2025 CATALOGUE

(Imperial)

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Z-PURLINS

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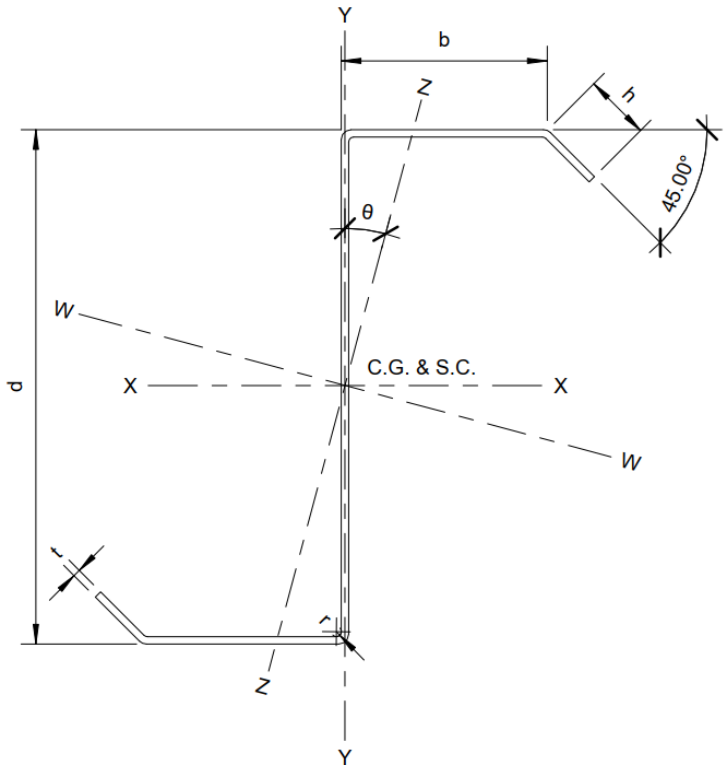


Dimensions

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 = 0.0984”

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 (Imperial)																	
Section		Dimension					Property										
No.	Designation	d	b	h	t	Gauge	Ix,eff.	Sx,eff.	rx	Iy,g	Sy, eff.	ry	rmin.	J	Cw	Ag	θ
		in	in	in	in		in^4	in^3	in	in^4	in^3	in	in	in^4 x10^{-3}	in^6	in^2	degrees
1	400Z250-45	4.00	2.50	0.50	0.048	18	1.16	0.46	1.67	0.80	0.17	1.31	0.68	0.35	1.84	0.46	36.34
2	400Z250-57	4.00	2.50	0.50	0.060	16	1.53	0.61	2.00	0.99	0.23	1.31	0.68	0.69	2.27	0.58	36.33
3	400Z250-71	4.00	2.50	0.50	0.075	14	1.94	0.96	1.66	1.23	0.31	1.30	0.68	1.37	2.79	0.73	36.31
4	400Z250-85	4.00	2.50	0.50	0.090	13	2.32	1.04	1.65	1.45	0.42	1.30	0.67	2.35	3.27	0.87	36.30
5	400Z250-99	4.00	2.50	0.50	0.105	12	2.71	1.26	1.64	1.67	0.52	1.29	0.67	3.70	3.73	1.00	36.29
6	400Z250-114	4.00	2.50	0.50	0.120	11	3.06	1.44	1.64	1.88	0.60	1.28	0.67	5.49	4.16	1.14	36.27
7	400Z250-128	4.00	2.50	0.50	0.135	10	3.40	1.63	1.63	2.09	0.69	1.28	0.66	7.77	4.57	1.28	36.25
8	600Z300-45	6.00	3.00	0.75	0.048	18	3.55	0.91	2.46	1.56	0.32	1.57	0.90	0.48	8.75	0.63	29.39
9	600Z300-57	6.00	3.00	0.75	0.060	16	4.44	1.22	2.45	1.94	0.39	1.57	0.90	0.94	10.85	0.79	29.37
10	600Z300-71	6.00	3.00	0.75	0.075	14	5.77	1.58	2.45	2.41	0.49	1.56	0.89	1.86	13.40	0.99	29.37
11	600Z300-85	6.00	3.00	0.75	0.090	13	6.98	1.97	2.44	2.86	0.62	1.56	0.89	3.20	15.80	1.18	29.31
12	600Z300-99	6.00	3.00	0.75	0.105	12	8.12	2.43	2.43	3.29	0.79	1.55	0.89	5.06	18.11	1.37	29.28
13	600Z300-114	6.00	3.00	0.75	0.120	11	9.19	2.84	2.43	3.72	0.93	1.54	0.88	7.51	20.35	1.56	29.26
14	600Z300-128	6.00	3.00	0.75	0.135	10	10.23	3.22	2.42	4.14	1.06	1.54	0.88	10.64	22.50	1.75	29.23
15	800Z300-57	8.00	3.00	0.75	0.060	16	8.65	1.72	3.18	1.94	0.39	1.46	0.93	1.09	20.70	0.91	20.39
16	800Z300-71	8.00	3.00	0.75	0.075	14	11.14	2.34	3.17	2.41	0.50	1.45	0.92	2.15	25.61	1.14	20.35
17	800Z300-85	8.00	3.00	0.75	0.090	13	13.47	2.89	3.16	2.86	0.62	1.45	0.92	3.69	30.24	1.36	20.31
18	800Z300-99	8.00	3.00	0.75	0.105	12	15.74	3.55	3.15	3.29	0.78	1.44	0.92	5.83	34.73	1.58	20.28
19	800Z300-114	8.00	3.00	0.75	0.120	11	17.85	4.16	3.15	3.72	0.92	1.44	0.91	8.66	39.07	1.80	20.24
20	800Z300-128	8.00	3.00	0.75	0.135	10	19.92	4.70	3.14	4.14	1.06	1.43	0.91	12.28	43.27	2.02	20.20
21	1000Z300-57	10.00	3.00	0.75	0.060	16	14.75	2.13	3.87	1.94	0.40	1.37	0.92	1.23	34.11	1.03	15.11
22	1000Z300-71	10.00	3.00	0.75	0.075	14	18.78	3.11	3.86	2.41	0.50	1.37	0.92	2.43	42.24	1.29	15.07
23	1000Z300-85	10.00	3.00	0.75	0.090	13	22.64	3.95	3.85	2.86	0.62	1.36	0.92	4.18	49.93	1.54	15.04
24	1000Z300-99	10.00	3.00	0.75	0.105	12	26.54	4.82	3.85	3.29	0.78	1.36	0.91	6.60	57.39	1.79	15.00
25	1000Z300-114	10.00	3.00	0.75	0.120	11	30.11	5.63	3.84	3.72	0.92	1.35	0.91	9.81	64.62	2.04	14.96
26	1000Z300-128	10.00	3.00	0.75	0.135	10	33.64	6.37	3.83	4.14	1.05	1.34	0.91	13.92	71.64	2.29	14.92
27	1200Z300-71	12.00	3.00	0.75	0.075	14	29.01	3.66	4.52	2.41	0.51	1.29	0.91	2.71	63.05	1.44	11.48
28	1200Z300-85	12.00	3.00	0.75	0.090	13	34.69	5.04	4.52	2.86	0.62	1.29	0.91	4.66	74.57	1.72	11.71
29	1200Z300-99	12.00	3.00	0.75	0.105	12	40.66	6.21	4.51	3.29	0.77	1.28	0.90	7.37	85.77	2.00	11.68
30	1200Z300-114	12.00	3.00	0.75	0.120	11	46.17	7.24	4.50	3.72	0.92	1.28	0.90	10.95	96.64	2.28	11.65
31	1200Z300-128	12.00	3.00	0.75	0.135	10	51.61	8.20	4.49	4.14	1.05	1.27	0.89	15.53	107.20	2.56	11.61

Z-PURLINS

Resistance:

Fy	= steel yield strength = 50ksi (345mPa)
Vr	= factored shear strength
Br,ext.	= factored web crippling strength with 3 in. of exterior support
Br,int.	= factored web crippling strength with 3 in. of interior support
Mrd	= factored distortional buckling resistance
Mr	= factored lateral-torsional buckling resistance

Design Assumptions:

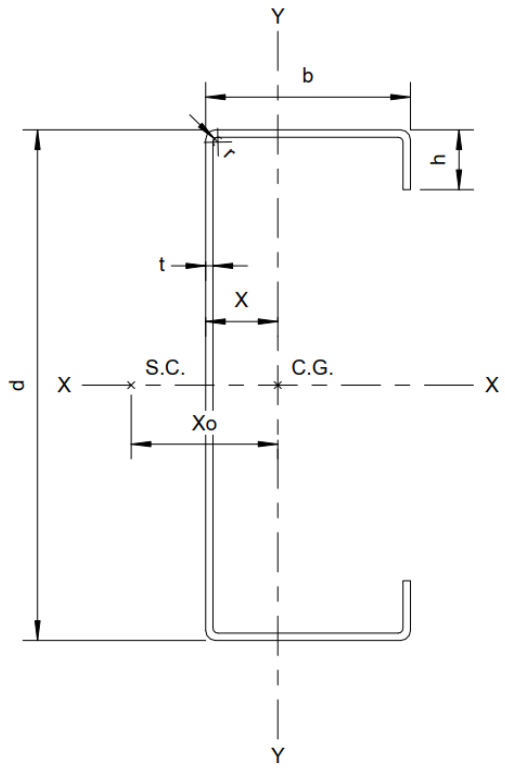
1. The values in the table have been calculated according to Limit States Design (LSD) and CSA S136-16 North American Specification for the Design of Cold-Formed Steel Structural Members.
2. The grade of steel is based on ASTM A653/A653M SS Grade 50 (345mPa).
3. Shaded Mr values indicates that distortional 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 (kip·ft) , Unsupported Length (ft)												
No.	Designation	Weight	Vr	Br,ext.	Br,int.	Mrd	0'	2'	3'	4'	5'	6'	8'	10'	12'	14'	16'	18'	20'
		lbs/ft	kip	kip	kip	kip·ft													
1	400Z250-45	1.58	3.03	0.85	1.52	1.49	1.73	1.73	1.73	1.70	1.61	1.49	1.17	0.85	0.66	0.51	0.40	0.32	0.27
2	400Z250-57	1.98	4.79	1.29	2.41	2.07	2.29	2.29	2.29	2.25	2.12	1.97	1.57	1.15	0.87	0.66	0.52	0.43	0.36
3	400Z250-71	2.47	6.59	1.97	3.80	2.87	3.04	3.04	3.04	3.00	2.85	2.66	2.16	1.53	1.13	0.87	0.70	0.59	0.50
4	400Z250-85	2.95	7.84	2.74	5.43	3.70	3.91	3.91	3.91	3.86	3.67	3.40	2.65	1.92	1.42	1.11	0.90	0.76	0.66
5	400Z250-99	3.42	9.06	3.63	7.35	4.57	4.72	4.72	4.72	4.64	4.34	3.99	3.21	2.32	1.73	1.37	1.13	0.96	0.83
6	400Z250-114	3.88	10.27	4.62	9.54	5.38	5.38	5.38	5.38	5.30	4.98	4.62	3.81	2.75	2.08	1.66	1.38	1.19	1.04
7	400Z250-128	4.34	11.45	5.72	12.00	6.11	6.11	6.11	6.11	6.03	5.72	5.39	4.33	3.21	2.46	1.99	1.67	1.43	1.26
8	600Z300-45	2.15	2.12	0.80	1.48	2.71	3.40	3.40	3.40	3.40	3.37	3.27	2.91	2.37	1.80	1.43	1.12	0.89	0.73
9	600Z300-57	2.69	4.22	1.23	2.36	3.76	4.56	4.56	4.56	4.56	4.49	4.28	3.75	3.03	2.33	1.83	1.42	1.14	0.93
10	600Z300-71	3.36	7.56	1.89	3.73	5.21	5.94	5.94	5.94	5.94	5.83	5.56	4.86	4.03	3.08	2.32	1.81	1.46	1.21
11	600Z300-85	4.02	10.86	2.64	5.34	6.74	7.37	7.37	7.37	7.37	7.25	6.96	6.21	5.02	3.75	2.83	2.22	1.81	1.51
12	600Z300-99	4.67	14.11	3.51	7.23	8.35	9.10	9.10	9.10	9.10	8.97	8.61	7.43	6.05	4.42	3.36	2.66	2.18	1.83
13	600Z300-114	5.31	16.03	4.48	9.40	10.04	10.66	10.66	10.66	10.66	10.44	9.91	8.64	7.05	5.13	3.92	3.13	2.59	2.19
14	600Z300-128	5.95	17.93	5.56	11.83	11.77	12.06	12.06	12.06	12.06	11.84	11.28	10.01	7.97	5.87	4.52	3.64	3.02	2.58
15	800Z300-57	3.09	3.12	1.18	2.32	5.11	6.46	6.46	6.46	6.46	6.37	6.17	5.42	4.25	3.25	2.48	1.91	1.53	1.25
16	800Z300-71	3.87	6.22	1.82	3.67	7.13	8.77	8.77	8.77	8.77	8.57	8.13	6.99	5.65	4.20	3.12	2.42	1.94	1.60
17	800Z300-85	4.63	10.77	2.56	5.27	9.27	10.85	10.85	10.85	10.85	10.61	10.12	8.89	6.93	5.04	3.76	2.93	2.36	1.95
18	800Z300-99	5.38	14.77	3.41	7.14	11.57	13.32	13.32	13.32	13.32	13.04	12.45	10.56	8.34	5.90	4.43	3.47	2.81	2.34
19	800Z300-114	6.13	19.27	4.36	9.28	13.99	15.58	15.58	15.58	15.58	15.15	14.30	12.27	9.52	6.77	5.11	4.03	3.28	2.75
20	800Z300-128	6.87	24.37	5.42	11.70	16.50	17.64	17.64	17.64	17.64	17.18	16.28	14.17	10.72	7.68	5.83	4.62	3.79	3.19
21	1000Z300-57	3.50	2.48	1.14	2.28	6.45	8.00	8.00	8.00	8.00	7.85	7.57	6.83	5.53	4.19	3.16	2.43	1.93	1.58
22	1000Z300-71	4.39	4.93	1.77	3.62	9.06	11.65	11.65	11.65	11.65	11.44	10.99	9.32	7.30	5.48	3.96	3.06	2.44	2.00
23	1000Z300-85	5.24	8.53	2.49	5.20	11.86	14.80	14.80	14.80	14.80	14.38	13.65	11.80	8.92	6.39	4.75	3.68	2.95	2.43
24	1000Z300-99	6.10	13.56	3.32	7.06	14.88	18.08	18.08	18.08	18.08	17.58	16.68	13.93	10.58	7.44	5.55	4.32	3.48	2.87
25	1000Z300-114	6.94	19.27	4.26	9.19	18.08	21.12	21.12	21.12	21.12	20.38	19.15	16.19	12.04	8.50	6.37	4.98	4.03	3.35
26	1000Z300-128	7.79	24.37	5.30	11.58	21.43	23.90	23.90	23.90	23.90	23.10	21.80	18.56	13.51	9.58	7.21	5.67	4.61	3.84
27	1200Z300-71	4.89	4.10	1.72	3.57	10.93	13.75	13.75	13.75	13.75	13.43	12.93	11.60	8.96	6.49	4.80	3.70	2.95	2.41
28	1200Z300-85	5.85	7.08	2.43	5.14	14.39	18.89	18.89	18.89	18.89	18.47	17.46	14.86	10.96	7.74	5.74	4.44	3.54	2.90
29	1200Z300-99	6.80	11.25	3.25	6.99	18.14	23.29	23.29	23.29	23.29	22.49	21.20	17.47	12.83	9.00	6.69	5.19	4.16	3.42
30	1200Z300-114	7.75	16.82	4.17	9.10	22.14	27.16	27.16	27.16	27.16	26.02	24.34	20.30	14.58	10.25	7.65	5.95	4.79	3.96
31	1200Z300-128	8.69	23.98	5.20	11.48	26.36	30.73	30.73	30.73	30.73	29.49	27.70	23.11	16.33	11.52	8.58	6.74	5.45	4.52

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

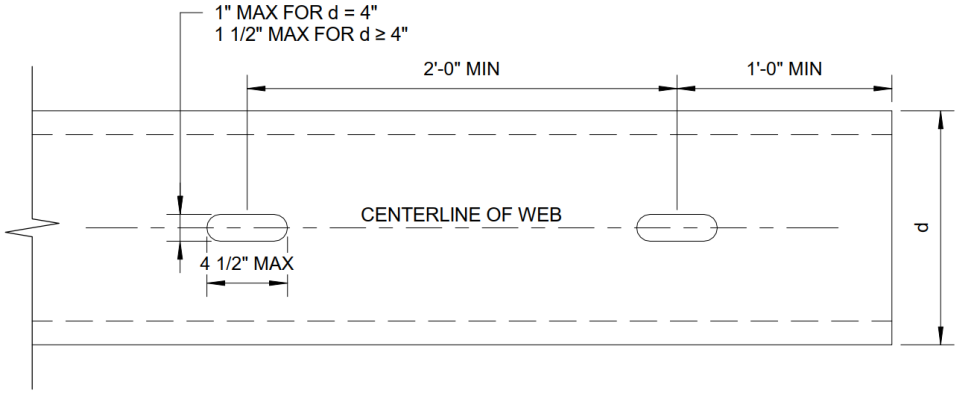
Resistance:

Fy	= steel yield strength = 50ksi (345mPa)
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 2’-0”. Punchouts for members 4” deep are a maximum of 1” wide by 4.5” in length. Punchouts for members greater than 4” deep are a maximum of 1.5” wide by 4.5” 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 (Imperial)																		
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
		in	in	in	in	in		lbs/ft	in^2	in^4	in	in	kip	kip	$x10^{-3}$ in^4	in^6	in	in
1	400C177-45	4.00	1.77	0.59	0.048	0.079	18	1.35	0.40	1.01	1.59	0.67	3.03	0.92	0.30	0.64	0.60	1.44
2	400C177-57	4.00	1.77	0.59	0.060	0.079	16	1.69	0.50	1.25	1.59	0.67	4.79	1.40	0.59	0.78	0.60	1.42
3	400C177-71	4.00	1.77	0.59	0.075	0.079	14	2.10	0.62	1.54	1.58	0.66	6.66	2.12	1.17	0.94	0.60	1.41
4	400C177-85	4.00	1.77	0.59	0.090	0.087	13	2.49	0.73	1.81	1.57	0.65	7.89	2.92	1.99	1.08	0.59	1.39
5	400C177-99	4.00	1.77	0.59	0.105	0.087	12	2.88	0.85	2.07	1.56	0.65	9.13	3.86	3.12	1.20	0.59	1.37
6	400C177-114	4.00	1.77	0.59	0.120	0.108	11	3.25	0.96	2.31	1.55	0.64	10.21	4.83	4.59	1.30	0.59	1.35
7	400C177-128	4.00	1.77	0.59	0.135	0.138	10	3.59	1.06	2.52	1.54	0.63	11.20	5.87	6.43	1.37	0.59	1.33
8	600C236-45	6.00	2.36	0.59	0.048	0.079	18	1.87	0.55	3.11	2.38	0.86	2.11	0.87	0.42	2.93	0.70	1.72
9	600C236-57	6.00	2.36	0.59	0.060	0.079	16	2.34	0.69	3.86	2.37	0.86	4.19	1.33	0.82	3.59	0.70	1.71
10	600C236-71	6.00	2.36	0.59	0.075	0.079	14	2.92	0.86	4.79	2.36	0.85	7.56	2.03	1.62	4.36	0.70	1.69
11	600C236-85	6.00	2.36	0.59	0.090	0.087	13	3.47	1.02	5.66	2.35	0.84	10.86	2.82	2.77	5.05	0.70	1.67
12	600C236-99	6.00	2.36	0.59	0.105	0.087	12	4.02	1.18	6.51	2.35	0.84	14.17	3.73	4.35	5.71	0.70	1.66
13	600C236-114	6.00	2.36	0.59	0.120	0.108	11	4.55	1.34	7.30	2.34	0.83	15.97	4.68	6.43	6.25	0.70	1.64
14	600C236-128	6.00	2.36	0.59	0.135	0.138	10	5.05	1.49	8.04	2.33	0.82	17.68	5.70	9.04	6.72	0.69	1.61
15	800C236-57	8.00	2.36	0.79	0.060	0.079	16	2.82	0.83	7.84	3.07	0.86	3.11	1.28	0.99	8.04	0.65	1.64
16	800C236-71	8.00	2.36	0.79	0.075	0.079	14	3.53	1.04	9.74	3.06	0.86	6.19	1.96	1.96	9.82	0.65	1.63
17	800C236-85	8.00	2.36	0.79	0.090	0.087	13	4.20	1.24	11.53	3.05	0.85	10.73	2.73	3.35	11.42	0.65	1.61
18	800C236-99	8.00	2.36	0.79	0.105	0.087	12	4.87	1.43	13.30	3.05	0.84	14.77	3.63	5.28	12.95	0.65	1.59
19	800C236-114	8.00	2.36	0.79	0.120	0.108	11	5.52	1.62	14.96	3.03	0.83	19.27	4.56	7.81	14.28	0.65	1.57
20	800C236-128	8.00	2.36	0.79	0.135	0.138	10	6.15	1.81	16.53	3.02	0.83	24.16	5.56	11.00	15.44	0.65	1.55
21	1000C295-57	10.00	2.95	0.79	0.060	0.079	16	3.47	1.02	15.09	3.85	1.05	2.47	1.24	1.22	21.98	0.76	1.95
22	1000C295-71	10.00	2.95	0.79	0.075	0.079	14	4.34	1.28	18.79	3.84	1.05	4.91	1.90	2.41	26.99	0.76	1.93
23	1000C295-85	10.00	2.95	0.79	0.090	0.087	13	5.18	1.52	22.30	3.83	1.04	8.51	2.65	4.13	31.56	0.76	1.92
24	1000C295-99	10.00	2.95	0.79	0.105	0.087	12	6.01	1.77	25.77	3.82	1.03	13.53	3.53	6.51	35.96	0.76	1.90
25	1000C295-114	10.00	2.95	0.79	0.120	0.108	11	6.82	2.01	29.07	3.81	1.02	19.27	4.45	9.64	39.88	0.76	1.88
26	1000C295-128	10.00	2.95	0.79	0.135	0.138	10	7.61	2.24	32.23	3.79	1.01	24.37	5.44	13.62	43.41	0.76	1.86
27	1200C394-71	12.00	3.94	0.79	0.075	0.079	14	5.35	1.58	34.26	4.66	1.37	4.07	1.85	2.97	80.35	1.01	2.55
28	1200C394-85	12.00	3.94	0.79	0.090	0.087	13	6.39	1.88	40.74	4.65	1.37	7.05	2.59	5.10	94.43	1.01	2.53
29	1200C394-99	12.00	3.94	0.79	0.105	0.087	12	7.43	2.19	47.17	4.65	1.36	11.20	3.45	8.05	108.12	1.01	2.52
30	1200C394-114	12.00	3.94	0.79	0.120	0.108	11	8.44	2.48	53.33	4.63	1.35	16.80	4.36	11.94	120.61	1.01	2.50
31	1200C394-128	12.00	3.94	0.79	0.135	0.138	10	9.44	2.78	59.30	4.62	1.34	24.08	5.33	16.87	132.14	1.00	2.48

C Sections

C Section Properties (Imperial)										
Section		Perforated Effective								
No.	Designation	Ix,eff. in^4	Sx,eff. in^3	MrxLB kip·ft	MrxDB kip·ft	Vrn kip	MryLB web comp. kip·ft	MryLB lip comp. kip·ft	MryDB lip comp. kip·ft	Lu in
1	400C177-45	1.01	0.46	1.72	1.57	1.62	0.51	0.56	0.53	37.5
2	400C177-57	1.25	0.62	2.30	2.11	2.02	0.64	0.68	0.71	37.4
3	400C177-71	1.54	0.77	2.88	2.81	2.21	0.81	0.83	0.86	37.3
4	400C177-85	1.81	0.91	3.38	3.38	2.14	0.96	0.96	1.00	37.2
5	400C177-99	2.07	1.04	3.87	3.87	2.10	1.09	1.09	1.13	37.2
6	400C177-114	2.31	1.15	4.30	4.30	2.00	1.19	1.19	1.24	37.2
7	400C177-128	2.52	1.26	4.70	4.70	1.88	1.28	1.28	1.33	37.3
8	600C236-45	3.00	0.86	3.12	2.65	1.74	0.78	0.90	0.72	47.6
9	600C236-57	3.84	1.11	4.07	3.62	2.74	0.99	1.10	0.98	46.8
10	600C236-71	4.79	1.46	5.40	4.92	3.90	1.26	1.35	1.31	46.4
11	600C236-85	5.66	1.80	6.68	6.24	4.63	1.51	1.58	1.63	46.2
12	600C236-99	6.51	2.10	7.82	7.61	5.14	1.75	1.80	1.86	46.1
13	600C236-114	7.30	2.43	9.06	8.95	4.99	1.97	1.99	2.06	45.9
14	600C236-128	8.04	2.68	10.01	10.00	4.80	2.15	2.15	2.23	45.7
15	800C236-57	7.84	1.82	6.78	5.52	2.99	1.15	1.31	1.22	48.6
16	800C236-71	9.74	2.37	8.85	7.52	4.72	1.46	1.64	1.62	48.3
17	800C236-85	11.53	2.88	10.79	9.55	6.78	1.76	1.92	1.95	48.1
18	800C236-99	13.30	3.32	12.44	11.66	7.96	2.06	2.19	2.23	47.9
19	800C236-114	14.96	3.74	13.99	13.74	8.98	2.32	2.42	2.47	47.6
20	800C236-128	16.53	4.13	15.46	15.46	9.87	2.57	2.64	2.70	47.3
21	1000C295-57	15.09	2.35	8.38	7.29	2.47	1.59	1.88	1.52	58.4
22	1000C295-71	18.79	3.31	12.07	10.08	4.91	2.03	2.35	2.06	58.2
23	1000C295-85	22.30	4.07	15.16	12.97	7.12	2.46	2.76	2.60	57.9
24	1000C295-99	25.77	4.91	18.35	16.00	9.68	2.88	3.16	3.15	57.6
25	1000C295-114	29.07	5.61	20.99	19.07	11.96	3.28	3.53	3.58	57.3
26	1000C295-128	32.23	6.35	23.77	22.17	13.30	3.66	3.86	3.92	57.0
27	1200C394-71	32.53	4.02	14.28	12.72	4.07	3.11	3.76	2.73	76.8
28	1200C394-85	39.31	6.41	19.61	16.52	7.05	3.79	4.43	3.50	75.9
29	1200C394-99	46.03	6.64	24.69	20.60	9.98	4.46	5.10	4.30	75.2
30	1200C394-114	52.26	7.79	29.01	24.85	13.01	5.12	5.71	5.11	74.7
31	1200C394-128	58.37	9.03	33.70	29.21	16.44	5.75	6.28	5.91	74.2

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 8’-0”.
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 a 3.5” 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 500psf and less than 10psf 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 (ft)	Minimum Number of Bridging Rows
Up to 16	1 at mid span
16 to 24	2 at 1/3 point
24 to 32	3 at 1/4 point
32 to 40	4 at 1/5 point

C Sections

C Section Floor Joist Selection Table (Imperial)[1] Uniformly Distributed Single Span Loads (psf) with Kϕ = 0																							
Strength - Factored Loads (psf) **L/360 - Specified Loads (psf)**																							
Section		**400C177-45**			**400C177-57**			**400C177-71**			**400C177-85**			**400C177-99**			**400C177-114**			**400C177-128**		
Span (ft)	**Design Criteria**	**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**		
		12	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**
8	**Strength**	196.8	147.8	98.4	263.9	198.3	132.0	350.7	263.5	175.4	422.3	317.2	211.1	483.4	363.1	241.7		375.6	250.1		353.2	235.2
	L/360	84.7	63.6	42.4	104.9	78.8	52.4	129.3	97.2	64.7	151.9	114.1	75.9	173.8	130.6	86.9		145.3	96.7		158.7	105.6
9	**Strength**	155.5	116.8	77.7	208.5	156.6	104.3	277.1	208.2	138.6	333.7	250.7	166.8	381.9	286.9	191.0	425.0	319.3	212.5	418.4	314.2	209.1
	L/360	59.5	44.7	29.7	73.6	55.3	36.8	90.8	68.2	45.4	106.7	80.1	53.3	122.1	91.7	61.0	135.9	102.1	67.9	148.4	111.5	74.2
10	**Strength**	125.9	94.6	63.0	168.9	126.9	84.5	224.5	168.6	112.2	270.3	203.0	135.1	309.4	232.4	154.7	344.2	258.6	172.1	375.8	282.3	187.9
	L/360	43.4	32.6	21.7	53.7	40.3	26.8	66.2	49.7	33.1	77.8	58.4	38.9	89.0	66.9	44.5	99.1	74.4	49.5	108.2	81.3	54.1
11	**Strength**	104.1	78.2	52.0	139.6	104.9	69.8	185.5	139.4	92.8	223.4	167.8	111.7	255.7	192.1	127.8	284.5	213.7	142.2	310.6	233.3	155.3
	L/360	32.6	24.5	16.3	40.3	30.3	20.2	49.8	37.4	24.9	58.4	43.9	29.2	66.9	50.2	33.4	74.4	55.9	37.2	81.3	61.0	40.6
12	**Strength**	87.4	65.7	43.7	117.3	88.1	58.6	155.9	117.1	77.9	187.7	141.0	93.8	214.8	161.4	107.4	239.0	179.6	119.5	261.0	196.1	130.5
	L/360	25.1	18.9	12.5	31.1	23.3	15.5	38.3	28.8	19.2	45.0	33.8	22.5	51.5	38.7	25.8	57.3	43.1	28.7	62.6	47.0	31.3
13	**Strength**	74.5	56.0		99.9	75.1	50.0	132.8	99.8	66.4	159.9	120.1	80.0	183.1	137.5	91.5	203.7	153.0	101.8	222.4	167.1	111.2
	L/360	19.7	14.8		24.4	18.4	12.2	30.1	22.6	15.1	35.4	26.6	17.7	40.5	30.4	20.3	45.1	33.9	22.5	49.2	37.0	24.6
14	**Strength**	64.2	48.3		86.2	64.7		114.5	86.0	57.3	137.9	103.6	68.9	157.8	118.6	78.9	175.6	131.9	87.8	191.8	144.0	95.9
	L/360	15.8	11.9		19.6	14.7		24.1	18.1	12.1	28.3	21.3	14.2	32.4	24.4	16.2	36.1	27.1	18.0	39.4	29.6	19.7
15	**Strength**	56.0			75.1	56.4		99.8	74.9		120.1	90.2	60.1	137.5	103.3	68.7	153.0	114.9	76.5	167.0	125.5	83.5
	L/360	12.8			15.9	11.9		19.6	14.7		23.0	17.3	11.5	26.4	19.8	13.2	29.3	22.0	14.7	32.0	24.1	16.0
16	**Strength**	49.2			66.0			87.7	65.9		105.6	79.3		120.8	90.8	60.4	134.5	101.0	67.2	146.8	110.3	73.4
	L/360	10.6			13.1			16.2	12.1		19.0	14.3		21.7	16.3	10.9	24.2	18.2	12.1	26.4	19.8	13.2
17	**Strength**				58.4			77.7			93.5	70.3		107.0	80.4		119.1	89.5		130.0	97.7	65.0
	L/360				10.9			13.5			15.8	11.9		18.1	13.6		20.2	15.1		22.0	16.5	11.0
18	**Strength**							69.3			83.4			95.5	71.7		106.2	79.8		116.0	87.1	
	L/360							11.4			13.3			15.3	11.5		17.0	12.8		18.5	13.9	
19	**Strength**										74.9			85.7			95.4	71.6		104.1	78.2	
	L/360										11.3			13.0			14.4	10.8		15.8	11.8	
20	**Strength**													77.3			86.1			94.0		
	L/360													11.1			12.4			13.5		
21	**Strength**																78.1			85.2		
	L/360																10.7			11.7		
22	**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.

C Sections

C Section Floor Joist Selection Table (Imperial)[1] Uniformly Distributed Single Span Loads (psf) with Kϕ = 0																						
Strength - Factored Loads (psf) **L/360 - Specified Loads (psf)**																						
Section		**600C236-45**			**600C236-57**			**600C236-71**			**600C236-85**			**600C236-99**			**600C236-114**			**600C236-128**		
Span (ft)	**Design Criteria**	**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**		
		12	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**
8	**Strength** **L/360**	330.8* 251.9	248.5* 189.3	165.4* 126.0	452.1* 321.9	339.7* 241.8	226.1* 160.9		462.0* 302.0	307.5* 201.0			390.0* 237.4			475.6* 273.2						
9	**Strength** **L/360**	261.4* 176.9	196.4* 132.9	130.7* 88.5	357.3* 226.1	268.4* 169.8	178.6* 113.0	485.9* 282.3	365.0* 212.1	243.0* 141.2		463.0 250.5	308.2 166.7			375.8 191.9			441.9 215.1			493.8 236.9
10	**Strength** **L/360**	211.7* 129.0	159.1* 96.9	105.9* 64.5	289.4* 164.8	217.4* 123.8	144.7* 82.4	393.6 205.8	295.7 154.6	196.8 102.9	499.2 243.1	375.0 182.6	249.6 121.5		457.3 210.1	304.4 139.9			358.0 156.8			400.0 172.7
11	**Strength** **L/360**	175.0* 96.9	131.5* 72.8	87.5* 48.5	239.2 123.8	179.7 93.0	119.6 61.9	325.3 154.6	244.4 116.2	162.6 77.3	412.6 182.6	309.9 137.2	206.3 91.3		377.9 157.9	251.5 105.1		444.5 177.0	295.8 117.8		496.7 194.9	330.6 129.8
12	**Strength** **L/360**	147.0* 74.6	110.5* 56.1	73.5* 37.3	201.0 95.4	151.0 71.6	100.5 47.7	273.3 119.1	205.3 89.5	136.7 59.6	346.7 140.7	260.4 105.7	173.3 70.3	422.7 161.9	317.6 121.6	211.4 80.9	497.2 181.5	373.5 136.3	248.6 90.7		417.3 150.2	277.8 99.9
13	**Strength** **L/360**	125.3 58.7	94.1 44.1	62.6 29.4	171.2 75.0	128.6 56.3	85.6 37.5	232.9 93.7	175.0 70.4	116.5 46.8	295.4 110.6	221.9 83.1	147.7 55.3	360.2 127.3	270.6 95.6	180.1 63.7	423.6 142.8	318.3 107.2	211.8 71.4	473.4 157.2	355.6 118.1	236.7 78.6
14	**Strength** **L/360**	108.0 47.0	81.2 35.3	54.0 23.5	147.6 60.1	110.9 45.1	73.8 30.0	200.8 75.0	150.9 56.3	100.4 37.5	254.7 88.6	191.3 66.6	127.4 44.3	310.6 101.9	233.3 76.6	155.3 51.0	365.3 114.3	274.4 85.9	182.6 57.1	408.2 125.9	306.6 94.6	204.1 62.9
15	**Strength** **L/360**	94.1 38.2	70.7 28.7	47.1 19.1	128.6 48.8	96.6 36.7	64.3 24.4	174.9 61.0	131.4 45.8	87.5 30.5	221.9 72.0	166.7 54.1	110.9 36.0	270.5 82.9	203.2 62.3	135.3 41.4	318.2 92.9	239.0 69.8	159.1 46.5	355.6 102.3	267.1 76.9	177.8 51.2
16	**Strength** **L/360**	82.7 31.5	62.1 23.7	41.4 15.7	113.0 40.2	84.9 30.2	56.5 20.1	153.8 50.2	115.5 37.7	76.9 25.1	195.0 59.3	146.5 44.6	97.5 29.7	237.8 68.3	178.6 51.3	118.9 34.1	279.7 76.6	210.1 57.5	139.8 38.3	312.5 84.3	234.8 63.3	156.2 42.2
17	**Strength** **L/360**	73.3 26.3	55.0 19.7	36.6 13.1	100.1 33.5	75.2 25.2	50.1 16.8	136.2 41.9	102.3 31.5	68.1 20.9	172.7 49.5	129.8 37.2	86.4 24.7	210.6 56.9	158.2 42.8	105.3 28.5	247.7 63.8	186.1 48.0	123.9 31.9	276.8 70.3	208.0 52.8	138.4 35.2
18	**Strength** **L/360**	65.4 22.1	49.1 16.6	32.7 11.1	89.3 28.3	67.1 21.2	44.7 14.1	121.5 35.3	91.3 26.5	60.7 17.6	154.1 41.7	115.8 31.3	77.0 20.8	187.9 48.0	141.1 36.0	93.9 24.0	221.0 53.8	166.0 40.4	110.5 26.9	246.9 59.2	185.5 44.5	123.5 29.6
19	**Strength** **L/360**	58.7 18.8	44.1 14.1		80.2 24.0	60.2 18.0	40.1 12.0	109.0 30.0	81.9 22.5	54.5 15.0	138.3 35.4	103.9 26.6	69.1 17.7	168.6 40.8	126.7 30.6	84.3 20.4	198.3 45.7	149.0 34.4	99.2 22.9	221.6 50.4	166.5 37.8	110.8 25.2
20	**Strength** **L/360**	52.9 16.1	39.8 12.1		72.3 20.6	54.3 15.5		98.4 25.7	73.9 19.3	49.2 12.9	124.8 30.4	93.8 22.8	62.4 15.2	152.2 35.0	114.3 26.3	76.1 17.5	179.0 39.2	134.5 29.5	89.5 19.6	200.0 43.2	150.2 32.4	100.0 21.6
21	**Strength** **L/360**	48.0 13.9	36.1 10.5		65.6 17.8	49.3 13.4		89.3 22.2	67.0 16.7	44.6 11.1	113.2 26.2	85.0 19.7	56.6 13.1	138.0 30.2	103.7 22.7	69.0 15.1	162.3 33.9	122.0 25.4	81.2 16.9	181.4 37.3	136.3 28.0	90.7 18.6
22	**Strength** **L/360**	43.7 12.1			59.8 15.5	44.9 11.6		81.3 19.3	61.1 14.5		103.1 22.8	77.5 17.2	51.6 11.4	125.8 26.3	94.5 19.7	62.9 13.1	147.9 29.5	111.1 22.1	74.0 14.7	165.3 32.4	124.2 24.4	82.6 16.2
23	**Strength** **L/360**	40.0 10.6			54.7 13.5			74.4 16.9	55.9 12.7		94.4 20.0	70.9 15.0		115.1 23.0	86.4 17.3	57.5 11.5	135.3 25.8	101.7 19.4	67.7 12.9	151.2 28.4	113.6 21.3	75.6 14.2
24	**Strength** **L/360**				50.2 11.9			68.3 14.9	51.3 11.2		86.7 17.6	65.1 13.2		105.7 20.2	79.4 15.2		124.3 22.7	93.4 17.0	62.1 11.3	138.9 25.0	104.3 18.8	69.4 12.5
25	**Strength** **L/360**				46.3 10.5			63.0 13.2			79.9 15.6	60.0 11.7		97.4 17.9	73.2 13.4		114.6 20.1	86.1 15.1		128.0 22.1	96.2 16.6	64.0 11.1

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.

C Sections

C Section Floor Joist Selection Table (Imperial)[1] Uniformly Distributed Single Span Loads (psf) with Kϕ = 0																			
Strength - Factored Loads (psf) **L/360 - Specified Loads (psf)**																			
Section		**800C236-57**			**800C236-71**			**800C236-85**			**800C236-99**			**800C236-114**			**800C236-128**		
Span (ft)	**Design Criteria**	**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**		
		12	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**
9	**Strength**		409.3*	272.4*			371.2*			471.5*									
	L/360		346.9	230.9			286.9			339.7									
10	**Strength**	441.3*	331.5*	220.6*		451.7*	300.6*			381.9*			466.3*						
	L/360	336.6	252.9	168.3		314.3	209.2			247.7			285.6						
12	**Strength**	364.7*	274.0*	182.3*	496.9*	373.3*	248.5*		474.2*	315.6*			385.4*			454.0*			
	L/360	252.9	190.0	126.5	314.3	236.1	157.2		279.6	186.1			214.6			241.3			
13	**Strength**	306.4*	230.2*	153.2*	417.6*	313.7*	208.8*		398.5*	265.2*		486.5*	323.8*			381.5*			429.2
	L/360	194.8	146.3	97.4	242.1	181.9	121.0		215.3	143.3		248.4	165.3			185.9			205.4
14	**Strength**	261.1*	196.2*	130.6*	355.8*	267.3*	177.9*	452.0*	339.5*	226.0*		414.5	275.9		488.4	325.1			365.7
	L/360	153.2	115.1	76.6	190.4	143.0	95.2	225.5	169.4	112.7		195.3	130.0		219.7	146.2			161.5
15	**Strength**	225.1*	169.1*	112.6*	306.8*	230.5*	153.4*	389.7	292.8	194.9	475.8	357.4	237.9		421.1	280.3		473.7	315.3
	L/360	122.7	92.2	61.3	152.5	114.5	76.2	180.5	135.6	90.3	208.2	156.4	104.1		175.9	117.1		194.3	129.3
16	**Strength**	196.1*	147.3*	98.1*	267.2*	200.8*	133.6*	339.5	255.0	169.7	414.5	311.4	207.2	488.3	366.8	244.2		412.7	274.7
	L/360	99.7	74.9	49.9	124.0	93.1	62.0	146.8	110.3	73.4	169.3	127.2	84.6	190.3	143.0	95.2		158.0	105.2
17	**Strength**	172.4*	129.5*	86.2*	234.9	176.4	117.4	298.4	224.1	149.2	364.3	273.7	182.1	429.2	322.4	214.6	482.8	362.7	241.4
	L/360	82.2	61.7	41.1	102.1	76.7	51.1	120.9	90.8	60.5	139.5	104.8	69.7	156.8	117.8	78.4	173.3	130.2	86.7
18	**Strength**	152.7*	114.7*	76.3*	208.1	156.3	104.0	264.3	198.6	132.2	322.7	242.4	161.3	380.2	285.6	190.1	427.7	321.3	213.8
	L/360	68.5	51.5	34.3	85.1	64.0	42.6	100.8	75.7	50.4	116.3	87.4	58.1	130.8	98.2	65.4	144.5	108.5	72.2
19	**Strength**	136.2	102.3	68.1	185.6	139.4	92.8	235.8	177.1	117.9	287.8	216.2	143.9	339.1	254.8	169.6	381.5	286.6	190.7
	L/360	57.7	43.4	28.9	71.7	53.9	35.9	84.9	63.8	42.5	98.0	73.6	49.0	110.2	82.8	55.1	121.7	91.4	60.9
20	**Strength**	122.2	91.8	61.1	166.6	125.1	83.3	211.6	159.0	105.8	258.3	194.1	129.2	304.4	228.6	152.2	342.4	257.2	171.2
	L/360	49.1	36.9	24.5	61.0	45.8	30.5	72.2	54.3	36.1	83.3	62.6	41.6	93.7	70.4	46.8	103.5	77.7	51.7
21	**Strength**	110.3	82.9	55.2	150.3	112.9	75.2	191.0	143.5	95.5	233.1	175.1	116.6	274.7	206.3	137.3	309.0	232.1	154.5
	L/360	42.1	31.6	21.0	52.3	39.3	26.1	61.9	46.5	31.0	71.4	53.6	35.7	80.3	60.3	40.2	88.7	66.7	44.4
22	**Strength**	100.1	75.2	50.0	136.3	102.4	68.2	173.2	130.1	86.6	211.5	158.9	105.7	249.1	187.2	124.6	280.3	210.6	140.1
	L/360	36.3	27.3	18.2	45.2	33.9	22.6	53.5	40.2	26.7	61.7	46.3	30.8	69.4	52.1	34.7	76.6	57.6	38.3
23	**Strength**	91.2	68.5	45.6	124.2	93.3	62.1	157.8	118.6	78.9	192.7	144.7	96.3	227.0	170.5	113.5	255.4	191.8	127.7
	L/360	31.6	23.7	15.8	39.3	29.5	19.6	46.5	34.9	23.3	53.7	40.3	26.8	60.3	45.3	30.2	66.7	50.1	33.3
24	**Strength**	83.4	62.7	41.7	113.7	85.4	56.8	144.4	108.5	72.2	176.3	132.4	88.1	207.7	156.0	103.8	233.7	175.5	116.8
	L/360	27.7	20.8	13.8	34.4	25.8	17.2	40.7	30.6	20.4	47.0	35.3	23.5	52.8	39.7	26.4	58.3	43.8	29.2
25	**Strength**	76.6	57.6	38.3	104.4	78.4	52.2	132.6	99.6	66.3	161.9	121.6	81.0	190.8	143.3	95.4	214.6	161.2	107.3
	L/360	24.3	18.3	12.2	30.3	22.7	15.1	35.8	26.9	17.9	41.3	31.0	20.7	46.5	34.9	23.2	51.3	38.6	25.7
26	**Strength**	70.6	53.0	35.3	96.2	72.3	48.1	122.2	91.8	61.1	149.2	112.1	74.6	175.8	132.1	87.9	197.8	148.6	98.9
	L/360	21.5	16.2	10.8	26.8	20.1	13.4	31.7	23.8	15.9	36.6	27.5	18.3	41.1	30.9	20.6	45.4	34.1	22.7
27	**Strength**	65.3	49.0		88.9	66.8	44.5	113.0	84.9	56.5	138.0	103.6	69.0	162.5	122.1	81.3	182.8	137.4	91.4
	L/360	19.2	14.4		23.8	17.9	11.9	28.2	21.2	14.1	32.5	24.4	16.3	36.6	27.5	18.3	40.4	30.3	20.2
28	**Strength**	60.5	45.5		82.5	62.0	41.2	104.8	78.7	52.4	127.9	96.1	64.0	150.7	113.2	75.4	169.6	127.4	84.8
	L/360	17.1	12.8		21.3	16.0	10.6	25.2	18.9	12.6	29.0	21.8	14.5	32.6	24.5	16.3	36.1	27.1	18.0
29	**Strength**	56.3	42.3		76.7	57.6		97.4	73.2	48.7	119.0	89.4	59.5	140.1	105.3	70.1	157.7	118.4	78.8
	L/360	15.3	11.5		19.1	14.3		22.6	17.0	11.3	26.0	19.5	13.0	29.3	22.0	14.6	32.3	24.3	16.2

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.

C Sections

C Section Floor Joist Selection Table (Imperial)[1] Uniformly Distributed Single Span Loads (psf) with Kϕ = 0																			
Strength - Factored Loads (psf) **L/360 - Specified Loads (psf)**																			
Section		**1000C295-57**			**1000C295-71**			**1000C295-85**			**1000C295-99**			**1000C295-114**			**1000C295-128**		
Span (ft)	**Design Criteria**	**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**			**Spacing (in)**		
		12	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**	**12**	**16**	**24**
11	**Strength** **L/360**	448.5* 487.0	337.0* 365.8	224.4* 243.5		500.2* 455.6	332.9* 303.2			428.5* 359.9									
12	**Strength** **L/360**	404.8* 375.1	304.1* 281.8	202.4* 187.5		420.3* 350.9	279.8* 233.6			360.0* 277.2			444.2* 320.3						
13	**Strength** **L/360**	344.9* 295.0	259.1* 221.6	172.5* 147.5	476.8* 367.4	358.2* 276.0	238.4* 183.7		460.9* 327.6	306.8* 218.0			378.5* 251.9			451.2* 284.2			
14	**Strength** **L/360**	297.4* 236.2	223.4* 177.4	148.7* 118.1	411.1* 294.2	308.8* 221.0	205.5* 147.1		397.4* 262.3	264.5* 174.6		490.3* 303.1	326.3* 201.7			389.0* 227.5			452.3* 252.2
15	**Strength** **L/360**	259.1* 192.0	194.6* 144.3	129.5* 96.0	358.1* 239.2	269.0* 179.7	179.0* 119.6	460.9* 283.8	346.2* 213.2	230.4* 141.9		427.1* 246.4	284.3* 164.0			338.9* 185.0			394.0* 205.1
16	**Strength** **L/360**	227.7* 158.2	171.1* 118.9	113.8* 79.1	314.7* 197.1	236.4* 148.0	157.4* 98.5	405.0* 233.9	304.3* 175.7	202.5* 116.9	499.7* 270.3	375.4* 203.0	249.8* 135.1		447.5* 229.0	297.9* 152.4			346.3* 169.0
17	**Strength** **L/360**	201.7* 131.9	151.5* 99.1	100.8* 66.0	278.8* 164.3	209.4* 123.4	139.4* 82.1	358.8* 195.0	269.5* 146.5	179.4* 97.5	442.6* 225.3	332.5* 169.3	221.3* 112.7		396.4* 190.9	263.8* 127.1		460.9 211.7	306.7 140.9
18	**Strength** **L/360**	179.9* 111.1	135.2* 83.5	90.0* 55.6	248.7* 138.4	186.8* 104.0	124.3* 69.2	320.0* 164.3	240.4* 123.4	160.0* 82.1	394.8* 189.8	296.6* 142.6	197.4* 94.9	470.7 214.1	353.6 160.8	235.3 107.0		411.1 178.3	273.6 118.7
19	**Strength** **L/360**	161.5* 94.5	121.3* 71.0	80.7* 47.2	223.2* 117.7	167.7* 88.4	111.6* 58.8	287.2* 139.7	215.8* 104.9	143.6* 69.8	354.3 161.4	266.2 121.2	177.2 80.7	422.4 182.0	317.4 136.8	211.2 91.0	491.1 201.8	368.9 151.6	245.6 100.9
20	**Strength** **L/360**	145.7* 81.0	109.5* 60.9	72.9* 40.5	201.4* 100.9	151.3* 75.8	100.7* 50.4	259.2 119.7	194.7 90.0	129.6 59.9	319.8 138.4	240.2 104.0	159.9 69.2	381.3 156.1	286.4 117.3	190.6 78.0	443.2 173.0	333.0 130.0	221.6 86.5
21	**Strength** **L/360**	132.2* 70.0	99.3* 52.6	66.1* 35.0	182.7* 87.2	137.3* 65.5	91.4* 43.6	235.1 103.4	176.6 77.7	117.6 51.7	290.1 119.5	217.9 89.8	145.0 59.8	345.8 134.8	259.8 101.3	172.9 67.4	402.0 149.5	302.0 112.3	201.0 74.7
22	**Strength** **L/360**	120.4* 60.9	90.5* 45.7	60.2* 30.4	166.5 75.8	125.1 56.9	83.2 37.9	214.2 90.0	160.9 67.6	107.1 45.0	264.3 104.0	198.5 78.1	132.1 52.0	315.1 117.3	236.7 88.1	157.5 58.6	366.3 130.0	275.2 97.7	183.2 65.0
23	**Strength** **L/360**	110.2* 53.3	82.8* 40.0	55.1* 26.6	152.3 66.3	114.4 49.8	76.2 33.2	196.0 78.7	147.3 59.1	98.0 39.4	241.8 91.0	181.7 68.4	120.9 45.5	288.3 102.6	216.6 77.1	144.1 51.3	335.1 113.8	251.8 85.5	167.6 56.9
24	**Strength** **L/360**	101.2 46.9	76.0 35.2	50.6 23.4	139.9 58.4	105.1 43.9	69.9 29.2	180.0 69.3	135.2 52.1	90.0 34.6	222.1 80.1	166.8 60.2	111.0 40.0	264.8 90.3	198.9 67.9	132.4 45.2	307.8 100.1	231.2 75.2	153.9 50.1
25	**Strength** **L/360**	93.3 41.5	70.1 31.2	46.6 20.7	128.9 51.7	96.8 38.8	64.5 25.8	165.9 61.3	124.6 46.1	83.0 30.7	204.7 70.9	153.8 53.2	102.3 35.4	244.0 79.9	183.3 60.0	122.0 40.0	283.7 88.6	213.1 66.6	141.8 44.3
26	**Strength** **L/360**	86.2 36.9	64.8 27.7	43.1 18.4	119.2 45.9	89.5 34.5	59.6 23.0	153.4 54.5	115.2 40.9	76.7 27.3	189.2 63.0	142.2 47.3	94.6 31.5	225.6 71.0	169.5 53.4	112.8 35.5	262.3 78.8	197.0 59.2	131.1 39.4
27	**Strength** **L/360**	80.0 32.9	60.1 24.7	40.0 16.5	110.5 41.0	83.0 30.8	55.3 20.5	142.2 48.7	106.9 36.6	71.1 24.3	175.5 56.2	131.8 42.3	87.7 28.1	209.2 63.4	157.2 47.7	104.6 31.7	243.2 70.3	182.7 52.8	121.6 35.2
28	**Strength** **L/360**	74.3 29.5	55.9 22.2	37.2 14.8	102.8 36.8	77.2 27.6	51.4 18.4	132.3 43.6	99.4 32.8	66.1 21.8	163.2 50.4	122.6 37.9	81.6 25.2	194.5 56.9	146.1 42.7	97.3 28.4	226.1 63.1	169.9 47.4	113.1 31.5
29	**Strength** **L/360**	69.3 26.6	52.1 20.0	34.7 13.3	95.8 33.1	72.0 24.9	47.9 16.5	123.3 39.3	92.6 29.5	61.6 19.6	152.1 45.4	114.3 34.1	76.1 22.7	181.3 51.2	136.2 38.5	90.7 25.6	210.8 56.8	158.4 42.6	105.4 28.4
30	**Strength** **L/360**	64.8 24.0	48.7 18.0	32.4 12.0	89.5 29.9	67.3 22.5	44.8 14.9	115.2 35.5	86.6 26.7	57.6 17.7	142.1 41.0	106.8 30.8	71.1 20.5	169.4 46.2	127.3 34.7	84.7 23.1	197.0 51.3	148.0 38.5	98.5 25.6

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.

C Sections

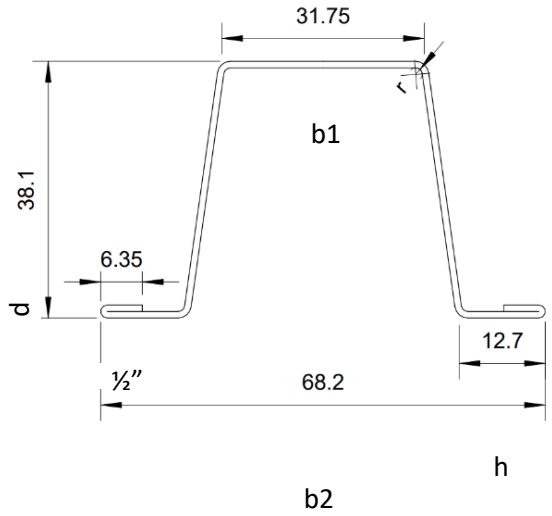
C Section Floor Joist Selection Table (Imperial)[1] Uniformly Distributed Single Span Loads (psf) with Kϕ = 0																	
Strength - Factored Loads (psf) L/360 - Specified Loads (psf)																	
Section		1200C394-71			1200C394-85			1200C394-99			1200C394-114			1200C394-128			
Span (m)	Design Criteria	Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			Spacing (in)			
		12	16	24	12	16	24	12	16	24	12	16	24	12	16	24	
14	Strength		389.8*	259.4*			336.9*			420.2*							
	L/360		382.6	254.6			307.7			360.3							
15	Strength	452.0*	339.5*	226.0*		441.0*	293.5*			366.0*			441.5*				
	L/360	414.0	311.0	207.0		375.9	250.2			292.9			332.6				
16	Strength	397.3*	298.4*	198.6*		387.6*	258.0*		483.3*	321.7*			388.0*			456.2*	
	L/360	341.1	256.3	170.6		309.7	206.1		362.6	241.3			274.0			306.1	
17	Strength	351.9*	264.4*	175.9*	457.0*	343.3*	228.5*		428.1*	284.9*			343.7*			404.2*	
	L/360	284.4	213.7	142.2	343.7	258.2	171.9		302.3	201.2			228.5			255.2	
18	Strength	313.9*	235.8*	156.9*	407.6*	306.2*	203.8*		381.9*	254.2*		460.7*	306.6*			360.5*	
	L/360	239.6	180.0	119.8	289.6	217.5	144.8		254.7	169.5		289.2	192.5			215.0	
19	Strength	281.7*	211.6*	140.9*	365.9*	274.8*	182.9*	456.2*	342.7*	228.1*		413.4*	275.2*		486.1*	323.5*	
	L/360	203.7	153.0	101.9	246.2	185.0	123.1	288.2	216.5	144.1		245.9	163.6		274.6	182.8	
20	Strength	254.2*	191.0*	127.1*	330.2*	248.0*	165.1*	411.7*	309.3*	205.9*	496.7*	373.1*	248.3*		438.7*	292.0*	
	L/360	174.7	131.2	87.3	211.1	158.6	105.5	247.1	185.7	123.6	280.6	210.8	140.3		235.5	156.7	
21	Strength	230.6*	173.2*	115.3*	299.5*	225.0*	149.7*	373.5*	280.6*	186.7*	450.5*	338.4*	225.3*		397.9*	264.9*	
	L/360	150.9	113.3	75.4	182.3	137.0	91.2	213.5	160.4	106.7	242.4	182.1	121.2		203.4	135.4	
22	Strength	210.1*	157.8*	105.1*	272.9*	205.0*	136.4*	340.3*	255.6*	170.1*	410.5*	308.4*	205.2*	482.6	362.6	241.3	
	L/360	131.2	98.6	65.6	158.6	119.1	79.3	185.7	139.5	92.8	210.8	158.4	105.4	235.5	176.9	117.7	
23	Strength	192.2*	144.4*	96.1*	249.7*	187.6*	124.8*	311.3*	233.9*	155.7*	375.6	282.1	187.8	441.6	331.7	220.8	
	L/360	114.8	86.3	57.4	138.8	104.3	69.4	162.5	122.1	81.2	184.5	138.6	92.3	206.1	154.8	103.0	
24	Strength	176.6*	132.6*	88.3*	229.3*	172.3*	114.6*	285.9	214.8	143.0	344.9	259.1	172.5	405.6	304.7	202.8	
	L/360	101.1	75.9	50.5	122.2	91.8	61.1	143.0	107.4	71.5	162.4	122.0	81.2	181.4	136.3	90.7	
25	Strength	162.7*	122.2*	81.4*	211.3*	158.7*	105.7*	263.5	198.0	131.8	317.9	238.8	158.9	373.8	280.8	186.9	
	L/360	89.4	67.2	44.7	108.1	81.2	54.0	126.5	95.1	63.3	143.7	107.9	71.8	160.5	120.6	80.2	
26	Strength	150.4*	113.0*	75.2*	195.4	146.8	97.7	243.6	183.0	121.8	293.9	220.8	147.0	345.6	259.6	172.8	
	L/360	79.5	59.7	39.8	96.1	72.2	48.0	112.5	84.5	56.2	127.7	96.0	63.9	142.7	107.2	71.3	
27	Strength	139.5*	104.8*	69.8*	181.2	136.1	90.6	225.9	169.7	113.0	272.5	204.7	136.3	320.4	240.7	160.2	
	L/360	71.0	53.3	35.5	85.8	64.5	42.9	100.4	75.5	50.2	114.1	85.7	57.0	127.4	95.7	63.7	
28	Strength	129.7	97.4	64.9	168.5	126.6	84.2	210.1	157.8	105.0	253.4	190.4	126.7	298.0	223.8	149.0	
	L/360	63.7	47.8	31.8	76.9	57.8	38.5	90.1	67.7	45.0	102.3	76.8	51.1	114.2	85.8	57.1	
29	Strength	120.9	90.8	60.5	157.0	118.0	78.5	195.8	147.1	97.9	236.2	177.5	118.1	277.8	208.7	138.9	
	L/360	57.3	43.0	28.6	69.2	52.0	34.6	81.1	60.9	40.5	92.0	69.1	46.0	102.8	77.2	51.4	
30	Strength	113.0	84.9	56.5	146.7	110.2	73.4	183.0	137.5	91.5	220.8	165.8	110.4	259.6	195.0	129.8	
	L/360	51.8	38.9	25.9	62.5	47.0	31.3	73.2	55.0	36.6	83.1	62.5	41.6	92.9	69.8	46.4	
31	Strength	105.8	79.5	52.9	137.4	103.2	68.7	171.4	128.7	85.7	206.7	155.3	103.4	243.1	182.6	121.5	
	L/360	46.9	35.2	23.5	56.7	42.6	28.3	66.4	49.9	33.2	75.4	56.6	37.7	84.2	63.2	42.1	
32	Strength	99.3	74.6	49.7	129.0	96.9	64.5	160.8	120.8	80.4	194.0	145.8	97.0	228.1	171.4	114.1	
	L/360	42.6	32.0	21.3	51.5	38.7	25.8	60.3	45.3	30.2	68.5	51.5	34.3	76.5	57.5	38.3	
33	Strength	93.4	70.2	46.7	121.3	91.1	60.6	151.2	113.6	75.6	182.4	137.1	91.2	214.5	161.1	107.3	
	L/360	38.9	29.2	19.4	47.0	35.3	23.5	55.0	41.3	27.5	62.5	46.9	31.2	69.8	52.4	34.9	
34	Strength	88.0	66.1	44.0	114.2	85.8	57.1	142.5	107.0	71.2	171.9	129.1	85.9	202.1	151.8	101.0	
	L/360	35.6	26.7	17.8	43.0	32.3	21.5	50.3	37.8	25.2	57.1	42.9	28.6	63.8	47.9	31.9	
35	Strength	83.0	62.4	41.5	107.8	81.0	53.9	134.4	101.0	67.2	162.2	121.8	81.1	190.7	143.3	95.3	
	L/360	32.6	24.5	16.3	39.4	29.6	19.7	46.1	34.6	23.1	52.4	39.3	26.2	58.5	43.9	29.2	

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.

Furring (Hat) Channels



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 (Imperial)																						
Section		Dimension							Property													
No.	Designation	d in	b1 in	b2 in	h in	t in	r in	Gauge	Ix,eff. in^4	Sx,eff. in^3	rx in	Iy,g in^4	Sy, eff. in^3	ry in	J $x10^{-3}$ in^4	Cw in^6	Ag in^2	y in	Weight lbs/ft	Vr kip	Br,ext kip	Br,int kip	Mrx kip·ft
1	150F125-34	1.5	1.25	2.68	0.5	0.036	0.079	20	0.059	0.073	0.57	0.104	0.074	0.76	0.077	0.009	0.181	0.79	0.61	2.24	0.36	0.77	0.27
2	150F125-45	1.5	1.25	2.68	0.5	0.048	0.079	18	0.076	0.097	0.56	0.137	0.102	0.76	0.180	0.011	0.238	0.79	0.81	2.93	0.64	1.39	0.36
3	150F125-57	1.5	1.25	2.68	0.5	0.060	0.079	16	0.093	0.118	0.56	0.171	0.127	0.76	0.354	0.013	0.297	0.79	1.01	3.63	1.00	2.22	0.44

Resistance:

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

Vr = factored shear strength

Br,ext. = factored web crippling strength with 1” of exterior support

Br,int. = factored web crippling strength with 1” of interior support

Mrx = factored bending moment resistance assuming fully braced condition

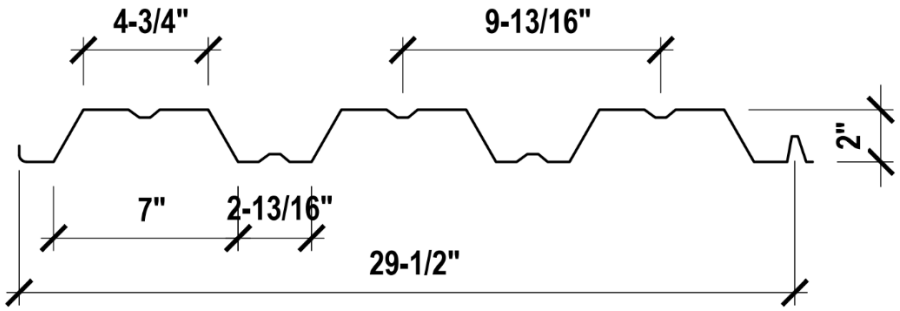
Design Assumptions:

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 1” (25mm) 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 Foot 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.	in	lb/ft²	in³	in³	in⁴	in⁴	kip-in	kip-in	kip/ft
24	0.024	1.213	0.134	0.140	0.189	0.208	4.02	4.18	1.53
22	0.030	1.509	0.184	0.190	0.244	0.270	5.53	5.72	2.38
20	0.036	1.809	0.241	0.246	0.303	0.335	7.23	7.36	3.22
18	0.048	2.425	0.375	0.372	0.430	0.475	11.25	11.17	4.32
16	0.060	3.021	0.505	0.503	0.559	0.615	15.16	15.11	5.38

Steel Roof Deck

Load Table – Limit States Design - Imperial

SPAN		FACTORED AND UNFACTORED UNIFORMLY DISTRIBUTED LOADS (psf)														
		SINGLE SPAN					DOUBLE SPAN					TRIPLE SPAN				
		NOMINAL THICKNESS (in)					NOMINAL THICKNESS (in)					NOMINAL THICKNESS (in)				
		0.024	0.030	0.036	0.048	0.060	0.024	0.030	0.036	0.048	0.060	0.024	0.030	0.036	0.048	0.060
4'0"	F	173	238	311	485	652	180	246	317	480	650	226	307	397	599	812
	D	203	261	324	459	597	480	622	771	1094	1422	380	493	610	867	1128
4'6"	F	136	188	246	382	516	142	194	251	380	514	178	242	313	474	641
	D	142	184	228	324	420	338	437	541	769	998	267	347	428	610	792
5'0"	F	111	152	198	309	418	115	157	203	307	416	144	196	253	384	520
	D	102	134	165	236	307	246	320	395	560	729	194	253	313	445	576
5'6"	F	92	125	165	257	345	96	129	167	255	345	119	163	209	317	430
	D	77	100	125	178	230	186	240	297	422	547	146	190	234	334	434
6'0"	F	77	107	138	215	290	79	109	140	213	288	100	136	175	267	361
	D	61	77	96	136	178	142	184	228	324	422	113	146	182	257	334
6'6"	F	65	90	117	184	246	69	94	119	182	246	86	117	150	228	307
	D	48	61	75	107	140	113	144	180	255	332	88	115	142	203	263
7'0"	F	56	77	102	159	213	58	79	104	157	213	73	100	129	196	265
	D	38	48	61	86	111	90	117	144	205	265	71	92	115	161	211
7'6"	F	50	67	88	138	186	52	69	90	136	186	65	88	113	171	232
	D	31	40	50	69	90	73	94	117	165	215	58	75	92	132	171
8'0"	F	44	58	77	121	163	46	61	79	119	163	56	77	98	150	203
	D	25	33	40	58	75	61	77	96	136	178	48	63	77	109	140
8'6"	F	38	52	69	107	144	40	54	71	107	144	50	69	88	134	180
	D	21	27	33	48	63	50	65	79	115	148	40	52	63	90	117
9'0"	F	33	48	61	96	129	36	48	63	94	127	44	61	77	119	161
	D	17	23	29	40	52	42	54	67	96	125	33	44	54	75	98
9'6"	F	31	42	54	86	115	31	44	56	86	115	40	54	71	107	144
	D	15	19	25	33	44	36	46	58	81	107	29	38	46	65	84
10'0"	F	27	38	50	77	104	29	40	50	77	104	36	50	63	96	129
	D	13	17	21	29	38	31	40	50	71	92	25	51	40	56	73

Material: ASTM A653M - 18, Grade 33 ksi

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 12".
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.

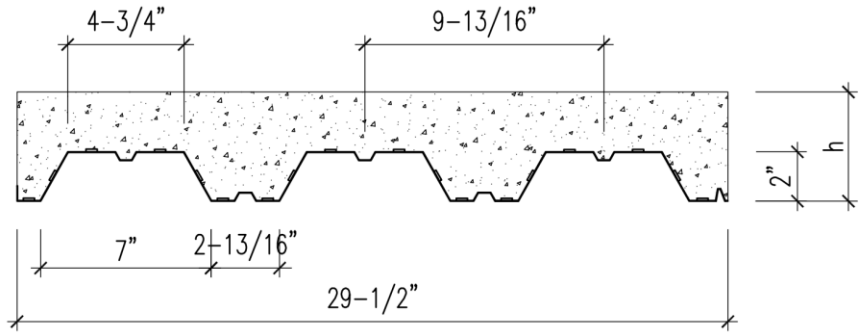
Steel Roof Deck

Web Crippling – Factored Resistance (kip/ft)

NOMINAL THICKNESS		REACTION	BEARING LENGTH							
GA.	in		1-1/2”	2”	2-1/2”	3”	3-1/2”	4”	5”	6”
24	0.024	End	0.28	0.30	0.34	0.35	0.38	0.39	0.42	0.46
		Interior	0.48	0.51	0.56	0.58	0.62	0.64	0.69	0.74
22	0.030	End	0.42	0.45	0.49	0.52	0.56	0.58	0.62	0.67
		Interior	0.70	0.75	0.81	0.84	0.90	0.93	1.00	1.06
20	0.036	End	0.62	0.66	0.72	0.76	0.81	0.84	0.91	0.98
		Interior	1.12	1.19	1.28	1.34	1.42	1.47	1.58	1.68
18	0.048	End	0.99	1.06	1.15	1.21	1.28	1.33	1.44	1.53
		Interior	1.61	1.71	1.83	1.90	2.01	2.07	2.22	2.36
16	0.060	End	1.47	1.57	1.70	1.78	1.88	1.95	2.11	2.25
		Interior	2.38	2.51	2.69	2.79	2.93	3.02	3.23	3.42

Composite Steel Deck

Dimensions



Physical Properties (per Foot of Width)

STEEL DECK SECTION PROPERTIES (PER FOOT OF WIDTH)								BEARING REACTION WEB CRIPPLING (PER FOOT OF WIDTH)		COMPOSITE SLAB PROPERTIES (PER FOOT OF WIDTH)						
NOMINAL THICKNESS		YIELD STRESS	MASS	AREA OF STEEL	SECTION MODULUS		DEFLECTION INERTIA MIDSPAN Ie+	END Pe	INT Pi	OVERALL SLAB DEPTH (in)						
					MID-SPAN Se+	SUPPORT Se-										
GA	In	ksi	lb/ft²	in²/ft	in³	in³	in⁴	kip	kip	4.0	5.0	6.0	7.0	8.0	9.0	10.0
22	0.030	33	1.51	0.444	0.184	0.190	0.244	0.42	0.85	SLAB WEIGHT (lb/ft²)						
20	0.036	33	1.81	0.531	0.241	0.246	0.303	0.62	1.34	37.4	49.8	62.1	74.4	86.7	99.0	111.4
18	0.048	33	2.42	2.42	0.375	0.372	0.430	0.99	1.90	CONCRETE VOLUME (in³/ft)						
16	0.060	33	3.02	3.02	0.505	0.503	0.559	1.47	2.79	0.751	1.020	1.289	1.558	1.827	2.097	2.366

Composite Steel Deck

Load Table – Limit States Design - Imperial

SLAB THICKNESS	DECK THICKNESS	CONSTRUCTION STAGE			MAXIMUM SUPERIMPOSED FACTORED LOAD (ULS) FOR STRENGTH/ MAXIMUM SUPERIMPOSED UNFACTORED LOAD (SLS) FOR DEFLECTION AT L/360 (psf)																							
		MAXIMUM UNSHORED SPAN			COMPOSITE SLAB SPAN (ft-in)																							
h (in)	t (in)	Single (ft-in)	Double (ft-in)	Triple (ft-in)	4'-0"		4'-6"		5'-0"		5'-6"		6'-0"		6'-6"		7'-0"		7'-6"		8'-0"		8'-6"		9'-0"		9'-6"		10'-0"	
					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
4.0	0.030	5'-6"	6'-6"	6'-5"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	350	340	300	270	260	220	230	180	200	150	170	120
	0.036	6'-8"	7'-10"	7'-9"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	360	360	290	310	240	270	190	240	160	210	130
	0.048	9'-0"	9'-9"	10'-1"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	330	410	270	360	220	320	180	280	150
	0.060	10'-10"	11'-4"	11'-8"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	360	410	300	410	240	390	200	340	160
5.0	0.030	5'-1"	6'-0"	5'-11"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	370	410	320	370	280	310	250	260
	0.036	6'-1"	7'-2"	7'-1"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	390	400	350	330	300	270
	0.048	8'-2"	8'-11"	9'-3"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	370	410	310
	0.060	9'-10"	10'-4"	10'-8"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	340
6.0	0.030	4'-9"	5'-6"	5'-6"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	370	410	320	410
	0.036	5'-8"	6'-7"	6'-6"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	400	410
	0.048	7'-6"	8'-3"	8'-6"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.060	9'-0"	9'-7"	9'-11"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
7.0	0.030	4'-5"	5'-2"	5'-2"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	400	410
	0.036	5'-4"	6'-2"	6'-1"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.048	7'-0"	7'-8"	8'-0"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.060	8'-5"	8'-11"	9'-3"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
8.0	0.030	4'-2"	4'-11"	4'-10"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.036	5'-0"	5'-10"	5'-9"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.048	6'-7"	7'-3"	7'-6"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.060	7'-11"	8'-5"	8'-9"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
9.0	0.030	4'-0"	4'-8"	4'-7"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.036	4'-9"	5'-6"	5'-6"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.048	6'-3"	6'-11"	7'-1"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.060	7'-6"	8'-0"	8'-3"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
10.0	0.030	3'-10"	4'-6"	4'-5"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.036	4'-7"	5'-4"	5'-2"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.048	6'-0"	6'-7"	6'-9"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	0.060	7'-1"	7'-8"	7'-11"	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410

Material: ASTM A653M, ZF75 or Z275, Grade 33 ksi

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 1 foot.
2. Load values are based on concrete density of 150 pcf with a minimum compressive resistance of 3,625 ksi 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 410 psf 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 20.9 lb/ft² or 137 lb/ft 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 1.5" and the interior bearing length equal to 3".
10. Deflection under wet concrete to be less than L/180 or 3/4" maximum.
11. Composite slab uniform service loads are limited to a deflection of L/360.
12. Structural design by Lavergne Draward & Associates Inc.