	7.38	8.06	9.22	12.1	
17	5.56	6.25	6.94	7.59	8.67	11.4	
18	5.25	5.91	6.56	7.16	8.19	10.8	
19	4.97	5.60	6.21	6.79	7.76	10.2	
20	4.73	5.32	5.90	6.45	7.37	9.71	
21	4.50	5.06	5.62	6.14	7.02	9.25	
22	4.30	4.83	5.37	5.86	6.70	8.83	
23	4.11	4.62	5.13	5.61	6.41	8.45	
24	3.94	4.43	4.92	5.37	6.14	8.09	
25	3.78	4.25	4.72	5.16	5.90	7.77	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	55.3	54.8	54.3	53.9	53.3	51.9	
<b>L<sub>cr</sub></b> (in.)	21.5	20.2	19	18.1	16.7	14.1	
<b>M<sub>r</sub></b> (kip-ft)	210	237	263	288	330	439	
<b>M<sub>rd</sub></b> (kip-ft)	202	236	263	288	330	439	
<b>V<sub>r</sub></b> (kip)	19.4	23.4	25.9	28.2	32.1	42.0	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	258	287	315	341	385	489	
<b>P<sub>et</sub></b> (kip)	1.46	1.89	2.38	2.90	3.90	7.21	
<b>P<sub>e2</sub></b> (kip)	0.509	0.661	0.834	1.01	1.36	2.52	
<b>P<sub>t1</sub></b> (kip)	4.61	6.03	7.66	9.35	12.7	23.7	
<b>P<sub>t2</sub></b> (kip)	0.646	0.845	1.07	1.31	1.77	3.32	
<b>F<sub>ya</sub></b> (ksi)	56.9	57.6	58.2	58.9	59.9	62.5	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	57.1	56.7	56.4	56.1	55.6	54.8	
<b>L<sub>cr</sub></b> (in.)	20.0	18.8	17.7	16.8	15.5	13.1	
<b>M<sub>r</sub></b> (kip-ft)	142	160	177	193	221	291	
<b>M<sub>rd</sub></b> (kip-ft)	142	160	177	193	221	291	
<b>V<sub>r</sub></b> (kip)	15.1	16.9	18.7	20.4	23.1	30.0	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	131	145	159	172	193	244	
<b>P<sub>et</sub></b> (kip)	1.50	1.94	2.44	2.96	3.98	7.34	
<b>P<sub>e2</sub></b> (kip)	0.523	0.678	0.854	1.04	1.39	2.57	
<b>P<sub>t1</sub></b> (kip)	4.67	6.11	7.74	9.45	12.8	23.9	
<b>P<sub>t2</sub></b> (kip)	0.654	0.855	1.08	1.32	1.79	3.35	
<b>F<sub>ya</sub></b> (ksi)	56.9	57.6	58.2	58.9	59.9	62.5	

**NOTE:** The inside bend radius was taken as 0.25 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**

**C-SECTION PROPERTIES (IMPERIAL UNITS)**

D x B x L	Gross											Effective		
	t (in.)	Weight (lb/ft)	A (in <sup>2</sup> )	S <sub>x</sub> (in <sup>3</sup> )	r <sub>x</sub> (in.)	I <sub>y</sub> (in <sup>4</sup> )	r <sub>y</sub> (in.)	J (in <sup>4</sup> )	C <sub>w</sub> (in <sup>6</sup> )	j (in.)	X <sub>o</sub> (in.)	r <sub>o</sub> (in <sup>4</sup> )	S <sub>xe</sub> (in <sup>3</sup> )	I <sub>xe</sub> (in <sup>4</sup> )
<b>16 x 3.50 X 1.25</b>	0.120	9.91	2.91	12.6	5.88	4.18	0.120	0.0140	231	10.0	2.13	6.37	11.6	99.0
	0.135	11.1	3.27	14.1	5.88	4.63	1.13	0.0199	255	10.0	2.11	6.36	13.2	112
	0.150	12.3	3.62	15.6	5.87	5.07	1.18	0.0271	279	10.1	2.10	6.34	14.9	124
	0.164	13.4	3.95	16.9	5.86	5.46	1.13	0.0354	301	10.1	2.08	6.33	16.5	135
	0.188	15.3	4.50	19.2	5.84	6.11	1.16	0.0530	336	10.2	2.06	6.30	19.2	154
	0.250	20.1	5.91	24.8	5.80	7.60	1.13	0.123	419	10.4	2.00	6.24	24.8	199
<b>14 x 3.50 X 1.25</b>	0.120	9.09	2.67	10.4	5.22	4.03	1.23	0.0128	172	8.25	2.27	5.83	10.4	72.9
	0.135	10.2	3.00	11.6	5.21	4.47	1.22	0.0182	191	8.27	2.25	5.81	11.6	81.5
	0.150	11.3	3.32	12.9	5.21	4.89	1.21	0.0249	208	8.29	2.24	5.79	12.9	89.9
	0.164	12.3	3.62	14.0	5.20	5.27	1.21	0.0324	224	8.31	2.22	5.78	14.0	97.7
	0.188	14.0	4.13	15.8	5.18	5.89	1.20	0.0486	250	8.35	2.20	5.75	15.8	111
	0.250	18.4	5.41	20.4	5.14	7.34	1.16	0.113	311	8.46	2.13	5.69	20.4	143
<b>12 x 3.50 X 1.25</b>	0.120	8.28	2.43	8.39	4.55	3.86	0.126	0.0117	123	6.77	2.43	5.31	8.39	50.3
	0.135	9.28	2.73	9.37	4.54	4.27	1.25	0.0116	136	6.78	2.41	5.29	9.37	56.2
	0.150	10.3	3.02	10.3	4.53	4.68	1.24	0.0226	149	6.79	2.40	5.27	10.3	62.0
	0.164	11.2	3.29	11.2	4.52	5.04	1.24	0.0295	160	6.81	2.38	5.26	11.2	67.3
	0.188	12.8	3.75	12.7	4.51	5.64	1.23	0.0442	179	6.82	2.36	5.23	12.7	76.2
	0.250	16.7	4.91	16.4	4.47	7.02	1.20	0.102	222	6.88	2.29	5.16	16.4	98.2
<b>10 x 3.50 X 1.25</b>	0.120	7.46	2.19	6.52	3.86	3.64	1.29	0.0105	84.0	5.59	2.62	4.84	6.52	32.6
	0.135	8.36	2.46	7.28	3.85	4.04	1.28	0.0149	92.8	5.59	2.60	4.82	7.28	36.4
	0.150	9.25	2.72	8.02	3.84	4.42	1.27	0.0204	101	5.59	2.59	4.80	8.02	40.1
	0.164	10.1	2.96	8.70	3.83	4.76	1.27	0.0266	109	5.59	2.57	4.79	8.70	43.5
	0.188	11.5	3.37	9.84	3.82	5.32	1.26	0.0397	121	5.59	2.54	4.76	9.84	49.2
	0.250	15.0	4.41	12.6	3.78	6.63	1.23	0.0919	150	5.61	2.47	4.69	12.6	63.2
<b>8 x 2.75 X 1.0</b>	0.120	5.92	1.74	4.10	3.07	1.76	1.00	0.008	25.5	4.41	2.03	3.82	4.10	16.4
	0.135	6.62	1.95	4.57	3.06	1.94	1.00	0.0118	28.0	4.41	2.01	3.80	4.57	18.3
	0.150	7.32	2.15	5.02	3.06	2.11	0.990	0.0161	3.04	4.41	2.00	3.78	5.02	20.1
	0.164	7.97	2.34	5.44	3.05	2.26	0.980	0.0210	32.6	4.42	1.98	3.77	5.44	21.8
	0.188	9.06	2.66	6.13	3.03	2.51	0.970	0.0314	36.0	4.42	1.95	3.74	6.13	24.5
	0.250	11.8	3.46	7.79	3.00	3.07	0.940	0.0722	43.5	4.44	1.89	3.67	7.79	31.2
<b>6 x 2.75 X 1.0</b>	0.120	5.10	1.50	2.77	2.35	1.59	1.03	0.007	14.3	3.54	2.26	3.42	2.77	8.31
	0.135	5.70	1.68	3.08	2.35	1.75	1.02	0.0102	15.7	3.54	2.24	3.40	3.08	9.24
	0.150	6.30	1.85	3.38	2.34	1.91	1.02	0.0139	17.0	3.53	2.22	3.38	3.38	10.1
	0.164	6.85	2.01	3.65	2.33	2.05	1.01	0.0181	18.1	3.52	2.21	3.37	3.65	11.0
	0.188	7.78	2.29	4.10	2.32	2.28	1.00	0.0269	20.0	3.51	2.18	3.34	4.10	12.3
	0.250	10.1	2.96	5.18	2.29	2.78	0.970	0.0618	23.9	3.48	2.11	3.26	5.18	15.5

**NOTE:** The inside bend radius was taken as 0.375 in. for the 3.50 in. flanges and 0.25 in. for the 2.75 in. flanges.



**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (METRIC UNITS)**

<b>406 x 89 x 31.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>14.8</b>	<b>16.6</b>	<b>18.3</b>	<b>20.4</b>	<b>22.8</b>	<b>29.9</b>	
Span (m)	<b>3.0</b>	131	175	203	224	260	408
	<b>3.5</b>	127	150	174	192	223	350
	<b>4.0</b>	111	132	152	168	195	306
	<b>4.5</b>	98.6	117	135	149	174	272
	<b>5.0</b>	88.8	105	122	134	156	245
	<b>5.5</b>	80.7	95.7	111	122	142	223
	<b>6.0</b>	74.0	87.7	101	112	130	204
	<b>6.5</b>	68.3	81.0	93.5	103	120	188
	<b>7.0</b>	63.4	75.2	86.8	96.0	112	175
	<b>7.5</b>	59.2	70.2	81.0	89.6	104	163
	<b>8.0</b>	55.5	65.8	76.0	84.0	97.6	153
	<b>8.5</b>	52.2	61.9	71.5	79.1	91.9	144
	<b>9.0</b>	49.3	58.5	67.5	74.7	86.8	136
	<b>9.5</b>	46.7	55.4	64.0	70.7	82.2	129
	<b>10.0</b>	44.4	52.6	60.8	67.2	78.1	122
	<b>10.5</b>	42.3	50.1	57.9	64.0	74.4	117
	<b>11.0</b>	40.4	47.9	55.3	61.1	71.0	111
	<b>11.5</b>	38.6	45.8	52.9	58.4	67.9	106
	<b>12.0</b>	37.0	43.9	50.7	56.0	65.1	102
	<b>12.5</b>	35.5	42.1	48.6	53.8	62.5	98.0
	<b>13.0</b>	34.1	40.5	46.8	51.7	60.1	94.2
	<b>13.5</b>	32.9	39.0	45.0	49.8	57.8	90.7
	<b>14.0</b>	31.7	37.6	43.4	48.0	55.8	87.5

<b>356 x 89 x 31.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>13.5</b>	<b>15.2</b>	<b>16.8</b>	<b>18.3</b>	<b>20.9</b>	<b>27.4</b>	
Span (m)	<b>3.0</b>	128	152	176	199	241	336
	<b>3.5</b>	110	130	151	171	206	288
	<b>4.0</b>	96.3	114	132	150	181	252
	<b>4.5</b>	85.6	101	117	133	161	224
	<b>5.0</b>	77.0	91.0	106	120	144	201
	<b>5.5</b>	70.0	82.8	96.0	109	131	183
	<b>6.0</b>	64.2	75.9	88.0	100	120	168
	<b>6.5</b>	59.2	70.0	81.2	92.0	111	155
	<b>7.0</b>	55.0	65.0	75.4	85.5	103	144
	<b>7.5</b>	51.3	60.7	70.4	79.8	96.3	134
	<b>8.0</b>	48.1	56.9	66.0	74.8	90.3	126
	<b>8.5</b>	45.3	53.5	62.1	70.4	85.0	119
	<b>9.0</b>	42.8	50.6	58.7	66.5	80.3	112
	<b>9.5</b>	40.5	47.9	55.6	63.0	76.0	106
	<b>10.0</b>	38.5	45.5	52.8	59.8	72.2	101
	<b>10.5</b>	36.7	43.3	50.3	57.0	68.8	96.0
	<b>11.0</b>	35.0	41.4	48.0	54.4	65.7	91.6
	<b>11.5</b>	33.5	39.6	45.9	52.0	62.8	87.8
	<b>12.0</b>	32.1	37.9	44.0	49.8	60.2	84.0
	<b>12.5</b>	30.8	36.4	42.2	47.9	57.8	80.6
	<b>13</b>	29.6	35.0	40.6	46.0	55.6	77.5
	<b>13.5</b>	28.5	33.7	39.1	44.3	53.5	74.6
	<b>14.0</b>	27.5	32.5	37.7	42.7	51.6	72.0

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	1828	1821	1814	1808	1798	1608	
<b>L<sub>cr</sub> (mm)</b>	881	826	779	742	687	585	
<b>M<sub>r</sub> (kN-m)</b>	58.8	67.4	76.0	84.0	97.6	153	
<b>M<sub>rd</sub> (kN-m)</b>	55.5	65.8	76.6	87.0	106	153	
<b>V<sub>r</sub> (kN)</b>	58.2	83.1	114	150	212	374	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	642	726	808	878	996	1290	
<b>P<sub>e1</sub> (kN)</b>	5.62	7.36	9.36	11.5	15.6	29.3	
<b>P<sub>e2</sub> (kN)</b>	1.97	2.58	3.28	4.01	5.45	10.2	
<b>P<sub>i1</sub> (kN)</b>	17.6	23.3	29.8	36.7	50.3	95.9	
<b>P<sub>i2</sub> (kN)</b>	2.46	3.26	4.18	5.14	7.05	13.4	
<b>F<sub>ya</sub> (MPa)</b>	345	345	345	345	345	418	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	1781	1739	1724	1711	1689	1636	
<b>L<sub>cr</sub> (mm)</b>	852	798	753	717	664	565	
<b>M<sub>r</sub> (kN-m)</b>	57.4	66.7	74.4	81.6	94.0	126	
<b>M<sub>rd</sub> (kN-m)</b>	48.1	56.9	66.0	74.8	90.3	126	
<b>V<sub>r</sub> (kN)</b>	67.2	95.9	132	161	212	341	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	473	529	584	634	719	928	
<b>P<sub>e1</sub> (kN)</b>	5.73	7.50	9.52	11.6	15.8	29.6	
<b>P<sub>e2</sub> (kN)</b>	2.01	2.63	3.33	4.08	5.53	10.4	
<b>P<sub>i1</sub> (kN)</b>	17.7	23.5	30.1	37.0	50.7	96.5	
<b>P<sub>i2</sub> (kN)</b>	2.48	3.29	4.21	5.18	7.09	13.5	
<b>F<sub>ya</sub> (MPa)</b>	373	389	393	397	403	418	

**NOTE:** The inside bend radius was taken as 9.52 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (METRIC UNITS)**

<b>305 x 89 x 31.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>12.3</b>	<b>13.8</b>	<b>15.3</b>	<b>16.7</b>	<b>19.0</b>	<b>24.9</b>	
Span (m)	<b>3.0</b>	108	127	147	166	200	269
	<b>3.5</b>	92.7	109	126	143	171	231
<b>4.0</b>	81.1	95.5	110	125	150	202	
<b>4.5</b>	72.1	84.9	98.2	111	133	179	
<b>5.0</b>	64.9	76.4	88.4	100	120	161	
<b>5.5</b>	59.0	69.5	80.3	90.7	109	147	
<b>6.0</b>	54.1	63.7	73.6	83.2	100	134	
<b>6.5</b>	49.9	58.8	68.0	76.8	92.3	124	
<b>7.0</b>	46.3	54.6	63.1	71.3	85.7	115	
<b>7.5</b>	43.2	50.9	58.9	66.5	80.0	108	
<b>8.0</b>	40.5	47.8	55.2	62.4	75.0	101	
<b>8.5</b>	38.2	44.9	52.0	58.7	70.5	94.9	
<b>9.0</b>	36.0	42.5	49.1	55.4	66.6	89.7	
<b>9.5</b>	34.1	40.2	46.5	52.5	63.1	84.9	
<b>10.0</b>	32.4	38.2	44.2	49.9	60.0	80.7	
<b>10.5</b>	30.9	36.4	42.1	47.5	57.1	76.8	
<b>11.0</b>	29.5	34.7	40.2	45.4	54.5	73.4	
<b>11.5</b>	28.2	33.2	38.4	43.4	52.1	70.2	
<b>12.0</b>	27.0	31.8	36.8	41.6	50.0	67.2	
<b>12.5</b>	25.9	30.6	35.3	39.9	48.0	64.6	
<b>13.0</b>	24.9	29.4	34.0	38.4	46.1	62.1	
<b>13.5</b>	24.0	28.3	32.7	37.0	44.4	59.8	
<b>14.0</b>	23.2	27.3	31.6	35.6	42.8	57.6	

<b>254 x 89 x 31.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>11.1</b>	<b>12.4</b>	<b>13.8</b>	<b>15.0</b>	<b>17.1</b>	<b>22.3</b>	
Span (m)	<b>3.0</b>	87.6	103	119	133	156	208
	<b>3.5</b>	75.1	88.2	102	114	134	178
<b>4.0</b>	65.7	77.2	88.9	100	117	156	
<b>4.5</b>	58.4	68.6	79.0	89.0	104	138	
<b>5.0</b>	52.6	61.7	71.1	80.1	93.5	125	
<b>5.5</b>	47.8	56.1	64.7	72.8	85.0	113	
<b>6.0</b>	43.8	51.4	59.3	66.7	77.9	104	
<b>6.5</b>	40.5	47.5	54.7	61.6	71.9	95.8	
<b>7.0</b>	37.6	44.1	50.8	57.2	66.8	89.0	
<b>7.5</b>	35.1	41.2	47.4	53.4	62.3	83.1	
<b>8.0</b>	32.9	38.6	44.5	50.0	58.5	77.9	
<b>8.5</b>	30.9	36.3	41.8	47.1	55.0	73.3	
<b>9.0</b>	29.2	34.3	39.5	44.5	52.0	69.2	
<b>9.5</b>	27.7	32.5	37.4	42.1	49.2	65.6	
<b>10.0</b>	26.3	30.9	35.6	40.0	46.8	62.3	
<b>10.5</b>	25.0	29.4	33.9	38.1	44.5	59.3	
<b>11.0</b>	23.9	28.1	32.3	36.4	42.5	56.6	
<b>11.5</b>	22.9	26.8	30.9	34.8	40.7	54.2	
<b>12.0</b>	21.9	25.7	29.6	33.4	39.0	51.9	
<b>12.5</b>	21.0	24.7	28.4	32.0	37.4	49.8	
<b>13.0</b>	20.2	23.7	27.4	30.8	36.0	47.9	
<b>13.5</b>	19.5	22.9	26.3	29.7	34.6	46.1	
<b>14.0</b>	18.8	22.0	25.4	28.6	33.4	44.5	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	1808	1766	1752	1739	1718	1669	
<b>L<sub>cr</sub> (mm)</b>	819	768	724	689	638	542	
<b>M<sub>r</sub> (kN-m)</b>	46.2	53.7	59.9	65.6	75.5	101	
<b>M<sub>rd</sub> (kN-m)</b>	40.5	47.8	55.2	62.4	75.0	101	
<b>V<sub>r</sub> (kN)</b>	79.4	109	135	161	212	287	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	327	365	402	437	495	637	
<b>P<sub>e1</sub> (kN)</b>	5.85	7.65	9.70	11.9	16.1	30	
<b>P<sub>e2</sub> (kN)</b>	2.05	2.68	3.39	4.15	5.62	10.5	
<b>P<sub>i1</sub> (kN)</b>	17.9	23.7	30.3	37.3	51.0	97.1	
<b>P<sub>i2</sub> (kN)</b>	2.50	3.31	4.24	5.22	7.15	13.6	
<b>F<sub>ya</sub> (MPa)</b>	373	389	393	397	403	418	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	1839	1798	1784	1772	1753	1710	
<b>L<sub>cr</sub> (mm)</b>	782	733	692	658	609	517	
<b>M<sub>r</sub> (kN-m)</b>	35.9	41.7	46.5	50.9	58.7	77.9	
<b>M<sub>rd</sub> (kN-m)</b>	32.9	38.6	44.5	50.0	58.5	77.9	
<b>V<sub>r</sub> (kN)</b>	86.2	109	135	156	178	234	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	212	236	260	282	319	410	
<b>P<sub>e1</sub> (kN)</b>	5.98	7.81	9.89	12.1	16.3	30.5	
<b>P<sub>e2</sub> (kN)</b>	2.09	2.73	3.46	4.22	5.72	10.7	
<b>P<sub>i1</sub> (kN)</b>	18.1	23.9	30.6	37.6	51.4	97.8	
<b>P<sub>i2</sub> (kN)</b>	2.53	3.35	4.28	5.27	7.20	13.7	
<b>F<sub>ya</sub> (MPa)</b>	373	389	393	397	403	418	

**NOTE:** The inside bend radius was taken as 9.52 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**C-SECTIONS (METRIC UNITS)**

<b>203 x 70 x 25.4</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>8.80</b>	<b>9.86</b>	<b>10.9</b>	<b>11.9</b>	<b>13.5</b>	<b>17.5</b>	
Span (m)	<b>3.0</b>	63.4	71.4	79.5	87.0	99.8	133
	<b>3.5</b>	54.3	61.2	68.1	74.5	85.5	114
<b>4.0</b>	47.5	53.6	59.6	65.2	74.8	99.4	
<b>4.5</b>	42.3	47.6	53.0	58.0	66.5	88.4	
<b>5.0</b>	38.0	42.9	47.7	52.2	59.9	79.5	
<b>5.5</b>	34.6	39.0	43.4	47.4	54.4	72.3	
<b>6.0</b>	31.7	35.7	39.7	43.5	47.4	54.4	
<b>6.5</b>	29.3	33.0	36.7	40.1	46.0	61.2	
<b>7.0</b>	27.2	30.6	34.1	37.3	42.8	56.8	
<b>7.5</b>	25.4	28.6	31.8	34.8	39.9	53.0	
<b>8.0</b>	23.8	26.8	29.8	32.6	37.4	49.7	
<b>8.5</b>	22.4	25.2	28.1	30.7	35.2	46.8	
<b>9.0</b>	21.1	23.8	26.5	29.0	33.3	44.2	
<b>9.5</b>	20.0	22.6	25.1	27.5	31.5	41.9	
<b>10.0</b>	19.0	21.4	23.8	26.1	29.9	39.8	

<b>152 x 70 x 25.4</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>7.59</b>	<b>8.49</b>	<b>9.38</b>	<b>10.2</b>	<b>11.6</b>	<b>15.0</b>	
Span (m)	<b>2.0</b>	64.2	72.2	80.2	87.6	100	132
	<b>2.5</b>	51.4	57.8	64.2	70.1	80.2	106
<b>3.0</b>	42.8	48.2	53.5	58.4	66.8	88.1	
<b>3.5</b>	36.7	41.3	45.8	50.1	57.3	75.5	
<b>4.0</b>	32.1	36.1	40.1	43.8	50.1	66.0	
<b>4.5</b>	28.5	32.1	35.7	38.9	44.5	58.7	
<b>5.0</b>	25.7	28.9	32.1	35.1	40.1	52.8	
<b>5.5</b>	23.3	26.3	29.2	31.9	36.4	48.0	
<b>6.0</b>	21.4	24.1	26.7	29.2	33.4	44.0	
<b>6.5</b>	19.8	22.2	24.7	27.0	30.8	40.6	
<b>7.0</b>	18.3	20.6	22.9	25.0	28.6	37.7	
<b>7.5</b>	17.1	19.3	21.4	23.4	26.7	35.2	
<b>8.0</b>	16.1	18.1	20.1	21.9	25.1	33.0	
<b>8.5</b>	15.1	17.0	18.9	20.6	23.6	31.1	
<b>9.0</b>	14.3	16.1	17.8	19.5	22.3	29.4	
<b>9.5</b>	13.5	15.2	16.9	18.4	21.1	27.8	
<b>10.0</b>	12.8	14.4	16.0	17.5	20.0	26.4	

<b>DESIGN DATA</b>						
<b>L<sub>v</sub> (mm)</b>	1403	1390	1378	1368	1352	1315
<b>L<sub>cr</sub> (mm)</b>	547	512	483	459	424	359
<b>M<sub>r</sub> (kN-m)</b>	23.8	26.8	29.3	32.6	37.4	49.7
<b>M<sub>rd</sub> (kN-m)</b>	22.9	26.7	29.8	32.6	37.4	49.7
<b>V<sub>r</sub> (kN)</b>	86.2	104	115	126	143	187
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	107	119	130	141	159	202
<b>P<sub>e1</sub> (kN)</b>	6.48	8.41	10.6	12.9	17.4	32.1
<b>P<sub>e2</sub> (kN)</b>	2.27	2.94	3.71	4.51	6.07	11.2
<b>P<sub>i1</sub> (kN)</b>	20.5	26.9	34.1	41.6	56.4	106
<b>P<sub>i2</sub> (kN)</b>	2.87	3.76	4.77	5.83	7.9	14.8
<b>F<sub>ya</sub> (MPa)</b>	393	398	402	407	414	432

<b>DESIGN DATA</b>						
<b>L<sub>v</sub> (mm)</b>	1449	1439	1430	1422	1411	1390
<b>L<sub>cr</sub> (mm)</b>	509	477	449	427	394	333
<b>M<sub>r</sub> (kN-m)</b>	16.1	18.1	20.1	21.9	25.1	33.0
<b>M<sub>rd</sub> (kN-m)</b>	16.1	18.1	20.1	21.9	25.1	33.0
<b>V<sub>r</sub> (kN)</b>	67.4	75.4	83.3	90.6	103	134
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	53.9	59.9	65.8	71.1	79.9	101
<b>P<sub>e1</sub> (kN)</b>	6.66	8.82	10.9	13.2	17.72	32.7
<b>P<sub>e2</sub> (kN)</b>	2.33	3.02	3.80	4.62	6.20	11.4
<b>P<sub>i1</sub> (kN)</b>	20.8	27.2	34.5	42.1	57.0	106
<b>P<sub>i2</sub> (kN)</b>	2.91	3.81	4.82	5.89	7.98	14.9
<b>F<sub>ya</sub> (MPa)</b>	393	398	402	407	414	432

NOTE: The inside bend radius was taken as 6.35 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**

**C-SECTION PROPERTIES (METRIC UNITS)**

Gross													Effective	
	t	Mass	A	S <sub>x</sub> x10 <sup>3</sup>	r <sub>x</sub>	I <sub>y</sub> x10 <sup>6</sup>	r <sub>y</sub>	J x10 <sup>3</sup>	C <sub>w</sub> x10 <sup>9</sup>	j	X <sub>o</sub>	r <sub>o</sub>	S <sub>xe</sub> x10 <sup>3</sup>	I <sub>xe</sub> x10 <sup>6</sup>
D x B x L	(mm)	(kg/m)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm)	(mm <sup>4</sup> )	(mm)	(mm <sup>4</sup> )	(mm <sup>6</sup> )	(mm)	(mm)	(mm)	(mm <sup>3</sup> )	(mm <sup>4</sup> )
<b>406 x 89 X 31.8</b>	3.05	14.8	1879	207	150	1.74	30.4	5.82	61.9	254	54.0	162	189	41.2
	3.43	16.6	2108	231	149	1.93	1.13	8.26	68.6	255	53.7	161	217	46.5
	3.81	18.3	2335	255	149	2.11	1.13	11.3	75.0	256	53.3	161	245	51.8
	4.17	20.0	2546	277	149	2.27	1.13	14.7	80.8	257	52.9	161	271	56.3
	4.78	22.8	2904	315	148	2.54	1.13	22.1	90.3	259	52.3	160	314	63.9
	6.35	29.9	3813	407	147	3.17	28.8	51.3	112	263	263	50.8	158	407
<b>356 x 89 X 31.8</b>	3.05	13.5	1724	171	133	1.68	31.2	5.34	46.2	210	57.6	148	171	30.4
	3.43	15.2	1934	191	132	1.86	31.0	7.58	51.1	210	57.2	148	191	33.9
	3.81	16.8	2141	211	132	2.04	30.8	10.4	55.9	211	56.8	147	211	37.4
	4.17	18.3	2334	229	132	2.19	30.7	13.5	60.2	211	56.4	147	229	40.7
	4.78	20.9	2661	259	132	2.45	30.4	20.2	67.3	212	55.8	146	259	46.1
	6.35	27.4	3491	335	131	3.05	29.6	46.9	83.5	215	54.2	145	335	59.5
<b>305 x 89 X 31.8</b>	3.05	12.3	1570	138	116	1.61	32.0	4.86	33.1	172	61.7	135	138	21.0
	3.43	13.8	1759	154	115	1.78	31.8	6.90	36.6	172	61.3	134	154	23.4
	3.81	15.3	1948	169	115	1.95	31.6	9.42	40.0	173	60.9	134	169	25.8
	4.17	16.7	2122	184	115	2.10	31.4	12.3	43.1	173	60.5	134	184	28.0
	4.78	19.0	2419	208	115	2.35	31.1	18.4	48.1	173	59.8	133	208	31.7
	6.35	24.9	3168	268	114	2.92	30.4	42.6	59.6	175	58.1	131	268	40.9
<b>254 x 89 X 31.8</b>	3.05	11.1	1415	107	98.0	1.52	32.7	4.38	22.6	142	66.5	123	107	13.6
	3.43	12.4	1585	119	97.8	1.68	32.6	6.21	24.9	142	66.1	122	119	15.2
	3.81	13.8	1754	131	97.5	1.84	32.4	8.49	27.2	142	65.7	122	131	16.7
	4.17	15.0	1911	143	97.3	1.98	32.2	11.1	29.3	142	65.3	122	143	18.1
	4.78	17.1	2176	161	97.0	2.22	31.9	16.5	32.6	142	64.6	121	161	20.5
	6.35	22.3	2845	207	96.1	2.76	31.1	38.2	40.3	142	62.9	119	207	26.3
<b>203 x 70 X 25.4</b>	3.05	8.80	1122	67.2	78.0	0.730	25.5	3.47	6.84	112	51.5	96.9	67.2	6.83
	3.43	9.86	1255	74.8	77.8	0.806	25.3	4.92	7.53	112	51.1	96.5	74.8	7.60
	3.81	10.9	1388	82.3	77.6	0.878	25.2	6.72	8.18	112	50.7	96.0	82.3	8.36
	4.17	11.9	1510	89.1	77.4	0.942	25.0	8.74	8.75	112	50.3	95.6	89.1	9.05
	4.78	13.5	1717	100	77.1	1.05	24.7	13.1	9.67	112	49.6	94.9	100	10.2
	6.35	17.5	2235	128	76.2	1.28	23.9	30.0	11.7	113	47.9	93.1	128	13.0
<b>152 x 70 X 25.4</b>	3.05	7.59	967	45.4	59.8	0.662	26.2	2.99	3.83	90.0	57.4	86.9	45.4	3.46
	3.43	8.49	1081	50.5	59.6	0.730	26.0	4.24	4.21	89.8	56.9	86.4	50.5	3.84
	3.81	9.38	1194	55.4	59.4	0.735	25.8	5.78	4.56	89.6	56.5	86.0	55.4	4.22
	4.17	10.2	1299	59.8	59.3	0.853	25.6	7.51	4.87	89.4	56.1	85.5	59.8	4.56
	4.78	11.6	1475	67.2	58.9	0.947	25.3	11.2	5.37	89.1	55.4	84.8	67.2	5.12
	6.35	15.0	1912	84.8	58.1	1.16	24.6	25.7	6.43	88.4	53.6	82.8	84.8	6.47

**NOTE:** The inside bend radius was taken as 9.52 mm for the 89mm flanges and 6.35mm for the 70mm flanges

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (IMPERIAL UNITS)**

<b>16 x 2.00</b>							
Thickness (in.)	0.120	0.135	0.150	0.164	0.188	0.250	
Weight (lb/ft)	7.96	8.94	9.91	10.8	12.4	16.3	
Span (ft)	15	13.8	16.5	19.3	21.7	25.6	42.8
	16	12.9	15.5	18.1	20.4	24.0	40.2
	17	12.2	14.6	17.0	19.2	22.6	37.8
	18	11.5	13.5	16.1	18.1	21.4	35.7
	19	10.9	13.0	15.2	17.2	20.2	33.8
	20	10.3	12.4	14.5	16.3	19.2	32.1
	21	9.84	11.8	13.8	15.5	18.3	30.6
	22	9.39	11.3	13.2	14.8	17.5	29.2
	23	8.99	10.8	12.6	14.2	16.7	27.9
	24	8.61	10.3	12.1	13.6	16.0	26.8
	25	8.27	9.91	11.6	13.0	15.4	25.7
	26	7.95	9.53	11.1	12.5	14.8	24.7
	27	7.65	9.18	10.7	12.1	14.2	23.8
	28	7.38	8.85	10.3	11.6	13.7	22.9
	29	7.13	8.54	9.99	11.2	13.3	22.2
	30	6.89	8.26	9.65	10.9	12.8	21.4
	31	6.67	7.99	9.34	10.5	12.4	20.7
	32	6.46	7.74	9.05	10.2	12.0	20.1
	33	6.26	7.51	8.78	9.88	11.7	19.5
	34	6.08	7.29	8.52	9.59	11.3	18.9
	35	5.90	7.08	8.27	9.32	11.0	18.4
	36	5.74	6.88	8.04	9.06	10.7	17.8
	37	5.59	6.70	7.83	8.81	10.4	17.4
	38	5.44	6.52	7.62	8.58	10.1	16.9
	39	5.30	6.35	7.43	8.36	9.86	16.5
	40	5.17	6.19	7.24	8.15	9.62	16.1

<b>DESIGN DATA</b>						
$L_u$ (in.)	29.7	29.7	29.6	29.5	29.4	25.8
$M_f$ (kip-ft)	310	372	434	489	577	964
$V_f$ (kip)	12.9	18.4	25.2	33.1	47.6	84.1
$D_c$ (lb-ft <sup>2</sup> )	1016	1164	1306	1425	1621	2112
$P_{e1}$ (kip)	1.33	1.74	2.21	2.70	3.65	6.81
$P_{e2}$ (kip)	0.467	0.610	0.773	0.943	1.28	2.39
$P_{f1}$ (kip)	4.44	5.82	7.40	9.05	12.3	23.1
$P_{f2}$ (kip)	0.621	0.815	1.04	1.27	1.72	3.23
$F_y$ (ksi)	50.0	50.0	50.0	50.0	50.0	63.7

<b>14 x 2.00</b>							
Thickness (in.)	0.120	0.135	0.150	0.164	0.188	0.250	
Weight (lb/ft)	7.14	8.02	8.89	9.7	11.1	14.6	
Span (ft)	15	11.7	14.0	16.2	18.2	25.4	34.4
	16	11.0	13.1	15.2	17.1	23.8	32.3
	17	10.3	12.3	14.3	16.1	22.4	30.4
	18	9.77	11.6	13.5	15.2	21.2	28.7
	19	9.25	11.0	12.8	14.4	20.0	27.2
	20	8.79	10.5	12.2	13.6	19.0	25.8
	21	8.37	9.98	11.6	13.0	18.1	24.6
	22	7.99	9.53	11.1	12.4	17.3	23.5
	23	7.64	9.11	10.6	11.9	16.6	22.5
	24	7.32	8.73	10.2	11.4	15.9	21.5
	25	7.03	8.39	9.75	10.9	15.2	20.7
	26	6.76	8.06	9.37	10.5	14.6	19.9
	27	6.51	7.76	9.03	10.1	14.1	19.1
	28	6.28	7.49	8.70	9.75	13.6	18.4
	29	6.06	7.23	8.40	9.41	13.1	17.8
	30	5.86	6.99	8.12	9.10	12.7	17.2
	31	5.67	6.76	7.86	8.81	12.3	16.7
	32	5.49	6.55	7.62	8.53	11.9	16.1
	33	5.33	6.35	7.39	8.27	11.5	15.7
	34	5.17	6.17	7.17	8.03	11.2	15.2
	35	5.02	5.99	6.96	7.80	10.9	14.8
	36	4.88	5.82	6.77	7.58	10.6	14.3
	37	4.75	5.67	6.59	7.38	10.3	14.0
	38	4.63	5.52	6.41	7.18	10.0	13.6
	39	4.51	5.38	6.25	7.00	9.77	13.2
	40	4.39	5.24	6.09	6.82	9.52	12.9

<b>DESIGN DATA</b>						
$L_u$ (in.)	30.5	30.5	30.4	30.4	27.3	26.6
$M_f$ (kip-ft)	264	315	366	410	571	775
$V_f$ (kip)	14.8	21.1	29.1	36.2	47.6	78.0
$D_c$ (lb-ft <sup>2</sup> )	735	836	924	1006	1143	1486
$P_{e1}$ (kip)	1.36	1.77	2.25	2.74	3.70	6.90
$P_{e2}$ (kip)	0.476	0.621	0.786	0.959	1.30	2.42
$P_{f1}$ (kip)	4.48	5.87	7.45	9.12	12.4	23.2
$P_{f2}$ (kip)	0.627	0.821	1.04	1.28	1.73	3.25
$F_y$ (ksi)	50.0	50.0	50.0	50.0	61.1	63.7

**NOTE:** The inside bend radius was taken as 0.25 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (IMPERIAL UNITS)**

<b>12 x 2.00</b>							
Thickness (in.)		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.164</b>	<b>0.188</b>	<b>0.250</b>
Weight (lb/ft)		<b>6.33</b>	<b>7.10</b>	<b>7.87</b>	<b>8.59</b>	<b>9.81</b>	<b>12.9</b>
Span (ft)	<b>15</b>	9.67	11.4	13.1	15.8	19.9	26.9
		<b>16</b>	9.06	10.7	12.3	14.8	18.6
	<b>17</b>	8.53	10.1	11.6	13.9	17.5	23.7
	<b>18</b>	8.06	9.54	10.9	13.1	16.6	22.4
	<b>19</b>	7.63	9.04	10.3	12.5	15.7	21.2
	<b>20</b>	7.25	8.59	9.82	11.8	14.9	20.2
	<b>21</b>	6.90	8.18	9.35	11.3	14.2	19.2
	<b>22</b>	6.59	7.81	8.93	10.8	13.6	18.3
	<b>23</b>	6.30	7.47	8.54	10.3	13.0	17.5
	<b>24</b>	6.04	7.15	8.18	9.86	12.4	16.8
	<b>25</b>	5.80	6.87	7.86	9.46	11.9	16.1
	<b>26</b>	5.58	6.60	7.55	9.10	11.5	15.5
	<b>27</b>	5.37	6.36	7.27	8.76	11.0	14.9
	<b>28</b>	5.18	6.13	7.01	8.45	10.7	14.4
	<b>29</b>	5.00	5.92	6.77	8.16	10.3	13.9
	<b>30</b>	4.83	5.72	6.55	7.89	9.94	13.4
	<b>31</b>	4.68	5.54	6.33	7.63	9.62	13.0
	<b>32</b>	4.53	5.37	6.14	7.39	9.32	12.6
	<b>33</b>	4.39	5.20	5.95	7.17	9.04	12.2
	<b>34</b>	4.26	5.05	5.78	6.96	8.77	11.9
	<b>35</b>	4.14	4.91	5.61	6.76	8.52	11.5
	<b>36</b>	4.03	4.77	5.45	6.57	8.28	11.2
	<b>37</b>	3.92	4.64	5.31	6.39	8.06	10.9
	<b>38</b>	3.82	4.52	5.17	6.23	7.85	10.6
	<b>39</b>	3.72	4.40	5.04	6.07	7.65	10.3
	<b>40</b>	3.62	4.29	4.91	5.91	7.46	10.1

<b>10 x 2.00</b>							
Thickness (in.)		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.164</b>	<b>0.188</b>	<b>0.250</b>
Weight (lb/ft)		<b>5.51</b>	<b>6.18</b>	<b>6.85</b>	<b>7.47</b>	<b>8.53</b>	<b>11.2</b>
Span (ft)	<b>15</b>	7.63	8.75	9.88	11.9	14.7	20.2
		<b>16</b>	7.15	8.21	9.26	11.2	13.8
	<b>17</b>	6.73	7.72	8.72	10.5	13.0	17.8
	<b>18</b>	6.36	7.29	8.23	9.92	12.3	16.8
	<b>19</b>	6.02	6.91	7.80	9.40	11.6	15.9
	<b>20</b>	5.72	6.57	7.41	8.93	11.1	15.1
	<b>21</b>	5.45	6.25	7.06	8.50	10.5	14.4
	<b>22</b>	5.20	5.97	6.74	8.12	10.1	13.8
	<b>23</b>	4.97	5.71	6.44	7.76	9.61	13.2
	<b>24</b>	4.77	5.47	6.18	7.44	9.21	12.6
	<b>25</b>	4.58	5.25	5.93	7.14	8.85	12.1
	<b>26</b>	4.40	5.05	5.70	6.87	8.51	11.7
	<b>27</b>	4.24	4.86	5.49	6.61	8.19	11.2
	<b>28</b>	4.09	4.69	5.29	6.38	7.90	10.8
	<b>29</b>	3.94	4.53	5.11	6.16	7.63	10.4
	<b>30</b>	3.81	4.38	4.94	5.95	7.37	10.1
	<b>31</b>	3.69	4.24	4.78	5.76	7.13	9.77
	<b>32</b>	3.57	4.10	4.63	5.58	6.91	9.47
	<b>33</b>	3.47	3.98	4.49	5.41	6.70	9.18
	<b>34</b>	3.36	3.86	4.36	5.25	6.50	8.91
	<b>35</b>	3.27	3.75	4.24	5.10	6.32	8.66
	<b>36</b>	3.18	3.65	4.12	4.96	6.14	8.41
	<b>37</b>	3.09	3.55	4.01	4.83	5.98	8.19
	<b>38</b>	3.01	3.46	3.90	4.70	5.82	7.97
	<b>39</b>	2.93	3.37	3.80	4.58	5.67	7.77
	<b>40</b>	2.86	3.28	3.71	4.46	5.53	7.57

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	31.3	31.3	31.3	29.8	28.2	27.5	
<b>M<sub>r</sub></b> (kip-ft)	218	258	295	355	447	605	
<b>V<sub>r</sub></b> (kip)	17.4	24.5	30.3	36.2	47.6	66.0	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	500	563	622	676	767	994	
<b>P<sub>e1</sub></b> (kip)	1.39	1.81	2.29	2.79	3.76	6.99	
<b>P<sub>e1</sub></b> (kip)	0.486	0.633	0.801	0.975	1.32	2.45	
<b>P<sub>r1</sub></b> (kip)	4.52	5.92	7.52	9.19	12.5	23.4	
<b>P<sub>r2</sub></b> (kip)	0.632	0.828	1.05	1.29	1.75	3.27	
<b>F<sub>y</sub></b> (ksi)	50.0	50.0	50.0	55.0	61.1	63.7	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub></b> (in.)	32.2	32.2	32.2	30.7	29.3	28.5	
<b>M<sub>r</sub></b> (kip-ft)	172	197	222	268	332	454	
<b>V<sub>r</sub></b> (kip)	19.4	24.5	30.3	36.1	41.2	54.0	
<b>D<sub>c</sub></b> (lb-ft <sup>2</sup> )	315	355	391	425	482	622	
<b>P<sub>e1</sub></b> (kip)	1.42	1.85	2.33	2.84	3.83	7.10	
<b>P<sub>e2</sub></b> (kip)	0.497	0.646	0.816	0.993	1.34	2.48	
<b>P<sub>r1</sub></b> (kip)	4.56	5.97	7.58	9.27	12.6	23.5	
<b>P<sub>r2</sub></b> (kip)	0.639	0.836	1.06	1.30	1.76	3.29	
<b>F<sub>y</sub></b> (ksi)	50.0	50.0	50.0	55.0	60.1	63.7	

**NOTE:** The inside bend radius was taken as 0.25 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (IMPERIAL UNITS)**

<b>8 x 2.00</b>							
<b>Thickness (in.)</b>		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.164</b>	<b>0.188</b>	<b>0.250</b>
<b>Weight (lb/ft)</b>		<b>4.69</b>	<b>5.26</b>	<b>5.83</b>	<b>6.35</b>	<b>7.25</b>	<b>9.51</b>
<b>Span (ft)</b>	<b>10</b>	8.15	9.38	10.6	12.8	16.1	21.5
	<b>11</b>	7.41	8.53	9.64	11.6	14.6	19.6
<b>12</b>	6.79	7.82	8.84	10.7	13.4	17.9	
<b>13</b>	6.27	7.22	8.16	9.83	12.4	16.6	
<b>14</b>	5.82	6.70	7.58	9.13	11.5	15.4	
<b>15</b>	5.44	6.25	7.07	8.52	10.7	14.4	
<b>16</b>	5.10	5.86	6.63	7.99	10.0	13.5	
<b>17</b>	4.80	5.52	6.24	7.52	9.45	12.7	
<b>18</b>	4.53	5.21	5.89	7.10	8.92	12.0	
<b>19</b>	4.29	4.94	5.58	6.73	8.45	11.3	
<b>20</b>	4.08	4.69	5.30	6.39	8.03	10.8	
<b>21</b>	3.88	4.47	5.05	6.09	7.65	10.3	
<b>22</b>	3.71	4.26	4.82	5.81	7.30	9.78	
<b>23</b>	3.54	4.08	4.61	5.56	6.98	9.36	
<b>24</b>	3.40	3.91	4.42	5.33	6.69	8.97	
<b>25</b>	3.26	3.75	4.24	5.11	6.42	8.61	
<b>26</b>	3.14	3.61	4.08	4.92	6.18	8.28	
<b>27</b>	3.02	3.47	3.93	4.73	5.95	7.97	
<b>28</b>	2.91	3.35	3.79	4.56	5.73	7.69	
<b>29</b>	2.81	3.23	3.66	4.41	5.54	7.42	
<b>30</b>	2.72	3.13	3.54	4.26	5.35	7.18	

<b>6 x 2.00</b>							
<b>Thickness (in.)</b>		<b>0.120</b>	<b>0.135</b>	<b>0.150</b>	<b>0.164</b>	<b>0.188</b>	<b>0.250</b>
<b>Weight (lb/ft)</b>		<b>3.88</b>	<b>4.34</b>	<b>4.81</b>	<b>5.24</b>	<b>5.97</b>	<b>7.81</b>
<b>Span (ft)</b>	<b>5</b>	10.7	12.3	14.0	16.8	21.1	28.1
	<b>6</b>	8.91	10.3	11.7	14.0	17.6	23.4
<b>7</b>	7.64	8.82	10.0	12.0	15.1	20.1	
<b>8</b>	6.69	7.71	8.74	10.5	13.2	17.5	
<b>9</b>	5.94	6.86	7.77	9.36	11.7	15.6	
<b>10</b>	5.35	6.17	6.99	8.42	10.6	14.0	
<b>11</b>	4.86	5.61	6.36	7.66	9.59	12.8	
<b>12</b>	4.46	5.14	5.83	7.02	8.79	11.7	
<b>13</b>	4.11	4.75	5.38	6.48	8.12	10.8	
<b>14</b>	3.82	4.41	5.00	6.02	7.54	10.0	
<b>15</b>	3.57	4.11	4.66	5.62	7.04	9.36	
<b>16</b>	3.34	3.86	4.37	5.22	6.60	8.77	
<b>17</b>	3.15	3.63	4.11	4.96	6.21	8.26	
<b>18</b>	2.97	3.43	3.89	4.68	5.86	7.80	
<b>19</b>	2.81	3.25	3.68	4.43	5.55	7.39	
<b>20</b>	2.67	3.09	3.50	4.21	5.28	7.02	
<b>21</b>	2.55	2.94	3.33	4.01	5.03	6.68	
<b>22</b>	2.43	2.81	3.18	3.83	4.80	6.38	
<b>23</b>	2.33	2.68	3.04	3.66	4.59	6.10	
<b>24</b>	2.23	2.57	2.91	3.51	4.40	5.85	
<b>25</b>	2.14	2.47	2.80	3.37	4.22	5.61	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub> (in.)</b>	33.1	33.1	33.2	31.6	30.0	29.7	
<b>M<sub>r</sub> (kip-ft)</b>	122	141	159	192	241	323	
<b>V<sub>r</sub> (kip)</b>	19.4	23.4	25.9	28.2	32.1	42.0	
<b>D<sub>c</sub> (lb-ft<sup>2</sup>)</b>	181	204	224	243	275	354	
<b>P<sub>e1</sub> (kip)</b>	1.46	1.89	2.38	2.90	3.90	7.21	
<b>P<sub>e2</sub> (kip)</b>	0.509	0.661	0.834	1.01	1.36	2.52	
<b>P<sub>r1</sub> (kip)</b>	4.61	6.03	7.66	9.35	12.7	23.7	
<b>P<sub>r2</sub> (kip)</b>	0.646	0.845	1.07	1.31	1.77	3.32	
<b>F<sub>y</sub> (ksi)</b>	50.0	50.0	50.0	55.0	61.1	63.7	

<b>DESIGN DATA</b>							
<b>L<sub>0</sub> (in.)</b>	33.9	34.1	34.3	32.7	31.2	31.4	
<b>M<sub>r</sub> (kip-ft)</b>	80.2	92.6	105	126	158	211	
<b>V<sub>r</sub> (kip)</b>	15.1	16.9	18.7	20.4	23.1	30.0	
<b>D<sub>c</sub> (lb-ft<sup>2</sup>)</b>	89.9	101	111	120	136	173	
<b>P<sub>e1</sub> (kip)</b>	1.50	1.94	2.44	2.96	3.98	7.34	
<b>P<sub>e2</sub> (kip)</b>	0.523	0.678	0.854	1.04	1.39	2.57	
<b>P<sub>r1</sub> (kip)</b>	4.67	6.11	7.74	9.45	12.8	23.9	
<b>P<sub>r2</sub> (kip)</b>	0.654	0.855	1.08	1.32	1.79	3.35	
<b>F<sub>y</sub> (ksi)</b>	50.0	50.0	50.0	55.0	61.1	63.7	

**NOTE:** The inside bend radius was taken as 0.25 in.

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kips)**  
**(For Laterally Supported Single Span)**

**CHANNEL SECTIONS PROPERTIES (IMPERIAL UNITS)**

Gross													Effective	
D x B	t	Weight	A	S <sub>x</sub>	r <sub>x</sub>	I <sub>y</sub>	r <sub>y</sub>	J	C <sub>w</sub>	j	X <sub>o</sub>	r <sub>o</sub>	S <sub>xe</sub>	I <sub>xe</sub>
	(in.)	(lb/ft)	(in <sup>2</sup> )	(in <sup>3</sup> )	(in.)	(in <sup>4</sup> )	(in.)	(in <sup>4</sup> )	(in <sup>6</sup> )	(in.)	(in.)	(in <sup>4</sup> )	(in <sup>3</sup> )	(in <sup>4</sup> )
<b>16 x 2.00</b>	0.120	7.96	2.34	8.42	5.37	0.496	0.461	0.0112	25.1	16.3	0.600	5.42	6.89	64.7
	0.135	8.94	2.63	9.43	5.36	0.552	0.459	0.0160	27.9	16.3	0.600	5.41	8.26	74.2
	0.150	9.91	2.91	10.4	5.35	0.607	0.456	0.0219	30.6	16.3	0.600	5.40	9.65	83.2
	0.164	10.8	3.18	11.4	5.34	0.656	0.454	0.0285	33.1	16.4	0.590	5.40	10.9	90.8
	0.188	12.4	3.63	12.9	5.33	0.739	0.451	0.0428	37.2	16.4	0.590	5.38	12.8	103
	0.250	16.3	4.79	16.8	5.30	0.936	0.442	0.100	46.8	16.5	0.570	5.35	16.8	134
<b>14 x 2.00</b>	0.120	7.14	2.10	6.80	4.76	0.486	0.481	0.0101	18.5	12.6	0.660	4.83	5.86	46.8
	0.135	8.02	2.36	7.61	4.76	0.541	0.479	0.0143	20.6	12.7	0.650	4.82	6.99	53.3
	0.150	8.89	2.61	8.41	4.75	0.594	0.477	0.0196	22.5	12.7	0.650	4.82	8.12	58.9
	0.164	9.70	2.85	9.15	4.74	0.643	0.475	0.0256	24.4	12.7	0.650	4.81	9.10	64.0
	0.188	11.1	3.26	10.4	4.73	0.724	0.471	0.0384	27.3	12.7	0.640	4.79	10.4	72.8
	0.250	14.6	4.29	13.5	4.69	0.917	0.462	0.0895	34.4	12.7	0.630	4.76	13.5	94.6
<b>12 x 2.00</b>	0.120	6.33	1.86	5.34	4.15	0.474	0.505	0.0089	13.0	9.50	0.720	4.25	4.83	31.9
	0.135	7.10	2.09	5.98	4.14	0.527	0.503	0.0127	14.4	9.51	0.720	4.24	5.72	35.8
	0.150	7.87	2.31	6.60	4.14	0.579	0.500	0.0174	15.8	9.51	0.720	4.23	6.55	39.6
	0.164	8.59	2.52	7.17	4.13	0.626	0.498	0.0226	17.0	9.51	0.710	4.22	7.17	43.0
	0.188	9.81	2.88	8.14	4.12	0.705	0.495	0.0340	19.1	9.52	0.710	4.21	8.14	48.8
	0.250	12.9	3.79	10.6	4.09	0.893	0.485	0.0791	24.0	9.53	0.690	4.17	10.6	63.3
<b>10 x 2.00</b>	0.120	5.51	1.62	4.04	3.53	0.457	0.531	0.0078	8.47	6.89	0.800	3.66	3.81	20.1
	0.135	6.18	1.82	4.52	3.53	0.509	0.529	0.0110	9.40	6.89	0.800	3.65	4.38	22.6
	0.150	6.85	2.01	4.98	3.52	0.559	0.527	0.0151	10.3	6.89	0.800	3.65	4.94	24.9
	0.164	7.47	2.2	5.41	3.51	0.605	0.525	0.0197	11.1	6.89	0.790	3.64	5.41	27.1
	0.188	8.53	2.51	6.14	3.50	0.680	0.521	0.0295	12.5	6.88	0.790	3.62	6.14	30.7
	0.250	11.2	3.29	7.93	3.47	0.862	0.512	0.0686	15.6	6.87	0.770	3.59	7.93	39.6
<b>8 x 2.00</b>	0.120	4.69	1.38	2.90	2.90	0.435	0.562	0.0066	5.01	4.81	0.910	3.09	2.72	11.5
	0.135	5.26	1.55	3.24	2.89	0.484	0.559	0.0094	5.56	4.80	0.900	3.08	3.13	13.0
	0.150	5.83	1.71	3.57	2.89	0.532	0.557	0.0129	6.08	4.80	0.900	3.08	3.54	14.3
	0.164	6.35	1.87	3.87	2.88	0.575	0.555	0.0167	6.56	4.79	0.890	3.07	3.87	15.5
	0.188	7.25	2.13	4.38	2.87	0.647	0.551	0.0251	7.34	4.78	0.890	3.05	4.38	17.5
	0.250	9.51	2.79	5.63	2.84	0.820	0.542	0.0582	9.17	4.75	0.870	3.02	5.63	22.5
<b>6 x 2.00</b>	0.120	3.88	1.14	1.92	2.25	0.404	0.595	0.005	2.53	3.25	1.04	2.55	1.78	5.72
	0.135	4.34	1.28	2.14	2.24	0.449	0.593	0.0078	2.80	3.24	1.04	2.54	2.06	6.43
	0.150	4.81	1.41	2.36	2.24	0.493	0.591	0.0106	3.06	3.24	1.03	2.53	2.33	7.07
	0.164	5.24	1.54	2.55	2.23	0.533	0.589	0.0138	3.30	3.23	1.03	2.53	2.55	7.66
	0.188	5.97	1.75	2.88	2.22	0.600	0.585	0.0207	3.68	3.21	1.02	2.51	2.88	8.64
	0.250	7.81	2.29	3.67	2.19	0.759	0.575	0.0478	4.57	3.17	1.01	2.48	3.67	11.0

**NOTE:** The inside bend radius was taken as 0.25 in.



**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (METRIC UNITS)**

<b>406 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>11.9</b>	<b>13.3</b>	<b>14.8</b>	<b>16.1</b>	<b>18.4</b>	<b>24.3</b>	
Span (m)	<b>3.0</b>	93.5	112	131	148	174	291
	<b>3.5</b>	80.2	96.1	112	126	149	250
	<b>4.0</b>	70.1	84.1	98.2	111	130	218
	<b>4.5</b>	62.3	74.7	87.3	98.4	116	194
	<b>5.0</b>	56.1	67.3	78.6	88.5	104	175
	<b>5.5</b>	51.0	61.1	71.5	80.5	94.4	159
	<b>6.0</b>	46.8	56.0	65.5	73.8	87.0	146
	<b>6.5</b>	43.2	51.7	60.5	68.1	80.3	134
	<b>7.0</b>	40.1	48.0	56.1	63.2	74.5	125
	<b>7.5</b>	37.4	44.8	52.4	59.0	69.6	116
	<b>8.0</b>	35.1	42.0	49.1	55.3	65.2	109
	<b>8.5</b>	33.0	39.6	46.2	52.1	61.4	103
	<b>9.0</b>	31.2	37.4	43.7	49.2	58.0	97.1
	<b>9.5</b>	29.5	35.4	41.4	46.6	54.9	92.0
	<b>10.0</b>	28.1	33.6	39.3	44.3	52.2	87.4
	<b>10.5</b>	26.7	32.0	37.4	42.2	49.7	83.2
	<b>11.0</b>	25.5	30.6	35.7	40.2	47.4	79.4
	<b>11.5</b>	24.4	29.2	34.2	38.5	45.4	76.0
	<b>12.0</b>	23.4	28.0	32.7	36.9	43.5	72.8
	<b>12.5</b>	22.4	26.9	31.4	35.4	41.7	69.9
	<b>13.0</b>	21.6	25.9	30.2	34.0	40.1	67.2
	<b>13.5</b>	20.8	24.9	29.1	32.8	38.7	64.7
	<b>14.0</b>	20.0	24.0	28.1	31.6	37.3	62.4

<b>356 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>10.6</b>	<b>11.9</b>	<b>13.2</b>	<b>14.4</b>	<b>16.5</b>	<b>21.8</b>	
Span (m)	<b>3.0</b>	79.5	94.8	110	123	173	234
	<b>3.5</b>	68.2	81.3	94.5	106	148	201
	<b>4.0</b>	59.7	71.1	82.7	92.6	129	176
	<b>4.5</b>	53.0	63.2	73.5	82.3	115	156
	<b>5.0</b>	47.7	56.9	66.1	74.1	104	140
	<b>5.5</b>	43.4	51.7	60.1	67.4	94.2	128
	<b>6.0</b>	39.8	47.4	55.1	61.7	86.3	117
	<b>6.5</b>	36.7	43.8	50.9	57.0	79.7	108
	<b>7.0</b>	34.1	40.6	47.2	52.9	74.0	100
	<b>7.5</b>	31.8	37.9	44.1	49.4	69.0	93.7
	<b>8.0</b>	29.8	35.6	41.3	46.3	64.7	87.8
	<b>8.5</b>	28.1	33.5	38.9	43.6	60.9	82.6
	<b>9.0</b>	26.5	31.6	36.7	41.2	57.5	78.1
	<b>9.5</b>	25.1	29.9	34.8	39.0	54.5	73.9
	<b>10.0</b>	23.9	28.5	33.1	37.0	51.8	70.2
	<b>10.5</b>	22.7	27.1	31.5	35.3	49.3	66.9
	<b>11.0</b>	21.7	25.9	30.1	33.7	47.1	63.9
	<b>11.5</b>	20.7	24.7	28.8	32.2	45.0	61.1
	<b>12.0</b>	19.9	23.7	27.6	30.9	43.2	58.5
	<b>12.5</b>	19.1	22.8	26.5	29.6	41.4	56.2
	<b>13.0</b>	18.4	21.9	25.4	28.5	39.8	54.0
	<b>13.5</b>	17.7	21.1	24.5	27.4	38.4	52.0
	<b>14.0</b>	17.0	20.3	23.6	26.5	37.0	50.2

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	755	753	751	750	747	654	
<b>M<sub>r</sub> (kN-m)</b>	35.1	42.0	49.1	55.3	65.2	109	
<b>V<sub>r</sub> (kN)</b>	57.3	81.7	112	147	212	374	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	419	481	539	589	670	873	
<b>P<sub>e1</sub> (kN)</b>	5.94	7.76	9.83	12.0	16.2	30.3	
<b>P<sub>e2</sub> (kN)</b>	2.08	2.72	3.44	4.20	5.68	10.6	
<b>P<sub>i1</sub> (kN)</b>	19.8	25.9	32.9	40.3	54.7	103	
<b>P<sub>i2</sub> (kN)</b>	2.77	3.63	4.61	5.64	7.66	14.4	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	345	345	441	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	775	773	772	771	693	674	
<b>M<sub>r</sub> (kN-m)</b>	29.8	35.6	41.3	46.3	64.7	87.8	
<b>V<sub>r</sub> (kN)</b>	65.9	94.0	129	161	212	347	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	303	346	382	416	472	614	
<b>P<sub>e1</sub> (kN)</b>	6.06	7.90	10.0	12.2	16.5	30.7	
<b>P<sub>e2</sub> (kN)</b>	2.12	2.77	3.50	4.27	5.77	10.8	
<b>P<sub>i1</sub> (kN)</b>	19.9	26.1	33.2	40.6	55.1	103	
<b>P<sub>i2</sub> (kN)</b>	2.79	3.66	4.65	5.68	7.71	14.5	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	345	422	441	

**NOTE:** The inside bend radius was taken as 6.35 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (METRIC UNITS)**

<b>305 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>9.42</b>	<b>10.6</b>	<b>11.7</b>	<b>12.8</b>	<b>14.6</b>	<b>19.2</b>	
Span (m)	<b>3.0</b>	65.6	77.7	88.8	108	135	183
	<b>3.5</b>	56.2	66.6	76.1	92.3	116	157
	<b>4.0</b>	49.2	58.3	66.6	80.7	101	137
	<b>4.5</b>	43.7	51.8	59.2	71.8	90.1	122
	<b>5.0</b>	39.4	46.6	53.3	64.6	81.1	110
	<b>5.5</b>	35.8	42.4	48.4	58.7	73.7	100
	<b>6.0</b>	32.8	38.8	44.4	53.8	67.6	91.4
	<b>6.5</b>	30.3	35.8	41.0	49.7	62.4	84.4
	<b>7.0</b>	28.1	33.3	38.1	46.1	57.9	78.4
	<b>7.5</b>	26.2	31.1	35.5	43.1	54.1	73.1
	<b>8.0</b>	24.6	29.1	33.3	40.4	50.7	68.6
	<b>8.5</b>	23.2	27.4	31.3	38.0	47.7	64.5
	<b>9.0</b>	21.9	25.9	29.6	35.9	45.1	61.0
	<b>9.5</b>	20.7	24.5	28.0	34.0	42.7	57.7
	<b>10.0</b>	19.7	23.3	26.6	32.3	40.6	54.9
	<b>10.5</b>	18.7	22.2	25.4	30.8	38.6	52.2
	<b>11.0</b>	17.9	21.2	24.2	29.4	36.9	49.9
	<b>11.5</b>	17.1	20.3	23.2	28.1	35.3	47.7
	<b>12.0</b>	16.4	19.4	22.2	26.9	33.8	45.7
	<b>12.5</b>	15.7	18.6	21.3	25.8	32.4	43.9
	<b>13.0</b>	15.10	17.9	20.5	24.8	31.2	42.2
	<b>13.5</b>	14.60	17.3	19.7	23.9	30.0	40.6
	<b>14.0</b>	14.1	16.6	19.0	23.1	29.0	39.2

<b>254 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>8.20</b>	<b>9.20</b>	<b>10.2</b>	<b>11.1</b>	<b>12.7</b>	<b>16.7</b>	
Span (m)	<b>3.0</b>	51.7	59.4	67.0	81.3	102	137
	<b>3.5</b>	44.3	50.9	57.5	69.6	87.3	118
	<b>4.0</b>	38.8	44.5	50.3	60.9	76.4	103
	<b>4.5</b>	34.5	39.6	44.7	54.2	67.9	91.6
	<b>5.0</b>	31.0	35.6	40.2	48.8	61.1	82.4
	<b>5.5</b>	28.2	32.4	36.6	44.3	55.6	74.9
	<b>6.0</b>	25.9	29.7	33.5	40.6	50.9	68.7
	<b>6.5</b>	23.9	27.4	30.9	37.5	47.0	63.4
	<b>7.0</b>	22.2	25.5	28.7	34.8	43.7	58.9
	<b>7.5</b>	20.7	23.8	26.8	32.5	40.8	54.9
	<b>8.0</b>	19.4	22.3	25.1	30.5	38.2	51.5
	<b>8.5</b>	18.3	21.0	23.7	28.7	36.0	48.5
	<b>9.0</b>	17.2	19.8	22.3	27.1	34.0	45.8
	<b>9.5</b>	16.3	18.8	21.2	25.7	32.2	43.4
	<b>10.0</b>	15.5	17.8	20.1	24.4	30.6	41.2
	<b>10.5</b>	14.8	17.0	19.2	23.2	29.1	39.2
	<b>11.0</b>	14.1	16.2	18.3	22.2	27.8	37.5
	<b>11.5</b>	13.5	15.5	17.5	21.2	26.6	35.8
	<b>12.0</b>	12.9	14.8	16.8	20.3	25.5	34.3
	<b>12.5</b>	12.4	14.3	16.1	19.5	24.5	33.0
	<b>13.0</b>	11.9	13.7	15.5	18.8	23.5	31.7
	<b>13.5</b>	11.5	13.2	14.9	18.1	22.6	30.5
	<b>14.0</b>	11.1	12.7	14.4	17.4	21.8	29.4

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	796	795	794	753	714	696	
<b>M<sub>r</sub> (kN-m)</b>	24.6	29.1	33.3	40.4	50.7	68.6	
<b>V<sub>r</sub> (kN)</b>	77.6	109	135	161	212	294	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	207	233	257	279	317	411	
<b>P<sub>e1</sub> (kN)</b>	6.19	8.05	10.2	12.4	16.8	31.1	
<b>P<sub>e2</sub> (kN)</b>	2.17	2.82	3.56	4.34	5.86	10.9	
<b>P<sub>r1</sub> (kN)</b>	20.1	26.3	33.5	40.9	55.5	104	
<b>P<sub>r2</sub> (kN)</b>	2.82	3.69	4.68	5.73	7.77	14.6	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	382	422	441	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	818	817	817	776	737	722	
<b>M<sub>r</sub> (kN-m)</b>	19.4	22.3	25.1	30.5	38.2	51.5	
<b>V<sub>r</sub> (kN)</b>	86.2	109	135	161	183	240	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	130	147	162	176	199	257	
<b>P<sub>e1</sub> (kN)</b>	6.32	8.22	10.4	12.6	17.0	31.6	
<b>P<sub>e2</sub> (kN)</b>	2.21	2.88	3.63	4.42	5.96	11.1	
<b>P<sub>r1</sub> (kN)</b>	20.3	26.6	33.8	41.2	55.9	105	
<b>P<sub>r2</sub> (kN)</b>	2.84	3.72	4.73	5.77	7.83	14.7	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	382	422	441	

**NOTE:** The inside bend radius was taken as 6.35 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**  
**CHANNEL SECTIONS (METRIC UNITS)**

<b>203 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>6.99</b>	<b>7.83</b>	<b>8.68</b>	<b>9.46</b>	<b>10.8</b>	<b>14.2</b>	
Span (m)	<b>3.0</b>	36.9	42.4	48.0	58.2	72.8	97.6
	<b>3.5</b>	31.6	36.4	41.1	49.8	62.4	83.6
	<b>4.0</b>	27.7	31.8	36.0	43.6	54.6	73.2
	<b>4.5</b>	24.6	28.3	32.0	38.8	48.5	65.1
	<b>5.0</b>	22.1	25.5	28.8	34.9	43.7	58.6
	<b>5.5</b>	20.1	23.1	26.2	31.7	39.7	53.2
	<b>6.0</b>	18.4	21.2	24.0	29.1	36.4	48.8
	<b>6.5</b>	17.0	19.6	22.1	26.8	33.6	45.0
	<b>7.0</b>	15.8	18.2	20.6	24.9	31.2	41.8
	<b>7.5</b>	14.7	17.0	19.2	23.3	29.1	39.0
	<b>8.0</b>	13.8	15.9	18.0	21.8	27.3	36.6
	<b>8.5</b>	13.0	15.0	16.9	20.5	25.7	34.4
	<b>9.0</b>	12.3	14.1	16.0	19.4	24.3	32.5
	<b>9.5</b>	11.6	13.4	15.1	18.4	23.0	30.8
	<b>10.0</b>	11.1	12.7	14.4	17.4	21.8	29.3

<b>152 x 50.8</b>							
Thickness (mm)	<b>3.05</b>	<b>3.43</b>	<b>3.81</b>	<b>4.17</b>	<b>4.78</b>	<b>6.35</b>	
Mass (kg/m)	<b>5.77</b>	<b>6.47</b>	<b>7.16</b>	<b>7.80</b>	<b>8.88</b>	<b>11.6</b>	
Span (m)	<b>2.0</b>	36.3	41.9	47.4	57.5	71.7	95.4
	<b>2.5</b>	29.0	33.5	38.0	46.0	57.4	76.4
	<b>3.0</b>	24.2	27.9	31.6	38.3	47.8	63.6
	<b>3.5</b>	20.7	23.9	27.1	32.9	41.0	54.5
	<b>4.0</b>	18.1	20.9	23.7	28.7	35.9	47.7
	<b>4.5</b>	16.1	18.6	21.1	25.6	31.9	42.4
	<b>5.0</b>	14.5	16.7	19.0	23.0	28.7	38.2
	<b>5.5</b>	13.2	15.2	17.3	20.9	26.1	34.7
	<b>6.0</b>	12.1	14.0	15.8	19.2	23.9	31.8
	<b>6.5</b>	11.2	12.9	14.6	17.7	22.1	29.4
	<b>7.0</b>	10.4	12.0	13.6	16.4	20.5	27.3
	<b>7.5</b>	9.67	11.2	12.7	15.3	19.1	25.5
	<b>8.0</b>	9.07	10.5	11.9	14.4	17.9	23.9
	<b>8.5</b>	8.54	9.85	11.2	13.5	16.9	22.5
	<b>9.0</b>	8.06	9.30	10.5	12.8	15.9	21.2
	<b>9.5</b>	7.64	8.81	10.0	12.1	15.1	20.1
	<b>10.0</b>	7.26	8.37	9.49	11.5	14.3	19.1

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	840	841	842	800	761	753	
<b>M<sub>r</sub> (kN-m)</b>	13.8	15.9	18.0	21.8	27.3	36.6	
<b>V<sub>r</sub> (kN)</b>	86.2	104	115	126	143	187	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	74.8	84.1	92.7	101	114	146	
<b>P<sub>e1</sub> (kN)</b>	6.48	8.41	10.6	12.9	17.4	32.1	
<b>P<sub>e2</sub> (kN)</b>	2.27	2.94	3.71	4.51	6.07	11.2	
<b>P<sub>r1</sub> (kN)</b>	20.5	26.9	34.1	41.6	56.4	106	
<b>P<sub>r2</sub> (kN)</b>	2.87	3.76	4.77	5.83	7.90	14.8	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	382	422	441	

<b>DESIGN DATA</b>							
<b>L<sub>v</sub> (mm)</b>	862	865	870	828	791	796	
<b>M<sub>r</sub> (kN-m)</b>	9.07	10.5	11.9	14.4	17.9	23.9	
<b>V<sub>r</sub> (kN)</b>	67.4	75.4	83.3	90.6	103	134	
<b>D<sub>c</sub> (kN-m<sup>2</sup>)</b>	37.1	41.7	45.9	49.7	56.1	71.5	
<b>P<sub>e1</sub> (kN)</b>	6.66	8.62	10.9	13.2	17.7	32.7	
<b>P<sub>e2</sub> (kN)</b>	2.33	3.02	3.80	4.62	6.20	11.4	
<b>P<sub>r1</sub> (kN)</b>	20.8	27.2	34.5	42.1	57.0	106	
<b>P<sub>r2</sub> (kN)</b>	2.91	3.81	4.82	5.89	7.98	14.9	
<b>F<sub>y</sub> (MPa)</b>	345	345	345	382	422	441	

**NOTE:** The inside bend radius was taken as 6.35 mm

**TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD TABLE (kN)**  
**(For Laterally Supported Single Span)**

**CHANNEL SECTION PROPERTIES (METRIC UNITS)**

Gross													Effective	
D x B	t	Mass	A	S <sub>x</sub> x10 <sup>3</sup>	r <sub>x</sub>	I <sub>y</sub> x10 <sup>6</sup>	r <sub>y</sub>	J x10 <sup>3</sup>	C <sub>w</sub> x10 <sup>9</sup>	j	X <sub>o</sub>	r <sub>o</sub>	S <sub>xe</sub> x10 <sup>3</sup>	I <sub>xd</sub> x10 <sup>6</sup>
(mm)	(kg/m)	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm)	(mm <sup>4</sup> )	(mm)	(mm <sup>4</sup> )	(mm <sup>2</sup> )	(mm)	(mm)	(mm)	(mm <sup>2</sup> )	(mm <sup>4</sup> )	
<b>406 x 50.8</b>	3.05	11.9	1509	138	136	0.207	11.7	4.67	6.75	414	15.3	138	113	26.9
	3.43	13.3	1695	155	136	0.230	11.6	6.64	7.50	414	15.3	138	135	30.9
	3.81	14.8	1879	171	136	0.253	11.6	9.09	8.23	415	15.2	137	158	34.6
	4.17	16.1	2051	186	136	0.273	11.5	11.9	8.89	415	15.1	137	178	37.8
	4.78	18.4	2344	212	135	0.307	11.5	17.8	9.98	416	15.0	137	210	43.0
	6.35	24.3	3093	276	135	0.390	11.2	41.6	12.6	419	14.6	136	275	56.0
<b>356 x 50.8</b>	3.05	10.6	1354	112	121	0.202	12.2	4.19	4.97	321	16.7	123	96.1	19.4
	3.43	11.9	1520	125	121	0.225	12.2	5.96	5.52	321	16.6	123	115	22.2
	3.81	13.2	1686	138	121	0.247	12.1	8.16	6.05	322	16.5	122	133	24.9
	4.17	14.4	1840	150	120	0.268	12.1	10.6	6.54	322	16.5	122	149	26.7
	4.78	16.5	2102	170	120	0.301	12.0	16.0	7.34	322	16.3	122	170	30.3
	6.35	21.8	2771	222	119	0.382	11.7	37.2	9.24	324	15.9	121	222	39.4
<b>305 x 50.8</b>	3.05	9.42	1200	87.6	106	0.197	12.8	3.71	3.48	241	18.4	108	79.2	13.3
	3.43	10.6	1346	97.7	105	0.219	12.8	5.28	3.86	242	18.3	108	93.8	14.9
	3.81	11.7	1492	108	105	0.241	12.7	7.22	4.24	242	18.2	107	107	16.5
	4.17	12.8	1628	118	105	0.261	12.7	9.42	4.57	242	18.1	107	118	17.9
	4.78	14.6	1859	113	105	0.293	12.6	14.1	5.13	242	18.0	107	133	20.3
	6.35	19.2	2443	173	104	0.372	12.3	32.9	6.45	242	17.6	106	173	26.4
<b>254 x 50.8</b>	3.05	8.20	1045	66.3	89.9	0.190	13.5	3.24	2.27	175	20.4	93.0	62.5	8.36
	3.43	9.20	1172	74.0	89.6	0.212	13.4	4.59	2.52	175	20.3	92.8	71.7	9.40
	3.81	10.2	1299	81.7	89.4	0.233	13.4	6.28	2.77	175	20.2	92.6	81.0	10.4
	4.17	11.1	1416	88.7	89.2	0.252	13.3	8.19	2.98	175	20.1	92.4	88.7	11.3
	4.78	12.7	1617	101	88.9	0.283	13.2	12.3	3.34	175	20.0	92.1	101	12.8
	6.35	16.7	2125	130	88.1	0.359	13.0	28.6	4.19	175	19.6	91.2	130	16.5
<b>203 x 50.8</b>	3.05	6.99	890	47.6	73.7	0.181	14.3	2.76	1.35	122	23.0	78.5	44.5	4.80
	3.43	7.83	998	53.1	73.5	0.202	14.2	3.91	1.49	122	22.9	87.3	51.2	5.39
	3.81	8.68	1105	58.5	73.3	0.221	14.2	5.35	1.63	122	22.8	78.1	57.9	5.94
	4.17	9.46	1205	63.5	73.2	0.239	14.1	6.97	1.76	122	22.7	77.9	63.5	6.45
	4.78	10.8	1374	71.8	72.9	0.269	14.0	10.4	1.97	121	22.6	77.6	71.8	7.30
	6.35	14.2	1803	92.3	72.1	0.341	13.8	24.2	2.46	121	22.1	76.7	92.3	9.38
<b>152 x 50.8</b>	3.05	5.77	735	31.5	57.2	0.168	15.1	2.28	0.680	82.7	26.5	64.8	29.2	2.38
	3.43	6.47	824	35.1	57.0	0.187	15.1	3.23	0.750	82.4	26.4	64.6	33.7	2.68
	3.81	7.16	912	38.6	56.8	0.205	15.0	4.41	0.820	82.2	26.3	64.4	38.2	2.94
	4.17	7.80	993	41.9	56.7	0.222	14.9	5.74	0.890	81.9	26.2	64.2	41.8	3.19
	4.78	8.88	1131	47.2	56.4	0.250	14.9	8.60	0.990	81.5	26.0	63.8	47.2	3.60
	6.35	11.6	1480	60.2	55.7	0.316	14.6	19.9	1.23	80.5	25.5	63.0	60.2	4.59

**NOTE:** The inside bend radius was taken as 6.35 mm