PURLINS & GIRTS

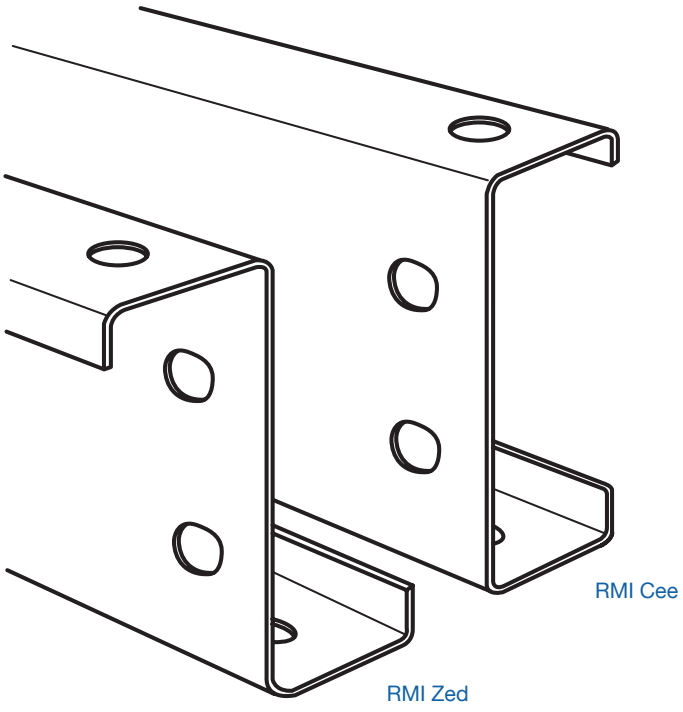
RMI ZED & CEE SECTIONS

GENERAL DATA FOR RMI ZED AND CEE SECTIONS

RMI ZED & CEE sections are accurately roll-formed from high-strength zinc-coated steel to provide an efficient, lightweight, economical roofing and cladding support system for framed structures.

RMI purlin sections may be used over single spans, lapped continuous and unlapped continuous spans in multi-bay buildings. Lapped continuous spans result in a considerable capacity increase in the system.

These sections may be used in single spans and unlapped continuous spans in multi-bay buildings. Cee sections are ideal as eave purlins or where compact sections are required for detailing. Cee sections cannot be lapped.



STANDARD RANGE OF RMI ZED & CEE

Nominal Section Size (mm)	BMT (mm)
100	2 mm
150	2 mm / 2.3 mm
200	2 mm / 2.3 mm

Corrosion Protection & Material Compatibility

Some building materials and environmental conditions can be detrimental to coated steel products. These include contact with or exposure to run-off from:

- Industrial, agricultural, marine or other aggressive atmospheric conditions;
- Incompatible metals, like lead or copper;
- building materials subject to cycles of dryness and wetness, or which have excessive moisture content such as improperly seasoned timber.
- materials which have been treated with preservatives, like CCA or tanalith-treated timber.

A zinc coating of Z350 (350 g/m2 minimum coating mass) is the standard coating class provided with RMI Zed & Cee sections. This will provide a long and trouble-free life. for enclosed buildings and open-sided rural buildings, in a non-aggressive environment.

A non-aggressive environment is 1000m from rough surf, 750m from industrial emission and fossil fuel combustion, and 300m from calm salt waters. Consideration must be given to the nature of activities performed within the building.

For more severe corrosive environments a Z450 (450 g/m2 minimum coating mass) will be required. This heavier coating mass will be available in special circumstances and is subject to a minimum order quantity and extended lead times.

Direct contact of incompatible materials with the coating must be avoided.

In such applications, and in very corrosive environments, suitable paint systems can be obtained from paint manufacturers: you can seek advice from our Information Line.

In applications where particular attention is required for corrosion, or the buildup of substances like dust or grain, then consideration should be given to the shape of the sections (either Zed, or Cee, or Zed with downturned lip); orientation of the sections; and coating class. Further information is available from your nearest Lysaght Service Centre.

Available lengths

RMI purlins are available custom-cut in any transportable length, however there are some limitations. For minimum lengths, and lengths over 12000mm, contact your nearest Lysaght office.

For normal deliveries nominal lengths should not exceed 12000mm. Lengths greater than 12000mm require special transportation and on-site handling facilities. Law restricts the hours of transportation and permits may be required in some states. Lengths greater than 19500mm require a special transportation permit.

Length tolerance for all sections is ±5mm.

Packing

RMI Zed & Cee sections are delivered in strapped bundles. The actual quantity in each bundle will vary with section size, order and length. The bundle mass is generally approximately one tonne.

RMI accessories are delivered in strapped or wired bundles, bags, or packages as appropriate.

Storage on-site

If not required for immediate use, sections should be neatly stacked off the ground and on a slight slope so that water can drain away. Sections and accessories should not be left exposed in the open for extended periods.

Ordering

To make ordering of the full purlin and girt system easier, every Lysaght Sales Office has order pads available on request.

Material specifications

In the grades shown, the number prefixed with G indicates minimum yield stress in MPa; and the number prefixed with Z indicates minimum coating mass in g/m2.

2 mm and 2.3 mm BMT: G450, Z350*

*All BMTs in Townsville have Z450 coating.

Further information is available from www.roofmart.lk

Bolt Specification

RMI purlin bolts and nuts have an integrated washer.

Tighten all bolts to 55 Nm torque.

Nominal section size (mm)	Bolt specification
100, 150, 200, 250	M12 RMI purlin bolt: standard (grade 4.6) or high strength (grade 8.8)

ZED & CEE Sections - Dimensions and Properties

RMI ZED Sections

RMI Zed sections feature one broad and one narrow flange, sized so that two sections of the same size fit together snugly, making them suitable for lapping.

Continuous lengths of purlin result in better economy, but lapping provides two thicknesses of metal over interior supports. Lapping increases the strength of the sections where bending moments and shear are at a maximum, thus improving the load capacity and rigidity of the system.

RMI Zed sections of the same depth and different thicknesses can be lapped in any combination.

RMI Zed sections may also be used over simple spans. For shorter spans they may be used continuously over two or more spans without laps – thus producing reduced deflection compared with simple spans – but it does not give the strength of a fully lapped system.

RMI Zed sections with one lip turned outward (called downturned lip purlins) may be used in simple or continuous spans with the ends butted.

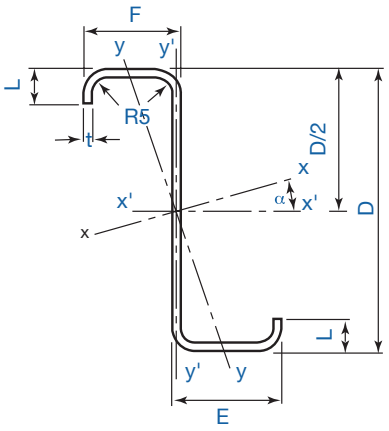
Typical assemblies are shown later in this manual.

RMI CEE Sections

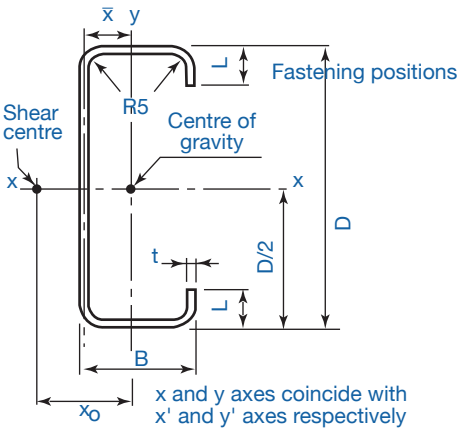
RMI Cee sections have equal flanges and are suitable for simply supported spans. For shorter spans they may be used continuously over two or more spans with the ends butted, thus producing reduced deflection compared with simple spans. They cannot be lapped.

Typical assemblies are shown later in this manual.

Zed section



Cee section



DIMENSIONS OF ZEDS & CEES

Catalogue number	t mm	D mm	Mass per unit length kg/m	Zeds			Cees	
				E mm	F mm	L mm	B mm	L mm
Z/C10010	1.0	102	1.78	53	49	12.5	51	12.5
Z/C10012	1.2	102	2.10	53	49	12.5	51	12.5
Z/C10015	1.5	102	2.62	53	49	13.5	51	13.5
Z/C10019	1.9	102	3.29	53	49	14.5	51	14.5
Z/C15012	1.2	152	2.89	65	61	15.5	64	14.5
Z/C15015	1.5	152	3.59	65	61	16.5	64	15.5
Z/C15019	1.9	152	4.51	65	61	17.5	64	16.5
Z/C15024	2.4	152	5.70	66	60	19.5	64	18.5
Z/C20015	1.5	203	4.49	79	74	15.0	76	15.5
Z/C20019	1.9	203	5.74	79	74	18.5	76	19.0
Z/C20024	2.4	203	7.24	79	73	21.5	76	21.0

SECTION PROPERTIES

RMI ZEDS

Product Code	Area	Principal Axes					Axes Perpendicular & Parallel To Web							Column Properties		Effective Section Properties At Yield Stress	
		Second Moment Of Area		Section Modulus	Radius Of Gyration		Second Moment Of Area		Product Moment Of Area	Section Modulus		Radius Of Gyration		Torsion Constant	Warping Constant	Section Modulus In Bending	Area In Compression
	A mm^2	Ix 10^6mm^4	Iy 10^6mm^4	Zy 10^3mm^3	ry mm	a (°)	Ix^1 10^6mm^4	Iy^1 10^6mm^4	Ix^1y^1 10^6mm^4	Zx^1 10^3mm^3	Zy^1 10^3mm^3	rx^1 mm	ry^1 mm	J mm^4	Iw 10^6mm^6	Zx^1 e 10^3mm^3	Ae mm^2
Z10010	216	0.451	0.0437	1.55	14.2	27.6	0.364	0.131	0.168	7.00	2.56	41.1	24.7	71.9	215	5.33	113
Z10012	258	0.536	0.0516	1.84	14.2	27.5	0.432	0.155	0.198	8.32	3.02	41.0	24.5	124	253	6.73	153
Z10015	323	0.668	0.0652	2.32	14.2	27.8	0.537	0.197	0.249	10.3	3.84	40.8	24.7	242	321	8.82	217
Z10019	409	0.840	0.0829	2.94	14.2	28.1	0.673	0.250	0.314	13.0	4.92	40.6	24.7	492	409	12.4	329
Z15012	354	1.47	0.115	3.14	18.1	21.8	1.28	0.303	0.469	16.7	4.78	60.3	29.3	170	1160	11.9	169
Z15015	443	1.84	0.145	3.96	18.1	22.0	1.60	0.383	0.588	20.8	6.06	60.1	29.4	332	1460	17.2	248
Z15019	561	2.32	0.184	5.02	18.1	22.1	2.01	0.487	0.744	26.1	7.73	59.9	29.5	675	1860	22.4	347
Z15024	712	2.92	0.238	6.38	18.3	22.5	2.53	0.632	0.950	32.6	10.0	59.6	29.8	1370	2410	31 .4	535
Z20015	555	3.89	0.255	5.53	21.4	18.5	3.53	0.621	1.09	34.3	8.05	79.7	33.4	416	4260	23.8	248
Z20019	713	5.02	0.342	7.45	21.9	19.1	4.52	0.843	1.45	43.9	11.0	79.6	34.4	858	5830	36.4	378
Z20024	907	6.36	0.443	9.64	22.1	19.4	5.70	1.10	1.86	55.3	14.4	79.3	34.8	1740	7630	48.4	546

Properties have been computed on the basis of mean flange width. The introduced error is negligible. The shear centre and monosymmetry constant deviations can be disregarded, that is, taken as zero.

RMI CEES

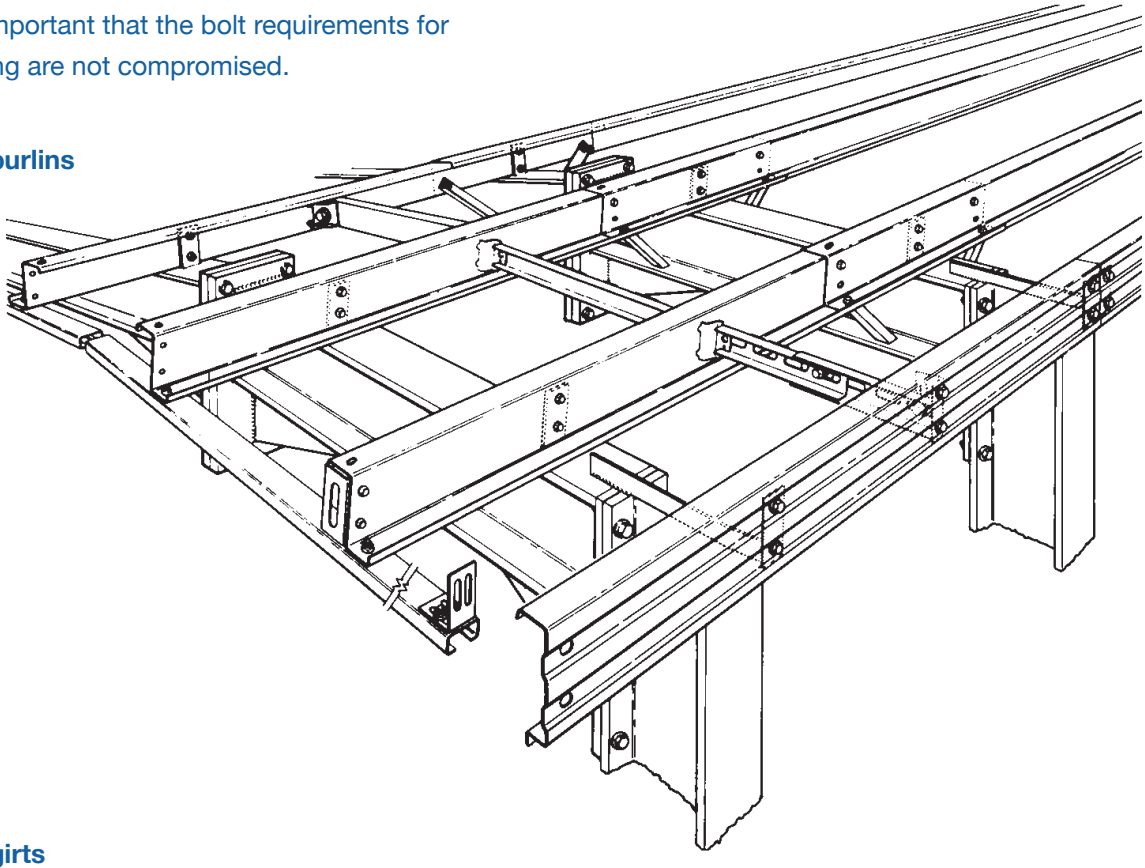
Product Code	Area	Full Section Properties						Column Properties					Effective Section Properties At Yield Stress	
		Second Moment Of Area		Section Modulus		Radius Of Gyration		Centroid	Shear Centre	Torsion Constant	Warping Constant	Monosymmetry Section Constant	Section Modulus In Bending	Area In Compression
	A mm^2	Ix 10^6mm^4	Iy 10^6mm^4	Zx 10^3mm^3	Zy 10^6mm^4	rx mm	ry mm	$\bar{x}$ mm	x_0 mm	J mm^4	Iw 10^6mm^6	b_y mm	Zxe 10^3mm^3	Ae mm^2
C10010	216	0.364	0.0755	7.13	2.19	41.1	18.7	16.1	39.9	71.9	160	123	5.37	113
C10012	258	0.432	0.0892	8.48	2.59	41.0	18.6	16.0	39.7	124	188	123	6.74	153
C10015	323	0.537	0.112	10.5	3.29	40.8	18.7	16.1	40.1	242	241	122	8.73	217
C10019	409	0.673	0.142	13.2	4.21	40.6	18.7	16.2	40.4	492	311	122	12.3	329
C15012	354	1.29	0.188	17.0	4.17	60.4	23.1	18.3	46.5	170	842	171	11.8	165
C15015	443	1.61	0.237	21.1	5.29	60.2	23.1	18.4	46.9	332	1070	171	17.1	244
C15019	561	2.02	0.300	26.6	6.74	60.0	23.1	18.5	47.1	675	1370	170	21.8	340
C15024	712	2.54	0.386	33.5	8.79	59.8	23.3	18.9	48.0	1370	1810	169	30.9	527
C20015	555	3.53	0.396	34.7	7.7	79.7	26.7	19.9	51.6	416	3060	223	24.1	251
C20019	713	4.51	0.531	44.4	9.77	79.6	27.3	20.8	53.6	858	4240	221	36.6	381
C20024	904	5.69	0.681	56.0	12.7	79.3	27.4	21.1	54.4	1740	5540	219	47.5	541
C25019	808	7.62	0.561	60.0	9.86	97.1	26.4	18.1	48.5	972	6860	276	46.2	381
C25024	1020	9.62	0.721	75.7	12.8	96.9	26.5	18.4	49.3	1970	8920	274	64.9	543
C30024	1260	17.0	1.51	113	21.7	116	34.6	25.0	66.0	2430	26800	320	91.1	632
C30030	1600	21.3	1.96	142	28.5	116	35.0	25.8	67.9	4790	35700	316	124	897
C35030	1910	35.8	3.82	205	42.3	137	44.7	33.2	86.3	5730	90000	378	159	940

6.2 TYPICAL ASSEMBLIES - ZEDS

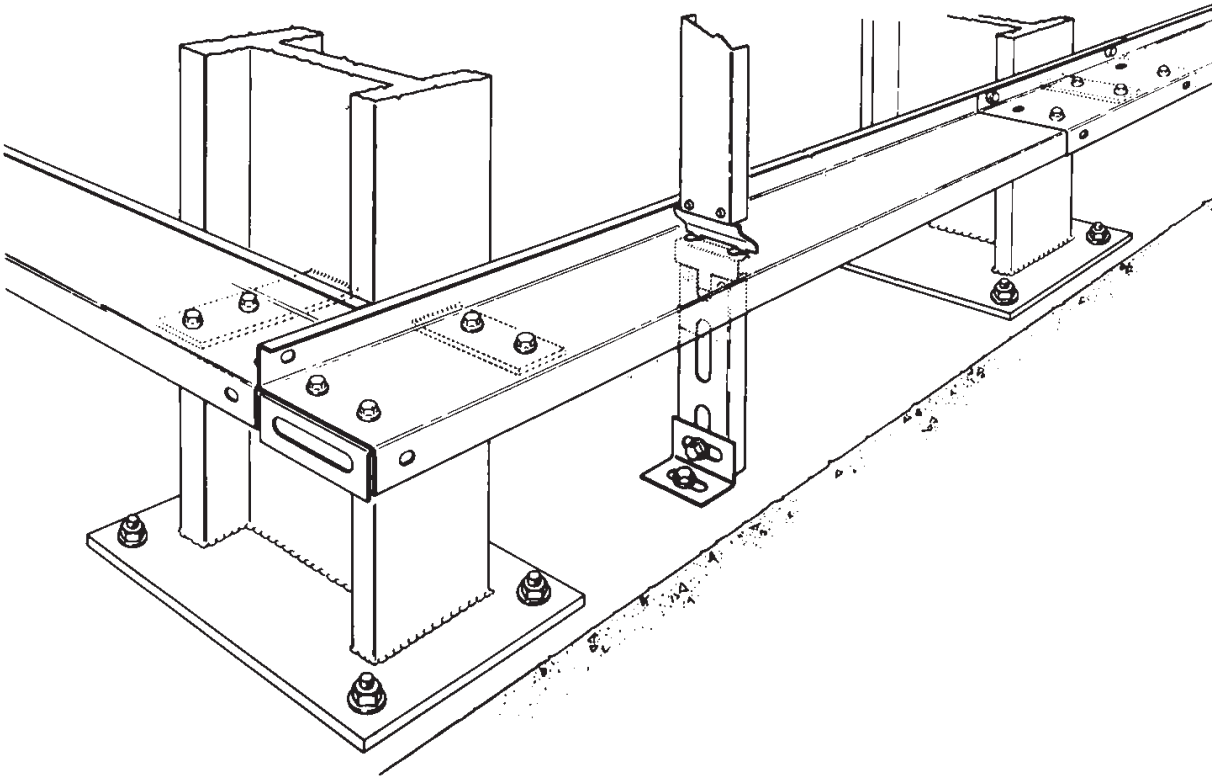
Typical assembly using RMI Zed sections and RMI bridging.

Where fly bracing is used in conjunction with lapped Zed sections it is important that the bolt requirements for lapping are not compromised.

Zed purlins



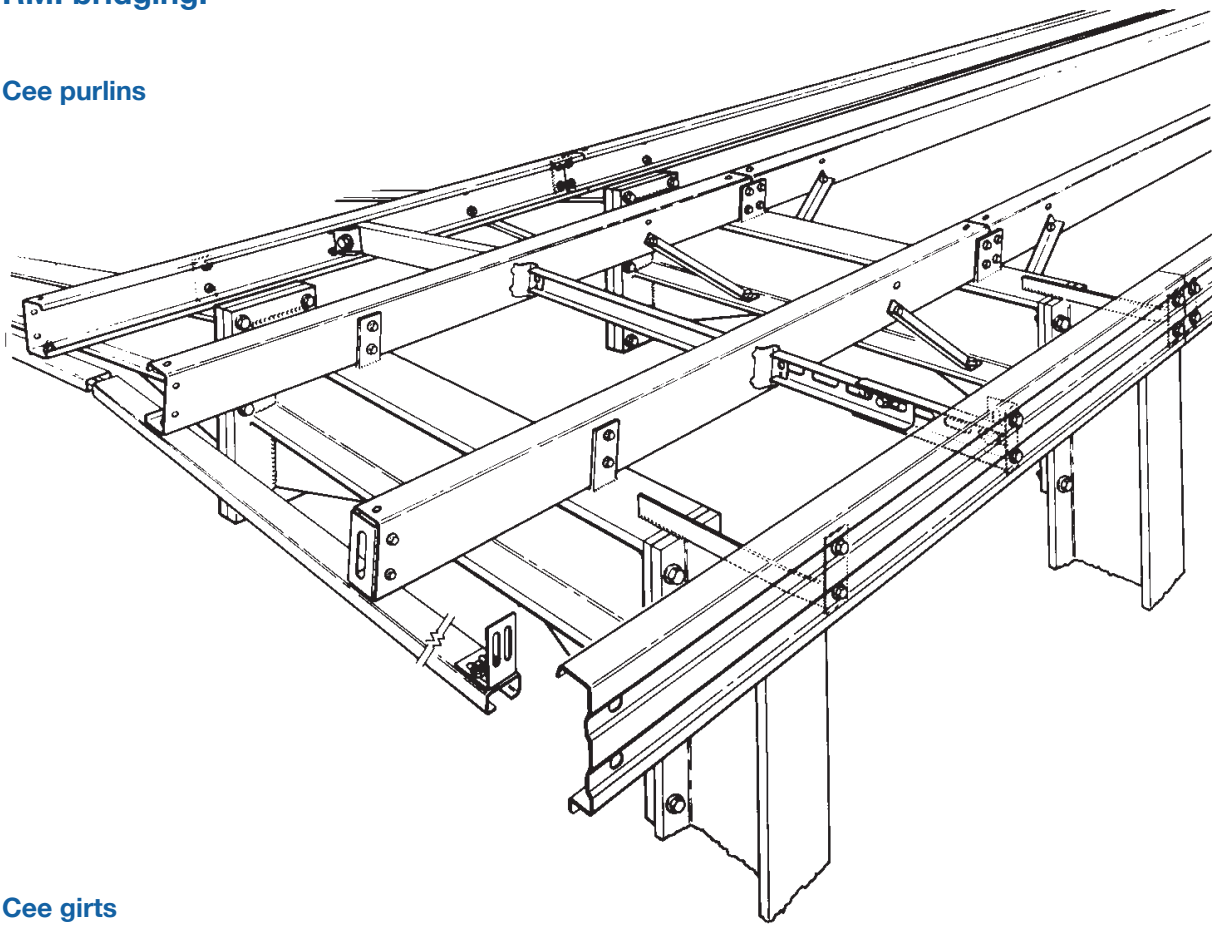
Zed girts



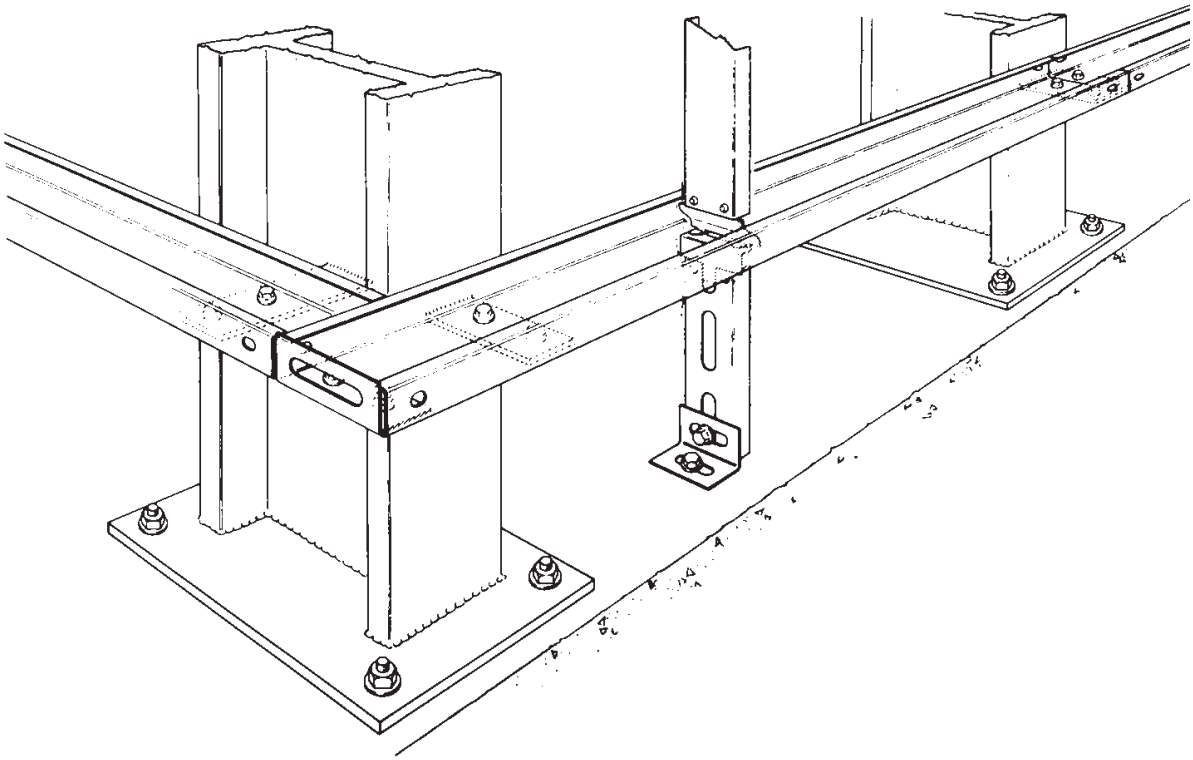
6.3 TYPICAL ASSEMBLIES - CEES

Typical assembly using RMI Cee sections and RMI bridging.

Cee purlins



Cee girts



8.0 Design notes for capacity tables

When determining a design, consideration should be given to load combinations for both strength and for serviceability.

Corrosion protection & material compatibility

The limit state capacity tables have been compiled using a finite element flexural torsional buckling analysis for modelling the whole purlin system. The model considers both in-plane distribution of axial force, shear force and bending moments, as well as out of plane buckling modes.

The finite element flexural torsional buckling analysis assumes that:

- All purlins bend about the axis which is perpendicular to the web;
- There is continuity at the laps;
- There is minor axis translation and twisting restraint at the bridging points;
- There is lateral stability in the plane of the roof at internal supports and the ends of cantilevers; and

both screw-fastened and concealed-fixed claddings provide restraint.

All design calculations for both strength and serviceability are in accordance with AS/NZS 4600:1996 Cold formed steel structures.

Deflection

There are no specific rules governing acceptable deflections, though structural codes give guidance. You need to consider the specific requirements of any structure. It may be necessary to design for deflection under more than one load combination. See also Assumptions used in tables.

Axial loads

Where a section is not loaded to its full capacity in bending, it has a reserve of strength to carry some axial load. This reserve in purlins and girts can be used to transmit forces due to wind loading on end walls, or to resist forces due to bracing of wall and roof structures.

Where required, the combined bending and axial load capacity should be calculated using AS/NZS 4600:1996 Cold-formed steel structures.

Point loads

The values in this publication assume uniformly distributed loading. However, in many applications (like the mounting of services and maintenance equipment) the loads applied to a structure are point loads. Thus, to use these tables for point loadings, the loads must be converted to equivalent distributed loads.

The table on the following page gives conversion formulae for loads on simple spans and lapped spans. They have been derived from commonly published moment and shear data, and give conservative conversions.

For simple spans the formulae are straight forward. For non- continuous lapped spans the formulae depend on the number of spans, the position of the span and the lapping ratio; thus the worst- case configuration has been used, and the values may be safely used for end spans, interior spans and any lapping ratio greater than 10%.

Formulae for loads on continuous unlapped configurations, and for deflections in all configurations, are not given but may be derived similarly.

Symbols used in table for conversion of point loads

P = single point load (kN)
L = span (m)
a = larger distance from support (m)
b = smaller distance from support (m)
w = equivalent uniform load (kN/m)
N = number of point loads over one span (for 6 or more loads)

Deflection

The capacity tables provide economical design solutions for most projects. Designs can be optimised by varying:

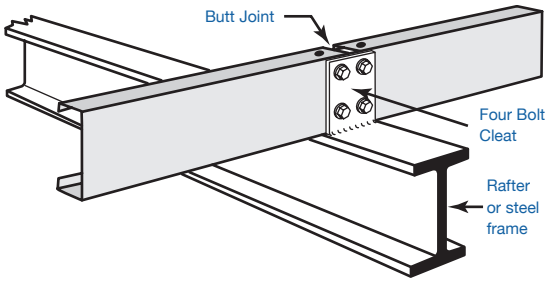
- Material specifications
- Bolt specifications and number
- Non-standard purlin profile
- Reduced or enlarged end spans
- Span range
- Cantilevers at one or both ends
- Lap length
- Bridging quantity
- Load distribution

BRIDGING

The capacity tables give solutions for an equal number of rows of bridging in each span. Provision is made for 0, 1, 2 or 3 rows of bridging.

With regard to wall heights and girt spans, please contact Roofmart team for guidance.

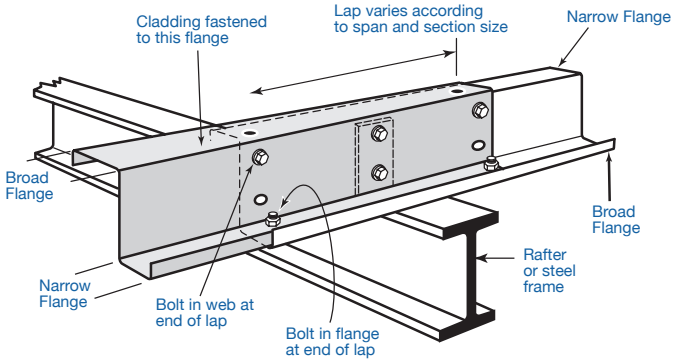
In practice it may be necessary to use at least one row of bridging in each span. We suggest that unbridged lengths be limited to 20 times the section depth.



Cleat Connections

The capacity tables are based on the sections being fastened using two bolts through the web to cleats (cleat connection) so that the load path is via the web of the sections.

The connections may be single section thickness such as in end connections, or the internal support connection of continuous configurations. Connections with double section thickness occur at the internal support of lapped configurations.



Cleatless Connections

Fixing of purlins through the bottom flange of the purlin (cleatless connection) is used in some forms of construction. The purlin capacity tables should not be used for these types of connections. For these types of connections there are other design issues (both strength and serviceability) and construction issues that need to be considered.

Lapping

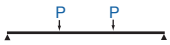
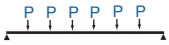
The structural lap at the interior supports of lapped configurations must be detailed to provide adequate structural continuity.

Each end of the lap must have one bolt through the flange furthest from the cladding, and one bolt through the webs near the flanges connected to the cladding.

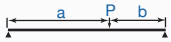
The nominal lap length is the distance between the bolt centres at the end of the laps. Laps vary in length with both section size and span as shown in the table below. In no situation must the lap be less than 10% of the span.

Conversion of point loads into equivalent uniform loads

Symmetrical equidistant point loads

Loading condition			Conversion formula
SINGLE LOAD	Simple		w = 2P/L
	Lapped		w = 2.22P/L
2 LOADS	Simple		w = 2.67P/L
	Lapped		w = 3.16P/L
3 LOADS	Simple		w = 4P/L
	Lapped		w = 3.78P/L
4 LOADS	Simple		w = 4.80P/L
	Lapped		w = 5.12P/L
5 LOADS	Simple		w = 6P/L
	Lapped		w = 6.65P/L
6 OR MORE LOADS	Simple		w = 1.14NP/L
	Lapped		w = 1.22NP/L

Single eccentric and two symmetrical point loads

Loading condition			Conversion formula
SINGLE ECCENTRIC POINT LOAD	Simple		w = 8abP/L^3
	Lapped		w = 17.76ab2P^4/L
2 SYMMETRICAL POINT LOADS	Simple		w = 8bP/L^2
	Lapped		w = 9.45b(2L-3b)P/L

LAP Lengths

Nominal section size (mm)	Span (mm)	Lap length (mm)
100	≤ 6000	600
	> 6000	900
150,200,250	≤ 9000	900
	> 9000 ≤ 12000	1200
	> 12000*	1800
300,350	≤ 9000	900
	> 9000 ≤ 12000	1200
	> 12000 ≤ 18000	800
	> 18000*	2400

** Load capacities for these spans are beyond the scope of this publication.*

Intermediate Values

Within a given bridging configuration, capacities for intermediate spans may be interpolated linearly.

notes to Capacity Tables

Loads are assumed to be uniformly distributed (see also Point Loads).

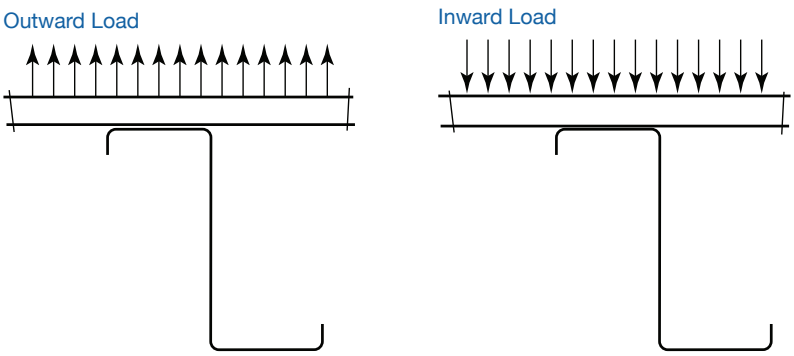
The capacities assume the use of approved sections, bridging system and bolts.

The column, Load for deflection span/150, is the load that will produce this deflection. It is not a design capacity.

All connections use purlin bolts grade 4.6, except for boldened capacities which require grade 8.8.

Forces acting to hold cladding against a structure are defined as inward. Forces acting to remove cladding from a structure are defined as outward.

Loading condition



9.0 Limit state capacity tables

Single Spans

Z/C 10012 (kN/m)					
INWARD	OUTWARD				L/150
0, 1, 2, 3	0	1	2	3	
4.84	4.11	4.84	4.84	4.84	4.34
3.70	2.58	3.70	3.70	3.70	2.96
2.93	1.79	2.93	2.93	2.93	2.12
2.37	1.29	2.37	2.37	2.37	1.57
1.96	0.94	1.88	1.96	1.96	1.20
1.65	0.70	1.47	1.65	1.65	0.93
1.40	0.53	1.13	1.40	1.40	0.73
1.21		0.86	1.21	1.21	0.59
1.05		0.69	1.05	1.05	0.48
0.93		0.56	0.90	0.93	0.40
0.82		0.46	0.76	0.82	0.33
0.73			0.64	0.73	0.28
0.66			0.53	0.66	0.24
0.59			0.43	0.59	0.21
0.54				0.53	0.18
0.49				0.46	0.15

Z/C 10019 (kN/m)						
INWARD		OUTWARD				L/150
0	1, 2, 3	0	1	2	3	
8.44	8.79	7.37	8.79	8.79	8.79	7.34
6.30	6.73	4.90	6.73	6.73	6.73	4.99
4.88	5.32	3.35	5.32	5.32	5.32	3.50
3.89	4.31	2.34	4.24	4.31	4.31	2.55
3.17	3.56	1.70	3.32	3.56	3.56	1.92
2.63	2.99	1.27	2.61	2.99	2.99	1.48
2.22	2.55	0.97	2.08	2.55	2.55	1.16
1.89	2.20	0.76	1.65	2.20	2.20	0.93
1.64	1.91	0.61	1.32	1.87	1.91	0.76
1.43	1.68	0.50	1.06	1.58	1.68	0.62
1.26	1.49	0.41	0.86	1.34	1.49	0.52
1.11	1.33		0.71	1.14	1.33	0.44
0.99	1.19		0.58	0.98	1.19	0.37
0.89	1.08		0.49	0.84	1.05	0.32
0.81	0.98		0.41	0.71	0.93	0.28
0.73	0.89			0.61	0.82	0.24
0.67	0.81			0.53	0.72	0.21
0.61	0.75			0.46	0.64	0.19
0.56	0.56				0.57	0.16

	Z/C 15012 (kN/m)						
	INWARD		OUTWARD				L/150
Bridging >	0	1, 2, 3	0	1	2	3	
Span mm							
2100	8.46	8.46	8.46	8.46	8.46	8.46	11.50
2400	6.48	6.48	6.40	6.48	6.48	6.48	7.88
2700	5.12	5.12	4.45	5.12	5.12	5.12	5.73
3000	4.15	4.15	3.14	4.15	4.15	4.15	4.28
3300	3.43	3.43	2.28	3.43	3.43	3.43	3.26
3600	2.88	2.88	1.70	2.88	2.88	2.88	2.53
3900	2.45	2.45	1.27	2.45	2.45	2.45	2.01
4200	2.12	2.12	1.01	2.12	2.12	2.12	1.63
4500	1.84	1.84	0.81	1.76	1.84	1.84	1.33
4800	1.62	1.62	0.65	1.42	1.62	1.62	1.11
5100	1.44	1.44	0.52	1.16	1.44	1.44	0.93
5400	1.28	1.28	0.42	0.95	1.28	1.28	0.79
5700	1.15	1.15		0.79	1.15	1.15	0.68
6000	1.03	1.04		0.67	1.04	1.04	0.58
6300	0.93	0.94		0.56	0.93	0.94	0.51
6600	0.84	0.86		0.48	0.82	0.86	0.45
6900	0.77	0.78		0.41	0.71	0.78	0.39
7200	0.70	0.72			0.61	0.72	0.35
7500	0.65	0.66			0.54	0.66	0.31

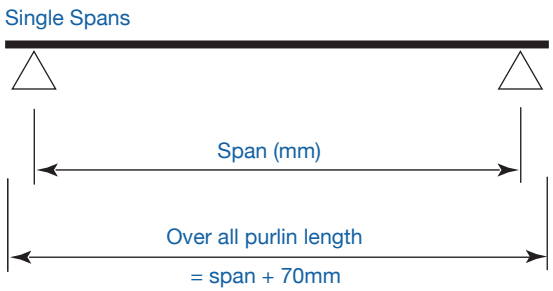
	Z/C 15019 (kN/m)							
	INWARD			OUTWARD				L/150
Bridging >	0	1	2, 3	0	1	2	3	
5pan mm)								
3000	6.79	7.68	7.68	5.67	7.68	7.68	7.68	7.33
3300	5.51	6.35	6.35	4.12	6.35	6.35	6.35	5.59
3600	4.56	5.33	5.33	3.09	5.33	5.33	5.33	4.32
3900	3.82	4.55	4.55	2.32	4.37	4.55	4.55	3.42
4200	3.24	3.92	3.92	1.78	3.62	3.92	3.92	2.76
4500	2.78	3.41	3.41	1.39	3.02	3.41	3.41	2.26
4800	2.41	3.00	3.00	1.11	2.53	3.00	3.00	1.86
5100	2.11	2.66	2.66	0.90	2.10	2.66	2.66	1.55
5400	1.87	2.37	2.37	0.73	1.75	2.35	2.37	1.31
5700	1.66	2.13	2.13	0.61	1.45	2.05	2.13	1.11
6000	1.48	1.92	1.92	0.51	1.22	1.80	1.92	0.95
6300	1.33	1.74	1.74	0.43	1.04	1.59	1.74	0.82
6600	1.20	1.59	1.59		0.88	1.41	1.59	0.72
6900	1.09	1.45	1.45		0.75	1.25	1.45	0.63
7200	0.99	1.33	1.33		0.64	1.10	1.32	0.55
7500	0.91	1.22	1.23		0.55	0.97	1.20	0.49
7800	0.83	1.12	1.14		0.48	0.86	1.08	0.43
8100	0.77	1.04	1.05		0.42	0.75	0.98	0.39

Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.



SINGLE SPANS

S200

	Z/C 20015 (kN/m)							Z/C 20019 (kN/m)						
	INWARD		OUTWARD				L/150	INWARD		OUTWARD				L/150
Bridging >	0	1, 2, 3	0	1	2	3		0	1, 2, 3	0	1	2	3	
Span mm														
3000	7.38	7.38	7.28	7.38	7.38	7.38	10.60	10.52	11.25	10.56	11.25	11.25	11.25	15.10
3300	6.10	6.10	5.47	6.10	6.10	6.10	7.96	8.38	9.30	7.83	9.30	9.30	9.30	11.42
3600	5.13	5.13	4.10	5.13	5.13	5.13	6.28	6.78	7.81	5.77	7.81	7.81	7.81	8.89
3900	4.33	4.37	3.13	4.37	4.37	4.37	5.07	5.59	6.66	4.50	6.66	6.66	6.66	7.06
4200	3.69	3.77	2.44	3.77	3.77	3.77	4.15	4.54	5.74	3.57	5.74	5.74	5.74	5.70
4500	3.17	3.28	1.86	3.28	3.28	3.28	3.45	3.88	5.00	2.84	5.00	5.00	5.00	4.67
4800	2.75	2.88	1.51	2.88	2.88	2.88	2.88	3.35	4.39	2.27	4.39	4.39	4.39	3.88
5100	2.41	2.56	1.25	2.56	2.56	2.56	2.42	2.92	3.89	1.84	3.84	3.89	3.89	3.27
5400	2.13	2.28	1.04	2.24	2.28	2.28	2.05	2.57	3.47	1.51	3.27	3.47	3.47	2.78
5700	1.89	2.05	0.87	1.92	2.05	2.05	1.75	2.27	3.12	1.24	2.77	3.12	3.12	2.39
6000	1.68	1.85	0.72	1.62	1.85	1.85	1.51	2.03	2.81	1.03	2.26	2.81	2.81	2.07
6300	1.51	1.67	0.61	1.38	1.67	1.67	1.31	1.82	2.55	0.86	1.94	2.55	2.55	1.80
6600	1.36	1.53	0.52	1.18	1.53	1.53	1.15	1.64	2.32	0.72	1.68	2.32	2.32	1.57
6900	1.23	1.40	0.44	1.01	1.40	1.40	1.01	1.49	2.13	0.62	1.46	2.13	2.13	1.38
7200	1.12	1.28		0.87	1.28	1.28	0.89	1.36	1.95	0.53	1.28	1.95	1.95	1.22
7500	1.03	1.18		0.76	1.18	1.18	0.79	1.24	1.80	0.46	1.12	1.78	1.80	1.08
7800	0.94	1.09		0.64	1.09	1.09	0.71	1.14	1.66	0.40	0.99	1.59	1.66	0.96
8100	0.87	1.01		0.56	0.98	1.01	0.64	1.05	1.54		0.86	1.43	1.54	0.86
8400	0.80	0.94		0.50	0.88	0.94	0.58	0.97	1.44		0.76	1.27	1.44	0.77
8700	0.74	0.88		0.45	0.79	0.88	0.52	0.90	1.34		0.67	1.13	1.34	0.70
9000	0.69	0.82		0.40	0.70	0.82	0.47	0.84	1.25		0.60	0.98	1.25	0.63
9300	0.64	0.77			0.63	0.77	0.43	0.78	1.17		0.53	0.89	1.17	0.58
9600	0.60	0.72			0.56	0.72	0.39	0.73	1.10		0.47	0.80	1.10	0.52
9900	0.56	0.68			0.51	0.68	0.36	0.68	1.03		0.42	0.73	1.03	0.48
10200	0.53	0.64			0.46	0.64	0.33	0.64	0.97			0.66	0.95	0.44
10500	0.49	0.60			0.42	0.60	0.31	0.60	0.92			0.61	0.87	0.40
l0800	0.46	0.57				0.55	0.28	0.56	0.87			0.55	0.80	0.37
11100	0.44	0.54				0.51	0.26	0.53	0.82			0.51	0.74	0.34
11400	0.41	0.51				0.47	0.24	0.50	0.78			0.47	0.68	0.31
11700	0.39	0.49				0.43	0.22	0.48	0.74			0.43	0.62	0.29
12000	0.37	0.46				0.40	0.21	0.45	0.70				0.55	0.27

Double Continuous Spans

Z/C 10012 (kN/m)						
INWARD		OUTWARD				L/150
	1, 2, 3	0	1	2	3	
4.84	4.84	4.84	4.84	4.84	4.84	9.97
3.70	3.70	3.70	3.70	3.70	3.70	6.68
2.93	2.93	2.93	2.93	2.93	2.93	4.69
2.37	2.37	2.37	2.37	2.37	2.37	3.42
1.96	1.96	1.96	1.96	1.96	1.96	2.57
1.65	1.65	1.61	1.65	1.65	1.65	1.99
1.40	1.40	1.29	1.40	1.40	1.40	1.58
1.19	1.21	1.04	1.21	1.21	1.21	1.28
1.02	1.05	0.84	1.05	1.05	1.05	1.05
0.88	0.93	0.66	0.93	0.93	0.93	0.87
0.76	0.82	0.55	0.82	0.82	0.82	0.73
0.67	0.73	0.46	0.70	0.73	0.73	0.62
0.59	0.66		0.61	0.66	0.66	0.53
0.52	0.59		0.52	0.59	0.59	0.46

Z/C 10019 (kN/m)						
INWARD		OUTWARD				L/150
0	1, 2, 3	0	1	2	3	
8.68	8.79	8.79	8.79	8.79	8.79	17.31
6.50	6.73	6.73	6.73	6.73	6.73	11.59
5.02	5.32	5.32	5.32	5.32	5.32	8.14
3.97	4.31	4.31	4.31	4.31	4.31	5.94
3.22	3.56	3.49	3.56	3.56	3.56	4.46
2.66	2.99	2.81	2.99	2.99	2.99	3.44
2.22	2.55	2.28	2.55	2.55	2.55	2.72
1.89	2.20	1.87	2.20	2.20	2.20	2.18
1.62	1.91	1.55	1.91	1.91	1.91	1.78
1.40	1.68	1.28	1.67	1.68	1.68	1.47
1.22	1.49	1.07	1.45	1.49	1.49	1.23
1.07	1.33	0.90	1.25	1.33	1.33	1.05
0.94	1.19	0.76	1.08	1.19	1.19	0.89
0.83	1.08	0.65	0.94	1.08	1.08	0.77

Sections below exceed the normal delivery length of 12000mm

0.74	0.98	0.56	0.82	0.98	0.98	0.66
0.66	0.89	0.48	0.72	0.89	0.89	0.58
0.59	0.81	0.42	0.63	0.80	0.81	0.50
0.54	0.75		0.55	0.72	0.75	0.44
0.48	0.69		0.49	0.64	0.69	0.39

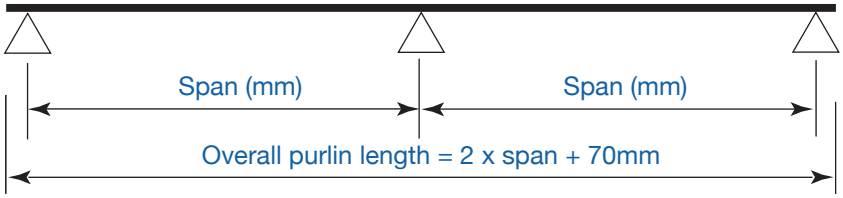
Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.

Double Continuous Spans



DOUBLE CONTINUOUS SPANS

Z/C 10012 (kN/m)						
INWARD		OUTWARD				L/150
0	1, 2, 3	0	1	2	3	
4.84	4.84	4.84	4.84	4.84	4.84	9.97
3.70	3.70	3.70	3.70	3.70	3.70	6.68
2.93	2.93	2.93	2.93	2.93	2.93	4.69
2.37	2.37	2.37	2.37	2.37	2.37	3.42
1.96	1.96	1.96	1.96	1.96	1.96	2.57
1.65	1.65	1.61	1.65	1.65	1.65	1.99
1.40	1.40	1.29	1.40	1.40	1.40	1.58
1.19	1.21	1.04	1.21	1.21	1.21	1.28
1.02	1.05	0.84	1.05	1.05	1.05	1.05
0.88	0.93	0.66	0.93	0.93	0.93	0.87
0.76	0.82	0.55	0.82	0.82	0.82	0.73
0.67	0.73	0.46	0.70	0.73	0.73	0.62
0.59	0.66		0.61	0.66	0.66	0.53
0.52	0.59		0.52	0.59	0.59	0.46

Z/C 10019 (kN/m)						
INWARD		OUTWARD				L/150
0	1, 2, 3	0	1	2	3	
8.68	8.79	8.79	8.79	8.79	8.79	17.31
6.50	6.73	6.73	6.73	6.73	6.73	
5.02	5.32	5.32	5.32	5.32	5.32	8.14
3.97	4.31	4.31	4.31	4.31	4.31	5.94
3.22	3.56	3.49	3.56	3.56	3.56	4.46
2.66	2.99	2.81	2.99	2.99	2.99	3.44
2.22	2.55	2.28	2.55	2.55	2.55	2.72
1.89	2.20	1.87	2.20	2.20	2.20	2.18
1.62	1.91	1.55	1.91	1.91	1.91	1.78
1.40	1.68	1.28	1.67	1.68	1.68	1.47
1.22	1.49	1.07	1.45	1.49	1.49	1.23
1.07	1.33	0.90	1.25	1.33	1.33	1.05
0.94	1.19	0.76	1.08	1.19	1.19	0.89
0.83	1.08	0.65	0.94	1.08	1.08	0.77
Sections below exceed the normal delivery length of 12000mm						
0.74	0.98	0.56	0.82	0.98	0.98	0.66
0.66	0.89	0.48	0.72	0.89	0.89	0.58
0.59	0.81	0.42	0.63	0.80	0.81	0.50
0.54	0.75		0.55	0.72	0.75	0.44
0.48	0.69		0.49	0.64	0.69	0.39

	Z/C 15012 (kN/m)					
	INWARD		OUTWARD			L/150
Bridging >	0	1, 2, 3	0	1	2, 3	
Span mm						
2100	6.43	6.43	6.43	6.43	6.43	27.65
2400	5.32	5.32	5.32	5.32	5.32	18.52
2700	4.47	4.47	4.47	4.47	4.47	13.01
3000	3.80	3.80	3.80	3.80	3.80	9.48
3300	3.27	3.27	3.27	3.27	3.27	7.12
3600	2.83	2.83	2.83	2.83	2.83	5.49
3900	2.45	2.45	2.45	2.45	2.45	4.32
4200	2.12	2.12	2.12	2.12	2.12	3.46
4500	1.84	1.84	1.84	1.84	1.84	2.81
4800	1.61	1.62	1.59	1.62	1.62	2.32
5100	1.41	1.44	1.33	1.44	1.44	1.93
5400	1.24	1.28	1.11	1.28	1.28	1.63
5700	1.09	1.15	0.93	1.15	1.15	1.41
6000	0.97	1.04	0.79	1.04	1.04	1.23
Sections below exceed the normal delivery length of 12000mm						
6300	0.86	0.94	0.67	0.94	0.94	1.07
6600	0.76	0.86	0.58	0.86	0.86	0.95
6900	0.68	0.78	0.50	0.78	0.78	0.84
7200	0.62	0.72	0.43	0.70	0.72	0.75
7500	0.55	0.66		0.61	0.66	0.66
7800	0.50	0.61		0.54	0.61	0.59
8100	0.46	0.57		0.48	0.57	0.53

	Z/C 15019 (kN/m)							
	INWARD			OUTWARD				L/150
Bridging >	0	1	2, 3	0	1	2	3	
Span mm								
3000	7.01	7.68	7.68	7.68	7.68	7.68	7.68	16.81
3300	5.67	6.35	6.35	6.35	6.35	6.35	6.35	12.63
3600	4.68	5.33	5.33	5.33	5.33	5.33	5.33	9.73
3900	3.92	4.55	4.55	4.51	4.55	4.55	4.55	7.65
4200	3.32	3.92	3.92	3.76	3.92	3.92	3.92	6.13
4500	2.83	3.41	3.41	3.17	3.41	3.41	3.41	4.98
4800	2.44	3.00	3.00	2.69	3.00	3.00	3.00	4.10
5100	2.12	2.66	2.66	2.30	2.66	2.66	2.66	3.42
5400	1.86	2.37	2.37	1.96	2.37	2.37	2.37	2.88
5700	1.64	2.13	2.13	1.68	2.13	2.13	2.13	2.47
6000	1.45	1.92	1.92	1.43	1.90	1.92	1.92	2.13
Sections below exceed the normal delivery length of 12000mm								
6300	1.29	1.74	1.74	1.22	1.68	1.74	1.74	1.86
6600	1.16	1.59	1.59	1.05	1.50	1.59	1.59	1.63
6900	1.04	1.45	1.45	0.91	1.34	1.45	1.45	1.44
7200	0.93	1.33	1.33	0.80	1.20	1.33	1.33	1.27
7500	0.85	1.23	1.23	0.70	1.07	1.23	1.23	1.14
7800	0.77	1.14	1.14	0.62	0.97	1.14	1.14	1.02
8100	0.70	1.05	1.05	0.54	0.87	1.05	1.05	0.91
8400	0.64	0.98	0.98	0.48	0.78	0.96	0.98	0.82
8700	0.59	0.90	0.91	0.43	0.70	0.88	0.91	0.74
9000	0.54	0.84	0.85		0.62	0.81	0.85	0.67

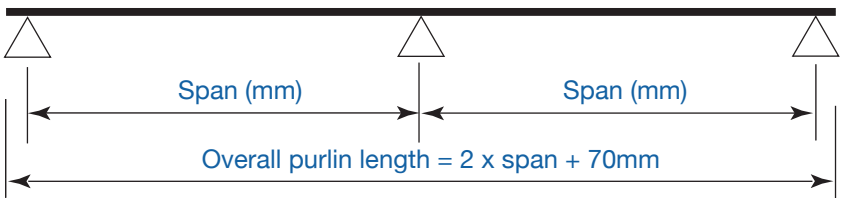
Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.

Double Continuous Spans



Double Continuous Spans

	Z/C 20015 (kN/m)						Z/C 20019 (kN/m)					
	INWARD		OUTWARD			L/150	INWARD		OUTWARD			L/150
Bridging >	0	1, 2, 3	0	1	2, 3		0	1, 2, 3	0	1	2, 3	
Span mm												
3000	6.10	6.10	6.10	6.10	6.10	25.47	10.69	10.69	10.69	10.69	10.69	36.30
3300	5.30	5.30	5.30	5.30	5.30	19.14	8.88	9.16	9.16	9.16	9.16	27.27
3600	4.64	4.64	4.64	4.64	4.64	14.74	7.24	7.81	7.81	7.81	7.81	21.00
3900	4.10	4.10	4.10	4.10	4.10	11.59	5.96	6.66	6.66	6.66	6.66	16.52
4200	3.64	3.64	3.64	3.64	3.64	9.28	4.96	5.74	5.74	5.74	5.74	13.23
4500	3.23	3.25	3.25	3.25	3.25	7.55	4.19	5.00	5.00	5.00	5.00	10.75
4800	2.79	2.88	2.88	2.88	2.88	6.22	3.47	4.39	4.39	4.39	4.39	8.86
5100	2.43	2.56	2.56	2.56	2.56	5.19	3.01	3.89	3.89	3.89	3.89	7.39
5400	2.14	2.28	2.28	2.28	2.28	4.37	2.63	3.47	3.46	3.47	3.47	6.22
5700	1.88	2.05	2.05	2.05	2.05	3.71	2.32	3.12	2.99	3.12	3.12	5.29
6000	1.66	1.85	1.80	1.85	1.85	3.18	2.06	2.81	2.59	2.81	2.81	4.54
Sections below exceed the normal delivery length of 12000mm												
6300	1.48	1.67	1.57	1.67	1.67	2.75	1.84	2.55	2.23	2.55	2.55	3.92
6600	1.32	1.53	1.35	1.53	1.53	2.39	1.65	2.32	1.86	2.32	2.32	3.41
6900	1.19	1.40	1.17	1.40	1.40	2.09	1.49	2.13	1.63	2.13	2.13	2.98
7200	1.07	1.28	1.02	1.28	1.28	1.84	1.35	1.95	1.43	1.95	1.95	2.63
7500	0.97	1.18	0.89	1.18	1.18	1.63	1.23	1.80	1.26	1.80	1.80	2.32
7800	0.89	1.09	0.79	1.09	1.09	1.45	1.12	1.66	1.12	1.66	1.66	2.08
8100	0.81	1.01	0.69	1.01	1.01	1.30	1.02	1.54	1.00	1.54	1.54	1.86
8400	0.74	0.94	0.62	0.94	0.94	1.18	0.94	1.44	0.90	1.40	1.44	1.68
8700	0.68	0.88	0.55	0.87	0.88	1.07	0.87	1.34	0.81	1.27	1.34	1.52
9000	0.62	0.82	0.47	0.79	0.82	0.98	0.80	1.25	0.72	1.15	1.25	1.37

	Z/C 25019 (kN/m)					
	INWARD		OUTWARD			L/150
Bridging >	0	1, 2, 3	0	1	2, 3	
Span mm						
4500	5.27	5.83	5.83	5.83	5.83	17.47
4800	4.51	5.26	5.26	5.26	5.26	14.39
5100	3.90	4.77	4.77	4.77	4.77	12.00
5400	3.41	4.35	4.35	4.35	4.35	10.11
5700	3.00	3.96	3.96	3.96	3.96	8.59
6000	2.66	3.57	3.44	3.57	3.57	7.37
Sections below exceed the normal delivery length of 12000mm						
6300	2.37	3.24	2.94	3.24	3.24	6.37
6600	2.12	2.95	2.46	2.95	2.95	5.54
6900	1.91	2.70	2.15	2.70	2.70	4.85
7200	1.73	2.48	1.88	2.48	2.48	4.26
7500	1.57	2.28	1.66	2.28	2.28	3.77
7800	1.43	2.11	1.47	2.11	2.11	3.35
8100	1.31	1.96	1.31	1.96	1.96	3.00
8400	1.20	1.82	1.17	1.82	1.82	2.69
8700	1.11	1.70	1.04	1.69	1.70	2.42
9000	1.02	1.59	0.93	1.53	1.59	2.18

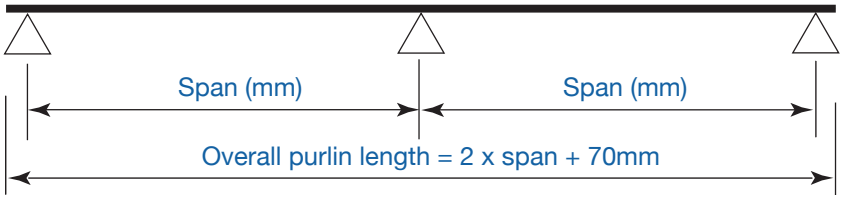
Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.

Double Continuous Spans



Double Lapped Spans

Z 10012 (kN/m)						
INWARD		OUTWARD				L/150
0	1, 2, 3	0	1	2	3	
8.30	8.30	8.30	8.30	8.30	8.30	12.20
6.44	6.44	6.44	6.44	6.44	6.44	8.05
4.31	4.75	4.75	4.75	4.75	4.75	5.57
3.30	3.62	3.61	3.62	3.62	3.62	4.01
2.59	2.86	2.71	2.86	2.86	2.86	2.98
2.09	2.32	2.08	2.32	2.32	2.32	2.27
1.72	1.91	1.59	1.91	1.91	1.91	1.77
1.43	1.61	1.19	1.61	1.61	1.61	1.41
1.20	1.37	0.95	1.37	1.37	1.37	1.15
1.02	1.18	0.78	1.18	1.18	1.18	0.95
0.88	1.03	0.64	1.00	1.03	1.03	0.79
0.76	0.91	0.53	0.85	0.91	0.91	0.67
0.66	0.80	0.45	0.72	0.80	0.80	0.57
0.58	0.72		0.61	0.72	0.72	0.49
0.51	0.72		0.53	0.72	0.72	0.44
0.45	0.64		0.45	0.62	0.64	0.38
0.40	0.58			0.55	0.58	0.34

Z 10019 (kN/m)							
INWARD			OUTWARD				L/150
0	1	2, 3	0	1	2	3	
15.08	15.08	15.08	15.08	15.08	15.08	15.08	21.19
11.70	11.70	11.70	11.70	11.70	11.70	11.70	13.97
6.57	8.63	8.63	8.49	8.63	8.63	8.63	9.67
5.02	6.59	6.59	6.24	6.59	6.59	6.59	6.96
3.96	5.20	5.20	4.70	5.20	5.20	5.20	5.18
3.19	4.21	4.21	3.63	4.21	4.21	4.21	3.95
2.62	3.48	3.48	2.86	3.48	3.48	3.48	3.08
2.19	2.92	2.92	2.27	2.92	2.92	2.92	2.45
1.85	2.49	2.49	1.82	2.48	2.49	2.49	1.98
1.58	2.15	2.15	1.48	2.09	2.15	2.15	1.63
1.36	1.87	1.87	1.22	1.77	1.87	1.87	1.36
1.19	1.65	1.65	1.01	1.50	1.65	1.65	1.14
1.04	1.46	1.46	0.84	1.29	1.46	1.46	0.97
0.92	1.30	1.30	0.71	1.11	1.30	1.30	0.83
0.84	1.26	1.30	0.63	1.03	1.26	1.30	0.74
0.75	1.12	1.17	0.54	0.88	1.11	1.17	0.64
0.67	1.00	1.05	0.47	0.76	0.97	1.05	0.56
0.60	0.90	0.96	0.41	0.66	0.86	0.96	0.50
0.54	0.81	0.87		0.58	0.76	0.87	0.44
0.49	0.73	0.80		0.51	0.68	0.78	0.39

	Z 15012 (kN/m)						
	INWARD		OUTWARD				L/150
Bridging >	0	1, 2, 3	0	1	2	3	
Span mm							
2400	8.87	8.87	8.87	8.87	8.87	8.87	23.35
2700	7.20	7.20	7.20	7.20	7.20	7.20	16.21
3000	5.94	5.94	5.94	5.94	5.94	5.94	11.68
3300	4.98	4.98	4.98	4.98	4.98	4.98	8.68
3600	4.22	4.22	4.22	4.22	4.22	4.22	6.61
3900	3.26	3.61	3.61	3.61	3.61	3.61	5.15
4200	2.69	3.12	3.12	3.12	3.12	3.12	4.09
4500	2.26	2.72	2.55	2.72	2.72	2.72	3.30
4800	1.92	2.39	2.04	2.39	2.39	2.39	2.70
5100	1.65	2.07	1.65	2.07	2.07	2.07	2.23
5400	1.43	1.80	1.36	1.80	1.80	1.80	1.87
5700	1.24	1.58	1.13	1.58	1.58	1.58	1.58
6000	1.09	1.40	0.94	1.40	1.40	1.40	1.35
6300	0.97	1.25	0.80	1.25	1.25	1.25	1.16
6600	0.86	1.12	0.68	1.11	1.12	1.12	1.00
6900	0.77	1.01	0.58	0.98	1.01	1.01	0.89
7200	0.69	0.92	0.49	0.85	0.92	0.92	0.79
7500	0.62	0.84	0.43	0.74	0.84	0.84	0.71
7800	0.56	0.77		0.64	0.77	0.77	0.63
8100	0.51	0.71		0.57	0.71	0.71	0.57
8400	0.46	0.65		0.50	0.65	0.65	0.52
8700	0.42	0.60		0.44	0.60	0.60	0.47
9000	0.38	0.56			0.55	0.56	0.42
9300	0.36	0.56			0.52	0.56	0.39
9600	0.33	0.52			0.47	0.52	0.36
9900	0.30	0.48			0.42	0.48	0.32

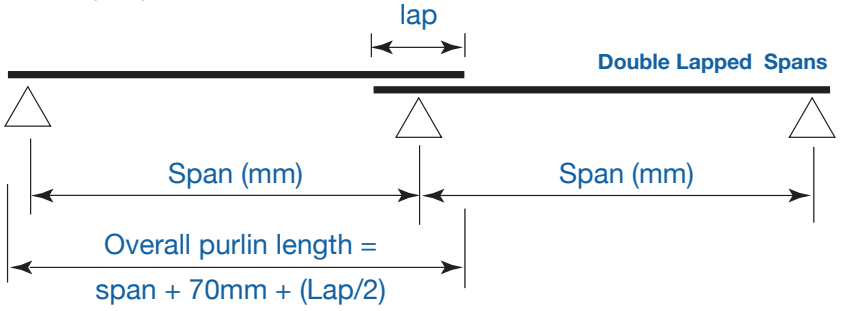
	Z 15019 (kN/m)							
	INWARD			OUTWARD				L/150
Bridging >	0	1	2, 3	0	1	2	3	
Span mm								
2400	20.06	20.06	20.06	20.06	20.06	20.06	20.06	41.39
2700	15.80	16.03	16.03	16.03	16.03	16.03	16.03	28.73
3000	12.63	13.12	13.12	13.12	13.12	13.12	13.12	20.70
3300	10.31	10.94	10.94	10.94	10.94	10.94	10.94	15.38
3600	8.58	9.27	9.27	9.27	9.27	9.27	9.27	11.72
3900	4.75	7.55	7.55	6.84	7.55	7.55	7.55	9.13
4200	3.93	6.22	6.22	5.46	6.22	6.22	6.22	7.25
4500	3.30	5.22	5.22	4.42	5.22	5.22	5.22	5.84
4800	2.80	4.44	4.44	3.59	4.44	4.44	4.44	4.78
5100	2.41	3.83	3.83	2.95	3.83	3.83	3.83	3.96
5400	2.09	3.34	3.34	2.42	3.32	3.34	3.34	3.31
5700	1.83	2.93	2.93	2.01	2.85	2.93	2.93	2.80
6000	1.61	2.58	2.60	1.69	2.47	2.60	2.60	2.39
6300	1.43	2.29	2.32	1.44	2.16	2.32	2.32	2.05
6600	1.28	2.04	2.08	1.23	1.89	2.08	2.08	1.78
6900	1.14	1.83	1.88	1.05	1.67	1.88	1.88	1.56
7200	1.03	1.64	1.70	0.91	1.48	1.70	1.70	1.38
7500	0.93	1.49	1.55	0.79	1.31	1.55	1.55	1.22
7800	0.85	1.35	1.42	0.69	1.16	1.39	1.42	1.09
8100	0.77	1.23	1.31	0.60	1.03	1.26	1.31	0.98
8400	0.70	1.13	1.20	0.53	0.92	1.14	1.20	0.88
8700	0.64	1.03	1.11	0.47	0.81	1.04	1.11	0.80
9000	0.59	0.95	1.03	0.42	0.72	0.94	1.03	0.72
9300	0.55	0.92	1.03		0.67	0.91	1.02	0.67
9600	0.51	0.85	0.96		0.60	0.83	0.94	0.61
9900	0.47	0.78	0.89		0.54	0.76	0.86	0.56
10200	0.43	0.73	0.83		0.49	0.69	0.80	0.51
10500	0.40	0.67	0.77		0.44	0.63	0.73	0.46

Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.



Double Lapped Spans

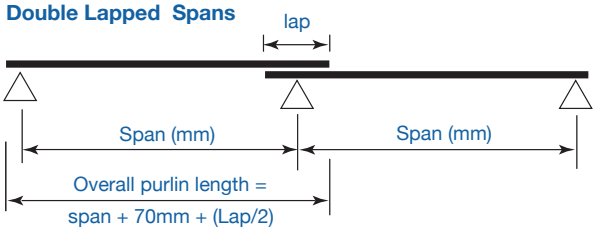
	Z 20019 (kN/m)							
	INWARD			OUTWARD				L/150
Bridging >	0	1	2, 3	0	1	2	3	0
Span mm								
3000	17.00	17.00	17.00	17.00	17.00	17.00	17.00	44.69
3300	14.16	14.16	14.16	14.16	14.16	14.16	14.16	33.21
3600	11.94	11.94	11.94	11.94	11.94	11.94	11.94	25.31
3900	7.09	10.18	10.18	10.18	10.18	10.18	10.18	19.72
4200	5.82	8.77	8.77	8.77	8.77	8.77	8.77	15.65
4500	4.86	7.61	7.61	7.61	7.61	7.61	7.61	12.62
4800	4.12	6.51	6.51	6.39	6.51	6.51	6.51	10.32
5100	3.53	5.61	5.61	5.31	5.61	5.61	5.61	8.54
5400	3.06	4.88	4.88	4.45	4.88	4.88	4.88	7.15
5700	2.67	4.29	4.29	3.70	4.29	4.29	4.29	6.05
6000	2.36	3.80	3.80	3.02	3.80	3.80	3.80	5.16
6300	2.09	3.39	3.39	2.58	3.39	3.39	3.39	4.43
6600	1.87	3.05	3.05	2.22	3.05	3.05	3.05	3.84
6900	1.67	2.75	2.75	1.93	2.75	2.75	2.75	3.34
7200	1.51	2.50	2.50	1.68	2.50	2.50	2.50	2.93
7500	1.37	2.28	2.28	1.48	2.28	2.28	2.28	2.58
7800	1.24	2.08	2.08	1.30	2.07	2.08	2.08	2.29
8100	1.13	1.91	1.91	1.16	1.86	1.91	1.91	2.04
8400	1.04	1.76	1.76	1.02	1.67	1.76	1.76	1.82
8700	0.95	1.63	1.63	0.90	1.50	1.63	1.63	1.63
9000	0.87	1.51	1.51	0.80	1.35	1.51	1.51	1.48
9300	0.82	1.48	1.51	0.74	1.21	1.51	1.51	1.37
9600	0.75	1.37	1.40	0.67	1.09	1.40	1.40	1.25
9900	0.70	1.26	1.31	0.60	0.99	1.31	1.31	1.14
10200	0.65	1.17	1.22	0.54	0.90	1.22	1.22	1.04
10500	0.60	1.09	1.15	0.49	0.82	1.13	1.15	0.96
10800	0.56	1.01	1.08	0.44	0.75	1.04	1.08	0.88
11100	0.52	0.94	1.01	0.40	0.68	0.96	1.01	0.81
11400	0.49	0.88	0.95		0.63	0.89	0.95	0.75
Sections below exceed the normal delivery length of 12000mm								
11700	0.46	0.82	0.90		0.58	0.82	0.90	0.69
12000	0.43	0.77	0.85		0.53	0.75	0.85	0.64

Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.
INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.

Double Lapped Spans



Cantilever Spans

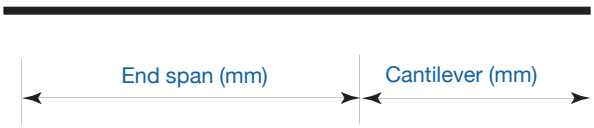
		CANTILEVER 1000mm (kN/m)							CANTILEVER 2000mm (kN/m)						
		IN BRIDGING			OUT BRIDGING			L/150	IN BRIDGING			OUT BRIDGING			L/150
Section	End Span mm	0	1	2	0	1	2		0	1	2	0	1	2	
Z/C 10010	2000	4.38	4.38	4.38	4.38	4.38	4.38	3.50							
	4000	1.25	1.25	1.25	0.62	1.12	1.25	0.26	0.91	1.10	1.10	0.99	1.10	1.10	0.48
	6000	0.52	0.52	0.52	0.14	0.26	0.43	0.06	0.59	0.61	0.61	0.18	0.32	0.52	0.12
Z/C10012	2000	5.33	5.33	5.33	5.33	5.33	5.33	4.26							
	4000	1.52	1.52	1.52	0.79	1.36	1.52	0.31	1.09	1.33	1.33	1.20	1.33	1.33	0.57
	6000	0.63	0.63	0.63	0.18	0.33	0.52	0.07	0.67	0.75	0.75	0.22	0.40	0.64	0.14
Z/C10015	2000	6.95	6.95	6.95	6.95	6.95	6.95	5.60							
	4000	1.83	1.98	1.98	1.05	1.73	1.98	0.38	1.43	1.69	1.74	1.53	1.74	1.74	0.72
	6000	0.74	0.82	0.82	0.24	0.45	0.69	0.09	0.81	0.97	0.97	0.30	0.55	0.83	0.17
Z/C 10019	2000	9.69	9.69	9.69	9.69	9.69	9.69	7.18							
	4000	2.41	2.76	2.76	1.41	2.41	2.76	0.48	1.94	2.41	2.42	2.13	2.42	2.42	0.90
	6000	0.96	1.14	1.14	0.34	0.60	0.95	0.12	1.01	1.36	1.36	0.42	0.74	1.15	0.22
Z/C15012	2000	6.87	6.87	6.87	6.87	6.87	6.87	11.35							
	4000	2.65	2.65	2.65	1.92	2.65	2.65	0.91	2.31	2.33	2.33	2.33	2.33	2.33	1.59
	6000	1.10	1.10	1.10	0.46	0.82	1.10	0.22	1.20	1.31	1.31	0.56	1.00	1.31	0.42
	8000	0.60	0.60	0.60	0.16	0.30	0.49	0.09	0.62	0.66	0.66	0.17	0.33	0.54	0.11
Z/C 15015	2000	11.11	11.11	11.11	11.11	11.11	11.11	15.12							
	4000	3.37	3.49	3.49	2.48	3.49	3.49	1.14	2.87	3.06	3.06	3.06	3.06	3.06	2.09
	6000	1.33	1.44	1.44	0.59	1.06	1.44	0.27	1.40	1.72	1.72	0.73	1.28	1.72	0.52
	8000	0.71	0.79	0.79	0.20	0.41	0.64	0.11	0.72	0.87	0.87	0.22	0.45	0.71	0.14
Z/C 15019	2000	16.64	16.64	16.64	16.64	16.64	16.64	19.82							
	4000	4.24	4.92	4.92	3.46	4.92	4.92	1.43	3.74	4.32	4.32	4.25	4.32	4.32	2.68
	6000	1.64	2.04	2.04	0.78	1.50	1.98	0.34	1.74	2.42	2.42	0.95	1.83	2.38	0.65
	8000	0.86	1.10	1.11	0.28	0.54	0.88	0.14	0.88	1.21	1.23	0.30	0.59	0.98	0.18
Z/C 15024	2000	23.04	23.04	23.04	23.04	23.04	23.04	26.35							
	4000	5.43	6.93	6.93	4.68	6.93	6.93	1.80	5.02	6.09	6.09	6.02	6.09	6.09	3.38
	6000	1.98	2.86	2.87	1.06	2.06	2.82	0.43	2.06	3.37	3.41	1.29	2.52	3.38	0.82
	8000	1.01	1.48	1.57	0.39	0.72	1.23	0.17	1.03	1.62	1.73	0.43	0.80	1.37	0.23
Z/C 20015	4000	4.73	4.73	4.73	4.53	4.73	4.73	2.44	3.93	3.93	3.93	3.93	3.93	3.93	4.14
	6000	1.88	1.96	1.96	1.06	1.93	1.96	0.60	2.01	2.33	2.33	1.29	2.32	2.33	1.12
	8000	0.98	1.07	1.07	0.40	0.74	1.07	0.24	1.01	1.18	1.18	0.44	0.81	1.18	0.31
Z/C 20019	4000	6.53	7.20	7.20	6.55	7.20	7.20	3.21	6.04	6.33	6.33	6.33	6.33	6.33	5.59
	6000	2.30	2.98	2.98	1.66	2.82	2.98	0.77	2.49	3.54	3.54	1.94	3.39	3.54	1.47
	8000	1.19	1.63	1.63	0.56	1.07	1.61	0.30	1.24	1.80	1.80	0.62	1.18	1.79	0.40
Z/C 20024	4000	8.48	10.47	10.47	9.12	10.47	10.47	4.06	8.05	9.20	9.20	9.20	9.20	9.20	7.47
	6000	2.97	4.34	4.34	2.18	3.89	4.34	0.97	3.16	5.15	5.15	2.63	4.67	5.15	1.85
	8000	1.50	2.25	2.37	0.76	1.53	2.21	0.38	1.53	2.47	2.62	0.83	1.68	2.44	0.51
Z/C 25019	4000	8.50	9.14	9.14	8.72	9.14	9.14	5.35	6.98	6.98	6.98	6.98	6.98	6.98	9.14
	6000	3.00	3.79	3.79	2.09	3.77	2.79	1.30	3.16	4.31	4.31	2.39	4.31	4.31	2.02
	8000	1.53	2.07	2.07	0.72	1.41	2.07	0.51	1.59	2.28	2.28	0.79	1.55	2.28	0.68
	10000	0.93	1.31	1.31	0.31	0.64	1.03	0.26	0.95	1.39	1.39	0.33	0.68	1.10	0.30
Z/C 25024	4000	10.86	13.41	13.41	12.09	13.41	13.41	6.86	10.50	11.46	11.46	11.46	11.46	11.46	12.35
	6000	3.77	5.56	5.56	2.85	5.19	5.56	1.64	3.94	6.33	6.33	3.21	5.95	6.33	2.56
	8000	1.87	2.99	3.04	0.96	1.98	2.95	0.65	1.91	3.28	3.35	1.04	2.18	3.27	0.86
	10000	1.11	1.80	1.93	0.42	0.86	1.48	0.32	1.11	1.90	2.05	0.44	0.91	1.58	0.38

The capacities are for cantilevers with single end span.
The ends of the cantilevers are stabilised by fascias, bridging, barge boards, perimeter beams or similar structural members.

Bold capacities require grade 8.8 purlin bolts.

Bridging shown is for end spans only.

See also: Design notes for capacity tables.



Cantilever Spans

		CANTILEVER 3000mm (kN/m)						
		IN BRIDGING			OUT BRIDGING			L/150
Section	End Span mm	0	1	2	0	1	2	
Z/C 10010	2000							
	4000	0.25	0.37	0.43	0.49	0.49	0.49	0.07
	6000	0.24	0.34	0.38	0.26	0.43	0.49	0.14
Z/C10012	2000							
	4000	0.33	0.44	0.53	0.59	0.59	0.59	0.09
	6000	0.31	0.40	0.47	0.34	0.52	0.59	0.17
Z/C10015	2000							
	4000	0.45	0.62	0.68	0.77	0.77	0.77	0.11
	6000	0.42	0.57	0.63	0.46	0.67	0.77	0.21
Z/C 10019	2000							
	4000	0.62	0.86	0.95	1.08	1.0B	1.08	0.13
	6000	0.58	0.79	0.88	0.65	0.95	1.08	0.27
Z/C15012	2000							
	4000	0.78	1.04	1.04	1.04	1.04	1.04	0.26
	6000	0.71	1.00	1.04	0.79	1.04	1.04	0.50
	8000	0.56	0.79	0.79	0.22	0.40	0.66	0.29
Z/C 15015	2000							
	4000	1.00	1.36	1.36	1.36	1.36	1.36	0.32
	6000	0.91	1.28	1.36	1.00	1.36	1.36	0.63
	8000	0.68	1.04	1.04	0.29	0.56	0.87	0.36
Z/C 15019	2000							
	4000	1.44	1.80	1.91	1.92	1.92	1.92	0.40
	6000	1.23	1.71	1.82	1.43	1.90	1.92	0.80
	8000	0.86	1.36	1.45	0.39	0.74	1.20	0.45
Z/C 15024	2000							
	4000	2.00	2.55	2.71	2.71	2.71	2.71	0.50
	6000	1.61	2.40	2.57	1.96	2.70	2.70	1.00
	8000	1.01	1.84	2.06	0.54	1.00	1.67	0.57
Z/C 20015	4000	1.80	1.85	1.85	1.85	1.85	1.85	0.70
	6000	1.50	1.85	1.85	1.80	1.85	1.85	1.29
	8000	1.00	1.41	1.41	0.55	1.01	1.41	0.76
Z/C 20019	4000	2.61	2.81	2.81	2.81	2.81	2.81	0.90
	6000	2.01	2.81	2.81	2.59	2.81	2.81	1.75
	8000	1.29	2.14	2.14	0.78	1.45	2.14	1.01
Z/C 20024	4000	3.62	4.09	4.09	4.09	4.09	4.09	1.13
	6000	2.73	4.04	4.09	3.59	4.09	4.09	2.25
	8000	1.54	2.89	3.11	1.04	2.08	2.95	1.28
Z/C 25019	4000	3.46	3.57	3.57	3.57	3.57	3.57	1.52
	6000	2.61	3.57	3.57	3.44	3.57	3.57	2.88
	8000	1.63	2.72	2.72	0.99	1.91	2.72	1.66
	10000	0.97	1.55	1.55	0.37	0.77	1.24	0.44
Z/C 25024	4000	4.79	5.24	5.24	5.24	5.24	5.24	1.92
	6000	3.46	5.24	5.24	4.75	5.24	5.24	3.80
	8000	1.92	3.83	3.99	1.31	2.70	3.94	2.16
	10000	1.12	2.10	2.28	0.50	1.03	1.79	0.55

Bold capacities require grade 8.8 purlin bolts.

Values above dotted horizontal line in body of table are governed by the strength of the grade 8.8 bolt.

INWARD = Inward load capacity. OUTWARD = Outward load capacity. L/150 = Load for deflection span/150.

See also: Design notes for capacity tables.

Cantilever spans