2025 CATALOGUE

(Metric)

STEEL BUILDING SOLUTION Inc.
MANITOBA, CANADA

ORDER INFORMATION

Tel: 1 (204) 265-3315

Cell: 1 (204) 792-4895

Email: gwaldjason@gmail.com

Box 3140 R.R. #3

Beausejour, Manitoba

R0E 0C0

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Prepared by: Burns Maendel Consulting Engineers

Z-PURLINS

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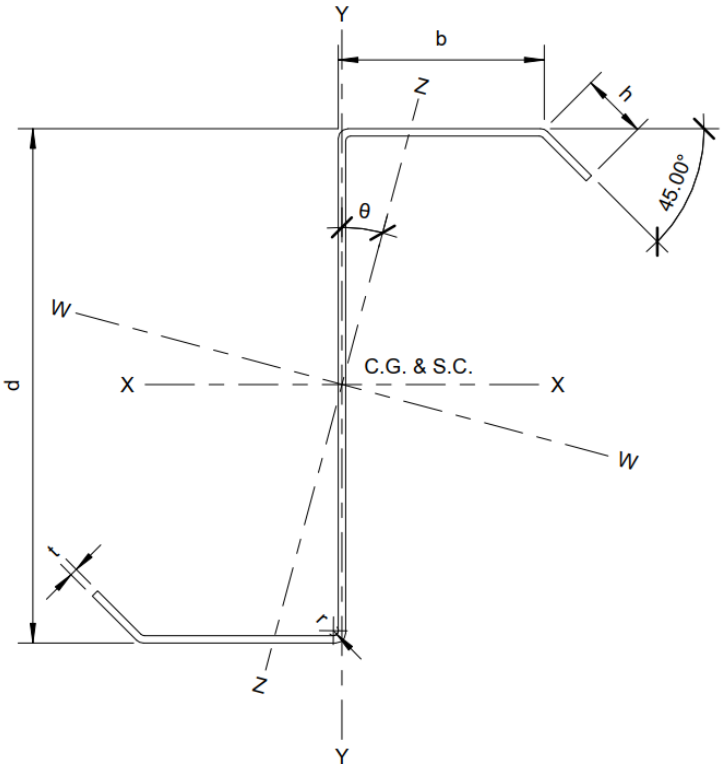


Dimensions

d	= section depth
b	= flange width
h	= lip length
t	= steel design thickness (nominal base steel thickness)
C.G.	= center of gravity
S.C.	= shear centre
r	= inside bend radius = 2.5 mm

Properties

Ix,eff	= effective moment of inertia about axis X-X at maximum compressive stress 0.6Fy
Sx,eff	= effective elastic section modulus about axis X-X
rx	= radius of gyration about axis X-X
Iy,g	= gross moment of inertia about axis Y-Y
Sy,eff	= effective elastic section modulus about axis Y-Y
ry	= radius of gyration about Y-Y
rmin.	= radius of gyration about axis Z-Z
J	= St. Venant torsion constant
Cw	= warping constant
Ag	= gross area of section
θ	= angle between axis Z-Z and Y-Y

Product Designation Example

600Z300-57

- 600 = Section depth (6 inches or 152.4mm)
- Z = Z-Purlins
- 300 = Flange width (3 inches or 76.2mm)
- 57 = Minimum steel thickness in 1/1000^{ths} inches (i.e. 95% of the design thickness)
  57/1000 = 0.057” or 1.45mm

Z-PURLINS

Z-Purlin Properties (Metric)																	
Section		Dimension					Property										
No.	Designation	d mm	b mm	h mm	t mm	Gauge	Ix,eff. x10^6 mm^4	Sx,eff. x10^3 mm^3	rx mm	Iy,g x10^6 mm^4	Sy, eff. x10^3 mm^3	ry mm	rmin. mm	J mm^4	Cw x10^9 mm^6	Ag mm^2	θ degrees
1	400Z250-45	101.6	63.5	12.7	1.21	18	0.48	7.57	42.38	0.33	2.82	33.32	17.34	146	0.50	300	36.34
2	400Z250-57	101.6	63.5	12.7	1.52	16	0.64	10.00	50.80	0.41	3.70	33.20	17.27	289	0.61	375	36.33
3	400Z250-71	101.6	63.5	12.7	1.91	14	0.81	15.78	42.07	0.51	5.06	33.05	17.18	570	0.75	469	36.31
4	400Z250-85	101.6	63.5	12.7	2.29	13	0.97	17.08	41.91	0.60	6.91	32.90	17.10	977	0.88	559	36.30
5	400Z250-99	101.6	63.5	12.7	2.67	12	1.13	20.63	41.74	0.70	8.53	32.75	17.01	1541	1.00	648	36.29
6	400Z250-114	101.6	63.5	12.7	3.05	11	1.27	23.53	41.57	0.78	9.82	32.60	16.93	2285	1.12	737	36.27
7	400Z250-128	101.6	63.5	12.7	3.43	10	1.41	26.68	41.41	0.87	11.33	32.45	16.84	3233	1.23	824	36.25
8	600Z300-45	152.4	76.2	19	1.21	18	1.48	14.86	62.43	0.65	5.21	39.92	22.89	199	2.35	407	29.39
9	600Z300-57	152.4	76.2	19	1.52	16	1.85	19.95	62.29	0.81	6.37	39.80	22.81	393	2.91	510	29.37
10	600Z300-71	152.4	76.2	19	1.91	14	2.40	25.94	62.11	1.00	8.06	39.65	22.72	776	3.60	638	29.37
11	600Z300-85	152.4	76.2	19	2.29	13	2.90	32.20	61.94	1.19	10.11	39.50	22.64	1333	4.24	762	29.31
12	600Z300-99	152.4	76.2	19	2.67	12	3.38	39.78	61.77	1.37	12.86	39.35	22.55	2104	4.86	885	29.28
13	600Z300-114	152.4	76.2	19	3.05	11	3.82	46.57	61.60	1.55	15.20	39.20	22.46	3125	5.46	1008	29.26
14	600Z300-128	152.4	76.2	19	3.43	10	4.26	52.71	61.43	1.72	17.42	39.05	22.38	4427	6.04	1129	29.23
15	800Z300-57	203.2	76.2	19	1.52	16	3.60	28.23	80.65	0.81	6.45	37.09	23.52	452	5.56	587	20.39
16	800Z300-71	203.2	76.2	19	1.91	14	4.64	38.35	80.47	1.00	8.19	36.94	23.43	894	6.88	735	20.35
17	800Z300-85	203.2	76.2	19	2.29	13	5.61	47.41	80.29	1.19	10.23	36.79	23.34	1536	8.12	879	20.31
18	800Z300-99	203.2	76.2	19	2.67	12	6.55	58.22	80.11	1.37	12.78	36.64	23.25	2426	9.33	1021	20.28
19	800Z300-114	203.2	76.2	19	3.05	11	7.43	68.09	79.93	1.55	15.12	36.50	23.16	3605	10.49	1163	20.24
20	800Z300-128	203.2	76.2	19	3.43	10	8.29	77.09	79.76	1.72	17.34	36.35	23.07	5110	11.62	1303	20.20
21	1000Z300-57	254	76.2	19	1.52	16	6.14	34.93	98.29	0.81	6.48	34.87	23.49	512	9.16	664	15.11
22	1000Z300-71	254	76.2	19	1.91	14	7.82	50.90	98.09	1.00	8.27	34.72	23.39	1012	11.34	832	15.07
23	1000Z300-85	254	76.2	19	2.29	13	9.42	64.66	97.91	1.19	10.17	34.57	23.30	1739	13.41	995	15.04
24	1000Z300-99	254	76.2	19	2.67	12	11.05	79.02	97.72	1.37	12.72	34.43	23.21	2749	15.41	1157	15.00
25	1000Z300-114	254	76.2	19	3.05	11	12.53	92.29	97.53	1.55	15.07	34.28	23.12	4085	17.35	1318	14.96
26	1000Z300-128	254	76.2	19	3.43	10	14.00	104.46	97.35	1.72	17.28	34.14	23.03	5794	19.24	1477	14.92
27	1200Z300-71	304.8	76.2	19	1.91	14	12.08	60.05	114.92	1.00	8.31	32.88	23.09	1128	16.93	928	11.48
28	1200Z300-85	304.8	76.2	19	2.29	13	14.44	82.53	114.73	1.19	10.14	32.74	23.00	1939	20.03	1110	11.71
29	1200Z300-99	304.8	76.2	19	2.67	12	16.92	101.77	114.53	1.37	12.68	32.60	22.91	3066	23.03	1290	11.68
30	1200Z300-114	304.8	76.2	19	3.05	11	19.22	118.70	114.34	1.55	15.03	32.46	22.81	4558	25.95	1470	11.65
31	1200Z300-128	304.8	76.2	19	3.43	10	21.48	134.31	114.14	1.72	17.24	32.32	22.72	6466	28.79	1649	11.61

Z-PURLINS

Resistance:

Fy	= steel yield strength = 345mPa (50ksi)
Vr	= factored shear strength
Br,ext.	= factored web crippling strength with 76mm of exterior support
Br,int.	= factored web crippling strength with 76mm of interior support
Mrd	= factored distortional buckling resistance
Mr	= factored lateral-torsional buckling resistance

Design Assumptions:

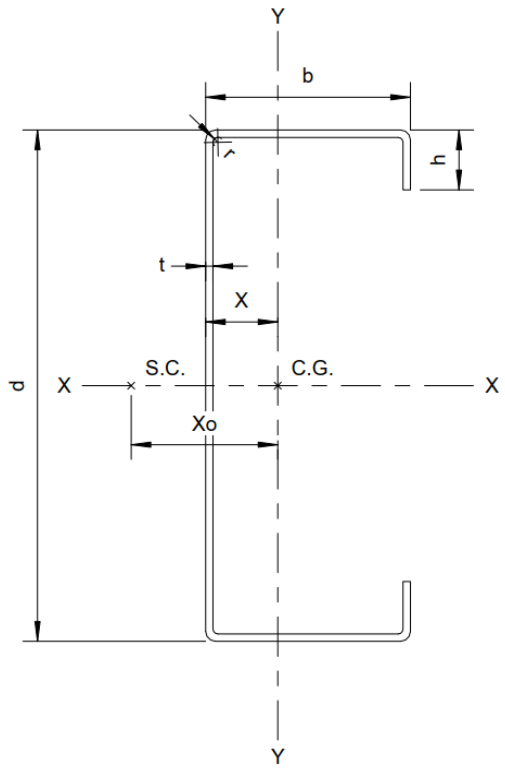
1. The values in the table have been calculated according to Limit States Design (LSD) and CSA S136-16 North American Specification for the Design of Cold-Formed Steel Structural Members.
2. The grade of steel is based on ASTM A653/A653M SS Grade 50 (345mPa).
3. Shaded Mr values indicates that distortional buckling may govern the design for the given section if the compression flange is not restrained against distortional buckling.
4. The design engineer shall determine the cases when distortional buckling is applicable.
5. Rotational rigidity of the sheathing is neglected and moment gradient factor has been conservatively set to 1 for the calculation of the distortional buckling resistance.
6. The web crippling resistance is calculated with one flange loading condition.
7. The shear resistance is taken as the elastic resistance (Fy). The design engineer shall review the plastic resistance (Fu) of the net section accounting for any holes.
8. The design engineer shall review the members under combined forces as required.
9. Purlin bracing shall be provided by the design engineer as required.

Note: Structural design by Burns Maendel Consulting Engineers.

Z-PURLINS

Z-Purlin Selection Table (Metric)																			
Section			Shear	Web crippling		Distortional buckling	Lateral-torsional buckling												
							Mr (kNm) , Unsupported Length (mm)												
No.	Designation	Weight kg/m	Vr kN	Br,ext. kN	Br,int. kN	Mrd kNm	0	610	914	1220	1524	1829	2438	3048	3658	4267	4877	5486	6096
1	400Z250-45	2.35	13.5	3.8	6.8	2.02	2.35	2.35	2.35	2.31	2.18	2.02	1.59	1.15	0.89	0.69	0.54	0.44	0.37
2	400Z250-57	2.94	21.3	5.7	10.7	2.81	3.10	3.10	3.10	3.05	2.88	2.67	2.13	1.57	1.18	0.90	0.71	0.58	0.49
3	400Z250-71	3.67	29.3	8.7	16.9	3.89	4.13	4.13	4.13	4.07	3.86	3.61	2.93	2.08	1.54	1.18	0.95	0.79	0.68
4	400Z250-85	4.38	34.9	12.2	24.2	5.02	5.30	5.30	5.30	5.23	4.97	4.61	3.60	2.61	1.92	1.50	1.23	1.03	0.89
5	400Z250-99	5.08	40.3	16.1	32.7	6.20	6.40	6.40	6.40	6.29	5.88	5.40	4.36	3.15	2.35	1.86	1.53	1.30	1.13
6	400Z250-	5.87	45.7	20.6	42.4	7.30	7.30	7.30	7.30	7.18	6.75	6.27	5.16	3.73	2.82	2.26	1.88	1.61	1.41
7	400Z250-	6.46	50.9	25.5	53.4	8.28	8.28	8.28	8.28	8.17	7.76	7.30	5.87	4.36	3.33	2.69	2.26	1.95	1.71
8	600Z300-45	3.19	9.4	3.6	6.6	3.67	4.61	4.61	4.61	4.61	4.56	4.43	3.94	3.21	2.45	1.93	1.51	1.21	0.99
9	600Z300-57	4.00	18.8	5.5	10.5	5.10	6.19	6.19	6.19	6.19	6.09	5.81	5.08	4.11	3.16	2.48	1.92	1.54	1.27
10	600Z300-71	5.00	33.6	8.4	16.6	7.06	8.05	8.05	8.05	8.05	7.91	7.54	6.59	5.47	4.17	3.15	2.46	1.98	1.64
11	600Z300-85	5.98	48.3	11.8	23.8	9.13	9.99	9.99	9.99	9.99	9.84	9.43	8.42	6.81	5.09	3.83	3.01	2.45	2.05
12	600Z300-99	6.94	62.8	15.6	32.2	11.32	12.34	12.34	12.34	12.34	12.16	11.67	10.08	8.20	6.00	4.55	3.61	2.96	2.49
13	600Z300-	7.90	71.3	19.9	41.8	13.61	14.45	14.45	14.45	14.45	14.16	13.43	11.71	9.55	6.95	5.32	4.25	3.51	2.97
14	600Z300-	8.85	79.8	24.7	52.6	15.96	16.36	16.36	16.36	16.36	16.05	15.30	13.58	10.80	7.95	6.13	4.93	4.10	3.50
15	800Z300-57	4.60	13.9	5.3	10.3	6.92	8.76	8.76	8.76	8.76	8.64	8.37	7.35	5.77	4.41	3.36	2.59	2.07	1.69
16	800Z300-71	5.76	27.7	8.1	16.3	9.66	11.90	11.90	11.90	11.90	11.62	11.02	9.48	7.65	5.70	4.23	3.28	2.63	2.16
17	800Z300-85	6.89	47.9	11.4	23.4	12.57	14.71	14.71	14.71	14.71	14.39	13.73	12.05	9.40	6.84	5.10	3.98	3.20	2.65
18	800Z300-99	8.01	65.7	15.2	31.8	15.69	18.06	18.06	18.06	18.06	17.68	16.88	14.31	11.30	8.00	6.00	4.70	3.81	3.17
19	800Z300-	9.11	85.7	19.4	41.3	18.96	21.13	21.13	21.13	21.13	20.54	19.39	16.63	12.91	9.19	6.93	5.46	4.45	3.73
20	800Z300-	10.22	108.4	24.1	52.0	22.37	23.92	23.92	23.92	23.92	23.29	22.08	19.21	14.54	10.41	7.90	6.26	5.14	4.32
21	1000Z300-	5.21	11.0	5.1	10.1	8.75	10.84	10.84	10.84	10.84	10.64	10.27	9.27	7.50	5.68	4.28	3.29	2.62	2.14
22	1000Z300-	6.52	22.0	7.9	16.1	12.29	15.80	15.80	15.80	15.80	15.51	14.91	12.63	9.90	7.42	5.37	4.14	3.31	2.71
23	1000Z300-	7.80	37.9	11.1	23.1	16.08	20.06	20.06	20.06	20.06	19.50	18.51	16.00	12.10	8.66	6.44	4.99	4.00	3.29
24	1000Z300-	9.07	60.3	14.8	31.4	20.17	24.52	24.52	24.52	24.52	23.84	22.62	18.89	14.34	10.09	7.53	5.86	4.72	3.90
25	1000Z300-	10.33	85.7	19.0	40.9	24.51	28.63	28.63	28.63	28.63	27.64	25.96	21.95	16.33	11.53	8.64	6.76	5.46	4.54
26	1000Z300-	11.58	108.4	23.6	51.5	29.06	32.41	32.41	32.41	32.41	31.33	29.55	25.17	18.32	12.99	9.78	7.68	6.25	5.21
27	1200Z300-	7.27	18.2	7.6	15.9	14.82	18.64	18.64	18.64	18.64	18.21	17.53	15.73	12.15	8.80	6.51	5.01	3.99	3.26
28	1200Z300-	8.70	31.5	10.8	22.9	19.51	25.61	25.61	25.61	25.61	25.04	23.67	20.15	14.86	10.50	7.78	6.02	4.81	3.94
29	1200Z300-	10.12	50.1	14.4	31.1	24.59	31.57	31.57	31.57	31.57	30.50	28.75	23.68	17.40	12.20	9.07	7.03	5.64	4.64
30	1200Z300-	11.52	74.8	18.6	40.5	30.02	36.83	36.83	36.83	36.83	35.28	33.00	27.53	19.77	13.90	10.37	8.07	6.50	5.37
31	1200Z300-	12.93	106.7	23.1	51.0	35.74	41.67	41.67	41.67	41.67	39.98	37.56	31.33	22.13	15.62	11.64	9.14	7.38	6.12

C Sections



Dimensions

d	= section depth
b	= flange width
h	= lip length
t	= steel design thickness (nominal base steel thickness)
C.G.	= centre of gravity
S.C.	= shear centre
r	= inside bend radius

Gross Properties

Ix,g	= gross moment of inertia about axis X-X
rx	= radius of gyration about axis X-X
ry	= radius of gyration about axis Y-Y
J	= St. Venant torsion constant
Cw	= warping constant
Ag	= gross area of section
x	= distance from exterior fiber of web to centre of gravity
xo	= distance from shear centre to centre of gravity

Effective Properties

Ix,eff	= effective moment of inertia about axis X-X at maximum compressive stress = 0.6Fy
Sx,eff	= effective elastic section modulus about axis X-X

Product Designation Example

1000C295-99

1000 = Section depth (10 inches or 254 mm)
C = C Sections
295 = Flange width (2.95 inches or 75 mm)
99 = Minimum steel thickness in 1/1000^{ths} inches (i.e. 95% of the design thickness)
99/1000 = 0.099” or 2.51mm

C Sections

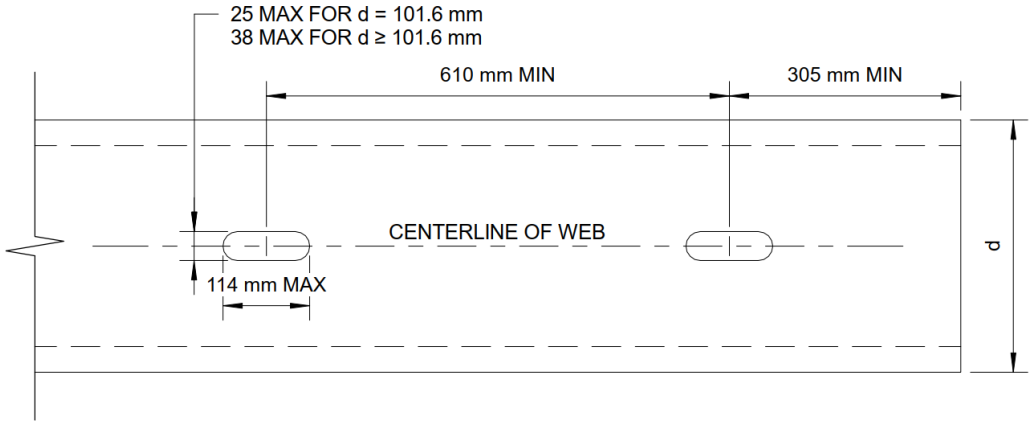
Resistance:

Fy	= steel yield strength = 345mPa (50ksi)
Vrg	= factored shear resistance along axis Y-Y of unperforated section
Vrn	= factored shear resistance along axis Y-Y of perforated section
Br,ext.	= factored web crippling strength with 89mm of exterior support
MrxLB	= factored moment resistance about axis X-X based on local buckling
MrxDB	= factored moment resistance about axis X-X based on distortional buckling, assuming $K_\phi = 0$
MryLB	= factored moment resistance about Y-Y based on local buckling with web or lip in compression
MryDB	= factored moment resistance about Y-Y based on distortional buckling with lip in compression
Lu	= Limiting unbraced length below which lateral-torsional buckling is not considered

Design Assumptions:

1. The values in the table have been calculated according to Limit States Design (LSD) and CSA S136-16 North American Specification for the Design of Cold-Formed Steel Structural Members.
2. The grade of steel is based on ASTM A653/A653M SS Grade 50 (345mPa).
3. When provided, factory punchouts shall be located along the centreline of the webs of the members and shall have a minimum centre-to-centre spacing of 610mm. Punchouts for members 101.6mm deep are a maximum of 25mm wide by 114mm in length. Punchouts for members greater than 101.6mm deep are a maximum of 38mm wide by 114mm in length. Any configuration or combination of holes that fit within the punchout width and length limitations stated above is permitted; other punchout configurations and locations not in accordance with the stated limitation must be approved by a design professional. Refer to figure below for punchout limitations.
4. The effective moment of inertia for deflection, Ix,eff, is based on local buckling at an assumed specified live load of 0.6Fy. This moment of inertia is only appropriate for checking serviceability limit states.
5. Gross section properties are based on the full-unreduced cross section of the joist sections, away from the punchouts.
6. The factored moment resistance for design is based on the lesser of local and distortional buckling. Distortional buckling is based on an assumed rotational stiffness of $K_\phi = 0$.

Note: Structural design by Burns Maendel Consulting Engineers.



C Sections

C Section Properties (Metric)																		
Section		Dimension						Gross Properties										
No.	Designation	d	b	h	t	r	Gauge	Weight	Ag	Ix,g	rx	ry	Vrg	Br,ext	J	Cw	x	xo
		mm	mm	mm	mm	mm		kg/m	mm^2	$x10^6$ mm^4	mm	mm	kN	kN	mm^4	$x10^9$ mm^6	mm	mm
1	400C177-45	101.6	45	15	1.21	2	18	2.01	257	0.420	40.45	17.11	13.5	4.1	125	0.173	15.12	36.56
2	400C177-57	101.6	45	15	1.52	2	16	2.51	320	0.520	40.30	16.97	21.3	6.2	247	0.210	15.12	36.19
3	400C177-71	101.6	45	15	1.91	2	14	3.13	399	0.642	40.10	16.79	29.6	9.4	485	0.253	15.12	35.74
4	400C177-85	101.6	45	15	2.29	2.2	13	3.71	473	0.753	39.90	16.60	35.1	13.0	827	0.289	15.10	35.27
5	400C177-99	101.6	45	15	2.67	2.2	12	4.29	547	0.862	39.71	16.43	40.6	17.2	1300	0.323	15.10	34.82
6	400C177-114	101.6	45	15	3.05	2.75	11	4.83	616	0.960	39.46	16.22	45.4	21.5	1911	0.349	15.07	34.31
7	400C177-128	101.6	45	15	3.43	3.5	10	5.35	682	1.048	39.19	15.98	49.8	26.1	2676	0.369	15.02	33.76
8	600C236-45	152.4	60	15	1.21	2	18	2.78	355	1.294	60.40	21.96	9.4	3.9	173	0.786	17.72	43.79
9	600C236-57	152.4	60	15	1.52	2	16	3.47	443	1.608	60.24	21.81	18.7	5.9	341	0.963	17.73	43.43
10	600C236-71	152.4	60	15	1.91	2	14	4.34	553	1.994	60.04	21.62	33.6	9.0	673	1.172	17.73	42.98
11	600C236-85	152.4	60	15	2.29	2.2	13	5.16	658	2.355	59.82	21.42	48.3	12.5	1151	1.357	17.72	42.51
12	600C236-99	152.4	60	15	2.67	2.2	12	5.98	763	2.711	59.62	21.24	63.0	16.6	1812	1.533	17.72	42.07
13	600C236-114	152.4	60	15	3.05	2.75	11	6.76	863	3.039	59.35	21.01	71.1	20.8	2675	1.680	17.68	41.55
14	600C236-128	152.4	60	15	3.43	3.5	10	7.52	959	3.347	59.06	20.76	78.6	25.4	3763	1.804	17.62	41.00
15	800C236-57	203.2	60	20	1.52	2	16	4.20	536	3.262	78.04	21.96	13.8	5.7	413	2.159	16.46	41.76
16	800C236-71	203.2	60	20	1.91	2	14	5.25	669	4.054	77.82	21.78	27.5	8.7	814	2.637	16.48	41.33
17	800C236-85	203.2	60	20	2.29	2.2	13	6.25	798	4.800	77.57	21.59	47.8	12.1	1394	3.068	16.48	40.89
18	800C236-99	203.2	60	20	2.67	2.2	12	7.25	925	5.536	77.36	21.41	65.7	16.1	2198	3.478	16.50	40.47
19	800C236-114	203.2	60	20	3.05	2.75	11	8.22	1048	6.225	77.06	21.19	85.7	20.3	3250	3.834	16.48	39.99
20	800C236-128	203.2	60	20	3.43	3.5	10	9.16	1168	6.878	76.74	20.96	107.5	24.8	4581	4.146	16.44	39.48
21	1000C295-57	254	75	20	1.52	2	16	5.16	658	6.281	97.67	26.74	11.0	5.5	507	5.903	19.35	49.54
22	1000C295-71	254	75	20	1.91	2	14	6.46	824	7.821	97.44	26.55	21.9	8.5	1002	7.247	19.37	49.12
23	1000C295-85	254	75	20	2.29	2.2	13	7.70	983	9.282	97.19	26.35	37.9	11.8	1718	8.474	19.37	48.67
24	1000C295-99	254	75	20	2.67	2.2	12	8.94	1141	10.73	96.97	26.17	60.2	15.7	2711	9.657	19.39	48.26
25	1000C295-114	254	75	20	3.05	2.75	11	10.15	1295	12.10	96.67	25.94	85.7	19.8	4014	10.710	19.36	47.77
26	1000C295-128	254	75	20	3.43	3.5	10	11.33	1445	13.41	96.34	25.69	108.4	24.2	5667	11.658	19.32	47.25
27	1200C394-71	304.8	100	20	1.91	2	14	7.97	1016	14.26	118.46	34.91	18.1	8.2	1236	21.578	25.59	64.83
28	1200C394-85	304.8	100	20	2.29	2.2	13	9.51	1214	16.96	118.22	34.70	31.4	11.5	2121	25.359	25.59	64.37
29	1200C394-99	304.8	100	20	2.67	2.2	12	11.05	1410	19.63	118.00	34.51	49.8	15.4	3350	29.033	25.60	63.94
30	1200C394-114	304.8	100	20	3.05	2.75	11	12.56	1602	22.20	117.71	34.27	74.7	19.4	4968	32.388	25.56	63.43
31	1200C394-128	304.8	100	20	3.43	3.5	10	14.04	1791	24.68	117.40	34.01	107.1	23.7	7023	35.485	25.51	62.89

C Sections

C Section Properties (Metric)										
Section		Perforated Effective								
No.	Designation	Ix,eff. x10^6 mm^4	Sx,eff. x10^3 mm^3	MrxLB kNm	MrxDB kNm	Vrn kN	MryLB web comp. kNm	MryLB lip comp. kNm	MryDB lip comp. kNm	Lu mm
1	400C177-45	0.420	7.61	2.33	2.14	7.20	0.69	0.75	0.72	954
2	400C177-57	0.520	10.11	3.12	2.86	8.97	0.87	0.92	0.96	950
3	400C177-71	0.642	12.63	3.90	3.81	9.83	1.10	1.13	1.17	948
4	400C177-85	0.753	14.83	4.58	4.58	9.54	1.30	1.31	1.35	946
5	400C177-99	0.862	16.98	5.25	5.25	9.35	1.48	1.48	1.53	946
6	400C177-114	0.960	18.89	5.84	5.84	8.91	1.62	1.62	1.68	946
7	400C177-128	1.048	20.63	6.37	6.37	8.38	1.73	1.73	1.80	947
8	600C236-45	1.250	14.17	4.23	3.59	7.74	1.05	1.21	0.98	1210
9	600C236-57	1.597	18.13	5.52	4.91	12.20	1.34	1.50	1.33	1189
10	600C236-71	1.994	23.95	7.32	6.67	17.37	1.71	1.84	1.78	1179
11	600C236-85	2.355	29.43	9.05	8.46	20.59	2.04	2.14	2.22	1174
12	600C236-99	2.711	34.45	10.60	10.32	22.88	2.37	2.44	2.52	1171
13	600C236-114	3.039	39.85	12.28	12.14	22.18	2.67	2.70	2.79	1166
14	600C236-128	3.347	43.92	13.57	13.56	21.34	2.92	2.92	3.03	1161
15	800C236-57	3.262	29.83	9.19	7.48	13.32	1.56	1.78	1.65	1234
16	800C236-71	4.054	38.90	12.00	10.20	21.01	1.99	2.22	2.20	1228
17	800C236-85	4.800	47.24	14.63	12.95	30.16	2.39	2.60	2.65	1221
18	800C236-99	5.536	54.48	16.87	15.81	35.41	2.79	2.96	3.02	1216
19	800C236-114	6.225	61.27	18.97	18.63	39.96	3.15	3.29	3.36	1209
20	800C236-128	6.878	67.70	20.96	20.96	43.9	3.48	3.58	3.65	1202
21	1000C295-57	6.281	38.47	11.36	9.88	10.98	2.15	2.55	2.07	1484
22	1000C295-71	7.821	54.19	16.36	13.66	21.86	2.75	3.19	2.80	1477
23	1000C295-85	9.282	66.69	20.55	17.58	31.68	3.33	3.75	3.53	1470
24	1000C295-99	10.73	80.45	24.87	21.69	43.04	3.91	4.29	4.27	1464
25	1000C295-114	12.10	92.01	28.46	25.86	53.18	4.45	4.78	4.86	1456
26	1000C295-128	13.41	104.09	32.22	30.06	59.14	4.96	5.23	5.32	1448
27	1200C394-71	13.54	65.91	19.36	17.24	18.12	4.22	5.10	3.70	1951
28	1200C394-85	16.36	104.97	26.59	22.39	31.35	5.13	6.01	4.74	1927
29	1200C394-99	19.16	108.74	33.48	27.93	44.41	6.05	6.91	5.83	1910
30	1200C394-114	21.75	127.59	39.33	33.69	57.89	6.94	7.74	6.93	1897
31	1200C394-128	24.30	147.96	45.69	39.61	73.13	7.79	8.51	8.01	1884

C Sections

Floor Joist Load Table Notes:

1. Loads are assumed to be uniformly distributed over entire span.
2. Load values are based on continuous support of the compression flange over the full length of the joist and the tension flange is laterally braced at maximum spacing of 2.44m.
3. Joists must be braced against rotation at all supports.
4. End shear and web crippling resistances are not reduced for punchouts.
5. End web crippling check is based on an 89mm bearing length with flange fastened to support.
6. Where load values are followed by the symbol (*), web stiffeners are required at end supports.
7. Other load configuration & support arrangement must be reviewed by a design professional.
8. Increased in yield strength from cold work of forming has not been included.
9. Values greater than 24kPa and less than 0.5kPa are not shown.
10. For other deflection limits, multiply the L/360 uniform specified loads by the following factor:

Deflection Limit	Factor
L/180	360/180 = 2
L/480	360/480 = 0.75

Bridging Recommendations

Bridging components shall be designed based on Section C2 Member Bracing of S136-16 with the minimum required number of rows as shown below. Additional bridging rows may be required by design, and by a professional structural engineer.

Span (m)	Minimum Number of Bridging Rows
Up to 4.88	1 at mid span
4.88 to 7.32	2 at 1/3 point
7.32 to 9.75	3 at 1/4 point
9.75 to 12.2	4 at 1/5 point

C Sections

C Section Floor Joist Selection Table (Metric)[1] Uniformly Distributed Single Span Loads (kPa) with Kϕ = 0																							
Strength - Factored Loads (kPa) **L/360 - Specified Loads (kPa)**																							
Section		**400C177-45**			**400C177-57**			**400C177-71**			**400C177-85**			**400C177-99**			**400C177-114**			**400C177-128**		
Span[2] (m)	**Design Criteria**	**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**		
		305	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**
2.44	**Strength**	9.42	7.08	4.71	12.63	9.49	6.32	16.79	12.61	8.39	20.21	15.19	10.11	23.14	17.38	11.57		17.98	11.97		16.91	11.26
	L/360	4.05	3.05	2.03	5.02	3.77	2.51	6.19	4.65	3.10	7.27	5.46	3.63	8.32	6.25	4.16		6.96	4.63		7.60	5.06
2.74	**Strength**	7.44	5.59	3.72	9.98	7.50	4.99	13.27	9.97	6.63	15.97	12.00	7.99	18.28	13.73	9.14	20.34	15.28	10.17	20.03	15.04	10.01
	L/360	2.85	2.14	1.42	3.53	2.65	1.76	4.35	3.27	2.17	5.11	3.84	2.55	5.84	4.39	2.92	6.50	4.89	3.25	7.10	5.34	3.55
3.05	**Strength**	6.03	4.53	3.01	8.09	6.07	4.04	10.75	8.07	5.37	12.94	9.72	6.47	14.81	11.12	7.40	16.48	12.38	8.24	17.99	13.52	9.00
	L/360	2.08	1.56	1.04	2.57	1.93	1.28	3.17	2.38	1.58	3.72	2.80	1.86	4.26	3.20	2.13	4.74	3.56	2.37	5.18	3.89	2.59
3.35	**Strength**	4.98	3.74	2.49	6.68	5.02	3.34	8.88	6.67	4.44	10.69	8.03	5.35	12.24	9.19	6.12	13.62	10.23	6.81	14.87	11.17	7.43
	L/360	1.56	1.17	0.78	1.93	1.45	0.97	2.38	1.79	1.19	2.80	2.10	1.40	3.20	2.40	1.60	3.56	2.68	1.78	3.89	2.92	1.94
3.66	**Strength**	4.19	3.14	2.09	5.61	4.22	2.81	7.46	5.61	3.73	8.98	6.75	4.49	10.28	7.73	5.14	11.44	8.60	5.72	12.49	9.39	6.25
	L/360	1.20	0.90	0.60	1.49	1.12	0.74	1.83	1.38	0.92	2.15	1.62	1.08	2.47	1.85	1.23	2.74	2.06	1.37	3.00	2.25	1.50
3.96	**Strength**	3.57	2.68		4.78	3.59	2.39	6.36	4.78	3.18	7.66	5.75	3.83	8.76	6.58	4.38	9.75	7.32	4.88	10.65	8.00	5.32
	L/360	0.94	0.71		1.17	0.88	0.58	1.44	1.08	0.72	1.69	1.27	0.85	1.94	1.46	0.97	2.16	1.62	1.08	2.36	1.77	1.18
4.27	**Strength**	3.08	2.31		4.13	3.10		5.48	4.12	2.74	6.60	4.96	3.30	7.56	5.68	3.78	8.41	6.32	4.20	9.18	6.90	4.59
	L/360	0.76	0.57		0.94	0.70		1.16	0.87	0.58	1.36	1.02	0.68	1.55	1.17	0.78	1.73	1.30	0.86	1.89	1.42	0.94
4.57	**Strength**	2.68			3.59	2.70		4.78	3.59		5.75	4.32	2.88	6.58	4.94	3.29	7.32	5.50	3.66	8.00	6.01	4.00
	L/360	0.62			0.76	0.57		0.94	0.71		1.10	0.83	0.55	1.26	0.95	0.63	1.40	1.06	0.70	1.53	1.15	0.77
4.88	**Strength**	2.35			3.16			4.20	3.15		5.05	3.80		5.78	4.35	2.89	6.44	4.84	3.22	7.03	5.28	3.51
	L/360	0.51			0.63			0.77	0.58		0.91	0.68		1.04	0.78	0.52	1.16	0.87	0.58	1.26	0.95	0.63
5.18	**Strength**				2.80			3.72			4.48	3.36		5.12	3.85		5.70	4.28		6.23	4.68	3.11
	L/360				0.52			0.65			0.76	0.57		0.87	0.65		0.97	0.73		1.05	0.79	0.53
5.49	**Strength**							3.32			3.99			4.57	3.43		5.09	3.82		5.55	4.17	
	L/360							0.54			0.64			0.73	0.55		0.81	0.61		0.89	0.67	
5.79	**Strength**										3.58			4.10			4.56	3.43		4.98	3.74	
	L/360										0.54			0.62			0.69	0.52		0.75	0.57	
6.10	**Strength**													3.70			4.12			4.50		
	L/360													0.53			0.59			0.65		
6.40	**Strength**																3.74			4.08		
	L/360																0.51			0.56		
6.71	**Strength**																					
	L/360																					

NOTES:

* Where load values are followed by the symbol (*), web stiffeners are required at end supports.

[1] Refer to Page 6 and 9 for Design Assumptions, Floor Joist Load Table Notes, and Bridging Recommendations.

[2] Spans are based on 0.305m (1') increments.

C Sections

C Section Floor Joist Selection Table (Metric)[1] Uniformly Distributed Single Span Loads (kPa) with Kϕ = 0																						
Strength - Factored Loads (kPa) **L/360 - Specified Loads (kPa)**																						
Section		**600C236-45**			**600C236-57**			**600C236-71**			**600C236-85**			**600C236-99**			**600C236-114**			**600C236-128**		
Span[2] (m)	**Design Criteria**	**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**		
		305	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**
2.44	**Strength** **L/360**	15.84* 12.06	11.90* 9.06	7.92* 6.03	21.64* 15.41	16.26* 11.57	10.82* 7.70		22.12* 14.46	14.72* 9.62			18.67* 11.36			22.77* 13.08						
2.74	**Strength** **L/360**	12.51* 8.47	9.40* 6.36	6.26* 4.24	17.10* 10.82	12.85* 8.13	8.55* 5.41	23.26* 13.51	17.47* 10.15	11.63* 6.76		22.16 11.99	14.75 7.98			17.99 9.18			21.16 10.30			23.64 11.34
3.05	**Strength** **L/360**	10.14* 6.17	7.61* 4.64	5.07* 3.09	13.85* 7.89	10.41* 5.93	6.93* 3.94	18.84 9.85	14.15 7.40	9.42 4.93	23.90 11.64	17.95 8.74	11.95 5.82		21.89 10.06	14.57 6.70			17.14 7.51			19.15 8.27
3.35	**Strength** **L/360**	8.38* 4.64	6.29* 3.49	4.19* 2.32	11.45 5.93	8.60 4.45	5.72 2.96	15.57 7.40	11.70 5.56	7.79 3.70	19.75 8.74	14.84 6.57	9.88 4.37		18.09 7.56	12.04 5.03		21.28 8.47	14.16 5.64		23.78 9.33	15.82 6.21
3.66	**Strength** **L/360**	7.04* 3.57	5.29* 2.68	3.52* 1.79	9.62 4.57	7.23 3.43	4.81 2.28	13.08 5.70	9.83 4.28	6.54 2.85	16.60 6.73	12.47 5.06	8.30 3.37	20.24 7.75	15.20 5.82	10.12 3.87	23.80 8.69	17.88 6.53	11.90 4.34		19.98 7.19	13.30 4.78
3.96	**Strength** **L/360**	6.00 2.81	4.51 2.11	3.00 1.41	8.20 3.59	6.16 2.70	4.10 1.80	11.15 4.48	8.38 3.37	5.57 2.24	14.14 5.30	10.62 3.98	7.07 2.65	17.24 6.09	12.95 4.58	8.62 3.05	20.28 6.83	15.23 5.13	10.14 3.42	22.66 7.53	17.02 5.65	11.33 3.76
4.27	**Strength** **L/360**	5.17 2.25	3.88 1.69	2.59 1.13	7.07 2.87	5.31 2.16	3.53 1.44	9.61 3.59	7.22 2.70	4.81 1.80	12.19 4.24	9.16 3.19	6.10 2.12	14.87 4.88	11.17 3.67	7.43 2.44	17.49 5.47	13.14 4.11	8.74 2.74	19.54 6.03	14.68 4.53	9.77 3.01
4.57	**Strength** **L/360**	4.50 1.83	3.38 1.37	2.25 0.91	6.16 2.34	4.63 1.76	3.08 1.17	8.37 2.92	6.29 2.19	4.19 1.46	10.62 3.45	7.98 2.59	5.31 1.72	12.95 3.97	9.73 2.98	6.48 1.98	15.23 4.45	11.44 3.34	7.62 2.22	17.02 4.90	12.79 3.68	8.51 2.45
4.88	**Strength** **L/360**	3.96 1.51	2.97 1.13	1.98 0.75	5.41 1.93	4.06 1.45	2.71 0.96	7.36 2.41	5.53 1.81	3.68 1.20	9.34 2.84	7.01 2.13	4.67 1.42	11.38 3.27	8.55 2.46	5.69 1.63	13.39 3.67	10.06 2.75	6.69 1.83	14.96 4.04	11.24 3.03	7.48 2.02
5.18	**Strength** **L/360**	3.51 1.26	2.63 0.94	1.75 0.63	4.79 1.61	3.60 1.21	2.40 0.80	6.52 2.01	4.90 1.51	3.26 1.00	8.27 2.37	6.21 1.78	4.13 1.18	10.08 2.73	7.57 2.05	5.04 1.36	11.86 3.06	8.91 2.30	5.93 1.53	13.25 3.37	9.95 2.53	6.63 1.68
5.49	**Strength** **L/360**	3.13 1.06	2.35 0.80	1.56 0.53	4.28 1.35	3.21 1.02	2.14 0.68	5.82 1.69	4.37 1.27	2.91 0.84	7.38 2.00	5.54 1.50	3.69 1.00	8.99 2.30	6.76 1.72	4.50 1.15	10.58 2.57	7.95 1.93	5.29 1.29	11.82 2.84	8.88 2.13	5.91 1.42
5.79	**Strength** **L/360**	2.81 0.90	2.11 0.68		3.84 1.15	2.88 0.86	1.92 0.58	5.22 1.44	3.92 1.08	2.61 0.72	6.62 1.70	4.97 1.27	3.31 0.85	8.07 1.95	6.06 1.47	4.04 0.98	9.49 2.19	7.13 1.64	4.75 1.09	10.61 2.41	7.97 1.81	5.30 1.21
6.10	**Strength** **L/360**	2.53 0.77	1.90 0.58		3.46 0.99	2.60 0.74		4.71 1.23	3.54 0.93	2.36 0.62	5.97 1.45	4.49 1.09	2.99 0.73	7.28 1.67	5.47 1.26	3.64 0.84	8.57 1.88	6.44 1.41	4.28 0.94	9.57 2.07	7.19 1.55	4.79 1.03
6.40	**Strength** **L/360**	2.30 0.67	1.73 0.50		3.14 0.85	2.36 0.64		4.27 1.06	3.21 0.80	2.14 0.53	5.42 1.26	4.07 0.94	2.71 0.63	6.61 1.45	4.96 1.09	3.30 0.72	7.77 1.62	5.84 1.22	3.89 0.81	8.68 1.79	6.52 1.34	4.34 0.89
6.71	**Strength** **L/360**	2.09 0.58			2.86 0.74	2.15 0.56		3.89 0.93	2.92 0.70		4.94 1.09	3.71 0.82	2.47 0.55	6.02 1.26	4.52 0.94	3.01 0.63	7.08 1.41	5.32 1.06	3.54 0.70	7.91 1.55	5.94 1.17	3.96 0.78
7.01	**Strength** **L/360**	1.92 0.51			2.62 0.65			3.56 0.81	2.68 0.61		4.52 0.96	3.39 0.72		5.51 1.10	4.14 0.83	2.75 0.55	6.48 1.23	4.87 0.93	3.24 0.62	7.24 1.36	5.44 1.02	3.62 0.68
7.32	**Strength** **L/360**				2.40 0.57			3.27 0.71	2.46 0.54		4.15 0.84	3.12 0.63		5.06 0.97	3.80 0.73		5.95 1.09	4.47 0.82	2.98 0.54	6.65 1.20	4.99 0.90	3.32 0.60
7.62	**Strength** **L/360**				2.22 0.50			3.01 0.63			3.82 0.74	2.87 0.56		4.66 0.86	3.50 0.64		5.48 0.96	4.12 0.72		6.13 1.06	4.60 0.79	3.06 0.53

NOTES:

* Where load values are followed by the symbol (*), web stiffeners are required at end supports.

[1] Refer to Page 6 and 9 for Design Assumptions, Floor Joist Load Table Notes, and Bridging Recommendations.

[2] Spans are based on 0.305m (1') increments.

C Sections

C Section Floor Joist Selection Table (Metric)[1] Uniformly Distributed Single Span Loads (kPa) with Kϕ = 0																			
Strength - Factored Loads (kPa) **L/360 - Specified Loads (kPa)**																			
Section		**800C236-57**			**800C236-71**			**800C236-85**			**800C236-99**			**800C236-114**			**800C236-128**		
Span[2] (m)	**Design Criteria**	**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**		
		305	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**
2.74	**Strength** **L/360**		19.59* 16.61	13.04* 11.05			17.77* 13.73			22.57* 16.26									
3.05	**Strength** **L/360**	21.12* 16.11	15.87* 12.11	10.56* 8.06		21.62* 15.04	14.39* 10.01			18.28* 11.86			22.32* 13.67						
3.35	**Strength** **L/360**	17.46* 12.11	13.11* 9.09	8.73* 6.05	23.79* 15.05	17.87* 11.30	11.89* 7.52		22.70* 13.38	15.11* 8.91			18.45* 10.27			21.73* 11.55			
3.66	**Strength** **L/360**	14.67* 9.33	11.02* 7.01	7.33* 4.66	19.99* 11.59	15.02* 8.71	9.99* 5.79		19.08* 10.31	12.70* 6.86		23.29* 11.89	15.50* 7.91			18.26* 8.90			20.54 9.83
3.96	**Strength** **L/360**	12.50* 7.33	9.39* 5.51	6.25* 3.67	17.03* 9.11	12.79* 6.85	8.52* 4.56	21.64* 10.79	16.25* 8.11	10.82* 5.40		19.84 9.35	13.21 6.22		23.38 10.52	15.56 7.00			17.51 7.73
4.27	**Strength** **L/360**	10.78* 5.87	8.10* 4.41	5.39* 2.94	14.69* 7.30	11.03* 5.48	7.34* 3.65	18.66 8.64	14.01 6.49	9.33 4.32	22.78 9.97	17.11 7.49	11.39 4.98		20.16 8.42	13.42 5.60		22.68 9.30	15.09 6.19
4.57	**Strength** **L/360**	9.39* 4.77	7.05* 3.59	4.69* 2.39	12.79* 5.93	9.61* 4.46	6.40* 2.97	16.25 7.03	12.21 5.28	8.13 3.51	19.84 8.10	14.91 6.09	9.92 4.05	23.38 9.11	17.56 6.85	11.69 4.56		19.76 7.56	13.15 5.03
4.88	**Strength** **L/360**	8.25* 3.93	6.20* 2.96	4.13* 1.97	11.24 4.89	8.45 3.67	5.62 2.44	14.28 5.79	10.73 4.35	7.14 2.89	17.44 6.68	13.10 5.02	8.72 3.34	20.55 7.51	15.43 5.64	10.27 3.75	23.11 8.30	17.36 6.23	11.56 4.15
5.18	**Strength** **L/360**	7.31* 3.28	5.49* 2.46	3.65* 1.64	9.96 4.08	7.48 3.06	4.98 2.04	12.65 4.83	9.50 3.63	6.33 2.41	15.45 5.57	11.60 4.18	7.72 2.78	18.20 6.26	13.67 4.70	9.10 3.13	20.47 6.92	15.38 5.20	10.24 3.46
5.49	**Strength** **L/360**	6.52 2.76	4.90 2.08	3.26 1.38	8.88 3.43	6.67 2.58	4.44 1.72	11.29 4.07	8.48 3.05	5.64 2.03	13.78 4.69	10.35 3.52	6.89 2.34	16.23 5.27	12.19 3.96	8.12 2.64	18.26 5.83	13.72 4.38	9.13 2.91
5.79	**Strength** **L/360**	5.85 2.35	4.40 1.76	2.93 1.17	7.97 2.92	5.99 2.19	3.99 1.46	10.13 3.46	7.61 2.60	5.06 1.73	12.37 3.99	9.29 3.00	6.18 1.99	14.57 4.48	10.95 3.37	7.28 2.24	16.39 4.95	12.31 3.72	8.20 2.48
6.10	**Strength** **L/360**	5.28 2.01	3.97 1.51	2.64 1.01	7.20 2.50	5.41 1.88	3.60 1.25	9.14 2.96	6.87 2.23	4.57 1.48	11.16 3.42	8.38 2.57	5.58 1.71	13.15 3.84	9.88 2.89	6.57 1.92	14.79 4.25	11.11 3.19	7.40 2.12
6.40	**Strength** **L/360**	4.79 1.74	3.60 1.31	2.39 0.87	6.53 2.16	4.90 1.62	3.26 1.08	8.29 2.56	6.23 1.92	4.15 1.28	10.12 2.95	7.60 2.22	5.06 1.48	11.93 3.32	8.96 2.49	5.96 1.66	13.42 3.67	10.08 2.76	6.71 1.83
6.71	**Strength** **L/360**	4.36 1.51	3.28 1.14	2.18 0.76	5.95 1.88	4.47 1.41	2.97 0.94	7.55 2.23	5.68 1.67	3.78 1.11	9.22 2.57	6.93 1.93	4.61 1.28	10.87 2.89	8.16 2.17	5.43 1.44	12.22 3.19	9.18 2.40	6.11 1.60
7.01	**Strength** **L/360**	3.99 1.32	3.00 0.99	2.00 0.66	5.44 1.65	4.09 1.24	2.72 0.82	6.91 1.95	5.19 1.46	3.46 0.97	8.44 2.25	6.34 1.69	4.22 1.12	9.94 2.53	7.47 1.90	4.97 1.26	11.18 2.79	8.40 2.10	5.59 1.40
7.32	**Strength** **L/360**	3.67 1.17	2.75 0.88	1.83 0.58	5.00 1.45	3.75 1.09	2.50 0.72	6.35 1.72	4.77 1.29	3.17 0.86	7.75 1.98	5.82 1.49	3.88 0.99	9.13 2.22	6.86 1.67	4.57 1.11	10.27 2.46	7.72 1.85	5.14 1.23
7.62	**Strength** **L/360**	3.38 1.03	2.54 0.77	1.69 0.52	4.61 1.28	3.46 0.96	2.30 0.64	5.85 1.52	4.39 1.14	2.93 0.76	7.14 1.75	5.37 1.31	3.57 0.88	8.42 1.97	6.32 1.48	4.21 0.98	9.47 2.17	7.11 1.63	4.73 1.09
7.92	**Strength** **L/360**	3.12 0.92	2.35 0.69		4.26 1.14	3.20 0.86	2.13 0.57	5.41 1.35	4.06 1.01	2.70 0.67	6.60 1.56	4.96 1.17	3.30 0.78	7.78 1.75	5.84 1.31	3.89 0.87	8.75 1.93	6.58 1.45	4.38 0.97
8.23	**Strength** **L/360**	2.90 0.82	2.18 0.62		3.95 1.02	2.97 0.76	1.97 0.51	5.02 1.20	3.77 0.90	2.51 0.60	6.12 1.39	4.60 1.04	3.06 0.69	7.21 1.56	5.42 1.17	3.61 0.78	8.12 1.73	6.10 1.30	4.06 0.86
8.53	**Strength** **L/360**	2.69 0.73	2.02 0.55		3.67 0.91	2.76 0.69		4.66 1.08	3.50 0.81	2.33 0.54	5.69 1.25	4.28 0.94	2.85 0.62	6.71 1.40	5.04 1.05	3.35 0.70	7.55 1.55	5.67 1.16	3.77 0.77

NOTES:

* Where load values are followed by the symbol (*), web stiffeners are required at end supports.

[1] Refer to Page 6 and 9 for Design Assumptions, Floor Joist Load Table Notes, and Bridging Recommendations.

[2] Spans are based on 0.305m (1') increments.

C Sections

C Section Floor Joist Selection Table (Metric)[1] Uniformly Distributed Single Span Loads (kPa) with Kϕ = 0																			
Strength - Factored Loads (kPa) **L/360 - Specified Loads (kPa)**																			
Section		**1000C295-57**			**1000C295-71**			**1000C295-85**			**1000C295-99**			**1000C295-114**			**1000C295-128**		
Span[2] (m)	**Design Criteria**	**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**			**Spacing (mm)**		
		305	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**	**305**	**406**	**610**
3.35	**Strength** **L/360**	21.47* 23.31	16.13* 17.51	10.74* 11.66		23.95* 21.81	15.94* 14.51			20.51* 17.23									
3.66	**Strength** **L/360**	19.38* 17.96	14.56* 13.49	9.69* 8.98		20.12* 16.80	13.39* 11.18			17.24* 13.27			21.26* 15.33						
3.96	**Strength** **L/360**	16.51* 14.12	12.40* 10.61	8.26* 7.06	22.82* 17.59	17.14* 13.21	11.41* 8.79		22.06* 15.68	14.69* 10.44			18.12* 12.06			21.60* 13.60			
4.27	**Strength** **L/360**	14.24* 11.31	10.69* 8.49	7.12* 5.65	19.68* 14.08	14.78* 10.58	9.84* 7.04		19.02* 12.55	12.66* 8.36		23.47* 14.51	15.62* 9.66			18.62* 10.89			21.65* 12.07
4.57	**Strength** **L/360**	12.40* 9.19	9.32* 6.91	6.20* 4.60	17.14* 11.45	12.88* 8.60	8.57* 5.72	22.06* 13.59	16.57* 10.21	11.03* 6.79		20.45* 11.80	13.61* 7.85			16.22* 8.85			18.86* 9.82
4.88	**Strength** **L/360**	10.90* 7.57	8.19* 5.69	5.45* 3.79	15.07* 9.43	11.32* 7.09	7.53* 4.72	19.39* 11.20	14.57* 8.41	9.69* 5.60	23.92* 12.94	17.97* 9.72	11.96* 6.47		21.42* 10.96	14.26* 7.30			16.58* 8.09
5.18	**Strength** **L/360**	9.66* 6.32	7.25* 4.74	4.83* 3.16	13.35* 7.86	10.03* 5.91	6.67* 3.93	17.18* 9.33	12.90* 7.01	8.59* 4.67	21.19* 10.79	15.92* 8.10	10.59* 5.39		18.98* 9.14	12.63* 6.08		22.06 10.13	14.68 6.74
5.49	**Strength** **L/360**	8.61* 5.32	6.47* 4.00	4.31* 2.66	11.90* 6.63	8.94* 4.98	5.95* 3.31	15.32* 7.86	11.51* 5.91	7.66* 3.93	18.90* 9.09	14.20* 6.83	9.45* 4.54	22.53 10.25	16.93 7.70	11.27 5.12		19.68 8.54	13.10 5.68
5.79	**Strength** **L/360**	7.73* 4.52	5.81* 3.40	3.86* 2.26	10.68* 5.63	8.03* 4.23	5.34* 2.82	13.75* 6.69	10.33* 5.02	6.87* 3.34	16.96 7.73	12.74 5.80	8.48 3.86	20.22 8.71	15.19 6.55	10.11 4.36	23.51 9.66	17.66 7.26	11.75 4.83
6.10	**Strength** **L/360**	6.98* 3.88	5.24* 2.91	3.49* 1.94	9.64* 4.83	7.24* 3.63	4.82* 2.41	12.41 5.73	9.32 4.31	6.20 2.87	15.31 6.62	11.50 4.98	7.65 3.31	18.25 7.47	13.71 5.61	9.13 3.74	21.22 8.28	15.94 6.22	10.61 4.14
6.40	**Strength** **L/360**	6.33* 3.35	4.75* 2.52	3.16* 1.68	8.75* 4.17	6.57* 3.13	4.37* 2.09	11.26 4.95	8.46 3.72	5.63 2.48	13.89 5.72	10.43 4.30	6.94 2.86	16.55 6.45	12.44 4.85	8.28 3.23	19.24 7.16	14.46 5.38	9.62 3.58
6.71	**Strength** **L/360**	5.77* 2.91	4.33* 2.19	2.88* 1.46	7.97 3.63	5.99 2.73	3.98 1.81	10.26 4.31	7.70 3.24	5.13 2.15	12.65 4.98	9.50 3.74	6.33 2.49	15.08 5.61	11.33 4.22	7.54 2.81	17.53 6.22	13.17 4.68	8.77 3.11
7.01	**Strength** **L/360**	5.27* 2.55	3.96* 1.92	2.64* 1.28	7.29 3.18	5.48 2.39	3.65 1.59	9.38 3.77	7.05 2.83	4.69 1.88	11.58 4.36	8.70 3.27	5.79 2.18	13.80 4.91	10.37 3.69	6.90 2.46	16.04 5.45	12.05 4.09	8.02 2.72
7.32	**Strength** **L/360**	4.84 2.24	3.64 1.69	2.42 1.12	6.70 2.80	5.03 2.10	3.35 1.40	8.62 3.32	6.47 2.49	4.31 1.66	10.63 3.83	7.99 2.88	5.32 1.92	12.67 4.32	9.52 3.25	6.34 2.16	14.73 4.79	11.07 3.60	7.37 2.40
7.62	**Strength** **L/360**	4.46 1.99	3.35 1.49	2.23 0.99	6.17 2.47	4.64 1.86	3.09 1.24	7.94 2.93	5.97 2.20	3.97 1.47	9.80 3.39	7.36 2.55	4.90 1.70	11.68 3.83	8.77 2.87	5.84 1.91	13.58 4.24	10.20 3.19	6.79 2.12
7.92	**Strength** **L/360**	4.13 1.77	3.10 1.33	2.06 0.88	5.71 2.20	4.29 1.65	2.85 1.10	7.34 2.61	5.52 1.96	3.67 1.30	9.06 3.02	6.80 2.27	4.53 1.51	10.80 3.40	8.11 2.55	5.40 1.70	12.55 3.77	9.43 2.83	6.28 1.89
8.23	**Strength** **L/360**	3.83 1.58	2.88 1.18	1.91 0.79	5.29 1.96	3.97 1.47	2.65 0.98	6.81 2.33	5.12 1.75	3.40 1.16	8.40 2.69	6.31 2.02	4.20 1.35	10.01 3.04	7.52 2.28	5.01 1.52	11.64 3.37	8.75 2.53	5.82 1.68
8.53	**Strength** **L/360**	3.56 1.41	2.67 1.06	1.78 0.71	4.92 1.76	3.70 1.32	2.46 0.88	6.33 2.09	4.76 1.57	3.17 1.04	7.81 2.41	5.87 1.81	3.91 1.21	9.31 2.72	7.00 2.05	4.66 1.36	10.83 3.02	8.13 2.27	5.41 1.51
8.84	**Strength** **L/360**	3.32 1.27	2.49 0.96	1.66 0.64	4.59 1.58	3.45 1.19	2.29 0.79	5.90 1.88	4.43 1.41	2.95 0.94	7.28 2.17	5.47 1.63	3.64 1.09	8.68 2.45	6.52 1.84	4.34 1.23	10.09 2.72	7.58 2.04	5.05 1.36
9.14	**Strength** **L/360**	3.10 1.15	2.33 0.86	1.55 0.57	4.29 1.43	3.22 1.08	2.14 0.72	5.52 1.70	4.14 1.28	2.76 0.85	6.80 1.96	5.11 1.47	3.40 0.98	8.11 2.21	6.09 1.66	4.06 1.11	9.43 2.45	7.08 1.84	4.71 1.23

NOTES:

* Where load values are followed by the symbol (*), web stiffeners are required at end supports.

[1] Refer to Page 6 and 9 for Design Assumptions, Floor Joist Load Table Notes, and Bridging Recommendations.

[2] Spans are based on 0.305m (1') increments.

C Sections

C Section Floor Joist Selection Table (Metric)[1] Uniformly Distributed Single Span Loads (kPa) with Kϕ = 0																	
Strength - Factored Loads (kPa) L/360 - Specified Loads (kPa)																	
Section		1200C394-71			1200C394-85			1200C394-99			1200C394-114			1200C394-128			
Span[2] (m)	Design Criteria	Spacing (mm)			Spacing (mm)			Spacing (mm)			Spacing (mm)			Spacing (mm)			
		305	406	610	305	406	610	305	406	610	305	406	610	305	406	610	
4.27	Strength		18.66*	12.42*			16.13*			20.11*							
	L/360		18.31	12.19			14.73			17.25							
4.57	Strength	21.64*	16.25*	10.82*		21.11*	14.05*			17.52*			21.13*				
	L/360	19.82	14.89	9.91		17.99	11.98			14.02			15.92				
4.88	Strength	19.02*	14.29*	9.51*		18.55*	12.35*		23.14*	15.40*			18.58*			21.84*	
	L/360	16.33	12.27	8.17		14.83	9.87		17.36	11.55			13.12			14.65	
5.18	Strength	16.85*	12.65*	8.42*	21.88*	16.43*	10.94*		20.49*	13.64*			16.45*			19.35*	
	L/360	13.61	10.23	6.81	16.45	12.36	8.23		14.47	9.63			10.94			12.22	
5.49	Strength	15.03*	11.29*	7.51*	19.51*	14.66*	9.76*		18.28*	12.17*		22.05*	14.68*			17.26*	
	L/360	11.47	8.62	5.73	13.86	10.41	6.93		12.19	8.11		13.84	9.21			10.29	
5.79	Strength	13.49*	10.13*	6.74*	17.51*	13.16*	8.76*	21.84*	16.41*	10.92*		19.79*	13.17*		23.27*	15.49*	
	L/360	9.75	7.33	4.88	11.79	8.85	5.89	13.80	10.37	6.90		11.77	7.83		13.15	8.75	
6.10	Strength	12.17*	9.14*	6.09*	15.81*	11.87*	7.90*	19.71*	14.81*	9.86*	23.78*	17.86*	11.89*		21.00*	13.98*	
	L/360	8.36	6.28	4.18	10.10	7.59	5.05	11.83	8.89	5.92	13.43	10.09	6.72		11.27	7.50	
6.40	Strength	11.04*	8.29*	5.52*	14.34*	10.77*	7.17*	17.88*	13.43*	8.94*	21.57*	16.20*	10.78*		19.05*	12.68*	
	L/360	7.22	5.43	3.61	8.73	6.56	4.36	10.22	7.68	5.11	11.60	8.72	5.80		9.74	6.48	
6.71	Strength	10.06*	7.56*	5.03*	13.06*	9.81*	6.53*	16.29*	12.24*	8.14*	19.65*	14.76*	9.83*	23.10	17.36	11.55	
	L/360	6.28	4.72	3.14	7.59	5.70	3.80	8.89	6.68	4.44	10.09	7.58	5.05	11.27	8.47	5.64	
7.01	Strength	9.20*	6.91*	4.60*	11.95*	8.98*	5.98*	14.90*	11.20*	7.45*	17.98	13.51	8.99	21.14	15.88	10.57	
	L/360	5.50	4.13	2.75	6.64	4.99	3.32	7.78	5.84	3.89	8.83	6.64	4.42	9.87	7.41	4.93	
7.32	Strength	8.45*	6.35*	4.23*	10.98*	8.25*	5.49*	13.69	10.28	6.84	16.51	12.40	8.26	19.41	14.58	9.71	
	L/360	4.84	3.63	2.42	5.85	4.39	2.92	6.85	5.14	3.42	7.77	5.84	3.89	8.68	6.52	4.34	
7.62	Strength	7.79*	5.85*	3.89*	10.12*	7.60*	5.06*	12.61	9.48	6.31	15.22	11.43	7.61	17.89	13.44	8.95	
	L/360	4.28	3.22	2.14	5.17	3.89	2.59	6.06	4.55	3.03	6.88	5.17	3.44	7.68	5.77	3.84	
7.92	Strength	7.20*	5.41*	3.60*	9.35	7.03	4.68	11.66	8.76	5.83	14.07	10.57	7.03	16.54	12.43	8.27	
	L/360	3.81	2.86	1.90	4.60	3.46	2.30	5.38	4.05	2.69	6.11	4.59	3.06	6.83	5.13	3.41	
8.23	Strength	6.68*	5.02*	3.34*	8.67	6.52	4.34	10.81	8.12	5.41	13.05	9.80	6.52	15.34	11.52	7.67	
	L/360	3.40	2.55	1.70	4.11	3.09	2.05	4.81	3.61	2.40	5.46	4.10	2.73	6.10	4.58	3.05	
8.53	Strength	6.21	4.66	3.10	8.06	6.06	4.03	10.06	7.55	5.03	12.13	9.11	6.07	14.26	10.71	7.13	
	L/360	3.05	2.29	1.52	3.68	2.77	1.84	4.31	3.24	2.16	4.90	3.68	2.45	5.47	4.11	2.73	
8.84	Strength	5.79	4.35	2.89	7.52	5.65	3.76	9.37	7.04	4.69	11.31	8.50	5.65	13.30	9.99	6.65	
	L/360	2.74	2.06	1.37	3.31	2.49	1.66	3.88	2.92	1.94	4.41	3.31	2.20	4.92	3.70	2.46	
9.14	Strength	5.41	4.06	2.70	7.02	5.28	3.51	8.76	6.58	4.38	10.57	7.94	5.28	12.42	9.33	6.21	
	L/360	2.48	1.86	1.24	2.99	2.25	1.50	3.51	2.63	1.75	3.98	2.99	1.99	4.45	3.34	2.22	
9.45	Strength	5.07	3.81	2.53	6.58	4.94	3.29	8.20	6.16	4.10	9.90	7.43	4.95	11.64	8.74	5.82	
	L/360	2.25	1.69	1.12	2.71	2.04	1.36	3.18	2.39	1.59	3.61	2.71	1.80	4.03	3.03	2.01	
9.75	Strength	4.75	3.57	2.38	6.17	4.64	3.09	7.70	5.78	3.85	9.29	6.98	4.64	10.92	8.20	5.46	
	L/360	2.04	1.53	1.02	2.47	1.85	1.23	2.89	2.17	1.44	3.28	2.46	1.64	3.66	2.75	1.83	
10.06	Strength	4.47	3.36	2.24	5.81	4.36	2.90	7.24	5.44	3.62	8.73	6.56	4.37	10.27	7.71	5.13	
	L/360	1.86	1.40	0.93	2.25	1.69	1.12	2.63	1.98	1.32	2.99	2.25	1.50	3.34	2.51	1.67	
10.36	Strength	4.21	3.16	2.11	5.47	4.11	2.73	6.82	5.12	3.41	8.23	6.18	4.11	9.67	7.27	4.84	
	L/360	1.70	1.28	0.85	2.06	1.55	1.03	2.41	1.81	1.20	2.73	2.05	1.37	3.05	2.29	1.53	
10.67	Strength	3.97	2.99	1.99	5.16	3.88	2.58	6.44	4.83	3.22	7.76	5.83	3.88	9.13	6.86	4.56	
	L/360	1.56	1.17	0.78	1.89	1.42	0.94	2.21	1.66	1.10	2.51	1.88	1.25	2.80	2.10	1.40	

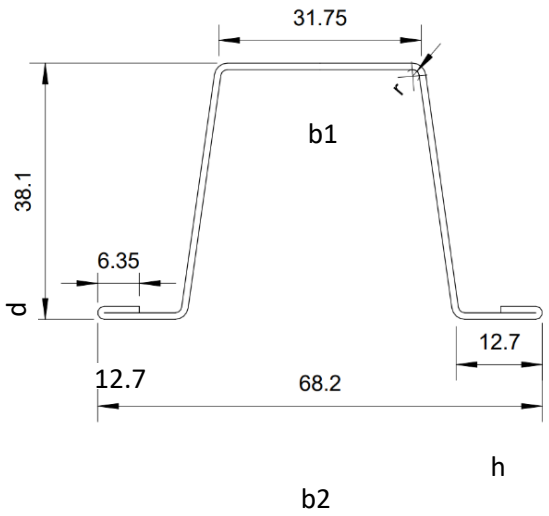
NOTES:

* Where load values are followed by the symbol (*), web stiffeners are required at end supports.

[1] Refer to Page 6 and 9 for Design Assumptions, Floor Joist Load Table Notes, and Bridging Recommendations. [2] Spans are based on 0.305m (1') increments.

Furring (Hat) Channels

p



Dimensions

d	=section depth
b1	=top flange width
b2	=bottom overall width
h	=bottom flange width
t	=steel design thickness (nominal base steel thickness)
r	=inside bend radius

Properties

Ix,eff	=effective moment of inertia about axis X-X at maximum compressive stress = 0.6Fy
Sx,eff	=effective elastic section modulus about axis X-X
rx	=radius of gyration about axis X-X
Iy,g	=gross moment of inertia about axis Y-Y
Sy,eff	=effective elastic section modulus about axis Y-Y
ry	=radius of gyration about Y-Y
J	=St. Venant torsion constant
Cw	=warping constant
Ag	=gross area of section
y	=distance from the extreme bottom flange to the centre of gravity

Product Designation Example

150F125-34

150 = Section depth (1.5 inches or 38 mm)
F = Furring Channel
125 = Flange width (1.25 inches or 31.75 mm)
34 = Minimum steel thickness in 1/1000^{ths} inches (i.e. 95% of the design thickness)
34/1000 = 0.034” or 0.86mm

Furring (Hat) Channels

Furring (Hat) Channel Properties (Metric)																						
Section		Dimension							Property													
No.	Designation	d mm	b1 mm	b2 mm	h mm	t mm	r mm	Gauge	Ix,eff. x10^6 mm^4	Sx,eff. x10^3 mm^3	rx mm	Iy,g x10^6 mm^4	Sy, eff. x10^3 mm^3	ry mm	J mm^4	Cw x10^9 mm^6	Ag mm^2	y mm	Weight kg/m	Vr kN	Br,ext kN	Br,int kN	Mrx kNm
1	150F125-34	38.1	31.75	68.2	12.7	0.91	2	20	0.0244	1.193	14.46	0.043	1.217	19.25	32.2	0.0024	117	19.97	0.91	9.97	1.59	3.44	0.37
2	150F125-45	38.1	31.75	68.2	12.7	1.21	2	18	0.0316	1.582	14.33	0.057	1.672	19.25	75.1	0.0031	154	19.97	1.21	13.05	2.84	6.20	0.49
3	150F125-57	38.1	31.75	68.2	12.7	1.52	2	16	0.0386	1.934	14.20	0.071	2.084	19.26	147.5	0.0036	192	19.97	1.50	16.13	4.44	9.87	0.60

Resistance:

Fy = steel yield strength = 345mPa (50ksi)

Vr = factored shear strength

Br,ext. = factored web crippling strength with 25mm of exterior support

Br,int. = factored web crippling strength with 25mm of interior support

Mrx = factored bending moment resistance assuming fully braced condition

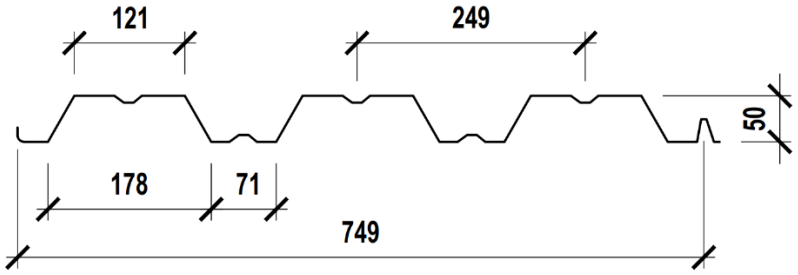
Design Assumptions:

1. The values in the table have been calculated according to Limit States Design (LSD) and CSA S136-16 North American Specification for the Design of Cold-Formed Steel Structural Members.
2. The grade of steel is based on ASTM A653/A653M SS Grade 50 (345mPa).
3. Effective properties are given as the minimum value for either positive or negative bending.
4. The web crippling resistance is calculated with one flange loading condition and a 25mm (1") bearing length.
5. The shear resistance is taken as the elastic resistance (Fy). The design engineer shall review the plastic resistance (Fu) of the net section accounting for any holes.
6. Consult with an engineer professional before using the above design aids.

Note: Structural design by Burns Maendel Consulting Engineers.

Steel Roof Deck

Dimensions



Physical Properties (per Metre of Width)

NOMINAL THICKNESS		MASS	EFFECTIVE PROPERTIES				RESISTANCES		
			SECTION MODULUS		MOMENT OF INERTIA AT SERVICE LOAD		BENDING MOMENT		SHEAR
			MID-SPAN Se+	SUPPORT Se-	POSITIVE Ie+	NEGATIVE Ie-	MID-SPAN Mr+	SUPPORT Mr-	Vr
GA.	mm	kg/m^2	mm^3	mm^3	mm^4	mm^4	kN-m	kN-m	kN/m
24	0.61	5.92	7,192	7,503	260,903	287,719	1.49	1.55	22.4
22	0.76	7.37	9,910	10,230	337,948	373,324	2.05	2.12	34.8
20	0.91	8.83	12,946	13,203	418,482	462,906	2.68	2.73	47.0
18	1.22	11.84	20,153	19,996	594,088	656,626	4.17	4.14	63.0
16	1.52	14.75	27,141	27,063	772,581	850,454	5.62	5.6	78.5

Steel Roof Deck

Load Table – Limit States Design - Metric

SPAN (mm)		FACTORED AND UNFACTORED UNIFORMLY DISTRIBUTED LOADS (kPa)														
		SINGLE SPAN					DOUBLE SPAN					TRIPLE SPAN				
		NOMINAL THICKNESS (mm)					NOMINAL THICKNESS (mm)					NOMINAL THICKNESS (mm)				
		0.61	0.76	0.91	1.22	1.52	0.61	0.76	0.91	1.22	1.52	0.61	0.76	0.91	1.22	1.52
1200	F	8.3	11.4	14.9	23.2	31.2	8.6	11.8	15.2	23.0	31.1	10.8	14.7	19.0	28.7	38.9
	D	9.7	12.5	15.5	22.0	28.6	23.0	29.8	36.9	52.4	68.1	18.2	23.6	29.2	41.5	54.0
1350	F	6.5	9.0	11.8	18.3	24.7	6.8	9.3	12.0	18.2	24.6	8.5	11.6	15.0	22.7	30.7
	D	6.8	8.8	10.9	15.5	20.1	16.2	20.9	25.9	36.8	47.8	12.8	16.6	20.5	29.2	37.9
1500	F	5.3	7.3	9.5	14.8	20.0	5.5	7.5	9.7	14.7	19.9	6.9	9.4	12.1	18.4	24.9
	D	4.9	6.4	7.9	11.3	14.7	11.8	15.3	18.9	26.8	34.9	9.3	12.1	15.0	21.3	27.6
1650	F	4.4	6.0	7.9	12.3	16.5	4.6	6.2	8.0	12.2	16.5	5.7	7.8	10.0	15.2	20.6
	D	3.7	4.8	6.0	8.5	11.0	8.9	11.5	14.2	20.2	26.2	7.0	9.1	11.2	16.0	20.8
1800	F	3.7	5.1	6.6	10.3	13.9	3.8	5.2	6.7	10.2	13.8	4.8	6.5	8.4	12.8	17.3
	D	2.9	3.7	4.6	6.5	8.5	6.8	8.8	10.9	15.5	20.2	5.4	7.0	8.7	12.3	16.0
1950	F	3.1	4.3	5.6	8.8	11.8	3.3	4.5	5.7	8.7	11.8	4.1	5.6	7.2	10.9	14.7
	D	2.3	2.9	3.6	5.1	6.7	5.4	6.9	8.6	12.2	15.9	4.2	5.5	6.8	9.7	12.6
2100	F	2.7	3.7	4.9	7.6	10.2	2.8	3.8	5.0	7.5	10.2	3.5	4.8	6.2	9.4	12.7
	D	1.8	2.3	2.9	4.1	5.3	4.3	5.6	6.9	9.8	12.7	3.4	4.4	5.5	7.7	10.1
2250	F	2.4	3.2	4.2	6.6	8.9	2.5	3.3	4.3	6.5	8.9	3.1	4.2	5.4	8.2	11.1
	D	1.5	1.9	2.4	3.3	4.3	3.5	4.5	5.6	7.9	10.3	2.8	3.6	4.4	6.3	8.2
2400	F	2.1	2.8	3.7	5.8	7.8	2.2	2.9	3.8	5.7	7.8	2.7	3.7	4.7	7.2	9.7
	D	1.2	1.6	1.9	2.8	3.6	2.9	3.7	4.6	6.5	8.5	2.3	3.0	3.7	5.2	6.7
2550	F	1.8	2.5	3.3	5.1	6.9	1.9	2.6	3.4	5.1	6.9	2.4	3.3	4.2	6.4	8.6
	D	1.0	1.3	1.6	2.3	3.0	2.4	3.1	3.8	5.5	7.1	1.9	2.5	3.0	4.3	5.6
2700	F	1.6	2.3	2.9	4.6	6.2	1.7	2.3	3.0	4.5	6.1	2.1	2.9	3.7	5.7	7.7
	D	0.8	1.1	1.4	1.9	2.5	2.0	2.6	3.2	4.6	6.0	1.6	2.1	2.6	3.6	4.7
2850	F	1.5	2.0	2.6	4.1	5.5	1.5	2.1	2.7	4.1	5.5	1.9	2.6	3.4	5.1	6.9
	D	0.7	0.9	1.2	1.6	2.1	1.7	2.2	2.8	3.9	5.1	1.4	1.8	2.2	3.1	4.0
3000	F	1.3	1.8	2.4	3.7	5.0	1.4	1.9	2.4	3.7	5.0	1.7	2.4	3.0	4.6	6.2
	D	0.6	0.8	1.0	1.4	1.8	1.5	1.9	2.4	3.4	4.4	1.2	1.5	1.9	2.7	3.5

Material: ASTM A653M - 18, Grade 230 MPa

Reference Standards:

CAN/CSA S136-16 North American Specification for the Design of Cold Formed Steel Structural Members

CSSBI 10M-2018 Standard for Steel Roof Deck

Notes:

1. Effective properties are based on a unit width of 1000 mm.
2. Loads in row "F" are the maximum factored loads governed by strength capacity. Loads in row "D" are the uniform specified loads that produce a deflection of L/240.
3. For loads based on alternate deflection limits, multiply loads shown as follows: L/180 = L/240 x 1.333, L/300 = L/240 x 0.800, L/360 = L/240 x 0.667.
4. Table does not account for web crippling. Refer to Web Crippling table for bearing capacities at supports.
5. Deck is not designed to carry concentrated hanging loads.
6. Structural design by Lavergne Draward & Associates Inc.

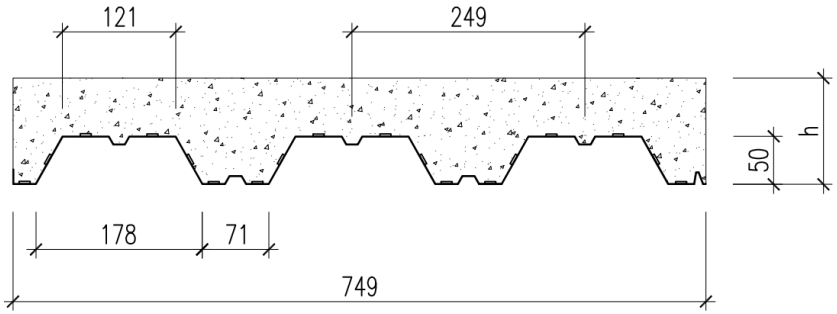
Steel Roof Deck

Web Crippling – Factored Resistance (kN/m)

NOMINAL THICKNESS		REACTION	BEARING LENGTH (mm)							
GA.	mm		40	50	65	75	90	100	125	150
24	0.61	End	4.1	4.4	4.9	5.1	5.5	5.7	6.2	6.7
		Interior	7.0	7.5	8.1	8.5	9.0	9.3	10.1	10.8
22	0.76	End	6.1	6.6	7.2	7.6	8.1	8.4	9.1	9.8
		Interior	10.2	10.9	11.8	12.3	13.1	13.5	14.6	15.5
20	0.91	End	9.0	9.7	10.5	11.1	11.8	12.3	13.3	14.3
		Interior	16.3	17.4	18.7	19.5	20.7	21.4	23.0	24.5
18	1.22	End	14.4	15.4	16.8	17.6	18.7	19.4	21.0	22.4
		Interior	23.5	24.9	26.7	27.8	29.3	30.2	32.4	34.4
16	1.52	End	21.5	22.9	24.8	26.0	27.5	28.5	30.8	32.8
		Interior	34.7	36.6	39.2	40.7	42.8	44.1	47.1	49.9

Composite Steel Deck

Dimensions



Physical Properties (per Metre of Width)

STEEL DECK SECTION PROPERTIES (PER METRE OF WIDTH)								BEARING REACTION WEB CRIPPLING (PER METRE OF WIDTH)		COMPOSITE SLAB PROPERTIES (PER METRE OF WIDTH)						
NOMINAL THICKNESS		YIELD STRESS	MASS	AREA OF STEEL	SECTION MODULUS		DEFLECTION INERTIA MIDSPAN Ie+	END Pe	INT Pi	OVERALL SLAB DEPTH (mm)						
					MID-SPAN Se+	SUPPORT Se-										
GA	mm	MPa	kg/m²	mm²/m	mm³	mm³	mm⁴	kN	kN	100	125	150	175	200	225	250
22	0.76	230	7.37	939	9,910	10,230	337,948	6.1	12.3	SLAB WEIGHT (kPa)						
20	0.91	230	8.83	1,125	12,946	13,203	418,482	9.0	19.5	1.79	2.38	2.97	3.56	4.15	4.74	5.33
18	1.22	230	11.84	1,508	20,153	19,995	594,088	14.4	27.8	CONCRETE VOLUME (m³/m)						
16	1.52	230	14.75	1,879	27,141	27,063	772,581	21.5	40.7	0.07	0.09	0.12	0.14	0.17	0.19	0.22

Composite Steel Deck

Load Table – Limit States Design - Metric

SLAB THICKNESS	DECK THICKNESS	CONSTRUCTION STAGE			MAXIMUM SUPERIMPOSED FACTORED LOAD (ULS) FOR STRENGTH/ MAXIMUM SUPERIMPOSED UNFACTORED LOAD (SLS) FOR DEFLECTION AT L/360 (kPa)																							
		MAXIMUM UNSHORED SPAN			COMPOSITE SLAB SPAN (mm)																							
h (mm)	t (mm)	Single (mm)	Double (mm)	Triple (mm)	1200		1350		1500		1650		1800		1950		2100		2250		2400		2550		2700		2850		3000	
					ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS
100	0.76	1690	2000	1980	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.8	20.0	17.0	16.5	14.7	13.3	12.7	10.8	11.1	8.8	9.8	7.2	8.6	6.0
	0.91	2050	2410	2380	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	17.7	17.5	14.3	15.2	11.6	13.4	9.5	11.8	7.8	10.4	6.4
	1.22	2760	2980	3080	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.9	20.0	16.1	19.9	13.1	17.5	10.7	15.5	8.9	13.8	7.3
	1.52	3320	3460	3570	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	17.6	20.0	14.4	20.0	11.8	18.7	9.8	16.6	8.1
125	0.76	1560	1830	1810	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	18.0	20.0	15.7	18.1	13.8	15.0	12.2	12.5
	0.91	1870	2190	2160	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.3	16.8	16.1	14.8	13.4
	1.22	2490	2730	2820	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	18.1	20.0	15.1
	1.52	3000	3160	3270	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.8	20.0	16.6
150	0.76	1450	1700	1680	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	17.9	20.0	15.8	20.0
	0.91	1730	2030	2000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.3	20.0
	1.22	2300	2520	2610	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.52	2760	2930	3030	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
175	0.76	1360	1600	1580	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.4	20.0
	0.91	1630	1900	1870	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.22	2150	2360	2440	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.52	2570	2740	2830	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
200	0.76	1290	1510	1490	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	0.91	1540	1790	1760	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.22	2020	2230	2300	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.52	2420	2580	2670	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
225	0.76	1230	1440	1420	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	0.91	1460	1700	1680	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.22	1920	2110	2180	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.52	2290	2450	2530	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
250	0.76	1180	1380	1360	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	0.91	1400	1630	1600	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.22	1830	2010	2080	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	1.52	2180	2340	2420	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0

Material: ASTM A653M, ZF75 or Z275, Grade 230 MPa

Reference standards: CAN / CSA - S136 - 16 North American Specification for the Design of Cold-Formed Steel Structural Members,
CSSBI 12M-2018 Standard for Composite Steel Deck

Notes:

1. Effective properties are based on a unit width of 1000mm.
2. Load values are based on concrete density of 2350 kg/m³ with a minimum compressive resistance of 25 MPa at 28 days.
3. The maximum factored (ULS) / unfactored (SLS) uniformly distributed load in the load table must by greater than the sum of factored / unfactored uniformly distributed loads applied on top of composite slab.
4. The self-weight of steel deck and concrete slab were already accounted for in the tables with dead load factor of 1.25 (ULS) / 1.0 (SLS). Concrete slab weight and volume are shown in Properties Table.
5. Load tables are based on the design of one-way composite slabs carrying uniformly distributed loads on a single span basis.
6. A uniform loading in excess of 20 kPa specified uniform load is often an indication of concentrated or moving loads. Such conditions may require additional reinforcing steel.
7. Load tables are based on uniformly distributed loads and shall not be used for concentrated loads.
8. The maximum loads for the deck acting as a form were established under the loads produced by the slab self-weight and the construction load of 1 kN/m² or 2 kN/m transverse live load.
9. The maximum reactions for web crippling are calculated for the loads on deck acting as a form with the end bearing length equal to 40mm and the interior bearing length equal to 75mm.
10. Deflection under wet concrete to be less than L/180 or 20mm maximum.
11. Composite slab uniform service loads are limited to a deflection of L/360.
12. Structural design by Lavergne Draward & Associates Inc.