

MEGASPAN PURLINS & GIRTS

DESIGN MANUAL & CAPACITY TABLES

UP TO
20%
STRONGER



A Met-TECH™ GUIDE

NOVEMBER 2018



Metroll®

BETTER SERVICE • BETTER BUILDING SOLUTIONS

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What is Met-TECH™ ?

Met-TECH™ is Metroll's Technical Resource Centre. It is the one stop shop for all of Metroll's product and technical information. Perfect for builders, contractors and specifiers to source all the information they may require. You can find other Met-TECH items on our website

www.metroll.com.au/resources

METROLL MEGASPAN®

Metroll Megaspan® Purlins are a range of performance enhanced C & Z Purlins. The profile has been optimised to deliver capacity improvements of more than 20% compared to standard purlins.

IMPORTANT NOTE

Standard purlins **MUST NOT** be substituted for designs using information from this Megaspan® Design Manual. Megaspan® is a higher performance section, standard purlins will not deliver the same load capacities and may be under-engineered and potentially unsafe.

APPLICATION

Metroll Megaspan® purlins and girts are primarily used in the design of sheds, industrial and commercial buildings. The sections are typically used to support roof and wall sheeting..

DESIGN & SPECIFICATION

MATERIALS

Metroll Megaspan® purlins and girts are manufactured from hi-tensile G450, G500 or G550 galvanised steel, with a minimum Z350 (350 g/m²) galvanised coating conforming to AS 1397.

CORROSION PROTECTION & MATERIAL COMPATIBILITY

Some building materials and environmental conditions can be detrimental to coated steel products irrespective of the product thickness. This includes contact with or exposure to runoff from:

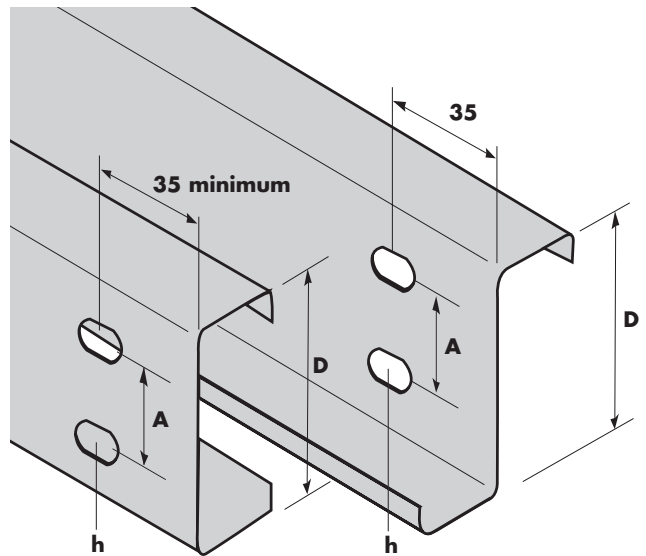
- Industrial, agricultural, marine or other aggressive atmospheric conditions
- Incompatible metals such as lead or copper
- Building materials subject to cycles of excessive moisture content such as non-seasoned timber
- Materials which have been treated with preservatives such as CCa or tanalith treated section.

The standard Z350 (350 g/m²) galvanised coating will provide a long and trouble free life for enclosed buildings and open sided rural applications in non-aggressive environments. For more severe corrosive environments a Z450 (450 g/m²) will be required. This heavier coated product is available subject to minimum order quantities and lead times.

HOLE PUNCHING

Metroll C and Z purlin sections are normally supplied with holes punched to the AISC guide except in VIC where 150mm sections are punched to Structural Steel Fabricator Association Victoria recommendations (70mm centres).

Holes are required at cleat supports, laps bridging points or as specified on detail sheets supplied prior to manufacture. The preferred method of dimensioning is hole centre to hole centre rather than referenced from one end. An overall purlin length is required to provide for a data entry dimensional check.



HOLE CENTRES

PURLIN SIZE	AISC CENTRES		
	D mm	A mm	h mm
100	40	18 x 22	
150	60*	18 x 22	
200	110	18 x 22	
250	160	18 x 22	
300	210	22 round	
350	260	22 round	
400	310	22 round	

* Standard centres in VIC is 70mm

Alternative hole sizes, shapes and centres are available. Please enquire with your local Metroll branch

PRODUCT RANGE

These diagrams and tables illustrate the sizes and thicknesses readily available for purlins and girts. Shapes other than standard C and Z sections may be subject to minimum order requirements and extended lead times. Contact your local Metroll branch for more detail.

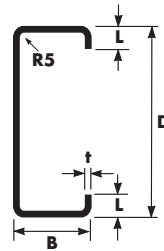
C & Z SECTION SIZE & MASS

Section	Thickness (t) mm	Mass kg/m
150 12	1.2	2.78
150 15	1.5	3.47
150 19	1.9	4.40
150 24	2.4	5.56
200 12*	1.2	3.49
200 15	1.5	4.36
200 19	1.9	5.59
200 24	2.4	7.07
250 15*	1.5	5.00
250 19	1.9	6.34
250 24	2.4	8.01
300 19*	1.9	7.83
300 24	2.4	9.89
300 30	3.0	12.36
350 19*	1.9	9.47
350 24*	2.4	11.96
350 30	3.0	14.95
400 24*	2.4	11.96
400 30*	3.0	14.95
400 30WF*	3.0	16.13

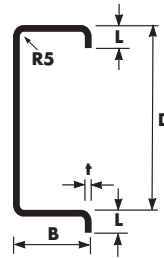
*Lead times and minimum order quantities may apply. Check with your local Metroll branch.

C SECTIONS

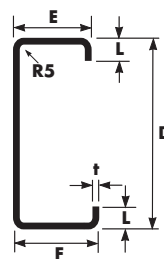
STANDARD C



DOWNTURN LIP C

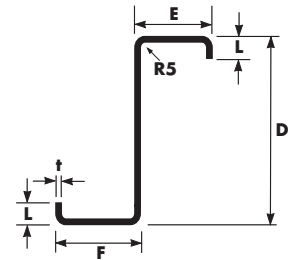


NESTABLE C (Box Configuration)

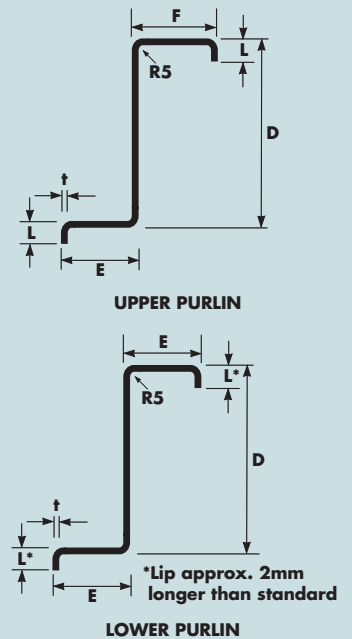


Z SECTIONS

STANDARD Z



LAPPABLE Z



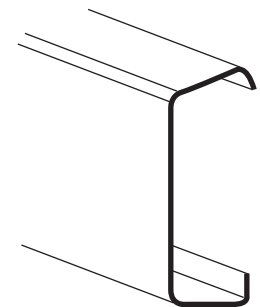
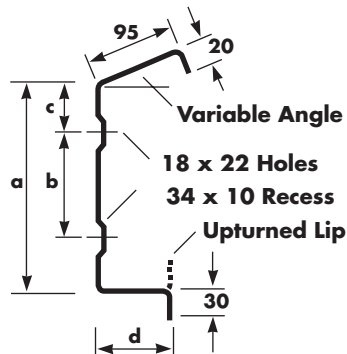
FASCIA PURLINS*

Fascia Purlin design varies significantly across Australia. Different applications require different section size and configuration. Metroll manufacture a range of fascia purlins including the popular Fluted Series. These purlins feature a fluted web which adds strength and provides a flush external face when used with flat headed fascia bolts. The added advantages of this section include a down turned lip for wall fixing and a variable upturned top flange for roof pitches from 5° to 30°.

FASCIA PURLIN DIMENSIONS

	A mm	B mm	C mm	D mm
230 Plain	230	110	65	50
230 Fluted	230	110	65	50
260 Plain	260	160	50	60
260 Fluted	260	160	50	60

*Not available at all Metroll branches.



It is common practice to use a standard C section in place of a fascia purlin in fascia applications. The C section can be supplied as a standard configuration or with the top flange bent to suit the roof slope.

SHEETING LENGTHS & EXPANSION JOINTS

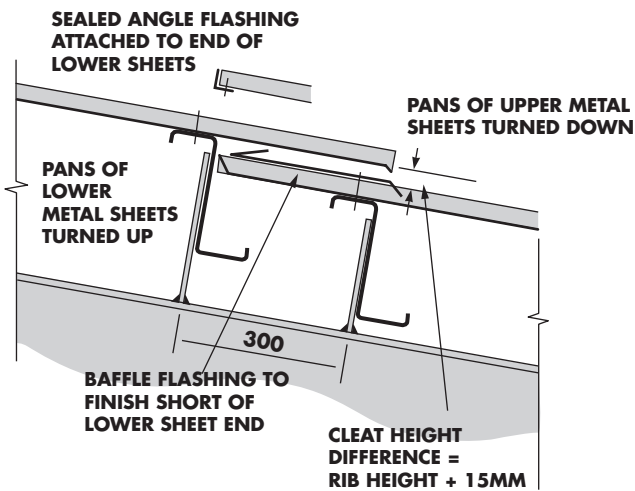
Roof sheeting lengths are limited by several issues - thermal expansion, transport limitations and practical handling are the main items governing maximum sheet lengths. The following table provides recommended maximum sheet lengths. This may vary from state to state. Contact your local Metroll branch for more information.

MAXIMUM ROOF SHEET LENGTHS

ROOF COLOUR	THROUGH FIX	CONCEALED FIX
Light	25 m	33 m
Dark	17 m	25 m

Where buildings are designed with roofing runs greater than the table above, expansion joints are necessary.

TYPICAL EXPANSION JOINT



DESIGN ASSUMPTIONS

The tables in this brochure are for limit state capacity, which means that any load beyond the tabulated loads will prevent the member from fulfilling its intended function. This may mean reaching a limit state for collapse or loss of structural integrity. The limit state capacity tables for various purlin combinations in this publication provide economic design solutions for most projects. In special projects a more optimal design can be obtained by varying combinations, such as:

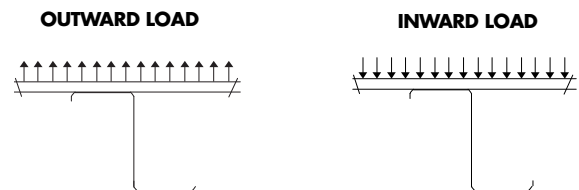
- Material specifications
- Bolt specifications & quantity
- Lap length
- Bridging quantity
- Span range
- Reduced or enlarged end spans
- Cantilevers at one or both ends of the configuration
- Loading

Design calculations are based on AS/NZS 4600:2005 Cold Formed Steel Structures, and follow criteria established by industry best practice.

Assumptions inherent in the code provisions and validated by them include:

- Self-weight is not included in the design load tables. Self-weight shall be added to any load cases assessed.
- Capacities are calculated on the basis of loading applied to the flange of the section, where the cladding, screw fixed to the flange, provides a minimum level of rotational restraint of 10,000 Nmm/mm.
- The Z shaped section behaves as an equivalent C shaped channel in the strong axis.
- The design assessment includes consideration for distortional buckling.
- For all systems, loading is assumed as uniformly distributed and acting on all spans simultaneously. All other load configurations must be specifically designed.
- Where multiple spans are specified, these are of equal dimension.
- All section properties stated are for full sections, (holes not deducted from the web).
- The loading condition diagrams show the loads applied to the cladding, transmitted via screw fixing into the top flange and acting in the direction shown by the arrows. This defines the 'inward' and 'outward' load directions.
- For Serviceability Conditions, the limiting deflection is $\text{Span}/150$.

LOADING CONDITIONS



DESIGN ASSUMPTIONS DISCLAIMER

This publication is intended to provide accurate information with regard to Metroll Megaspan® Z sections. It does not constitute a complete description of the goods, nor an explicit statement about suitability for any particular purpose. Data is provided as a guide only. Metroll Pty Ltd and Blueprint Consulting Engineers Ltd do not accept any liability for loss or damage suffered from the use of data in this publication.

USING THIS MANUAL

When selecting purlins real applied loads must be considered along with the stated capacities in this manual. All spans are considered loaded concurrently and no allowance has been made for uneven or skip loading. Where this is likely, or where loading conditions vary from those designed for in this manual, a structural engineer should verify compliance independently with AS/NZS 4600:2005.

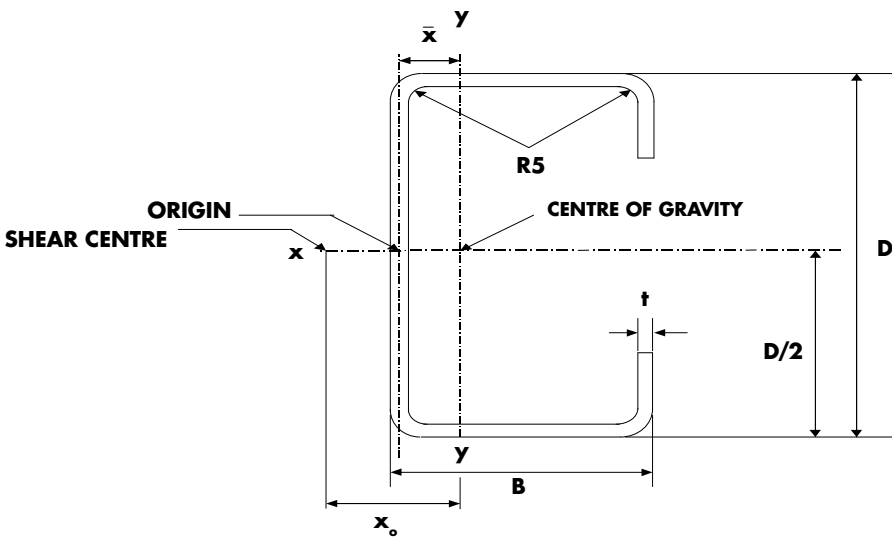
While real loading may be less than the stated capacity in

this manual, this may not necessarily ensure competency of the selected system. Member adequacy is dependent on the maximum moments applied and the moment profile within the member span.

These design actions can vary widely under real, project specific, applied loads and it is the responsibility of the project design engineer to verify their purlin selection is compliant with AS/NZS 4600:2005 and AS/NZS 1170 Assessed Loading.

C PURLIN - DIMENSIONS & PROPERTIES

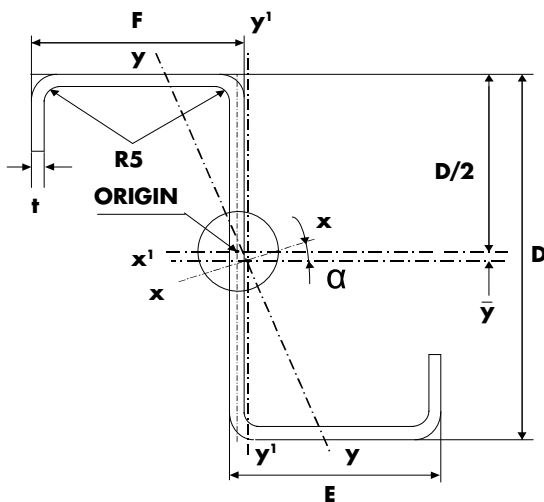
NOTE: x and y axes coincide with x^1 and y^1 axes (respectively)



SECTION	D	t	FLANGE (B)
C150	150	1.2	57
		1.5	
		1.9	
		2.4	
C200	200	1.2	69
		1.5	
		1.9	
		2.4	
C250	254	1.5	69
		1.9	
		2.4	
C300	300	1.9	87
		2.4	
		3.0	
C350	350	1.9	113
		2.4	
		3.0	
C400*	400	2.4	96
		3.0	125
C400WF*	400	3.0	125

***NOTE:** C Sections available. Lead times and minimum order quantities apply. Please enquire with your local Metroll branch.

Z PURLIN - DIMENSIONS & PROPERTIES



SECTION	D	t	FLANGE OVER (F)	FLANGE UNDER (E)
Z150	150	1.2	60	55
		1.5		
		1.9		
		2.4		
Z200	200	1.2	72	66
		1.5		
		1.9		
		2.4		
Z250	254	1.5	72	66
		1.9		
		2.4		
Z300	300	1.9	90	84
		2.4		
		3.0		
Z350	350	1.9	116	110
		2.4		
		3.0		
Z400*	400	2.4	94	88
		3.0		
Z400WF*	400	3.0	112	106

***NOTE:** Z Sections available. Lead times and minimum order quantities apply. Please enquire with your local Metroll branch.

FULL DIMENSIONS & PROPERTIES

C SECTION

SECTION	t	Area mm ²	Second Moment of Area (mm ⁴)				Radius of Gyration		Torsion Constant (mm ⁴)	Warping Constant (mm ⁶)	Coordinates of Centroid from flange centre (mm)		Coordinates of Shear Centre from flange centre (mm)		Mono-symmetry Constant
			I _x x10 ⁶ mm ⁴	I _y x10 ⁶ mm ⁴	Z _x x10 ³ mm ³	Z _y x10 ³ mm ³	r _x	r _y			x	y	β _y		
C150	1.20	354	1.22	0.17	16.37	4.51	58.66	21.95	169	0.88	18.01	-28.35	160		
	1.50	443	1.51	0.21	20.38	5.68	58.47	21.92	331	1.11	18.05	-28.45	160		
	1.90	561	1.90	0.27	25.64	7.24	58.21	21.87	672	1.41	18.11	-28.58	159		
	2.40	708	2.37	0.34	32.13	9.24	57.87	21.80	1353	1.81	18.17	-28.73	157		
C200	1.20	444	2.70	0.30	27.12	6.18	77.92	25.84	213	2.49	19.82	-31.86	212		
	1.50	555	3.36	0.37	33.82	7.77	77.77	25.83	415	3.12	19.88	-31.96	211		
	1.90	713	4.28	0.49	43.17	10.50	77.47	26.19	855	4.31	20.57	-33.06	209		
	2.40	900	5.35	0.61	54.16	13.35	77.11	26.12	1718	5.47	20.62	-33.21	207		
C250	1.50	638	5.93	0.40	46.94	8.03	96.41	25.11	477	5.27	17.46	-29.66	270		
	1.90	808	7.47	0.51	59.27	10.24	96.19	25.08	969	6.69	17.51	-29.77	269		
	2.40	1020	9.37	0.64	74.49	13.03	95.85	25.03	1948	8.47	17.56	-29.89	267		
C300	1.90	998	13.00	1.05	87.22	17.06	114.16	32.41	1174	20.00	23.67	-39.62	312		
	2.40	1260	16.37	1.32	110.00	21.75	113.98	32.40	2371	25.40	23.6	-39.76	310		
	3.00	1575	20.14	1.63	135.60	27.07	113.08	32.18	4570	31.57	23.73	-39.89	309		
C350	1.90	1207	22.28	2.16	128.00	27.17	135.89	42.30	1447	55.08	31.64	-51.43	368		
	2.40	1524	27.99	2.72	161.10	34.47	135.52	42.25	2909	69.74	31.70	-51.58	367		
	3.00	1905	34.77	3.39	200.40	43.30	135.10	42.17	5668	87.43	31.77	-51.75	365		
C400	2.40	1516	34.02	1.70	170.10	23.24	149.8	33.49	2911	53.26	21.61	-59.49	447		
	3.00	1899	42.46	2.14	212.29	29.46	149.5	33.58	5695	67.45	21.81	-60.02	444		
C400WF	3.00	2073	49.32	4.07	246.57	44.14	154.3	44.31	6217	125.41	31.33	-82.98	429		

Z SECTION

SECTION	t	Area mm ²	Second Moment of Area (mm ⁴)		Section Modulus Rectangular (mm ³)		Second Moment of Area Principal (mm ⁴)		Section Modulus Principal (mm ³)		Radius of Gyration (mm)		Torsion Constant (mm ⁴)	Warping Constant (mm ⁶)	Coordinates of Centroid from flange centre (mm)		Coordinates of Shear Centre from flange centre (mm)		Mono-symmetry Constant		Slope of principal axes α°
			I _x x10 ⁶ mm ⁴	I _y x10 ⁶ mm ⁴	Z _x x10 ³ mm ³	Z _y x10 ³ mm ³	I _x x10 ⁶ mm ⁴	I _y x10 ⁶ mm ⁴	Z _x x10 ³ mm ³	Z _y x10 ³ mm ³	r _x	r _y			x	y	x	y	β _x	β _y	
Z150	1.20	354	1.22	0.29	16.13	5.01	1.40	0.11	15.70	3.24	58.73	28.54	169	1.14	1.28	1.26	1.95	9.53	-16.62	15.40	-21.79
	1.50	443	1.52	0.36	20.09	6.30	1.74	0.14	19.59	4.06	58.55	28.55	331	1.42	1.28	1.26	1.97	9.56	-16.68	15.35	-21.86
	1.90	561	1.90	0.46	25.28	8.04	2.18	0.18	24.72	5.16	58.27	28.54	672	1.81	1.29	1.26	1.99	9.60	-16.76	15.27	-21.97
	2.40	708	2.38	0.58	31.68	10.24	2.73	0.22	31.08	6.53	57.94	28.54	1353	2.28	1.30	1.25	2.02	9.65	-16.86	15.18	-22.09
Z200	1.20	444	2.70	0.47	26.68	6.80	2.97	0.19	25.78	4.63	77.91	32.60	213	3.32	1.43	1.61	2.14	12.63	-22.51	20.08	-18.41
	1.50	555	3.36	0.59	33.27	8.55	3.70	0.24	32.19	5.81	77.75	32.62	415	4.16	1.46	1.58	2.27	12.74	-22.57	20.02	-19.07
	1.90	716	4.28	0.79	42.48	11.53	4.74	0.32	41.28	7.73	77.46	33.32	855	5.64	1.46	1.59	2.24	12.68	-22.57	19.57	-18.99
	2.40	900	5.35	1.00	53.29	14.65	5.94	0.41	51.90	9.78	77.09	33.30	1718	7.12	1.46	1.58	2.27	12.74	-22.69	19.48	-19.07
Z250	1.50	638	5.92	0.60	46.27	8.63	6.25	0.28	45.06	6.28	96.40	30.63	477	7.09	1.25	1.78	1.92	15.93	-29.26	24.22	-13.42
	1.90	808	7.47	0.76	58.42	11.00	7.88	0.35	56.95	7.99	96.17	30.62	969	8.99	1.26	1.78	1.94	15.99	-29.38	24.14	-13.46
	2.40	1020	9.37	0.96	73.43	13.98	9.88	0.44	71.67	10.13	95.83	30.61	1948	11.35	1.26	1.78	1.97	16.07	-29.53	24.05	-13.51
Z300	1.90	998	13.00	1.61	86.21	18.49	13.89	0.71	83.71	13.16	114.00	40.11	1174	26.69	1.33	1.72	2.06	14.94	-27.25	22.30	-15.08
	2.40	1260	16.36	2.03	108.7	23.55	17.49	0.90	106.00	16.73	114.00	40.16	2371	33.79	1.33	1.71	2.08	14.99	-27.35	22.20	-15.13
	3.00	1575	20.14	2.51	134.1	29.30	21.54	1.11	131.00	20.74	113.00	39.92	4570	41.89	1.33	1.72	2.11	15.10	-27.54	22.18	-15.17
Z350	1.90	1207	22.27	3.37	126.80	29.88	24.20	1.44	122.00	21.00	136.00	52.84	1447	74.01	1.38	1.65	2.08	13.41	-24.15	20.89	-16.92
	2.40	1524	27.99	4.25	159.5	37.89	30.42	1.82	154.00	26.56	136.00	52.82	2909	93.00	1.38	1.65	2.09	13.45	-24.23	20.84	-16.97
	3.00	1905	34.77	5.31	198.5	47.57	37.81	2.26	191.00	33.27	135.00	52.79	5668	117.00	1.39	1.64	2.11	13.50	-24.32	20.78	-17.02
Z400	2.40	1524	33.83	2.34	168.60	25.87	35.01	1.15	165.00	19.66	149.00	39.18	2909	72.00	1.15	1.88	1.82	18.85	-35.16	28.51	-10.79
	3.00	1905	42.05	2.92	209.80	32.48	43.53	1.44	206.00	24.65	149.00	39.14	5668	90.00	1.15	1.88	1.84	18.94	-35.34	28.44	-10.82
Z400WF	3.00	2055	46.43	4.98	231.90	46.25	49.14	2.27	225.00	33.52	150.00	49.23	5959	150.00	1.28	1.76	2.02	15.94	-29.15	23.58	-13.91

EFFECTIVE DIMENSIONS & PROPERTIES

C SECTION - EFFECTIVE

SECTION	DIMENSIONS				SECOND MOMENT OF AREA mm ⁴			
	D	t	Area mm ²	A _{eff} mm ²	I _{eff} x	I _{eff} y	Z _{eff} x	Z _{eff} y
					x10 ⁶ mm ⁴	x10 ⁶ mm ⁴	x10 ³ mm ³	x10 ³ mm ³
C150	150	1.20	354	196	1.12	0.12	14.01	3.91
		1.50	443	587	1.46	0.16	18.89	5.19
		1.90	561	421	1.90	0.23	25.19	6.82
		2.40	708	582	2.37	0.31	31.92	8.93
C200	200	1.20	444	213	2.29	0.19	200.44	5.30
		1.50	555	300	3.05	0.26	28.56	6.88
		1.90	713	442	4.12	0.37	40.06	9.57
		2.40	900	653	5.35	0.61	53.42	12.31
C250	254	1.50	638	306	5.18	0.26	36.88	6.98
		1.90	808	426	6.91	0.37	51.41	9.21
		2.40	1020	654	9.42	0.51	73.96	12.12
C300	300	1.90	998	487	11.67	0.67	71	15.05
		2.40	1260	708	15.90	0.95	103	19.78
		3.00	1575	1024	20.14	1.30	136	25.67
C350	350	1.90	1207	520	18.23	1.32	90	22.34
		2.40	1524	763	24.83	1.82	130	30.10
		3.00	1905	1080	33.15	2.48	183	39.14
C400	400	2.40	1516	654	28.05	1.68	123	20.31
		3.00	1899	922	38.03	1.56	177	26.58
C400WF	400	3.00	2073	954	41.01	2.90	183	39.07

Z SECTION - EFFECTIVE

SECTION	DIMENSIONS				SECOND MOMENT OF AREA mm ⁴				SECOND MODULUS PRINCIPAL mm ³			
	D	t	Area mm ²	A _{eff} mm ²	I _{eff} x*	I _{eff} x	I _{eff} y*	I _{eff} y	Z _{eff} x*	Z _{eff} x	Z _{eff} y*	Z _{eff} y
					x10 ⁶ mm ⁴	x10 ⁶ mm ⁴	x10 ⁶ mm ⁴	x10 ⁶ mm ⁴	x10 ³ mm ³	x10 ³ mm ³	x10 ³ mm ³	x10 ³ mm ³
Z150	150	1.20	354	203	1.32	1.30	0.11	0.11	14.24	14.11	3.24	3.24
		1.50	443	285	1.68	1.65	0.14	0.14	18.41	18.10	4.06	4.06
		1.90	561	419	2.21	2.17	0.18	0.18	24.67	24.41	5.15	5.15
		2.40	708	582	2.77	2.77	0.22	0.22	31.03	31.03	6.51	6.51
Z200	200	1.20	444	213	2.59	2.57	0.19	0.19	20.38	20.56	4.60	4.54
		1.50	555	300	3.44	3.38	0.24	0.24	28.41	28.28	5.81	5.81
		1.90	713	442	4.62	4.52	0.32	0.32	39.11	38.44	7.73	7.73
		2.40	900	642	6.01	5.94	0.41	0.41	51.90	51.68	9.78	9.78
Z250	254	1.50	638	305	5.55	5.50	0.28	0.27	36.56	36.79	6.28	6.16
		1.90	808	426	7.37	7.32	0.35	0.35	50.57	51.15	7.99	7.99
		2.40	1020	641	9.88	9.72	0.44	0.44	71.67	70.14	10.13	10.13
Z300	300	1.90	998	486	12.69	12.66	0.71	0.71	70.59	71.53	13.39	13.18
		2.40	1260	708	17.20	17.04	0.90	0.90	101	101	16.73	16.73
		3.00	1575	1024	21.54	21.54	1.11	1.11	131	131	20.74	20.74
Z350	350	1.90	1207	520	20.29	20.20	1.40	1.36	90	91	19.70	20.03
		2.40	1524	758	27.20	27.10	1.81	1.78	127	128	26.03	25.83
		3.00	1905	1048	35.40	34.90	2.26	2.26	172	170	32.65	32.65
Z400	400	2.40	1524	722	31.74	31.74	1.15	1.13	137	140	19.48	19.40
		3.00	1905	1039	43.12	42.98	1.44	1.44	199	201	24.65	24.65
Z400WF	400	3.00	2055	1099	48.11	48.14	2.27	2.27	212	215	33.52	33.52

TOLERANCES

All sections will be produced with the following tolerances. Please contact your Metroll branch if any variation is required.

Overall Length	±5mm
Flange Width	±1mm
Depth	±1mm
Hole Centres	±1.5mm

STRUCTURAL LAPPING

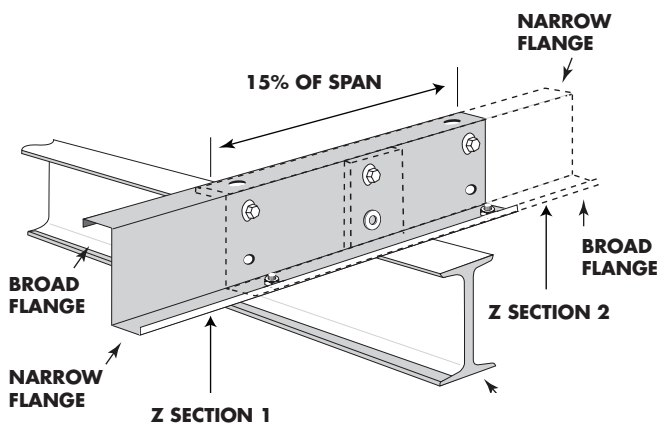
A feature of Megaspan® Z sections is one broad and one narrow flange proportioned so that two sections of the same size, when one is flipped over 180 degrees, can overlap and bolt snugly together.

Structural continuity results in better economy but lapping provides two thicknesses of material over interior supports, increasing the strength of the sections where bending moments and shears are maximum thus improving the load capacity and rigidity of the system. C sections cannot be lapped.

All lapped Z section configurations generally require a total lap length (bolt centre to bolt centre) of 15% of the span (to the nearest 50mm).

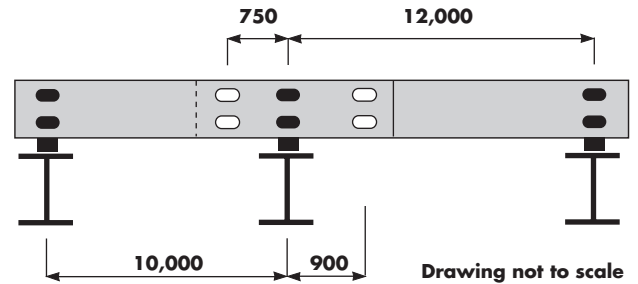
Structural laps provide greater load carrying capacity to the section. The lap/span ratio must be 15% or greater and all laps should use six bolts in the connection including two bolts in the bottom flange.

Z sections can be lapped in any thickness combination which allows for heavier, stronger sections to be used in end bay applications.



LAPS FOR UNEQUAL SPANS

For unequal spans the total lap length must be 15% of the average span and the lap is not equally spaced across the support. In practice 7.5% of the longer span must be applied to the shorter purlin as this material ends up in the longer span. Conversely 7.5% of the shorter span should be applied to the longer span. This is demonstrated in the example diagram below:



An alternative is to apply the 15% lap based on the longer of the spans.

BRIDGING

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

In some combinations of span configuration and loading there is no benefit in increasing the number of bridging rows.

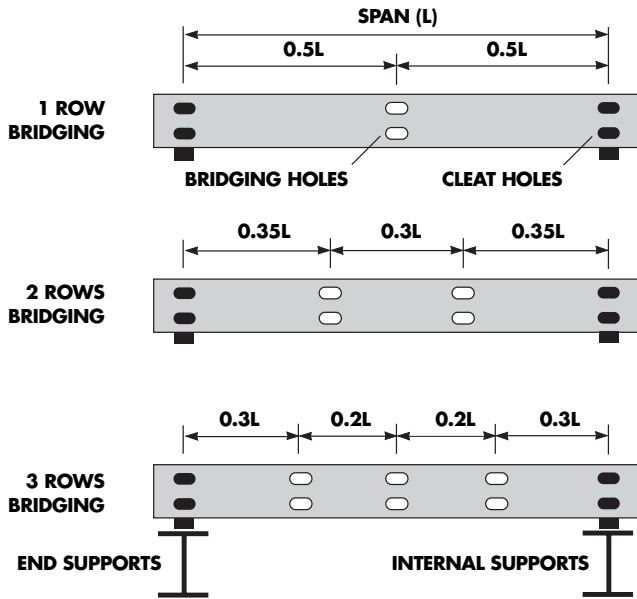
Metroll recommends that bridging is installed such that the maximum unbraced length is $20 \times D$ (D = purlin web height), or 4000mm, whichever is the least. In addition to enhancing purlin performance this requirement assists with the installation of roof sheeting. Location of the bridging must be as shown below (to the nearest 50mm), or as determined by the design engineer.

RECOMMENDED MAX. BRIDGING SPACING

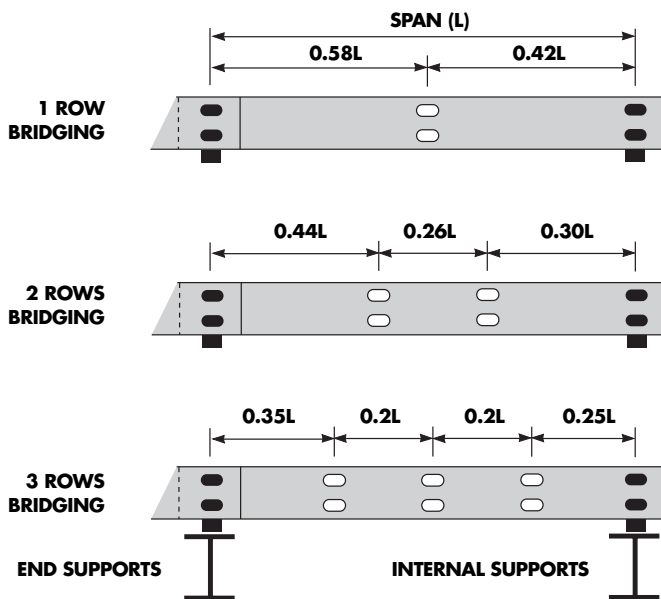
PURLIN SIZE MM	MAX. BRIDGING SPACING MM
100	2000
150	3000
200, 250, 300, 350, 400	4000

BRIDGING - HOLE LOCATIONS

SINGLE OR INTERNAL SPANS



DOUBLE OR END SPANS



MEMBER WEIGHT

All limit state loads are in kN/m. Limit state loads make no allowance for the mass of the member. In some cases, limit state loads are limited by the bolting.

DEFLECTION

There are no specific rules governing acceptable deflections, though structural codes give guidance. One needs to consider the specific requirements of any structure. It may be necessary to design under more than one load combination. Load stated is calculated to produce a deflection of $\text{Span}/150$ for the critical span. Solutions for other deflection ratios may be obtained using linear proportioning. Where a suspended ceiling is to be installed, such as in residential and commercial construction, more stringent deflection limits may be necessary to prevent damage to the ceiling components or joints. Both the end span and the internal span must be considered in the analysis of lapped and continuous spans.

CLEAT CONNECTIONS

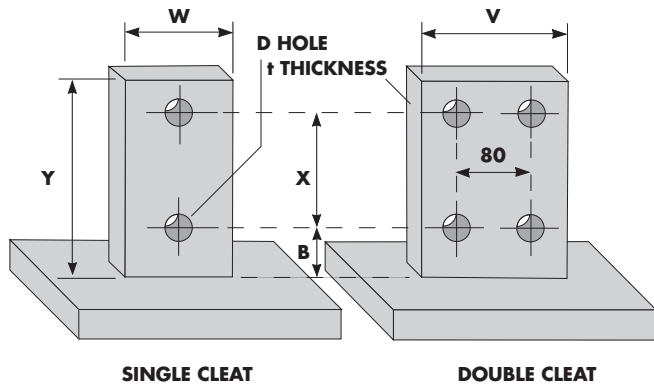
The limit state capacity tables are based on the sections being fastened through the web to the cleats so that the load is via the web of the sections.

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.

Each connection consists of two bolts. The bolt specifications (size and grade) will depend on the section size and design load. In some cases, eliminating cleats and bolting directly through the bottom flange for the Z and C sections could save on the number of bolts required. The number of bolts is halved compared with those in conventional cleated connections.

Single cleats are most commonly used with Z sections and double cleats with C sections. Double cleats can also be used in applications with a high reaction load to reduce bolt stress and shear. Extra care is required with hole detailing in double cleat application to a single purlin. The following table illustrates industry standard cleat sizes including purlin clearances.

CLEAT NOMINAL DIMENSIONS - MM



SIZE	X	B+	Y+	t	GAP	hd	W	V
100	40	40	105	8	10	18	50	130
150	60*	55†	145	8	10	18	60	140
200	110	55	195	8	10	18	60	140
250	160	55	245	8	10	18	60	140
300	210	65	305	12	20	22	60	140
350	260	65	355	12	20	22	60	140
400	310	75	405	12	20	22	60	140

* 70mm in VIC

† 50mm in VIC

+ When using down turned lip purlins or girts the lip length must be added to the dimension B and Y. Cleat lengths may be increased in some design situations (e.g above an expansion joint).

As a guide, increase the cleat thickness by 2mm for each 40mm of additional length.

BOLT SPECIFICATION

NOMINAL SECTION SIZE MM	BOLT SPECIFICATION
100, 150, 200, 250	Standard M12 Purlin Bolt High Strength M12 Purlin Bolt
300, 350, 400	Standard M16 Purlin Bolt High Strength M16 Purlin Bolt

POINT LOADS (SEE TABLE OVER PAGE)

The limit state loads specified in the tables are essentially uniformly distributed. It is inferred that all design loads will be converted into uniformly distributed values. In some applications the design loads are point loads. All design loads must be converted to uniformly distributed loads. The point-loaded configuration has been equated with uniformly loaded configuration for conversion formulae for single spans and lapped span configurations and are provided as a guide in the table on the following page. For continuous unlapped configurations a separate set of conversion formulae is applicable.

BOLTS

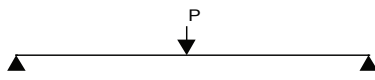
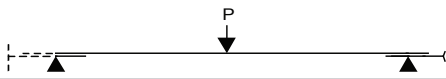

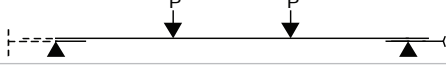
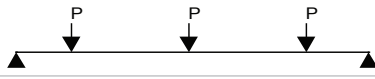
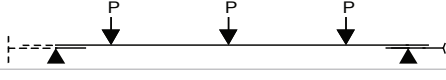
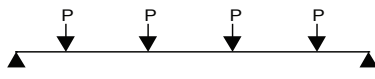
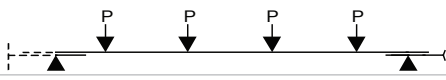
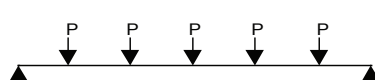
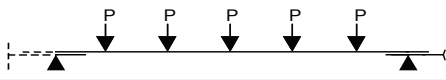
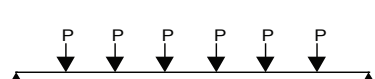
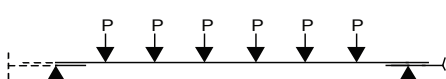
The fastening of sections to cleats is normally by standard Metroll purlin bolts. In the limit state capacity tables, where high strength bolts govern the capacity the loads are marked accordingly. In these situations the section capacity is not fully utilised and it may be more economical to select another configuration or change the spacing of the section or increase the bolt number of specification.

Purlin laps must be bolted in the top web hole and the lower flange holes at both ends of the lap. Bolting only the web of lapped purlins does not provide full structural integrity and excessive loads can be placed on the roofing screws that penetrate both purlin thickness in the lap region. The correct size and grade of purlin bolts nominated by the design engineer should be used at all times. Bolts should be fully tightened prior to roof installation and before any loads are applied to the purlins, girts or bridging.

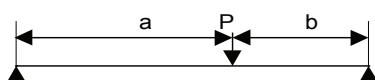



Bolts to be snug tightened to a nominal torque of 54Nm.

POINT LOADS

SYMMETRICAL EQUIDISTANT POINT LOADS

LOADING CONDITION		DIAGRAM	CONVERSION FORMULA
SINGLE LOAD	Simple		$w = \frac{2P}{L}$
	Lapped		$w = \frac{2.22P}{L}$
2 LOADS	Simple		$w = \frac{2.67P}{L}$
	Lapped		$w = \frac{3.16P}{L}$
3 LOADS	Simple		$w = \frac{4P}{L}$
	Lapped		$w = \frac{3.78P}{L}$
4 LOADS	Simple		$w = \frac{4.80P}{L}$
	Lapped		$w = \frac{5.12P}{L}$
5 LOADS	Simple		$w = \frac{6P}{L}$
	Lapped		$w = \frac{6.65P}{L}$
6 OR MORE LOADS	Simple		$w = \frac{1.14P}{L}$
	Lapped		$w = \frac{1.22P}{L}$

SINGLE ECCENTRIC & TWO SYMMETRICAL POINT LOADS

SINGLE ECCENTRIC POINT LOAD	Simple		$w = \frac{8abP}{L^3}$
	Lapped		$w = \frac{17.76ab^2P}{L^4}$
TWO SYMMETRICAL POINT LOADS	Simple		$w = \frac{8bP}{L^2}$
	Lapped		$w = \frac{9.45(2L-3b)P}{L^3}$

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

INSTALLATION

Purlin and girt installation should be carried out in suitable weather conditions by experienced crews.

WELDING

Welding of Megaspan® purlins, girts and bridging is not recommended. Welding any cold rolled, high tensile material affects the material properties and removes the galvanised coating. This can cause reduced life of the member.

SAFE WORK PRACTICES

Metroll Megaspan® purlins and girts are not designed for walking on. Residual oil from the manufacturing process may be present and slipping can occur. Appropriate lifting equipment and work platforms must be used.

As a minimum:

- Never walk on purlins or girts during installation. Use appropriate equipment.
- Never walk on bridging.
- Ensure safety mesh is in place.
- Always use approved safety harnesses and/or other suitable safety equipment during installation.

DESIGN CAPACITY TABLES

HOW TO USE THE MEGASPAN® PURLIN & GIRT DESIGN CAPACITY TABLES

The tables indicate the maximum limit state capacity of the sections. Capacities are based on uniformly distributed loads and any point loads need to be converted.

Required loads are established by a project designer using the appropriate building codes and standards. Once the

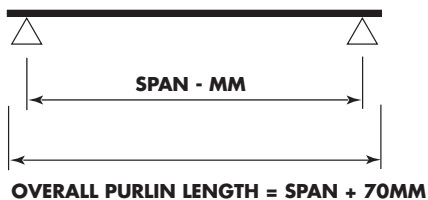
purlin and girt outwards and inwards loads are determined the preferred span configuration can be checked using the tables.

When using the Safebridge® bridging system 3 rows of bridging should be selected.

SPAN INFORMATION & SUPPORTING TABLE

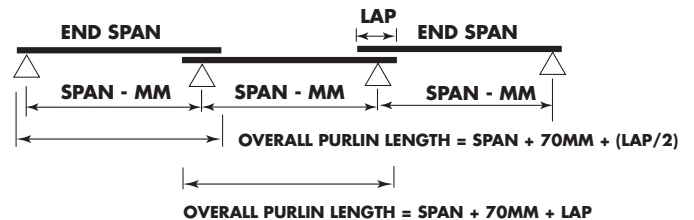
SINGLE SPAN

Refer Design Capacity Tables 1A OUTWARD & 1B INWARD



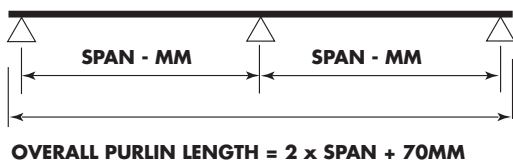
3 SPAN LAPPED

Refer Design Capacity Tables 4A OUTWARD & 4B INWARD



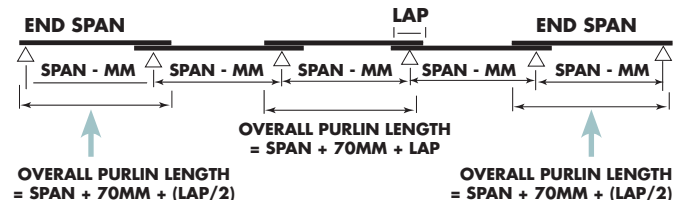
2 SPAN CONTINUOUS - UNLAPPED

Refer Design Capacity Tables 2A OUTWARD & 2B INWARD



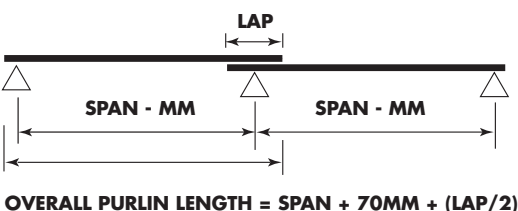
5 SPAN LAPPED

Refer Design Capacity Tables 5A OUTWARD & 5B INWARD



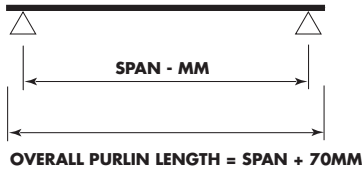
2 SPAN LAPPED

Refer Design Capacity Tables 3A OUTWARD & 3B INWARD



METROLL MEGASPAN® DESIGN CAPACITY TABLES

**TABLE 1A: SINGLE SPAN
OUTWARD LOAD (kN/m)**



B3/SB Denotes situations outside Metroll's standard bridging spacing guidelines. For Safebridge® system always use data for 3 rows of bridging.

BOLD Denotes where 8.8 grade bolts are required.

C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3.87	4.72	4.72	4.72	4.95	6.04	6.04	6.04	3000
2.27	3.47	3.47	3.47	3.00	4.44	4.44	4.44	3500
1.40	2.66	2.66	2.66	1.81	3.37	3.40	3.40	4000
	2.01	2.10	2.10		2.52	2.69	2.69	4500
	1.50	1.70	1.70		1.90	2.18	2.18	5000
	1.11	1.40	1.40		1.44	1.80	1.80	5500
	0.82	1.18	1.18		1.08	1.49	1.51	6000
	0.61	0.98	1.01		0.80	1.22	1.29	6500
	0.46	0.80	0.87		0.60	1.01	1.11	7000
	0.36	0.65	0.76		0.46	0.83	0.97	7500
	0.28	0.53	0.66		0.36	0.69	0.84	8000
	0.22	0.43	0.58		0.29	0.57	0.72	8500
	0.18	0.35	0.50		0.23	0.47	0.62	9000
	0.14	0.29	0.43		0.19	0.38	0.54	9500
	0.12	0.24	0.37		0.15	0.31	0.47	10000
	0.10	0.20	0.32		0.13	0.26	0.41	10500
	0.08	0.17	0.27		0.11	0.22	0.35	11000
	0.07	0.14	0.23		0.09	0.18	0.30	11500
	0.06	0.12	0.20		0.08	0.15	0.26	12000

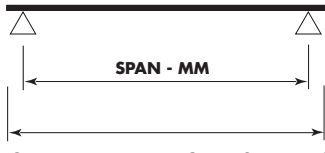
Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	6.46	8.32	8.32	8.32	8.22	11.24	11.32	11.32	5.34	5.34	5.34	5.34	8.73	8.80	8.80	8.80	12.03	12.72	12.72	12.72	3000
3500	3.89	6.11	6.11	6.11	5.04	7.88	8.31	8.31	4.16	4.58	4.58	4.58	5.69	6.46	6.46	6.46	7.83	9.34	9.34	9.34	3500
4000	2.37	4.53	4.68	4.68	3.12	5.72	6.37	6.37	2.76	3.83	3.83	3.83	3.68	4.95	4.95	4.95	5.11	7.15	7.15	7.15	4000
4500		3.35	3.70	3.70		4.24	4.97	5.03		3.02	3.02	3.02		3.91	3.91	3.91		5.65	5.65	5.65	4500
5000		2.50	3.00	3.00		3.18	3.90	4.07		2.37	2.45	2.45		3.17	3.17	3.17		4.49	4.58	4.58	5000
5500		1.88	2.46	2.48		2.41	3.12	3.37		1.86	2.02	2.02		2.57	2.62	2.62		3.55	3.78	3.78	5500
6000		1.41	2.00	2.08		1.83	2.52	2.80		1.47	1.70	1.70		2.02	2.20	2.20		2.79	3.18	3.18	6000
6500		1.05	1.63	1.77		1.39	2.05	2.33		1.16	1.45	1.45		1.59	1.87	1.87		2.20	2.71	2.71	6500
7000		0.79	1.33	1.53		1.06	1.69	1.96		0.92	1.24	1.25		1.24	1.62	1.62		1.73	2.34	2.34	7000
7500		0.61	1.09	1.32		0.82	1.39	1.66		0.72	1.04	1.09		0.94	1.41	1.41		1.34	1.98	2.04	7500
8000		0.48	0.90	1.12		0.65	1.15	1.42		0.57	0.88	0.96		0.75	1.22	1.24		1.04	1.69	1.79	8000
8500		0.38	0.74	0.96		0.52	0.96	1.22		0.45	0.75	0.85		0.60	1.04	1.10		0.83	1.43	1.58	8500
9000		0.31	0.61	0.83		0.42	0.79	1.05		0.37	0.64	0.76		0.48	0.88	0.98		0.66	1.22	1.41	9000
9500		0.25	0.50	0.71		0.35	0.66	0.91		0.30	0.55	0.67		0.39	0.75	0.88		0.54	1.04	1.26	9500
10000		0.21	0.41	0.62		0.29	0.54	0.78		0.25	0.45	0.59		0.32	0.63	0.79		0.44	0.88	1.12	10000
10500		0.18	0.34	0.53		0.24	0.45	0.68		0.21	0.40	0.52		0.26	0.53	0.72		0.37	0.75	0.99	10500
11000		0.15	0.28	0.46		0.21	0.38	0.59		0.17	0.34	0.46		0.22	0.45	0.63		0.31	0.63	0.88	11000
11500		0.13	0.24	0.40		0.18	0.32	0.51		0.14	0.28	0.41		0.19	0.38	0.56		0.26	0.53	0.78	11500
12000		0.11	0.20	0.34		0.16	0.28	0.45		0.12	0.24	0.36		0.16	0.32	0.50		0.22	0.45	0.69	12000
12500										0.10	0.21	0.32		0.13	0.28	0.44		0.19	0.38	0.61	12500
13000										0.09	0.18	0.28		0.12	0.24	0.39		0.16	0.33	0.54	13000
13500										0.08	0.16	0.25		0.10	0.21	0.34		0.14	0.28	0.48	13500
14000										0.07	0.14	0.22		0.09	0.18	0.30		0.12	0.25	0.42	14000
14500										0.06	0.12	0.20		0.08	0.16	0.26		0.11	0.21	0.37	14500
15000										0.05	0.11	0.17		0.07	0.14	0.23		0.10	0.19	0.32	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	15.65	17.49	17.49	17.49	8.12	8.12	8.12	8.12	15.88	16.14	16.14	16.14	20.91	22.47	22.47	22.47					3000
3500	10.09	12.85	12.85	12.85	6.96	6.96	6.96	6.96	10.39	11.86	11.86	11.86	13.22	16.51	16.51	16.51					3500
4000	6.53	9.84	9.84	9.84	4.97	6.09	6.09	6.09	6.51	9.08	9.08	9.08	8.30	12.64	12.64	12.64	10.42	10.42	10.42	10.42	4000
4500		7.76	7.78	7.78		5.10	5.10	5.10		7.18	7.18	7.18		9.99	9.99	9.99		9.27	9.27	9.27	4500
5000		5.96	6.30	6.30		4.13	4.13	4.13		5.81	5.81	5.81		7.99	8.09	8.09		8.15	8.15	8.15	5000
5500		4.63	5.21	5.21		3.31	3.42	3.42		4.68	4.80	4.80		6.16	6.69	6.68		6.73	6.73	6.73	5500
6000		3.62	4.37	4.37		2.64	2.87	2.87		3.72	4.04	4.04		4.77	5.62	5.62		5.57	5.66	5.66	6000
6500		2.85	3.73	3.73		2.11	2.45	2.45		2.89	3.44	3.44		3.69	4.79	4.79		4.61	4.82	4.82	6500
7000		2.23	3.12	3.21		1.67	2.11	2.11		2.21	2.97	2.97		2.84	4.13	4.13		3.84	4.16	4.16	7000
7500		1.74	2.62	2.80		1.29	1.84	1.84		1.69	2.58	2.58		2.18	3.51	3.60		3.22	3.62	3.62	7500
8000		1.36	2.21	2.46		1.01	1.57	1.62		1.31	2.23	2.27		1.69	2.94	3.16		2.71	3.18	3.18	8000
8500		1.08	1.87	2.18		0.80	1.35	1.43		1.04	1.90	2.01		1.34	2.47	2.80		2.29	2.81	2.82	8500
9000		0.87	1.58	1.92		0.64	1.15	1.25		0.83	1.62	1.79		1.08	2.07	2.50		1.90	2.46	2.52	9000
9500		0.71	1.34	1.68		0.52	0.99	1.15		0.67	1.36	1.61		0.87	1.74	2.24		1.56	2.16	2.26	9500
10000		0.58	1.14	1.47		0.42	0.85	1.03		0.55	1.14	1.45		0.72	1.46	1.97		1.29	1.91	2.01	10000
10500		0.49	0.96	1.30		0.35	0.72	0.92		0.45	0.95	1.30		0.60	1.22	1.73		1.08	1.69	1.85	10500
11000		0.41	0.81	1.14		0.29	0.60	0.82		0.38	0.79	1.16		0.50	1.02	1.52		0.91	1.50	1.68	11000
11500		0.35	0.69	1.01		0.25	0.51	0.73		0.32	0.66	1.03		0.42	0.85	1.33		0.77	1.33	1.53	11500
12000		0.30	0.58	0.89		0.21	0.43	0.65		0.27	0.56	0.91		0.36	0.72	1.17		0.65	1.19	1.38	12000
12500		0.25	0.50	0.79		0.18	0.37	0.58		0.23	0.48	0.80		0.31	0.62	1.03		0.55	1.06	1.26	12500
13000		0.22	0.43	0.70		0.15	0.32	0.52		0.20	0.41	0.70		0.27	0.53	0.90		0.47	0.94	1.14	13000
13500		0.19	0.37	0.62		0.13	0.27	0.46		0.17	0.35	0.61		0.23	0.46	0.79		0.41	0.82	1.04	13500
14000		0.17	0.32	0.54		0.11	0.24	0.40		0.15	0.31	0.53		0.20	0.40	0.69		0.36	0.72	0.95	14000
14500		0.15	0.28	0.48		0.10	0.21	0.35		0.13	0.27	0.47		0.18	0.35	0.60		0.31	0.63	0.87	14500
15000		0.13	0.25	0.42		0.09	0.18	0.31		0.12	0.23	0.41		0.16	0.31	0.52		0.27	0.56	0.80	15000

Span	C/Z 300 24				C/Z 300 30				C/Z 350 19				C/Z 350 24				C/Z 350 30				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
4000	16.46	17.71	17.71	17.71	21.25	24.09	24.09	24.09	8.87	8.87	8.87	8.87	17.								

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 1B: SINGLE SPAN
INWARD LOAD (kN/m)



OVERALL PURLIN LENGTH = SPAN + 70MM

Denotes situations outside Metroll's standard bridging spacing guidelines.

BOLD Denotes where 8.8 grade bolts are required.

C/Z 150 12

BO	B1	B2	L/150
4.72	4.72	4.72	4.60
3.47	3.47	3.47	2.90
2.66	2.66	2.66	2.00
	2.10	2.10	1.40
	1.70	1.70	1.00
	1.40	1.40	0.80
	1.18	1.18	0.60
	1.01	1.01	0.50
	0.87	0.87	0.40
	0.76	0.76	0.30
	0.66	0.66	0.20
	0.59	0.59	0.20
	0.52	0.52	0.20
	0.47	0.47	0.10
	0.42	0.42	0.10
	0.39	0.39	0.10
	0.35	0.35	0.10
	0.32	0.32	0.10
	0.30	0.30	0.10

C/Z 150 15

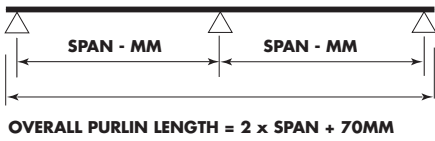
BO	B1	B2	L/150	Span
5.97	6.04	6.04	5.80	3000
4.32	4.44	4.44	3.60	3500
3.26	3.40	3.40	2.40	4000
	2.69	2.69	1.70	4500
	2.18	2.18	1.20	5000
	1.80	1.80	0.90	5500
	1.51	1.51	0.70	6000
	1.29	1.29	0.60	6500
	1.11	1.11	0.50	7000
	0.97	0.97	0.40	7500
	0.85	0.85	0.30	8000
	0.75	0.75	0.30	8500
	0.61	0.67	0.20	9000
	0.60	0.60	0.20	9500
	0.54	0.54	0.20	10000
	0.49	0.49	0.10	10500
	0.45	0.45	0.10	11000
	0.41	0.41	0.10	11500
	0.38	0.38	0.10	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	
3000	7.66	8.32	8.32	7.20	9.17	11.32	11.32	9.00	5.34	5.34	5.34	10.20	8.80	8.80	8.80	12.70	12.17	12.72	16.20	3000	
3500	5.48	6.11	6.11	4.50	6.51	8.31	8.31	5.70	4.58	4.58	4.58	6.40	6.46	6.46	6.46	8.70	8.63	9.34	10.20	3500	
4000	4.10	4.68	4.68	3.00	4.85	6.25	6.37	3.80	3.77	3.83	3.83	4.30	4.95	4.95	4.95	5.40	6.41	7.15	6.80	4000	
4500		3.70	3.70	2.10		4.86	5.03	2.70		3.02	3.02	3.00		3.91	3.91	3.80		5.65	5.65	4.80	4500
5000		3.00	3.00	1.60		3.88	4.07	1.90		2.45	2.45	2.20		3.17	3.17	2.70		4.58	4.58	3.50	5000
5500		2.48	2.48	1.20		3.17	3.37	1.50		2.02	2.02	1.70		2.62	2.62	2.10		3.78	3.78	2.60	5500
6000		2.08	2.08	0.90		2.63	2.81	1.10		1.70	1.70	1.30		2.20	2.20	1.60		3.18	3.18	2.00	6000
6500		1.77	1.77	0.70		2.22	2.37	0.90		1.45	1.45	1.00		1.87	1.87	1.30		2.71	2.71	1.60	6500
7000		1.53	1.53	0.60		1.90	2.03	0.70		1.25	1.25	0.80		1.62	1.62	1.00		2.34	2.34	1.30	7000
7500		1.33	1.33	0.50		1.64	1.75	0.60		1.09	1.09	0.70		1.41	1.41	0.80		2.04	2.04	1.00	7500
8000		1.17	1.17	0.40		1.43	1.53	0.50		0.96	0.96	0.50		1.24	1.24	0.70		1.79	1.79	0.90	8000
8500		1.04	1.04	0.30		1.26	1.34	0.40		0.85	0.85	0.40		1.10	1.10	0.60		1.58	1.58	0.70	8500
9000		0.92	0.92	0.30		1.12	1.19	0.30		0.76	0.76	0.40		0.98	0.98	0.50		1.41	1.41	0.60	9000
9500		0.83	0.83	0.20		1.00	1.06	0.30		0.68	0.68	0.30		0.88	0.88	0.40		1.27	1.27	0.50	9500
10000		0.74	0.75	0.20		0.90	0.95	0.20		0.61	0.61	0.30		0.79	0.79	0.30		1.14	1.14	0.40	10000
10500		0.67	0.68	0.20		0.81	0.86	0.20		0.56	0.56	0.20		0.72	0.72	0.30		1.04	1.04	0.40	10500
11000		0.61	0.62	0.10		0.73	0.78	0.20		0.46	0.46	0.20		0.65	0.65	0.30		0.94	0.95	0.30	11000
11500		0.56	0.57	0.10		0.67	0.71	0.20		0.43	0.43	0.20		0.60	0.60	0.20		0.86	0.87	0.30	11500
12000		0.51	0.52	0.10		0.61	0.65	0.10		0.39	0.39	0.10		0.55	0.55	0.20		0.78	0.79	0.20	12000
12500										0.36	0.36	0.10		0.51	0.51	0.20		0.72	0.73	0.20	12500
13000										0.34	0.34	0.10		0.47	0.47	0.20		0.66	0.68	0.20	13000
13500										0.31	0.31	0.10		0.43	0.43	0.10		0.62	0.63	0.20	13500
14000										0.29	0.29	0.10		0.40	0.40	0.10		0.57	0.58	0.20	14000
14500										0.27	0.27	0.10		0.38	0.38	0.10		0.53	0.54	0.10	14500
15000														0.35	0.35	0.10		0.50	0.51	0.10	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	BO	B1	B2	L/150	
3000	15.13	17.49	17.49	20.30	8.12	8.12	8.12	22.50	15.96	16.14	16.14	28.30	19.91	22.47	22.47	35.50					3000
3500	10.54	12.85	12.85	12.80	6.96	6.96	6.96	14.10	11.37	11.86	11.86	17.80	13.74	16.51	16.51	22.40					3500
4000	7.71	9.84	9.84	8.60	6.09	6.09	6.09	9.50	8.49	9.08	9.08	11.90	9.96	12.64	12.64	15.00	10.42	10.42	10.42	20.80	4000
4500		7.78	7.78	6.00		5.10	5.10	6.70		7.18	7.18	8.40		9.99	9.99	10.70		9.27	9.27	14.60	4500
5000		6.30	6.30	4.40		4.13	4.13	4.90		5.81	5.81	6.10		8.09	8.09	7.50		8.15	8.15	10.60	5000
5500		5.21	5.21	3.30		3.42	3.42	3.60		4.80	4.80	4.60		6.69	6.69	5.80		6.73	6.73	8.00	5500
6000		4.37	4.37	2.50		2.87	2.87	2.80		4.04	4.04	3.50		5.62	5.62	4.40		5.66	5.66	6.20	6000
6500		3.70	3.73	2.00		2.45	2.45	2.20		3.44	3.44	2.80		4.79	4.79	3.50		4.82	4.82	4.80	6500
7000		3.15	3.21	1.60		2.11	2.11	1.80		2.97	2.97	2.20		4.13	4.13	2.80		4.16	4.16	3.90	7000
7500		2.71	2.80	1.30		1.84	1.84	1.40		2.58	2.58	1.80		3.60	3.60	2.30		3.62	3.62	3.20	7500
8000		2.36	2.46	1.10		1.62	1.62	1.20		2.27	2.27	1.50		3.16	3.16	1.90		3.17	3.18	2.60	8000
8500		2.07	2.18	0.90		1.43	1.43	1.00		2.01	2.01	1.20		2.77	2.80	1.60		2.79	2.82	2.20	8500
9000		1.83	1.94	0.80		1.28	1.28	0.80		1.79	1.79	1.00		2.44	2.50	1.30		2.47	2.52	1.80	9000
9500		1.62	1.75	0.60		1.15	1.15	0.70		1.61	1.61	0.90		2.17	2.24	1.10		2.20	2.26	1.60	9500
10000		1.45	1.57	0.50		1.03	1.03	0.60		1.45	1.45	0.80		1.94	2.02	1.00		1.97	2.04	1.30	10000
10500		1.31	1.43	0.50		0.94	0.94	0.50		1.32	1.32	0.70		1.75	1.83	0.80		1.78	1.85	1.10	10500
11000		1.18	1.29	0.40		0.85	0.85	0.50		1.20	1.20	0.60		1.58	1.67	0.70		1.61	1.68	1.00	11000
11500		1.08	1.17	0.40		0.78	0.78	0.40		1.10	1.10	0.50		1.43	1.53	0.60		1.47	1.54	0.90	11500
12000		0.98	1.07	0.30		0.72	0.72	0.40		1.01	1.01	0.40		1.31	1.40	0.60		1.34	1.42	0.80	12000
12500		0.90	0.98	0.30		0.66	0.66	0.30		0.93	0.93	0.40		1.20	1.29	0.50		1.23	1.30	0.70	12500
13000		0.83	0.90	0.20		0.61	0.61	0.30		0.86	0.86	0.30		1.10	1.20	0.40		1.13	1.21	0.60	13000
13500		0.76	0.83	0.20		0.57	0.57	0.20		0.80	0.80	0.30		1.02	1.11	0.40		1.05	1.11	0.50	13500
14000		0.71	0.77	0.20		0.53	0.53	0.20		0.74	0.74	0.30		0.94	1.03	0.30		0.97	1.03	0.50	14000
14500		0.66	0.71	0.20		0.49	0.49	0.20		0.69	0.69	0.30		0.87	0.95	0.30		0.90	0.96	0.40	14500
15000		0.61	0.66	0.20		0.46	0.46	0.20		0.65	0.65	0.20		0.81	0.88	0.30		0.84	0.89	0.40	15000

Span	C/Z 300 24				C/Z 300 30				C/Z 350 19				C/Z 350 24				C/Z 350 30				Span
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METROLL MEGASPAN® DESIGN CAPACITY TABLES
TABLE 2A: 2 SPAN CONTINUOUS
OUTWARD LOAD (kN/m)



B3/SB Denotes situations outside Metroll's standard bridging spacing guidelines. For Safebridge® system always use data for 3 rows of bridging.

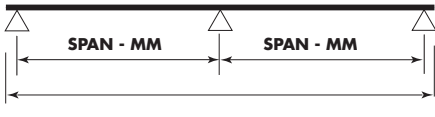
BOLD Denotes where 8.8 grade bolts are required.

C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
4.09	4.09	4.09	4.09	5.9	5.99	5.9	5.99	3000
3.22	3.22	3.22	3.22	4.44	4.44	4.44	4.44	3500
2.60	2.60	2.60	2.60	3.40	3.40	3.40	3.40	4000
	2.10	2.10	2.10		2.69	2.69	2.69	4500
	1.70	1.70	1.70		2.18	2.18	2.18	5000
	1.40	1.40	1.40		1.80	1.80	1.80	5500
	1.18	1.18	1.18		1.51	1.51	1.51	6000
	1.01	1.01	1.01		1.28	1.29	1.29	6500
	0.86	0.87	0.87		1.06	1.11	1.11	7000
	0.71	0.76	0.76		0.90	0.97	0.97	7500
	0.60	0.66	0.66		0.76	0.85	0.85	8000
	0.50	0.59	0.59		0.64	0.75	0.75	8500
	0.42	0.52	0.52		0.54	0.66	0.67	9000
	0.35	0.47	0.47		0.46	0.58	0.60	9500
	0.29	0.41	0.41		0.39	0.51	0.54	10000
	0.24	0.36	0.39		0.33	0.45	0.49	10500
	0.20	0.31	0.35		0.27	0.40	0.45	11000
	0.17	0.27	0.32		0.23	0.35	0.40	11500
	0.15	0.24	0.29		0.20	0.31	0.36	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	8.32	8.32	8.32	8.32	11.32	11.32	11.32	11.32	3.77	3.77	3.77	3.77	6.58	6.58	6.58	6.58	11.26	11.26	11.26	11.26	3000
3500	6.11	6.11	6.11	6.11	8.00	8.31	8.31	8.31	3.11	3.11	3.11	3.11	5.28	5.28	5.28	5.28	8.79	8.79	8.79	8.79	3500
4000	4.65	4.68	4.68	4.68	5.86	6.37	6.37	6.37	2.61	2.61	2.61	2.61	4.33	4.33	4.33	4.33	7.03	7.03	7.03	7.03	4000
4500		3.70	3.70	3.70		5.03	5.03	5.03		2.23	2.23	2.23		3.61	3.60	3.60		5.65	5.65	5.65	4500
5000		3.00	3.00	3.00		4.01	4.07	4.07		1.92	1.92	1.92		3.04	3.04	3.04		4.58	4.58	4.58	5000
5500		2.48	2.48	2.48		3.23	3.37	3.37		1.67	1.67	1.67		2.60	2.60	2.60		3.78	3.78	3.78	5500
6000		2.08	2.08	2.08		2.63	2.83	2.83		1.46	1.46	1.46		2.20	2.20	2.20		3.18	3.18	3.18	6000
6500		1.72	1.77	1.77		2.17	2.41	2.41		1.29	1.29	1.29		1.87	1.87	1.87		2.71	2.71	2.71	6500
7000		1.43	1.53	1.53		1.81	2.04	2.08		1.15	1.15	1.15		1.62	1.62	1.62		2.34	2.34	2.34	7000
7500		1.19	1.33	1.33		1.52	1.74	1.81		1.03	1.03	1.03		1.41	1.41	1.41		2.04	2.04	2.04	7500
8000		1.00	1.17	1.17		1.28	1.50	1.59		0.92	0.92	0.92		1.24	1.24	1.24		1.76	1.76	1.79	8000
8500		0.84	1.03	1.04		1.09	1.30	1.40		0.80	0.83	0.83		1.10	1.10	1.10		1.53	1.58	1.58	8500
9000		0.71	0.89	0.92		0.92	1.13	1.23		0.69	0.76	0.76		0.95	0.98	0.98		1.32	1.41	1.41	9000
9500		0.60	0.78	0.83		0.79	0.99	1.08		0.60	0.68	0.68		0.82	0.88	0.88		1.14	1.27	1.27	9500
10000		0.51	0.68	0.75		0.68	0.87	0.96		0.52	0.61	0.61		0.71	0.79	0.79		0.99	1.14	1.14	10000
10500		0.43	0.60	0.68		0.58	0.77	0.86		0.45	0.55	0.56		0.62	0.72	0.72		0.86	1.04	1.04	10500
11000		0.37	0.53	0.60		0.50	0.68	0.76		0.39	0.49	0.51		0.53	0.65	0.65		0.74	0.93	0.95	11000
11500		0.31	0.47	0.54		0.43	0.60	0.69		0.34	0.44	0.46		0.46	0.60	0.60		0.64	0.84	0.87	11500
12000		0.27	0.41	0.49		0.37	0.53	0.62		0.29	0.40	0.43		0.39	0.55	0.55		0.55	0.76	0.79	12000
12500										0.25	0.35	0.39		0.34	0.49	0.51		0.48	0.68	0.73	12500
13000										0.22	0.32	0.36		0.29	0.44	0.47		0.41	0.61	0.68	13000
13500										0.19	0.29	0.33		0.26	0.40	0.43		0.36	0.55	0.62	13500
14000										0.17	0.26	0.30		0.22	0.36	0.40		0.31	0.49	0.57	14000
14500										0.15	0.23	0.28		0.20	0.32	0.38		0.27	0.45	0.53	14500
15000										0.13	0.21	0.25		0.17	0.29	0.35		0.24	0.40	0.48	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	17.48	17.48	17.48	17.48	5.86	5.86	5.86	5.86	10.94	10.94	10.94	10.94	17.69	17.69	17.69	17.70					3000
3500	12.85	12.85	12.85	12.85	4.86	4.86	4.87	4.87	8.88	8.88	8.88	8.88	15.17	15.17	15.17	15.17					3500
4000	9.84	9.84	9.84	9.84	4.11	4.11	4.11	4.11	7.34	7.34	7.34	7.34	12.27	12.27	12.27	12.27	7.22	7.22	7.22	7.22	4000
4500		7.78	7.78	7.78		3.52	3.52	3.52		6.17	6.17	6.17		9.99	9.99	9.99		6.22	6.22	6.22	4500
5000		6.30	6.30	6.30		3.05	3.05	3.05		5.24	5.24	5.24		8.09	8.09	8.09		5.41	5.41	5.41	5000
5500		5.21	5.21	5.21		2.67	2.67	2.67		4.51	4.51	4.51		6.69	6.69	6.68		4.75	4.75	4.75	5500
6000		4.37	4.37	4.37		2.35	2.35	2.35		3.91	3.91	3.91		5.62	5.62	5.62		4.20	4.20	4.20	6000
6500		3.73	3.73	3.73		2.08	2.08	2.08		3.42	3.42	3.42		4.79	4.79	4.79		3.74	3.74	3.74	6500
7000		3.21	3.21	3.21		1.86	1.86	1.86		2.97	2.97	2.97		4.13	4.13	4.13		3.35	3.35	3.35	7000
7500		2.75	2.80	2.80		1.67	1.67	1.67		2.58	2.58	2.58		3.60	3.60	3.60		3.02	3.02	3.02	7500
8000		2.35	2.46	2.46		1.50	1.50	1.50		2.27	2.27	2.27		3.14	3.16	3.16		2.73	2.73	2.73	8000
8500		2.01	2.18	2.18		1.36	1.36	1.36		2.01	2.01	2.01		2.68	2.80	2.80		2.48	2.48	2.48	8500
9000		1.73	1.94	1.94		1.23	1.24	1.24		1.74	1.79	1.79		2.29	2.50	2.50		2.26	2.26	2.26	9000
9500		1.49	1.75	1.75		1.07	1.13	1.13		1.51	1.61	1.61		1.96	2.24	2.24		2.07	2.07	2.07	9500
10000		1.29	1.57	1.57		0.93	1.03	1.03		1.31	1.45	1.45		1.68	2.02	2.02		1.90	1.90	1.90	10000
10500		1.11	1.40	1.43		0.81	0.94	0.94		1.12	1.32	1.32		1.44	1.83	1.83		1.75	1.75	1.75	10500
11000		0.97	1.24	1.30		0.71	0.85	0.85		0.96	1.20	1.20		1.24	1.67	1.67		1.57	1.62	1.62	11000
11500		0.84	1.11	1.19		0.61	0.78	0.78		0.82	1.10	1.10		1.06	1.48	1.53		1.41	1.50	1.50	11500
12000		0.72	0.99	1.09		0.52	0.70	0.72		0.69	1.00	1.01		0.90	1.32	1.40		1.27	1.39	1.39	12000
12500		0.63	0.89	1.01		0.45	0.63	0.66		0.59	0.90	0.93		0.77	1.18	1.29		1.14	1.29	1.29	12500
13000		0.54	0.80	0.92		0.39	0.57	0.61		0.51	0.81	0.86		0.67	1.05	1.20		1.03	1.20	1.21	13000
13500		0.47	0.72	0.83		0.34	0.52	0.57		0.44	0.73	0.80		0.58	0.94	1.11		0.92	1.10	1.12	13500
14000		0.41	0.65	0.76		0.30	0.47	0.53		0.38	0.65	0.74		0.51	0.84	1.02		0.83	1.01	1.04	14000
14500		0.36	0.58	0.69		0.26	0.42	0.49		0.34	0.58	0.69		0.44	0.75	0.93		0.74	0.92	0.97	14500
15000		0.32	0.52	0.64		0.23	0.38	0.45		0.30	0.52	0.64		0.39	0.67	0.84		0.66	0.85	0.91	15000

METROLL MEGASPAN® DESIGN CAPACITY TABLES
TABLE 2B: 2 SPAN CONTINUOUS
INWARD LOAD (kN/m)



Denotes situations outside Metroll's standard bridging spacing guidelines.
BOLD Denotes where 8.8 grade bolts are required.

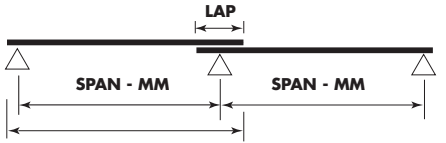
C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	L/150	B0	B1	B2	L/150	
4.09	4.09	4.09	11.20	5.99	5.99	5.99	13.90	3000
3.22	3.22	3.22	7.00	4.36	4.44	4.44	8.70	3500
2.60	2.60	2.60	4.70	3.27	3.40	3.40	5.80	4000
	2.10	2.10	3.30		2.69	2.69	4.10	4500
	1.70	1.70	2.40		2.18	2.18	3.00	5000
	1.40	1.40	1.80		1.80	1.80	2.20	5500
	1.18	1.18	1.40		1.51	1.51	1.70	6000
	1.01	1.01	1.10		1.29	1.29	1.40	6500
	0.87	0.87	0.90		1.11	1.11	1.10	7000
	0.76	0.76	0.70		0.97	0.97	0.90	7500
	0.66	0.66	0.60		0.85	0.85	0.70	8000
	0.59	0.59	0.50		0.75	0.75	0.60	8500
	0.52	0.52	0.40		0.67	0.67	0.50	9000
	0.47	0.47	0.40		0.60	0.60	0.40	9500
	0.42	0.42	0.40		0.54	0.54	0.40	10000
	0.39	0.39	0.30		0.49	0.49	0.30	10500
	0.35	0.35	0.20		0.44	0.44	0.30	11000
	0.32	0.32	0.20		0.39	0.41	0.20	11500
	0.29	0.30	0.20		0.36	0.38	0.20	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	
3000	7.89	8.32	8.32	17.40	9.60	11.32	11.32	21.70	3.77	3.77	3.77	24.60	6.58	6.58	6.58	30.70	11.26	11.26	11.26	39.10	3000
3500	5.61	6.11	6.11	10.90	6.79	8.31	8.31	13.70	3.11	3.11	3.11	15.50	5.28	5.28	5.28	19.30	8.79	8.79	8.79	24.60	3500
4000	4.18	4.68	4.68	7.30	5.04	6.37	6.37	9.20	2.61	2.61	2.61	10.40	4.33	4.33	4.33	12.90	6.63	7.03	7.03	16.50	4000
4500		3.70	3.70	5.20		5.03	5.03	6.40		2.23	2.23	7.30		3.61	3.60	9.10		5.65	5.65	11.60	4500
5000		3.00	3.00	3.80		4.07	4.07	4.70		1.92	1.92	5.30		3.04	3.04	6.60		4.58	4.58	8.40	5000
5500		2.48	2.48	2.80		3.35	3.37	3.50		1.67	1.67	4.00		2.60	2.60	5.00		3.78	3.78	6.30	5500
6000		2.08	2.08	2.20		2.79	2.83	2.70		1.46	1.46	3.10		2.20	2.20	3.80		3.18	3.18	4.90	6000
6500		1.77	1.77	1.70		2.35	2.41	2.10		1.29	1.29	2.40		1.87	1.87	3.00		2.71	2.71	3.80	6500
7000		1.53	1.53	1.40		2.00	2.08	1.70		1.15	1.15	1.90		1.62	1.62	2.40		2.34	2.34	3.10	7000
7500		1.33	1.33	1.10		1.72	1.81	1.40		1.03	1.03	1.60		1.41	1.41	2.00		2.04	2.04	2.50	7500
8000		1.17	1.17	0.90		1.49	1.59	1.10		0.92	0.92	1.30		1.24	1.24	1.60		1.79	1.79	2.10	8000
8500		1.04	1.04	0.80		1.31	1.41	1.00		0.83	0.83	1.10		1.10	1.10	1.30		1.58	1.58	1.70	8500
9000		0.92	0.92	0.60		1.15	1.24	0.80		0.76	0.76	0.90		0.98	0.98	1.10		1.41	1.41	1.40	9000
9500		0.81	0.83	0.50		1.02	1.10	0.70		0.68	0.68	0.80		0.88	0.88	1.00		1.27	1.27	1.20	9500
10000		0.72	0.75	0.50		0.90	0.98	0.60		0.61	0.61	0.70		0.79	0.79	0.80		1.14	1.14	1.10	10000
10500		0.65	0.68	0.40		0.81	0.88	0.50		0.56	0.56	0.60		0.72	0.72	0.70		1.04	1.04	0.90	10500
11000		0.58	0.62	0.40		0.72	0.79	0.40		0.51	0.51	0.50		0.65	0.65	0.60		0.95	0.95	0.80	11000
11500		0.52	0.56	0.30		0.65	0.71	0.40		0.46	0.46	0.40		0.60	0.60	0.50		0.86	0.87	0.70	11500
12000		0.47	0.51	0.30		0.59	0.64	0.30		0.43	0.43	0.40		0.55	0.55	0.50		0.78	0.79	0.60	12000
12500										0.39	0.39	0.30		0.51	0.51	0.40		0.71	0.73	0.50	12500
13000										0.35	0.36	0.30		0.47	0.47	0.40		0.65	0.68	0.50	13000
13500										0.32	0.34	0.30		0.43	0.43	0.30		0.60	0.63	0.40	13500
14000										0.30	0.31	0.20		0.40	0.40	0.30		0.55	0.58	0.40	14000
14500										0.27	0.29	0.20		0.37	0.38	0.30		0.50	0.54	0.30	14500
15000										0.25	0.27	0.20		0.34	0.35	0.20		0.46	0.50	0.30	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	B0	B1	B2	L/150	B0	B1	B2	B3/SB	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	
3000	16.06	17.48	17.48	48.90	5.86	5.86	5.86	54.10	10.94	10.94	10.94	68.20	17.69	17.69	17.69	85.60					3000
3500	11.20	12.85	12.85	30.80	4.86	4.86	4.87	34.10	8.88	8.88	8.88	43.00	14.69	15.17	15.17	53.90					3500
4000	8.19	9.84	9.84	20.60	4.11	4.11	4.11	22.80	7.34	7.34	7.34	28.80	10.64	12.27	12.27	36.10	7.22	7.22	7.22	50.10	4000
4500		7.78	7.78	14.50		3.52	3.52	16.00		6.17	6.17	20.20		9.99	9.99	25.40		6.22	6.22	35.20	4500
5000		6.30	6.30	10.60		3.05	3.05	11.70		5.24	5.24	14.70		8.09	8.09	18.50		5.41	5.41	25.70	5000
5500		5.21	5.21	7.90		2.67	2.67	8.80		4.51	4.51	11.10		6.69	6.68	13.90		4.75	4.75	19.30	5500
6000		4.37	4.37	6.10		2.35	2.35	6.80		3.91	3.91	8.50		5.62	5.62	10.70		4.20	4.20	14.80	6000
6500		3.73	3.73	4.80		2.08	2.08	5.30		3.42	3.42	6.70		4.79	4.79	8.40		3.74	3.74	11.70	6500
7000		3.21	3.21	3.80		1.86	1.86	4.30		2.97	2.97	5.40		4.13	4.13	6.70		3.35	3.35	9.30	7000
7500		2.80	2.80	3.10		1.67	1.67	3.50		2.58	2.58	4.40		3.60	3.60	5.50		3.02	3.02	7.60	7500
8000		2.46	2.46	2.60		1.50	1.50	2.90		2.27	2.27	3.60		3.16	3.16	4.50		2.73	2.73	6.30	8000
8500		2.18	2.18	2.10		1.36	1.36	2.40		2.01	2.01	3.00		2.80	2.80	3.80		2.48	2.48	5.20	8500
9000		1.94	1.94	1.80		1.24	1.24	2.00		1.79	1.79	2.50		2.50	2.50	3.20		2.26	2.26	4.40	9000
9500		1.73	1.73	1.50		1.13	1.13	1.70		1.61	1.61	2.10		2.24	2.24	2.70		2.07	2.07	3.70	9500
10000		1.55	1.57	1.30		1.03	1.03	1.50		1.45	1.45	1.80		2.02	2.02	2.30		1.90	1.90	3.20	10000
10500		1.38	1.43	1.10		0.94	0.94	1.30		1.32	1.32	1.60		1.83	1.83	2.00		1.75	1.75	2.80	10500
11000		1.24	1.30	1.00		0.85	0.85	1.10		1.20	1.20	1.40		1.66	1.67	1.70		1.62	1.62	2.40	11000
11500		1.12	1.19	0.90		0.78	0.78	1.00		1.10	1.10	1.20		1.50	1.53	1.50		1.50	1.50	2.10	11500
12000		1.01	1.09	0.80		0.72	0.72	0.80		1.01	1.01	1.10		1.35	1.40	1.30					

METROLL MEGASPAN® DESIGN CAPACITY TABLES

**TABLE 3A: 2 SPAN LAPPED
OUTWARD LOAD (kN/m)**



OVERALL PURLIN LENGTH = SPAN + 70MM + (LAP/2)

B3/SB Denotes situations outside Metroll's standard bridging spacing guidelines.
For Safebridge® system always use data for 3 rows of bridging.

BOLD Denotes where 8.8 grade bolts are required.

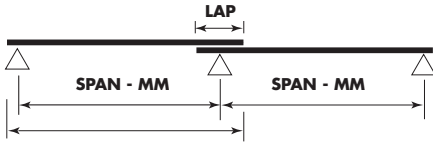
C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
5.34	5.34	5.34	5.34	8.34	8.34	8.34	8.34	3000
4.10	4.10	4.10	4.10	6.11	6.11	6.11	6.11	3500
3.25	3.25	3.25	3.25	4.52	4.60	4.60	4.60	4000
	2.69	2.69	2.69		3.63	3.63	3.63	4500
	2.27	2.27	2.27		2.94	2.94	2.94	5000
	1.90	1.90	1.90		2.43	2.43	2.43	5500
	1.60	1.60	1.60		2.03	2.04	2.04	6000
	1.35	1.36	1.36		1.67	1.74	1.74	6500
	1.11	1.17	1.17		1.39	1.50	1.50	7000
	0.91	1.02	1.02		1.16	1.31	1.31	7500
	0.75	0.90	0.90		0.97	1.14	1.15	8000
	0.62	0.79	0.80		0.81	0.98	1.02	8500
	0.51	0.68	0.71		0.67	0.85	0.91	9000
	0.42	0.59	0.64		0.56	0.74	0.82	9500
	0.35	0.51	0.57		0.46	0.65	0.73	10000
	0.29	0.44	0.52		0.39	0.56	0.64	10500
	0.25	0.38	0.46		0.32	0.49	0.57	11000
	0.21	0.32	0.41		0.27	0.43	0.51	11500
	0.18	0.28	0.36		0.23	0.37	0.43	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	12.73	12.73	12.73	12.73	16.65	17.07	17.07	17.07	4.58	4.58	4.58	4.58	8.31	8.31	8.31	8.31	14.95	14.95	14.94	14.95	3000
3500	8.65	8.67	8.67	8.67	10.88	11.79	11.79	11.79	3.71	3.71	3.71	3.71	6.54	6.54	6.54	6.54	11.34	11.34	11.34	11.34	3500
4000	6.04	6.33	6.33	6.33	7.58	8.61	8.61	8.61	3.08	3.08	3.08	3.08	5.28	5.28	5.28	5.28	8.89	8.89	8.89	8.89	4000
4500		5.00	5.00	5.00		6.74	6.80	6.80		2.65	2.65	2.65		4.45	4.45	4.45		7.33	7.33	7.33	4500
5000		4.05	4.05	4.05		5.30	5.51	5.51		2.30	2.30	2.30		3.79	3.79	3.79		6.14	6.14	6.14	5000
5500		3.35	3.35	3.35		4.25	4.55	4.55		2.02	2.02	2.02		3.27	3.27	3.27		5.12	5.12	5.12	5500
6000		2.73	2.81	2.81		3.45	3.80	3.83		1.79	1.79	1.79		2.84	2.84	2.84		4.30	4.30	4.30	6000
6500		2.24	2.40	2.40		2.83	3.17	3.26		1.59	1.59	1.59		2.49	2.49	2.49		3.66	3.66	3.66	6500
7000		1.84	2.07	2.07		2.34	2.67	2.81		1.42	1.42	1.42		2.19	2.19	2.19		3.16	3.16	3.16	7000
7500		1.53	1.79	1.80		1.94	2.27	2.43		1.28	1.28	1.28		1.90	1.90	1.90		2.70	2.75	2.75	7500
8000		1.27	1.53	1.58		1.63	1.94	2.10		1.16	1.16	1.16		1.67	1.67	1.67		2.32	2.42	2.42	8000
8500		1.06	1.32	1.40		1.37	1.67	1.82		1.04	1.05	1.05		1.43	1.48	1.48		1.98	2.14	2.14	8500
9000		0.88	1.14	1.25		1.15	1.44	1.59		0.89	0.96	0.96		1.23	1.32	1.32		1.69	1.91	1.91	9000
9500		0.74	0.98	1.11		0.97	1.25	1.40		0.77	0.88	0.88		1.05	1.19	1.19		1.45	1.72	1.72	9500
10000		0.61	0.85	0.98		0.82	1.09	1.24		0.66	0.80	0.80		0.90	1.07	1.07		1.24	1.52	1.55	10000
10500		0.51	0.74	0.87		0.69	0.95	1.09		0.57	0.71	0.74		0.77	0.97	0.97		1.07	1.35	1.40	10500
11000		0.43	0.64	0.77		0.58	0.83	0.97		0.49	0.63	0.68		0.65	0.87	0.88		0.91	1.20	1.28	11000
11500		0.37	0.56	0.68		0.50	0.73	0.87		0.41	0.56	0.63		0.55	0.77	0.81		0.77	1.07	1.17	11500
12000		0.31	0.49	0.61		0.43	0.64	0.77		0.36	0.50	0.56		0.47	0.68	0.74		0.66	0.95	1.07	12000
12500										0.31	0.44	0.51		0.41	0.61	0.69		0.56	0.84	0.97	12500
13000										0.27	0.39	0.46		0.35	0.54	0.63		0.49	0.75	0.88	13000
13500										0.23	0.35	0.42		0.31	0.48	0.58		0.42	0.66	0.80	13500
14000										0.20	0.31	0.38		0.27	0.42	0.53		0.37	0.59	0.73	14000
14500										0.18	0.28	0.35		0.23	0.37	0.48		0.32	0.52	0.66	14500
15000										0.16	0.24	0.31		0.20	0.33	0.43		0.28	0.46	0.60	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	24.49	24.49	24.49	24.48	7.06	7.06	7.06	7.06	13.60	13.60	13.60	13.60	24.96	24.95	24.96	24.95					3000
3500	17.85	17.85	17.85	17.85	5.75	5.74	5.74	5.75	10.82	10.82	10.82	10.82	19.24	19.24	19.24	19.24					3500
4000	13.31	13.31	13.31	13.31	4.80	4.80	4.80	4.80	8.84	8.84	8.84	8.84	15.28	15.28	15.28	15.28	8.37	8.37	8.37	8.37	4000
4500		10.52	10.52	10.52		4.15	4.15	4.15		7.51	7.51	7.51		12.71	12.72	12.71		7.27	7.27	7.27	4500
5000		8.52	8.52	8.52		3.62	3.62	3.63		6.45	6.45	6.45		10.72	10.72	10.73		6.37	6.37	6.38	5000
5500		7.04	7.04	7.04		3.20	3.20	3.20		5.60	5.60	5.59		9.04	9.04	9.04		5.64	5.64	5.64	5500
6000		5.92	5.92	5.92		2.84	2.84	2.84		4.90	4.89	4.90		7.60	7.60	7.60		5.03	5.03	5.03	6000
6500		5.04	5.04	5.04		2.54	2.54	2.54		4.31	4.31	4.31		6.47	6.47	6.47		4.51	4.52	4.52	6500
7000		4.26	4.35	4.35		2.28	2.28	2.28		3.83	3.83	3.83		5.58	5.58	5.58		4.07	4.07	4.07	7000
7500		3.58	3.79	3.79		2.06	2.06	2.06		3.42	3.42	3.42		4.81	4.86	4.86		3.69	3.69	3.69	7500
8000		3.03	3.33	3.33		1.87	1.87	1.87		3.05	3.07	3.07		4.05	4.27	4.27		3.36	3.36	3.36	8000
8500		2.58	2.95	2.95		1.70	1.70	1.70		2.62	2.72	2.72		3.42	3.79	3.79		3.07	3.07	3.07	8500
9000		2.20	2.62	2.63		1.56	1.56	1.56		2.25	2.43	2.43		2.89	3.38	3.38		2.81	2.81	2.81	9000
9500		1.88	2.30	2.36		1.38	1.43	1.43		1.92	2.18	2.18		2.45	3.03	3.03		2.59	2.59	2.59	9500
10000		1.61	2.02	2.13		1.19	1.32	1.31		1.63	1.97	1.97		2.08	2.70	2.70		2.39	2.39	2.39	10000
10500		1.38	1.78	1.93		1.03	1.21	1.21		1.37	1.78	1.78		1.76	2.37	2.48		2.21	2.21	2.21	10500
11000		1.18	1.58	1.79		0.87	1.12	1.12		1.15	1.58	1.62		1.48	2.09	2.26		2.05	2.05	2.05	11000
11500		1.01	1.39	1.59		0.74	1.00	1.04		0.97	1.41	1.49		1.25	1.84	2.07		1.83	1.90	1.90	11500
12000		0.86	1.23	1.43		0.63	0.89	0.97		0.82	1.26	1.37		1.07	1.62	1.90		1.64	1.78	1.78	12000
12500		0.74	1.09	1.29		0.54	0.80	0.89		0.70	1.11	1.26		0.91	1.43	1.72		1.46	1.66	1.66	12500
13000		0.64	0.97	1.16		0.47	0.71	0.82		0.61	0.98	1.16		0.79	1.26	1.55		1.31	1.55	1.55	13000
13500		0.56	0.86	1.05		0.41	0.64	0.75		0.52	0.86	1.06		0.68	1.11	1.39		1.16	1.42	1.45	13500
14000		0.49	0.77	0.95		0.35	0.57	0.68		0.46	0.75	0.96		0.60	0.97	1.26		1.02	1.30	1.37	14000 </

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 3B: 2 SPAN LAPPED INWARD LOAD (kN/m)



OVERALL PURLIN LENGTH = SPAN + 70MM + (LAP/2)

Denotes situations outside Metroll's standard bridging spacing guidelines.
BOLD Denotes where 8.8 grade bolts are required.

C/Z 150 12

BO	B1	B2	L/150
5.34	5.34	5.34	13.10
4.10	4.10	4.10	8.10
3.25	3.25	3.25	5.30
	2.69	2.69	3.80
	2.27	2.27	2.70
	1.90	1.90	2.10
	1.60	1.60	1.60
	1.36	1.36	1.20
	1.17	1.17	1.00
	1.02	1.02	0.80
	0.90	0.90	0.70
	0.80	0.80	0.60
	0.71	0.71	0.50
	0.63	0.64	0.40
	0.56	0.57	0.30
	0.49	0.52	0.30
	0.44	0.47	0.30
	0.39	0.43	0.20
	0.35	0.39	0.20

C/Z 150 15

BO	B1	B2	L/150	Span
8.34	8.34	8.34	16.20	3000
5.64	6.11	6.11	10.10	3500
4.07	4.60	4.60	6.60	4000
	3.63	3.63	4.70	4500
	2.94	2.94	3.40	5000
	2.43	2.43	2.60	5500
	2.04	2.04	2.00	6000
	1.74	1.74	1.50	6500
	1.50	1.50	1.20	7000
	1.31	1.31	1.00	7500
	1.14	1.15	0.80	8000
	0.99	1.02	0.70	8500
	0.87	0.91	0.60	9000
	0.77	0.82	0.50	9500
	0.68	0.74	0.40	10000
	0.61	0.67	0.40	10500
	0.54	0.60	0.30	11000
	0.49	0.54	0.30	11500
	0.43	0.49	0.20	12000

C/Z 150 19

Span	BO	B1	B2	L/150
3000	10.32	12.73	12.73	20.40
3500	6.94	8.67	8.67	12.60
4000	4.98	6.33	6.33	8.30
4500		5.00	5.00	5.80
5000		4.05	4.05	4.30
5500		3.35	3.35	3.20
6000		2.81	2.81	2.50
6500		2.39	2.40	1.90
7000		2.03	2.07	1.60
7500		1.74	1.80	1.30
8000		1.50	1.58	1.00
8500		1.31	1.40	0.90
9000		1.14	1.25	0.70
9500		1.00	1.12	0.60
10000		0.89	1.00	0.50
10500		0.79	0.89	0.50
11000		0.70	0.80	0.40
11500		0.62	0.72	0.40
12000		0.56	0.65	0.30
12500				
13000				
13500				
14000				
14500				
15000				

C/Z 150 24

Span	BO	B1	B2	L/150
3000	12.35	17.07	17.07	25.40
3500	8.26	11.79	11.79	15.80
4000	5.91	8.54	8.61	10.40
4500		6.62	6.80	7.30
5000		5.27	5.51	5.30
5500		4.28	4.55	4.00
6000		3.53	3.83	3.10
6500		2.96	3.26	2.40
7000		2.51	2.81	1.90
7500		2.15	2.42	1.60
8000		1.85	2.10	1.30
8500		1.61	1.83	1.10
9000		1.41	1.61	0.90
9500		1.24	1.42	0.80
10000		1.10	1.26	0.70
10500		0.98	1.13	0.60
11000		0.87	1.01	0.50
11500		0.78	1.01	0.50
12000		0.70	0.82	0.40

C/Z 200 12

Span	BO	B1	B2	L/150
3000	4.58	4.58	4.58	28.80
3500	3.71	3.71	3.71	17.90
4000	3.08	3.08	3.08	11.80
4500		2.65	2.65	8.30
5000		2.30	2.30	6.00
5500		2.02	2.02	4.50
6000		1.79	1.79	3.50
6500		1.59	1.59	2.70
7000		1.42	1.42	2.20
7500		1.28	1.28	1.80
8000		1.16	1.16	1.50
8500		1.05	1.05	1.20
9000		0.96	0.96	1.00
9500		0.88	0.88	0.90
10000		0.81	0.81	0.80
10500		0.73	0.74	0.70
11000		0.65	0.68	0.60
11500		0.59	0.63	0.50
12000		0.53	0.57	0.40
12500		0.48	0.53	0.40
13000		0.44	0.48	0.30
13500		0.40	0.44	0.30
14000		0.36	0.41	0.30
14500		0.33	0.37	0.20
15000		0.30	0.34	0.20

C/Z 200 15

Span	BO	B1	B2	L/150
3000	8.31	8.31	8.31	35.90
3500	6.54	6.54	6.54	22.20
4000	5.28	5.28	5.28	14.70
4500		4.45	4.45	10.30
5000		3.79	3.79	7.50
5500		3.27	3.27	5.60
6000		2.84	2.84	4.40
6500		2.49	2.49	3.40
7000		2.19	2.19	2.70
7500		1.90	1.90	2.20
8000		1.67	1.67	1.80
8500		1.48	1.48	1.50
9000		1.32	1.32	1.30
9500		1.19	1.19	1.10
10000		1.07	1.07	0.90
10500		0.97	0.97	0.80
11000		0.88	0.88	0.70
11500		0.79	0.81	0.60
12000		0.72	0.74	0.50
12500		0.65	0.69	0.50
13000		0.59	0.63	0.40
13500		0.53	0.59	0.40
14000		0.48	0.55	0.30
14500		0.44	0.51	0.30
15000		0.40	0.47	0.30

C/Z 200 19

Span	BO	B1	B2	L/150	Span
3000	14.95	14.95	14.95	45.80	3000
3500	11.09	11.34	11.34	28.30	3500
4000	7.87	8.89	8.89	18.70	4000
4500		7.33	7.33	13.10	4500
5000		6.14	6.14	9.60	5000
5500		5.12	5.12	7.20	5500
6000		4.30	4.30	5.50	6000
6500		3.66	3.66	4.40	6500
7000		3.16	3.16	3.50	7000
7500		2.75	2.75	2.80	7500
8000		2.41	2.42	2.30	8000
8500		2.11	2.14	1.90	8500
9000		1.86	1.91	1.60	9000
9500		1.65	1.72	1.40	9500
10000		1.47	1.55	1.20	10000
10500		1.31	1.40	1.00	10500
11000		1.18	1.28	0.90	11000
11500		1.06	1.17	0.80	11500
12000		0.95	1.08	0.70	12000
12500		0.86	0.99	0.60	12500
13000		0.78	0.90	0.50	13000
13500		0.70	0.82	0.50	13500
14000		0.64	0.76	0.40	14000
14500		0.58	0.70	0.40	14500
15000		0.53	0.64	0.40	15000

C/Z 200 24

Span	BO	B1	B2	L/150
3000	20.44	24.49	24.49	57.30
3500	13.35	17.85	17.87	35.50
4000	9.35	13.31	13.31	23.40
4500		10.52	10.52	16.40
5000		8.52	8.52	12.00
5500		7.04	7.04	9.00
6000		5.92	5.92	6.90
6500		5.02	5.02	5.50
7000		4.25	4.35	4.40
7500		3.63	3.79	3.60
8000		3.14	3.33	2.90
8500		2.73	2.95	2.40
9000		2.39	2.63	2.10
9500		2.10	2.36	1.70
10000		1.86	2.13	1.50
10500		1.66	1.93	1.30
11000		1.48	1.76	1.10
11500		1.32	1.59	1.00
12000		1.19	1.44	0.90
12500		1.07	1.31	0.80
13000		0.97	1.19	0.70
13500		0.88	1.08	0.60
14000		0.80	0.99	0.50
14500		0.72	0.90	0.50
15000		0.66	0.83	0.40

C/Z 250 15

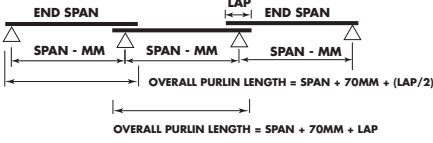
Span	BO	B1	B2	B3/SB
3000	7.06	7.06	7.06	63.40
3500	5.75	5.74	5.74	39.30
4000	4.80	4.80	4.80	25.90
4500		4.15	4.15	18.20
5000		3.62	3.62	13.30
5500		3.20	3.20	10.00
6000		2.84	2.84	7.70
6500		2.54	2.54	6.00
7000		2.28	2.28	4.80
7500		2.06	2.06	3.90
8000		1.87	1.87	3.20
8500		1.70	1.70	2.70
9000		1.56	1.56	2.30
9500		1.43	1.43	1.90
10000		1.32	1.32	1.70
10500		1.21	1.21	1.40
11000		1.12	1.12	1.20
11500		1.02	1.04	1.10
12000		0.92	0.97	1.00
12500		0.83	0.89	0.80
13000		0.76	0.83	0.80
13500		0.69	0.77	0.70
14000		0.63	0.71	0.60
14500		0.58	0.65	0.50
15000		0.53	0.60	0.50

C/Z 250 19

Span	BO	B1	B2	L/150
3000	13.60	13.60	13.60	79.90
3500	10.82	10.82	10.82	49.50
4000	8.84	8.84	8.84	32.70
4500		7.51	7.51	23.00
5000		6.45	6.45	16.70
5500		5.60	5.60	12.60
6000		4.90	4.89	9.70
6500		4.31	4.31	7.60
7000		3.83	3.83	6.10
7500		3.42	3.42	5.00
8000		3.07	3.07	4.10
8500		2.72	2.72	3.40
9000		2.43	2.43	2.90
9500		2.17	2.18	2.40
10000		1.93	1.97	2.10
10500		1.73	1.78	1.80
11000		1.55	1.62	1.60
11500		1.40		

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 4A: 3 SPAN LAPPED
OUTWARD LOAD (kN/m)



Denotes situations outside Metroll's standard bridging spacing guidelines.

B3/SB For Safebridge® system always use data for 3 rows of bridging.

BOLD Denotes where 8.8 grade bolts are required.

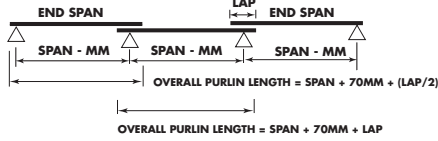
C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
6.29	6.29	6.29	6.29	9.93	9.93	9.93	9.93	3000
4.92	4.92	4.92	4.92	6.91	7.25	7.25	7.25	3500
3.87	3.95	3.95	3.95	4.88	5.53	5.52	5.53	4000
	3.34	3.34	3.34		4.37	4.37	4.37	4500
	2.76	2.76	2.76		3.50	3.54	3.54	5000
	2.22	2.28	2.28		2.76	2.92	2.92	5500
	1.75	1.92	1.92		2.21	2.46	2.46	6000
	1.38	1.63	1.63		1.77	2.09	2.09	6500
	1.09	1.41	1.41		1.41	1.75	1.80	7000
	0.85	1.18	1.23		1.13	1.47	1.57	7500
	0.67	0.99	1.08		0.89	1.25	1.38	8000
	0.54	0.83	0.96		0.70	1.06	1.20	8500
	0.44	0.69	0.84		0.57	0.89	1.04	9000
	0.36	0.58	0.72		0.46	0.75	0.91	9500
	0.29	0.48	0.63		0.38	0.64	0.79	10000
	0.24	0.40	0.54		0.31	0.54	0.69	10500
	0.20	0.34	0.47		0.26	0.45	0.60	11000
	0.17	0.29	0.41		0.22	0.38	0.53	11500
	0.15	0.25	0.35		0.19	0.32	0.46	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	Span
3000	13.57	13.68	13.67	13.67	17.09	18.59	18.58	18.59	5.04	5.04	5.04	5.04	9.48	9.48	9.48	9.47	17.94	17.94	17.94	17.93	3000
3500	9.20	9.98	9.98	9.98	11.56	13.58	13.58	13.57	4.12	4.11	4.12	4.12	7.57	7.56	7.57	7.57	13.85	13.85	13.85	13.85	3500
4000	6.37	7.61	7.61	7.61	8.04	10.06	10.34	10.34	3.45	3.45	3.45	3.45	6.20	6.20	6.20	6.20	11.01	11.01	11.02	11.01	4000
4500		6.01	6.01	6.01		7.64	8.17	8.17		3.00	3.00	3.00		5.31	5.31	5.31		9.19	9.18	9.19	4500
5000		4.69	4.87	4.87		5.92	6.58	6.62		2.64	2.64	2.65		4.60	4.59	4.60		7.44	7.44	7.44	5000
5500		3.68	4.02	4.02		4.65	5.29	5.47		2.35	2.35	2.35		4.02	4.02	4.02		6.15	6.15	6.15	5500
6000		2.91	3.38	3.38		3.69	4.32	4.60		2.10	2.10	2.10		3.54	3.54	3.54		5.14	5.17	5.17	6000
6500		2.31	2.82	2.88		2.95	3.56	3.84		1.89	1.89	1.89		3.05	3.05	3.05		4.24	4.40	4.40	6500
7000		1.84	2.35	2.48		2.36	2.96	3.24		1.71	1.71	1.71		2.54	2.63	2.63		3.50	3.80	3.80	7000
7500		1.46	1.96	2.16		1.90	2.48	2.75		1.52	1.56	1.56		2.09	2.29	2.29		2.89	3.31	3.31	7500
8000		1.16	1.65	1.87		1.52	2.09	2.36		1.26	1.42	1.42		1.73	2.01	2.01		2.39	2.90	2.91	8000
8500		0.92	1.39	1.61		1.22	1.77	2.03		1.05	1.30	1.30		1.42	1.78	1.78		1.97	2.51	2.57	8500
9000		0.74	1.17	1.39		0.99	1.50	1.76		0.87	1.14	1.20		1.16	1.58	1.59		1.62	2.18	2.30	9000
9500		0.61	0.99	1.20		0.81	1.27	1.52		0.72	0.99	1.10		0.95	1.37	1.43		1.32	1.89	2.06	9500
10000		0.50	0.83	1.05		0.67	1.08	1.33		0.59	0.86	0.98		0.79	1.18	1.29		1.08	1.64	1.85	10000
10500		0.42	0.70	0.91		0.56	0.91	1.16		0.49	0.75	0.87		0.66	1.03	1.17		0.90	1.42	1.64	10500
11000		0.35	0.58	0.79		0.48	0.77	1.01		0.42	0.65	0.77		0.55	0.89	1.06		0.75	1.23	1.47	11000
11500		0.30	0.49	0.69		0.41	0.65	0.88		0.35	0.56	0.69		0.46	0.76	0.95		0.63	1.07	1.31	11500
12000		0.25	0.42	0.60		0.35	0.56	0.77		0.30	0.49	0.61		0.39	0.66	0.84		0.54	0.92	1.16	12000
12500						0.26	0.42	0.54		0.26	0.42	0.54		0.33	0.56	0.75		0.46	0.79	1.04	12500
13000						0.22	0.37	0.49		0.29	0.47	0.49		0.29	0.49	0.67		0.40	0.68	0.92	13000
13500						0.19	0.32	0.43		0.25	0.42	0.43		0.25	0.42	0.59		0.34	0.59	0.82	13500
14000						0.17	0.28	0.39		0.22	0.37	0.53		0.22	0.37	0.53		0.30	0.51	0.73	14000
14500						0.15	0.24	0.35		0.19	0.32	0.46		0.19	0.32	0.46		0.26	0.44	0.65	14500
15000						0.13	0.22	0.31		0.13	0.22	0.31		0.17	0.28	0.41		0.23	0.39	0.58	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	Span
3000	28.75	28.75	28.73	28.74	7.72	7.72	7.72	7.72	15.28	15.27	15.28	15.27	29.23	29.22	29.23	29.21	9.23	9.23	9.23	9.23	3000
3500	21.01	20.99	20.98	20.98	6.33	6.33	6.33	6.33	12.31	12.31	12.31	12.32	22.93	22.93	22.93	22.94		8.08	8.08	8.08	3500
4000	15.02	16.00	15.99	15.99	5.33	5.33	5.33	5.33	10.19	10.19	10.19	10.18	18.49	18.49	18.49	18.48		7.16	7.15	7.16	4000
4500		12.64	12.64	12.64		4.66	4.66	4.66		8.78	8.78	8.78		15.65	15.65	15.65		6.40	6.40	6.40	4500
5000		10.24	10.24	10.24		4.11	4.11	4.11		7.65	7.65	7.66		13.15	13.14	13.15		5.77	5.76	5.77	5000
5500		8.46	8.46	8.46		3.67	3.67	3.67		6.74	6.73	6.73		10.87	10.86	10.86		5.22	5.22	5.22	5500
6000		6.84	7.11	7.11		3.29	3.29	3.29		5.97	5.96	5.97		9.13	9.13	9.13		4.76	4.75	4.75	6000
6500		5.56	6.06	6.06		2.97	2.97	2.97		5.32	5.32	5.32		7.44	7.78	7.78		4.35	4.35	4.35	6500
7000		4.55	5.22	5.22		2.70	2.70	2.70		4.63	4.72	4.77		6.05	6.71	6.71		4.00	4.00	4.00	7000
7500		3.74	4.54	4.55		2.46	2.46	2.46		3.85	4.20	4.20		4.93	5.84	5.84		3.68	3.68	3.68	7500
8000		3.08	3.87	4.00		2.26	2.26	2.26		3.15	3.69	3.69		4.01	5.14	5.14		3.41	3.41	3.41	8000
8500		2.54	3.32	3.54		1.91	2.07	2.07		2.56	3.27	3.27		3.26	4.44	4.55		3.16	3.16	3.16	8500
9000		2.09	2.85	3.16		1.57	1.91	1.91		2.06	2.87	2.92		2.64	3.80	4.06		2.81	2.94	2.93	9000
9500		1.71	2.46	2.80		1.28	1.77	1.77		1.67	2.50	2.62		2.14	3.26	3.64		2.45	2.74	2.74	9500
10000		1.41	2.13	2.46		1.06	1.55	1.64		1.36	2.18	2.36		1.76	2.80	3.29		2.13	2.55	2.55	10000
10500		1.17	1.84	2.17		0.88	1.35	1.52		1.13	1.88	2.14		1.45	2.40	2.91		1.82	2.33	2.39	10500
11000		0.98	1.59	1.92		0.73	1.18	1.36		0.94	1.61	1.94		1.22	2.06	2.57		1.55	2.10	2.24	11000
11500		0.83	1.38	1.71		0.62	1.03	1.22		0.79	1.38	1.73		1.03	1.76	2.26		1.34	1.89	2.08	11500
12000		0.71	1.19	1.51		0.52	0.89	1.09		0.67	1.17	1.55		0.87	1.50	2.00		1.16	1.70	1.90	12000
12500		0.61	1.02	1.35		0.44	0.76	0.98		0.57	0.99	1.38		0.75	1.28	1.77		1.01	1.54	1.73	12500
13000		0.52	0.88	1.20		0.38	0.66	0.88		0.49	0.85	1.22		0.64	1.10	1.56		0.88	1.39	1.58	13000
13500		0.46	0.76	1.06		0.33	0.57	0.79		0.43	0.74	1.08		0.56	0.95	1.38		0.77	1.26	1.45	13500
14000		0.40	0.66	0.95		0.29	0.50	0.71		0.37	0.64	0.95		0.49	0.83	1.21		0.67	1.12	1.33	14000
14500		0.35	0.58	0.84		0.25	0.43	0.63													

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 4B: 3 SPAN LAPPED
INWARD LOAD (kN/m)



Denotes situations outside Metroll's standard bridging spacing guidelines.

BOLD Denotes where 8.8 grade bolts are required.

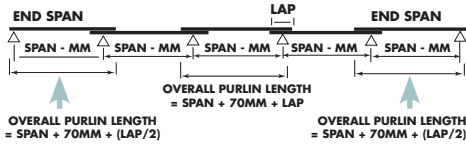
C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	L/150	B0	B1	B2	L/150	
6.29	6.29	6.29	9.50	8.73	9.93	9.93		3000
4.92	4.92	4.92	6.10	6.13	7.25	7.25	7.60	3500
3.81	3.95	3.95	3.90	4.51	5.53	5.52	4.90	4000
	3.34	3.34	2.80		4.37	4.37	4.30	4500
	2.76	2.76	2.00		3.54	3.54	2.50	5000
	2.28	2.28	1.50		2.92	2.92	1.90	5500
	1.92	1.92	1.20		2.46	2.46	1.40	6000
	1.63	1.63	0.90		2.09	2.09	1.10	6500
	1.41	1.41	0.70		1.81	1.80	0.90	7000
	1.23	1.23	0.60		1.57	1.57	0.70	7500
	1.08	1.08	0.50		1.38	1.38	0.60	8000
	0.96	0.96	0.40		1.21	1.22	0.50	8500
	0.85	0.85	0.30		1.06	1.09	0.40	9000
	0.77	0.76	0.30		0.94	0.98	0.40	9500
	0.68	0.69	0.30		0.83	0.88	0.30	10000
	0.61	0.63	0.20		0.75	0.80	0.30	10500
	0.54	0.57	0.20		0.67	0.73	0.20	11000
	0.48	0.52	0.20		0.60	0.66	0.20	11500
	0.43	0.48	0.10		0.54	0.60	0.20	12000

C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span	
Span	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	Span
3000	10.71	13.68	13.67	14.70	12.78	18.59	18.58	18.40	5.04	5.04	5.04	20.09	9.48	9.48	9.48	26.00	17.39	17.94	17.94	33.10	3000
3500	7.39	9.98	9.98	9.50	8.71	13.51	13.57	11.80	4.12	4.11	4.12	13.40	7.57	7.56	7.57	16.70	11.80	13.85	13.85	21.30	3500
4000	5.36	7.61	7.61	6.10	6.25	10.08	10.34	7.70	3.45	3.45	3.45	8.70	6.20	6.20	6.20	10.80	8.41	11.01	11.02	13.80	4000
4500		6.01	6.01	4.30		7.80	8.17	5.40		3.00	3.00	6.10		5.31	5.31	7.60		9.19	9.18	9.17	4500
5000		4.87	4.87	3.10		6.20	6.62	3.90		2.64	2.64	4.40		4.60	4.59	5.50		7.44	7.44	7.44	5000
5500		4.03	4.02	2.40		5.03	5.47	2.90		2.35	2.35	3.30		4.02	4.02	4.20		6.15	6.15	6.15	5500
6000		3.37	3.38	1.80		4.16	4.60	2.30		2.10	2.10	2.60		3.54	3.54	3.20		5.17	5.17	5.17	6000
6500		2.84	2.88	1.40		3.49	3.89	1.80		1.89	1.89	2.00		3.05	3.05	2.50		4.40	4.40	4.40	6500
7000		2.42	2.48	1.10		2.96	3.32	1.40		1.71	1.71	1.60		2.63	2.63	2.00		3.80	3.80	3.20	7000
7500		2.08	2.16	0.90		2.54	2.86	1.20		1.56	1.56	1.30		2.29	2.29	1.60		3.29	3.31	2.60	7500
8000		1.80	1.90	0.80		2.20	2.49	1.00		1.42	1.42	1.10		2.01	2.01	1.40		2.86	2.91	1.70	8000
8500		1.57	1.69	0.60		1.92	2.19	0.80		1.30	1.30	0.90		1.78	1.78	1.10		2.51	2.57	1.40	8500
9000		1.38	1.50	0.50		1.69	1.93	0.70		1.20	1.20	0.80		1.59	1.59	0.90		2.22	2.30	1.20	9000
9500		1.22	1.35	0.50		1.49	1.72	0.60		1.10	1.10	0.60		1.43	1.43	0.80		1.97	2.06	1.00	9500
10000		1.08	1.22	0.40		1.33	1.53	0.50		0.99	0.99	0.60		1.29	1.29	0.70		1.76	1.86	0.90	10000
10500		0.96	1.09	0.30		1.18	1.37	0.40		0.88	0.90	0.50		1.17	1.17	0.60		1.57	1.69	0.80	10500
11000		0.86	0.98	0.30		1.06	1.23	0.40		0.80	0.82	0.40		1.06	1.06	0.50		1.41	1.54	0.70	11000
11500		0.77	0.88	0.30		0.95	1.11	0.30		0.72	0.75	0.40		0.97	0.97	0.50		1.27	1.41	0.60	11500
12000		0.69	0.80	0.20		0.86	1.00	0.30		0.65	0.69	0.30		0.88	0.89	0.40		1.15	1.29	0.50	12000
12500						0.59	0.64	0.30		0.59	0.64	0.30		0.79	0.82	0.40		1.05	1.19	0.50	12500
13000						0.54	0.59	0.30		0.54	0.59	0.30		0.72	0.76	0.30		0.95	1.10	0.40	13000
13500						0.49	0.54	0.20		0.49	0.54	0.20		0.66	0.71	0.30		0.87	1.01	0.40	13500
14000						0.45	0.50	0.20		0.45	0.50	0.20		0.60	0.66	0.30		0.79	0.93	0.30	14000
14500						0.41	0.46	0.20		0.41	0.46	0.20		0.55	0.61	0.20		0.72	0.85	0.30	14500
15000						0.37	0.42	0.20		0.37	0.42	0.20		0.50	0.57	0.20		0.66	0.79	0.30	15000

C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span		
Span	B0	B1	B2	L/150	B0	B1	B2	B3/SB	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	Span	
3000	21.08	28.75	28.73	41.40	7.72	7.72	7.72	45.90	15.28	15.27	15.28	57.80	26.62	29.22	29.23	72.60						3000
3500	13.88	20.99	20.98	26.70	6.33	6.33	6.33	29.50	12.31	12.31	12.31	37.20	17.13	22.93	22.93	46.70						3500
4000	9.62	16.00	15.99	17.30	5.33	5.33	5.33	19.10	10.19	10.19	10.19	24.10	11.79	18.49	18.49	30.20						4000
4500		12.64	12.64	12.10		4.66	4.66	13.40		8.78	8.78	16.90		15.65	15.65	21.20						4500
5000		10.24	10.24	8.80		4.11	4.11	9.80		7.65	7.65	12.30		13.15	13.14	15.50						5000
5500		8.46	8.46	6.60		3.67	3.67	7.30		6.74	6.73	9.30		10.87	10.86	11.60						5500
6000		7.03	7.11	5.10		3.29	3.29	5.70		5.97	5.96	7.10		9.13	9.13	9.00						6000
6500		5.87	6.06	4.00		2.97	2.97	4.50		5.32	5.32	5.60		7.78	7.78	7.70						6500
7000		4.96	5.22	3.20		2.70	2.70	3.60		4.77	4.77	4.50		6.63	6.71	5.60						7000
7500		4.24	4.55	2.60		2.46	2.46	2.90		4.20	4.20	3.70		5.66	5.84	4.60						7500
8000		3.66	4.00	2.20		2.26	2.26	2.40		3.69	3.69	3.00		4.87	5.14	3.80						8000
8500		3.19	3.54	1.80		2.07	2.07	2.00		3.27	3.27	2.50		4.23	4.55	3.10						8500
9000		2.80	3.16	1.50		1.91	1.91	1.70		2.92	2.92	2.10		3.70	4.06	2.70						9000
9500		2.47	2.84	1.30		1.77	1.77	1.40		2.59	2.62	1.80		3.25	3.64	2.30						9500
10000		2.19	2.56	1.10		1.64	1.64	1.20		2.31	2.36	1.50		2.88	3.29	1.90						10000
10500		1.95	2.32	1.00		1.51	1.52	1.10		2.07	2.14	1.30		2.56	2.98	1.70						10500
11000		1.75	2.11	0.80		1.36	1.39	0.90		1.87	1.95	1.20		2.29	2.72	1.50						11000
11500		1.58	1.91	0.70		1.23	1.27	0.80		1.69	1.79	1.00		2.05	2.49	1.30				</		

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 5A: 5 SPAN LAPPED
OUTWARD LOAD (kN/m)



B3/SB Denotes situations outside Metroll's standard bridging spacing guidelines. For Safebridge® system always use data for 3 rows of bridging.

BOLD Denotes where 8.8 grade bolts are required.

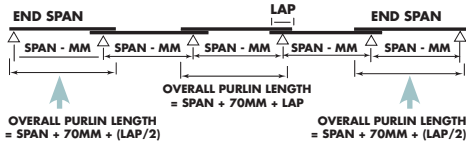
C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
6.06	6.05	6.06	6.03	8.98	10.01	10.02	9.99	3000
4.71	4.71	4.71	4.71	7.18	7.35	7.35	7.35	3500
3.77	3.77	3.77	3.76	4.95	5.48	5.48	5.48	4000
	3.17	3.17	3.17		4.33	4.33	4.33	4500
	2.70	2.70	2.70		3.51	3.51	3.51	5000
	2.24	2.26	2.26		2.78	2.90	2.90	5500
	1.78	1.90	1.90		2.24	2.44	2.44	6000
	1.41	1.62	1.62		1.80	2.08	2.08	6500
	1.12	1.40	1.40		1.45	1.76	1.79	7000
	0.89	1.19	1.40		1.16	1.48	1.56	7500
	0.70	1.00	1.07		0.93	1.26	1.37	8000
	0.56	0.84	0.95		0.74	1.07	1.20	8500
	0.45	0.71	0.84		0.59	0.91	1.04	9000
	0.37	0.59	0.73		0.48	0.77	0.91	9500
	0.31	0.50	0.63		0.40	0.65	0.80	10000
	0.26	0.42	0.55		0.33	0.55	0.70	10500
	0.21	0.35	0.48		0.28	0.46	0.61	11000
	0.18	0.30	0.42		0.23	0.39	0.54	11500
	0.15	0.25	0.36		0.20	0.33	0.47	12000

Span	C/Z 150 19				C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	14.14	14.22	14.20	14.19	17.81	19.33	19.30	19.30	4.93	4.92	4.93	4.91	9.19	9.18	9.19	9.15	17.18	17.18	17.18	17.12	3000
3500	9.56	10.32	10.32	10.32	12.00	14.03	14.03	14.03	4.02	4.02	4.2	4.02	7.31	7.31	7.32	7.32	13.21	13.21	13.21	13.22	3500
4000	6.48	7.55	7.55	7.55	8.16	10.06	10.26	10.26	3.36	3.36	3.36	3.35	5.98	5.98	5.98	5.96	10.47	10.47	10.47	10.5	4000
4500		5.96	5.96	5.96		7.66	8.10	8.10		2.92	2.92	2.92		5.10	5.10	5.10		8.74	8.74	8.74	4500
5000		4.72	4.83	4.83		5.95	6.57	6.57		2.56	2.56	2.56		4.39	4.39	4.40		7.38	7.38	7.38	5000
5500		3.72	3.99	3.99		4.69	5.29	5.43		2.27	2.27	2.27		3.83	3.83	3.83		6.10	6.10	6.10	5500
6000		2.95	3.36	3.36		3.74	4.32	4.56		2.02	2.02	2.02		3.36	3.36	3.36		5.13	5.13	5.13	6000
6500		2.36	2.83	2.86		3.00	3.57	3.84		1.82	1.82	1.82		2.97	2.97	2.97		4.25	4.37	4.37	6500
7000		1.89	2.83	2.86		2.42	2.98	3.24		1.64	1.64	1.64		2.57	2.61	2.61		3.54	3.77	3.77	7000
7500		1.52	1.98	2.15		1.96	2.50	2.76		1.49	1.49	1.49		2.13	2.27	2.27		2.94	3.28	3.28	7500
8000		1.21	1.67	1.87		1.58	2.11	2.36		1.29	1.35	1.35		1.77	1.99	1.99		2.44	2.88	2.88	8000
8500		0.97	1.41	1.61		1.28	1.79	2.04		1.08	1.24	1.24		1.47	1.77	1.77		2.03	2.51	2.55	8500
9000		0.78	1.19	1.40		1.03	1.52	1.77		0.90	1.13	1.14		1.21	1.58	1.58		1.69	2.19	2.28	9000
9500		0.64	1.01	1.21		0.85	1.30	1.54		0.75	1.00	1.04		0.99	1.38	1.41		1.39	1.91	2.04	9500
10000		0.52	0.85	1.06		0.70	1.10	1.34		0.62	0.87	0.96		0.82	1.20	1.28		1.14	1.66	1.85	10000
10500		0.44	0.72	0.92		0.59	0.94	1.17		0.52	0.76	0.87		0.69	1.04	1.16		0.94	1.44	1.65	10500
11000		0.37	0.61	0.80		0.50	0.80	1.03		0.43	0.66	0.77		0.58	0.90	1.06		0.79	1.26	1.47	11000
11500		0.31	0.51	0.70		0.43	0.68	0.90		0.37	0.58	0.69		0.48	0.78	0.95		0.66	1.09	1.32	11500
12000		0.27	0.44	0.61		0.37	0.58	0.79		0.32	0.50	0.62		0.41	0.68	0.85		0.56	0.95	1.18	12000
12500						0.27	0.44	0.55		0.27	0.44	0.55		0.35	0.58	0.76		0.48	0.82	1.05	12500
13000						0.23	0.38	0.49		0.23	0.38	0.49		0.30	0.50	0.68		0.42	0.70	0.94	13000
13500						0.20	0.33	0.44		0.20	0.33	0.44		0.26	0.44	0.60		0.36	0.61	0.84	13500
14000						0.18	0.29	0.39		0.18	0.29	0.39		0.23	0.38	0.54		0.31	0.53	0.75	14000
14500						0.15	0.25	0.35		0.15	0.25	0.35		0.20	0.34	0.48		0.28	0.46	0.67	14500
15000						0.14	0.22	0.32		0.14	0.22	0.32		0.17	0.29	0.42		0.24	0.40	0.60	15000

Span	C/Z 200 24				C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19				Span
	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	B0	B1	B2	B3/SB	
3000	29.61	29.61	29.61	29.53	7.56	7.55	7.56	7.52	14.87	14.87	14.87	14.80	28.17	28.14	28.17	28.05					3000
3500	21.46	21.46	21.46	21.46	6.19	6.19	6.19	6.19	11.95	11.95	11.95	11.96	22.01	22.01	22.01	22.02					3500
4000	15.12	15.87	15.87	15.87	5.20	5.20	5.20	5.19	9.86	9.86	9.86	9.83	17.68	17.68	17.68	17.64	9.03	9.03	9.03		4000
4500		12.53	12.53	12.53		4.53	4.53	4.53		8.47	8.47	8.47		14.90	14.90	14.90		7.89	7.89	7.89	4500
5000		10.15	10.15	10.15		3.99	3.99	4.00		7.35	7.35	7.36		12.70	12.70	12.71		6.97	6.96	6.98	5000
5500		8.39	8.39	8.39		3.55	3.55	3.55		6.45	6.45	6.45		10.77	10.77	10.77		6.22	6.22	6.22	5500
6000		6.88	7.05	7.05		3.18	3.18	3.18		5.69	5.69	5.69		9.06	9.06	9.06		5.59	5.58	5.59	6000
6500		5.62	6.01	6.01		2.87	2.87	2.87		5.06	5.06	5.06		7.53	7.71	7.71		5.05	5.05	5.05	6500
7000		4.62	5.18	5.18		2.60	2.60	2.59		4.53	4.53	4.52		6.15	6.65	6.65		4.59	4.59	4.58	7000
7500		3.81	4.51	4.51		2.36	2.36	2.36		3.91	4.07	0.7		5.04	5.79	5.79		4.19	4.19	4.19	7500
8000		3.16	3.89	3.97		2.16	2.16	2.16		3.24	3.66	3.66		4.13	5.10	5.10		3.84	3.84	3.84	8000
8500		2.62	3.34	3.51		1.95	1.98	1.98		2.66	3.24	3.24		3.38	4.48	4.51		3.53	3.53	3.53	8500
9000		2.17	2.88	3.13		1.63	1.82	1.82		2.16	2.89	2.89		2.76	3.84	4.03		3.26	3.26	3.26	9000
9500		1.79	2.49	2.81		1.34	1.68	1.68		1.75	2.52	2.60		2.25	3.30	3.61		3.01	3.01	3.01	9500
10000		1.48	2.15	2.48		1.10	1.56	1.55		1.43	2.20	2.34		1.84	2.84	3.26		2.80	2.80	2.79	10000
10500		1.23	1.87	2.19		0.92	1.37	1.44		1.18	1.91	2.12		1.53	2.45	2.93		2.49	2.60	2.60	10500
11000		1.03	1.62	1.94		0.77	1.20	1.34		0.99	1.65	1.94		1.28	2.11	2.59		2.18	2.42	2.42	11000
11500		0.87	1.41	1.72		0.65	1.05	1.23		0.83	1.42	1.74		1.08	1.81	2.29		1.89	2.26	2.26	11500
12000		0.74	1.22	1.53		0.55	0.92	1.10		0.71	1.21	1.56		0.92	1.56	2.03		1.62	2.11	2.12	12000
12500		0.64	1.06	1.37		0.47	0.79	0.99		0.60	1.03	1.40		0.78	1.33	1.80		1.39	1.90	1.98	12500
13000		0.55	0.92	1.22		0.40	0.68	0.89		0.52	0.89	1.24		0.68	1.14	1.59		1.21	1.72	1.86	13000
13500		0.48	0.79	1.09		0.35	0.59	0.80		0.45	0.76	1.1									

METROLL MEGASPAN® DESIGN CAPACITY TABLES

TABLE 5B: 5 SPAN LAPPED
INWARD LOAD (kN/m)



Denotes situations outside Metroll's standard bridging spacing guidelines.

BOLD Denotes where 8.8 grade bolts are required.

C/Z 150 12				C/Z 150 15				Span
B0	B1	B2	L/150	B0	B1	B2	L/150	
6.06	6.06	6.06	10.10	8.98	10.01	10.02	12.60	3000
4.71	4.71	4.71	6.30	6.27	7.35	7.35	7.80	3500
3.77	3.77	3.77	4.20	4.52	5.48	5.48	5.20	4000
	3.17	3.17	2.90		4.33	4.33	3.70	4500
	2.70	2.70	2.10		3.51	3.51	2.70	5000
	2.26	2.26	1.60		2.90	2.90	2.00	5500
	1.90	1.90	1.20		2.44	2.44	1.50	6000
	1.62	1.62	1.00		2.08	2.08	1.20	6500
	1.40	1.40	0.80		1.79	1.79	1.00	7000
	1.22	1.22	0.60		1.56	1.56	0.80	7500
	1.07	1.07	0.50		1.37	1.37	0.70	8000
	0.95	0.95	0.40		1.20	1.20	0.50	8500
	0.85	0.85	0.40		1.05	1.08	0.50	9000
	0.76	0.76	0.30		0.93	0.97	0.40	9500
	0.68	0.68	0.30		0.83	0.88	0.30	10000
	0.60	0.62	0.20		0.74	0.80	0.30	10500
	0.54	0.57	0.20		0.67	0.72	0.30	11000
	0.48	0.52	0.20		0.60	0.65	0.20	11500
	0.43	0.48	0.20		0.54	0.59	0.20	12000

C/Z 150 19					C/Z 150 24				C/Z 200 12				C/Z 200 15				C/Z 200 19						
Span	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	Span		
3000	10.99	14.22	14.20	15.80	13.13	19.33	19.30	19.70	4.93	4.92	4.93	22.40	9.19	9.18	9.19	27.80	17.18	17.16	17.18		35.50	3000	
3500	7.54	10.32	10.32	9.80	8.90	13.98	14.03	12.30	4.02	4.02	4.02	13.90	7.31	7.31	7.31	17.30	12.05	13.21	13.21		22.10	3500	
4000	5.40	7.55	7.55	6.50	6.33	10.06	10.26	8.20	3.36	3.36	3.36	9.20	5.98	5.98	5.98	11.50	8.48	10.47	10.47		14.70	4000	
4500		5.96	5.96	4.60		7.79	8.10	5.70		2.92	2.92	6.50		5.10	5.10	8.10		8.74	8.74		10.30	4500	
5000		4.83	4.83	3.30		6.19	6.57	4.20		2.56	2.56	4.70		4.39	4.39	5.90		7.38	7.38		7.50	5000	
5500		3.99	3.99	2.50		5.03	5.43	3.10		2.27	2.27	3.60		3.83	3.83	4.40		6.10	6.10		5.60	5500	
6000		3.36	3.36	1.90		4.15	4.56	2.40		2.02	2.02	2.70		3.36	3.36	3.40		5.13	5.13		4.30	6000	
6500		2.83	2.86	1.50		3.48	3.87	1.90		1.82	1.82	2.20		2.97	2.97	2.70		4.37	4.37		3.40	6500	
7000		2.41	2.47	1.20		2.95	3.31	1.50		1.64	1.64	1.70		2.61	2.61	2.10			3.77	3.77		2.70	7000
7500		2.07	2.47	1.20		2.53	2.85	1.20		1.49	1.49	1.40		2.27	2.27	1.70			3.28	3.28		2.20	7500
8000		1.79	1.89	0.80		2.19	2.48	1.00		1.35	1.35	1.20		1.99	1.99	1.40			2.85	2.88		1.80	8000
8500		1.56	1.67	0.70		1.91	2.18	0.90		1.24	1.24	1.00		1.77	1.77	1.20			2.50	2.55		1.50	8500
9000		1.37	1.49	0.60		1.68	1.92	0.70		1.13	1.13	0.80		1.58	1.58	1.00			2.21	2.28		1.30	9000
9500		1.21	1.34	0.50		1.48	1.70	0.60		1.04	1.04	0.70		1.41	1.41	0.90			1.96	2.04		1.10	9500
10000		1.07	1.21	0.40		1.32	1.52	0.50		0.96	0.96	0.60		1.28	1.28	0.70			1.75	1.85		0.90	10000
10500		0.96	1.08	0.40		1.19	1.36	0.50		0.88	0.89	0.50		1.16	1.16	0.60			1.57	1.67		0.80	10500
11000		0.85	0.97	0.30		1.06	1.22	0.40		0.79	0.82	0.40		1.06	1.06	0.60			1.41	1.53		0.70	11000
11500		0.76	0.87	0.30		0.94	1.09	0.30		0.71	0.75	0.40		0.96	0.96	0.50			1.27	1.40		0.60	11500
12000		0.69	0.78	0.20		0.85	0.99	0.30		0.65	0.69	0.30		0.87	0.89	0.40			1.15	1.28		0.50	12000
12500						0.59	0.63	0.30		0.59	0.63	0.30		0.79	0.82	0.40			1.04	1.18		0.50	12500
13000						0.53	0.58	0.30		0.53	0.58	0.30		0.72	0.76	0.30			0.94	1.08		0.40	13000
13500						0.49	0.53	0.20		0.49	0.53	0.20		0.65	0.70	0.30			0.86	0.99		0.40	13500
14000						0.45	0.49	0.20		0.45	0.49	0.20		0.60	0.65	0.30			0.79	0.91		0.30	14000
14500						0.41	0.45	0.20		0.41	0.45	0.20		0.55	0.61	0.20			0.72	0.84		0.30	14500
15000						0.37	0.41	0.20		0.37	0.41	0.20		0.50	0.57	0.20			0.66	0.78		0.30	15000

C/Z 200 24					C/Z 250 15				C/Z 250 19				C/Z 250 24				C/Z 300 19						
Span	B0	B1	B2	L/150	B0	B1	B2	B3/SB	B0	B1	B2	L/150	B0	B1	B2	L/150	B0	B1	B2	L/150	Span		
3000	21.65	29.59	29.61	44.40	7.56	7.55	7.56	49.20	14.87	14.85	14.87	62.00	27.22	28.14	28.17	77.75							3000
3500	14.17	21.46	21.47	27.60	6.19	6.19	6.19	30.60	11.95	11.95	11.95	38.60	17.42	22.01	22.01	48.41							3500
4000	9.79	15.87	15.87	18.40	5.20	5.20	5.20	20.30	9.86	9.86	9.86	25.60	11.97	17.68	17.68	32.15	9.03	9.03	9.03		44.60	4000	
4500		12.53	12.53	12.90		4.53	4.53	14.30		8.47	8.47	18.00		14.90	14.90	22.58					31.30	4500	
5000		10.15	10.15	9.40		3.99	3.99	10.40		7.35	7.35	13.10		12.70	12.70	16.46					22.80	5000	
5500		8.39	8.39	7.10		3.55	3.55	7.80		6.45	6.45	9.90		10.77	10.77	12.37					17.20	5500	
6000		7.04	7.05	5.40		3.18	3.18	6.00		5.69	5.69	6.00		9.06	9.06	9.53					13.20	6000	
6500		5.88	6.01	4.30		2.87	2.87	4.70		5.06	5.06	6.00		7.71	7.71	7.49					10.40	6500	
7000		4.97	5.18	3.40		2.60	2.60	3.80		4.53	4.53	4.80		6.65	6.65	6.00					8.30	7000	
7500		4.25	4.51	2.80		2.36	2.36	3.10		4.07	4.07	3.90		5.68	5.79	4.88					6.80	7500	
8000		3.67	3.97	2.30		2.16	2.16	2.50		3.66	3.66	3.20		4.89	5.10	4.02					5.60	8000	
8500		3.19	3.51	1.90		1.98	1.98	2.10		3.24	3.24	2.70		4.24	4.51	3.35					4.60	8500	
9000		2.80	3.13	1.60		1.82	1.82	1.80		2.89	2.89	2.30		3.71	4.03	2.82					3.90	9000	
9500		2.47	2.81	1.40		1.68	1.68	1.50		2.58	2.60	1.90		3.26	3.61	2.40					3.30	9500	
10000		2.19	2.54	1.20		1.56	1.56	1.30		2.30	2.34	1.60		2.89	3.26	2.06					2.90	10000	
10500		1.95	2.30	1.00		1.44	1.44	1.10		2.06	2.12	1.40		2.56	2.96	1.78					2.50	10500	
11000		1.75	2.10	0.90		1.34	1.34	1.00		1.86	1.94	1.20		2.29	2.70	1.55</							

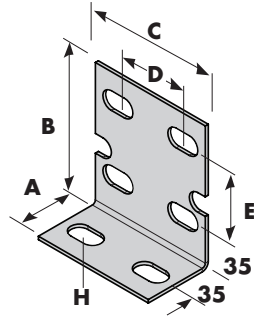
BRIDGING

Metroll Bridging is made up of basic components and as well as proprietary components from the Metroll Met-Lock Bridging System.

BASIC COMPONENTS

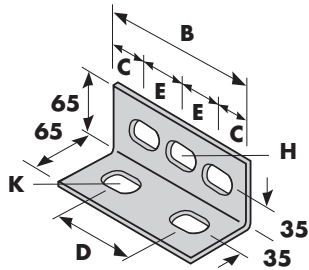
All Metroll components are manufactured from zinc coated steel and forms an integral part of the Metroll purlin and girt system.

GENERAL PURPOSE BRACKET - GPB



SIZE	A	B	C	D	E	H
100	60	110	70	40	50	20 x 17
150	60	125	110	60	65	30 x 17
200	60	135	160	110	75	30 x 17
250	65	135	210	160	75	30 x 17

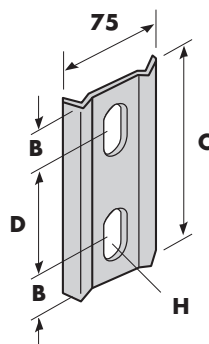
ANGLE CONNECTOR



SIZE	B	C	D	E	H	K
100	90	-	-	-	1 @ 60 x 17	1 @ 60 x 17
150	140	33	74	37	3 @ 30 x 17	2 @ 30 x 17
200	190	40	110	55	3 @ 30 x 17	2 @ 30 x 17
250	240	40	160	57	4 @ 30 x 17	2 @ 30 x 17

CLAMP PLATE

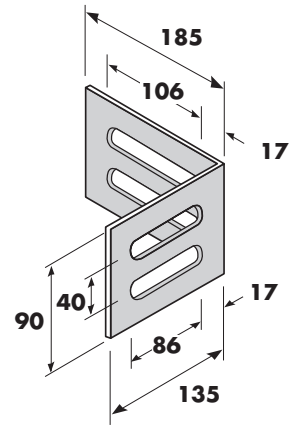
SIZE	B	C	D	E	H
100	25	90	40	-	20 x 17
150	40	140	60	37	30 x 17
200	40	190	110	55	30 x 17
250	40	240	160	57	30 x 17



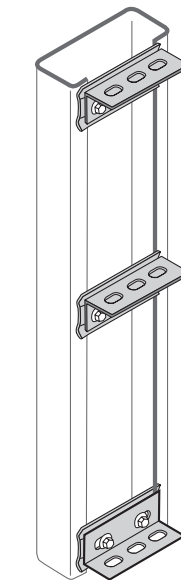
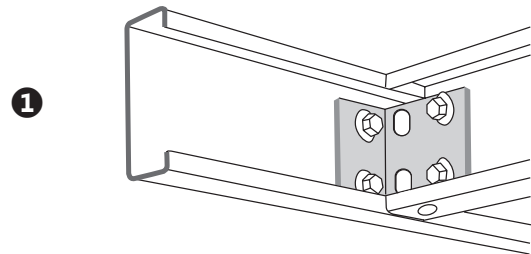
RAKING GIRT BRACKET

SIZE 100 ONLY

WA - Available on request only



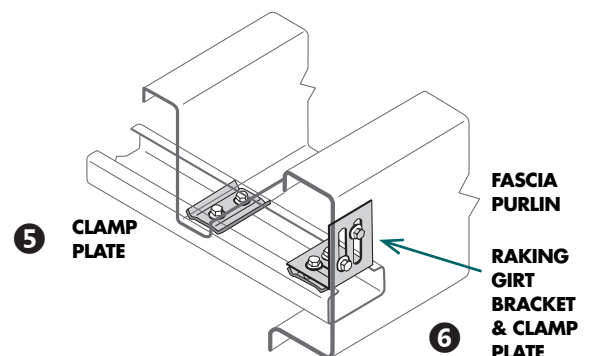
TYPICAL ASSEMBLIES OF THE BASIC COMPONENTS



2 CLAMP PLATE AND ANGLE CONNECTOR AS A TRIMMER TO DOOR HEAD CONNECTION

3 CLAMP PLATE AND ANGLE CONNECTOR FOR GIRTS CONNECTION

4 CLAMP PLATE AND ANGLE CONNECTOR AS A FOOT CONNECTION



MET-LOCK BRIDGING

Met-Lock Bridging by Metroll is an uncomplicated proprietary system developed for fast installation and optimum compatibility with Metroll purlins and girts. (In WA this system is called Tab-Lok Bridging and components differ).

Met-Lock Bridging can be installed in a number of ways. The usual method is to commence installation at the fascia and proceed up the roof slope to the ridge.

The system consists of solid bridging assemblies between purlins/girts and adjustable bridging assemblies at locations such as ridges, eaves and the bottom of girts (girt foot).

BRACING

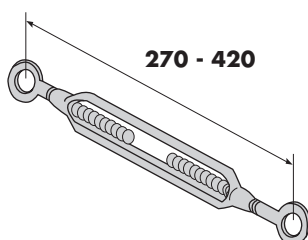
Purlins display two types of lateral instability; lateral deflection and twist (rotation and roll). It is necessary to control these instabilities by installing suitable bracing as close as possible to the flanges of a section.

Bracing can be continuous (cladding fastened to the flange), or point braced at the midspan region or at several points on the midspan region. Point bracing is required to stabilise and straighten the purlins and girts prior to the fixing of cladding in order to facilitate the fixing operation.

Common point bracing types are ties, these can be loaded in tension only. Because they are solid members, Met-Lock components secured to the web of purlins and girts can be loaded in tension, compression and bending. For this reason a continuous run of bridging is the most effective stabiliser for both roof and walls. It is also the most widely accepted by design engineers.

Met-Lock components are simple yet robust. Installers do not have to worry about additional clips or ends that distort with slight impact. Locators and Clamps have hook centres to match holes punched in corresponding purlins and girts.

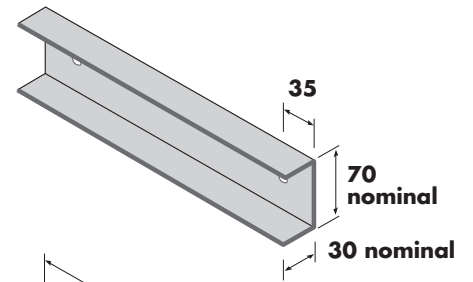
TURNBUCKLE



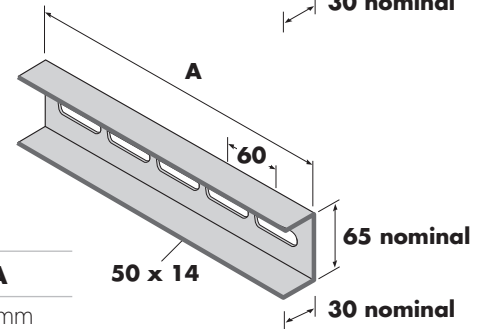
COMPONENTS OF MET-LOCK BRIDGING

CHANNEL

Cut to length with a hole at each end



SLOTTED CHANNEL

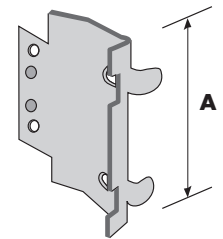


HOLES	A
2	130mm
3	190mm
5	310mm

LOCATOR END

SIZE	A (NOMINAL)
100	60mm
150	80mm*
200	130mm
250	180mm

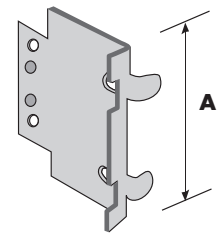
*90mm in VIC



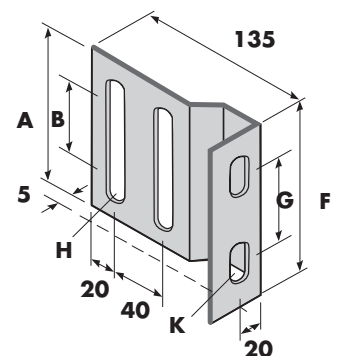
CLAMP END

SIZE	A (NOMINAL)
100	55mm
150	75mm*
200	125mm
250	175mm

*85mm in VIC



FASCIA BRACKET



SIZE	A	B	F	G	H	K
150	110	-	110	65	2 @ 80 x 14	2 @ 19 x 14
200/ 260	160	80	190	135	4 @ 65 x 14	2 @ 39 x 14

*NOTE: In WA the bridging system is called Tab-Lok. Components vary.

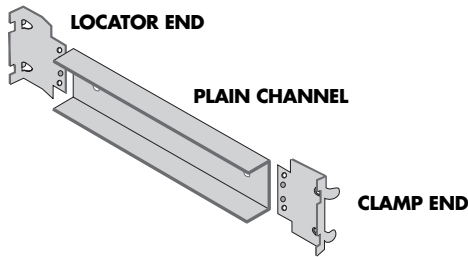
MET-LOCK BRIDGING - TYPICAL ASSEMBLIES

INTERMEDIATE BRIDGING

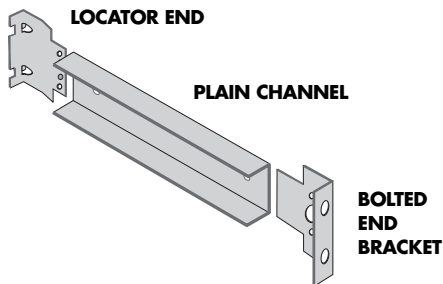
Intermediate Bridging is the basic connecting member between purlins and generally comprises a Locator End and a Clamp End attached to cut-to-length Plain Channel.

All bridging lengths should be centre to centre dimensions. Metroll programming deducts the purlin thickness to ensure the correct spacing is manufacturing.

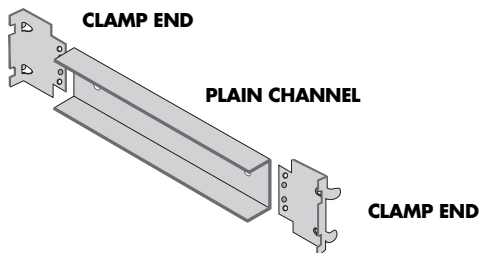
IBLC - INTERMEDIATE BRIDGING LOCATOR/CLAMP



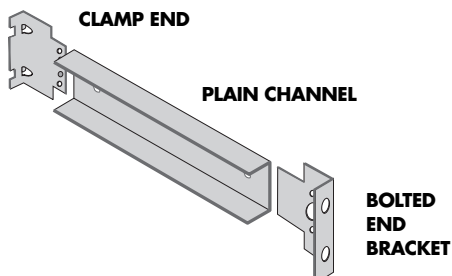
IBLB - INTERMEDIATE BRIDGING LOCATOR/BEB



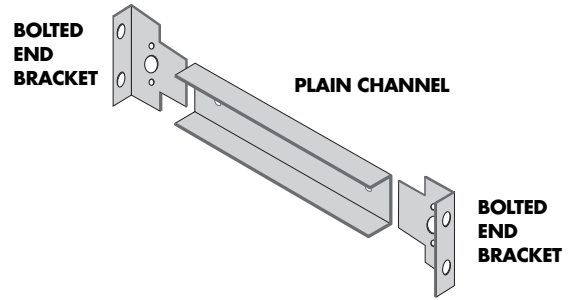
IBCC - INTERMEDIATE BRIDGING CLAMP/CLAMP



IBCB - INTERMEDIATE BRIDGING CLAMP/BEB

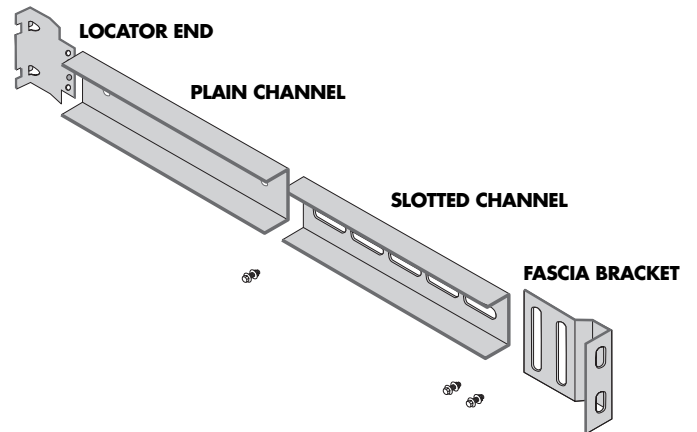


IBBB - INTERMEDIATE BRIDGING BEB/BEB



FASCIA BRIDGING

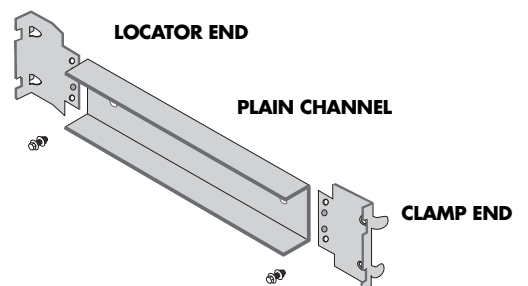
Fascia Bridging is used to provide support to the first internal purlin and for straightening and securing the Fascia Purlin. The standard combination consists of a Fascia Bracket, Slotted Channel, Plain Channel and a Locator End.



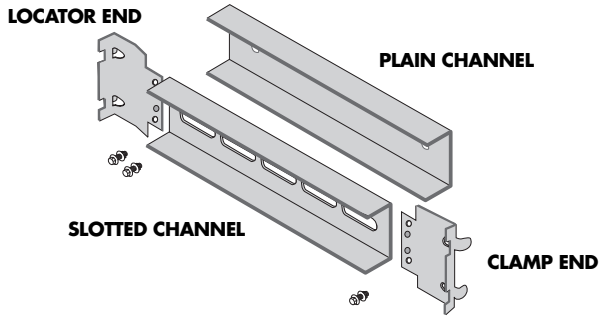
EXPANSION JOINT BRIDGING

Expansion Joint Bridging is used to accommodate a step or joint in the roof plane and is often an adjustable or swivel assembly. Combination variations are outlined below:

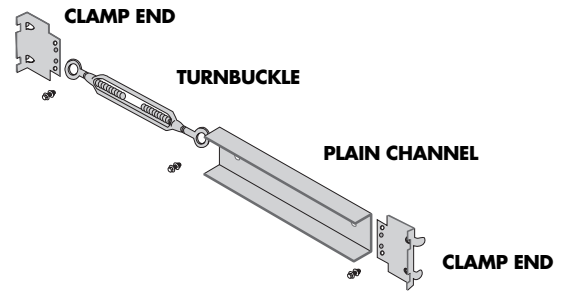
ALTERNATIVE - SWIVEL ENDS



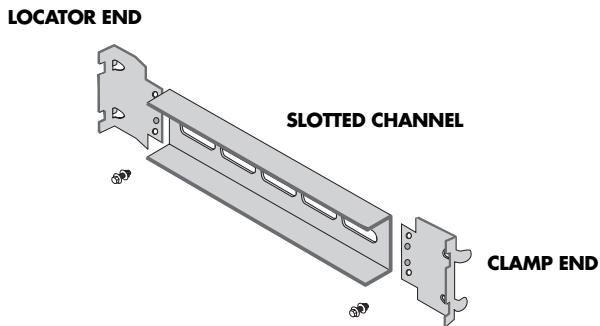
ALTERNATIVE - ADJUSTABLE



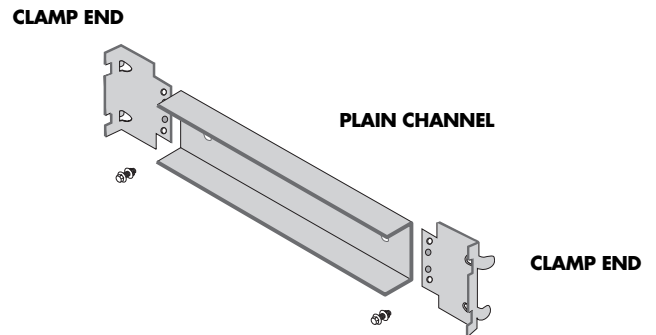
ALTERNATIVE - TURNBUCKLE WITH CHANNEL



ALTERNATIVE - SLOTTED CHANNEL



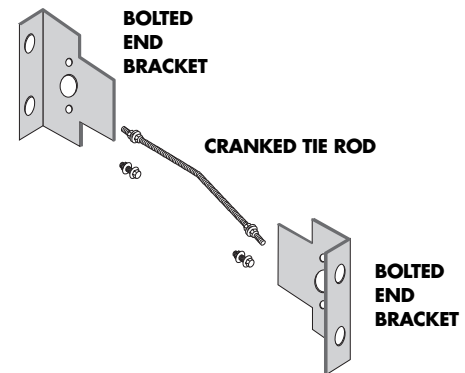
ALTERNATIVE - SWIVELS ENDS WITH CHANNEL



TIE ROD BRIDGING

Tie Rod Bridging is a light duty, versatile application commonly used for alignment and adjustment. This bridging may be used anywhere a bolted end is used, but is not suitable for sustaining compressive loads.

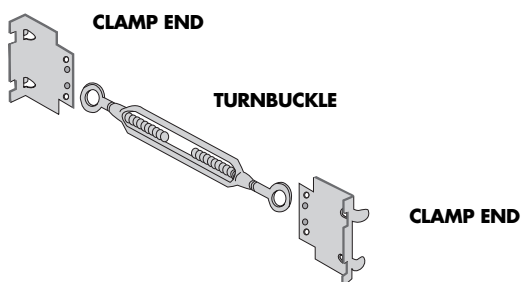
ALTERNATIVE - CRANKED TIE ROD



RIDGE BRIDGING

Like all Met-Lock Bridging the Ridge Tie or Bridging is simple and efficient. As the name implies this bridging is used at the apex of the roof and is usually adjustable. Several alternatives are outlined below:

ALTERNATIVE - TURNBUCKLE



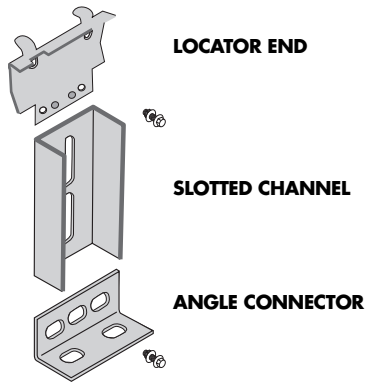
GIRT BRIDGING

Girt Bridging is usually made up of: an Adjustable Girt Foot, Intermediate Bridging and a Girt Hanger. The recommended installation procedure and precautions are required.

1. The roof sheeting should be installed before the Turnbuckle or Girt Hanger is used to level the Girts which would impose loads on the fascia system; and
2. A temporary girt support under the bottom girt is required until installation of the wall cladding is complete.

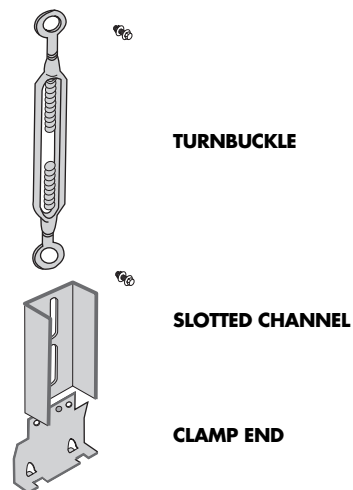
GIRT FOOT

Girt Foot assemblies are used to transfer downward forces in girt bridging to the floor. They also provide some adjustment and alignment to the bottom purlin.



GIRT HANGER

Primarily used to assist in alignment and stabilisation. A Girt Hanger is usually attached to a Slotted Channel by a Turnbuckle in the Fascia Bridging assembly. Girt Hangers should not be used to suspend the wall girts.



GIRT BRIDGING INSTALLATION

The recommended procedure for the installation of Girt Bridging is to start at floor level and work up the walls toward the fascia or eaves. A typical installation is as follows:

STEP 1:

Install the Girt Foot assembly by engaging the Locator into the appropriate holes in the bottom girt. Due to the transference of loads, Girt Feet assemblies must be anchored to the slab.

STEP 2:

Adjust the Girt Foot assembly to level the bottom girt. Where the slab has not been poured or a Girt Foot not specified, the bottom purlin must be temporarily supported to keep it level.

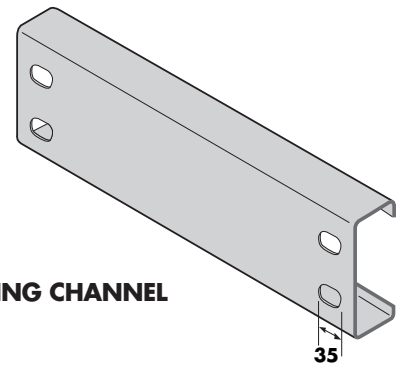
LARGE BRIDGING

Metroll's Large Bridging is for Metroll's large purlin range (C/Z300, C/Z350 and C/Z400 series). Like the Met-Lock range, the heavy duty range is simple and easy to install. Components are larger because the sections are more substantial.

Generally the Bridging Channel is a C150 section firmly bolted to end plates at 90°. If a particular angle is required at the bridging ends it must be specified at the time of order. Additional costs may apply.

BASIC COMPONENTS

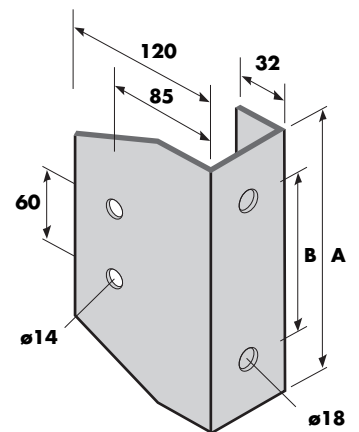
All Metroll components are manufactured from zinc coated steel and form an integral part of the Metroll purlin and girt system.



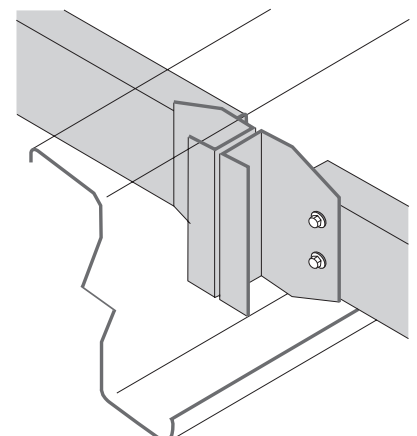
**C150 PURLIN
USED AS A BRIDGING CHANNEL**

LARGE SERIES END PLATE

SIZE	A	B
250	210	160
300	260	210
350	310	260
400	360	310



TYPICAL ASSEMBLY

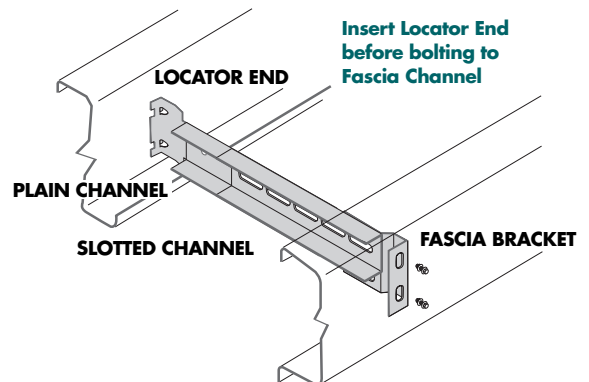


BRIDGING INSTALLATION

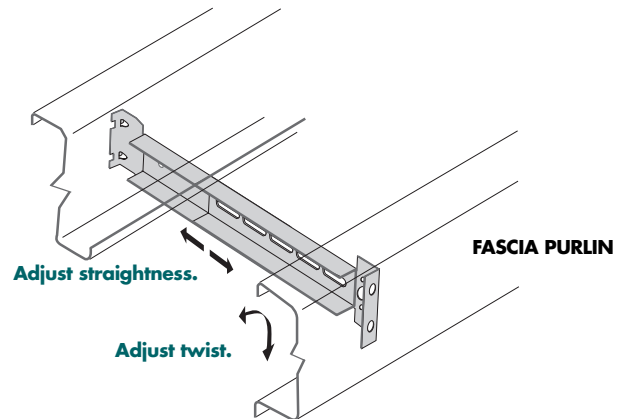
Following are the recommended safe and practical steps for the installation of the Met-Lock Bridging System. Procedures will vary from state to state, however standard practice is to commence purlin installation at the fascia and work up the roof slope to the ridge line.

STEP 1: FIX FASCIA BRIDGING

Install the Fascia Bridging by inserting the Locator End into the holes of the first purlin and bolting the Fascia Bracket to the Fascia Purlin. Adjust the Slotted Channel to straighten the fascia and bolt firmly.

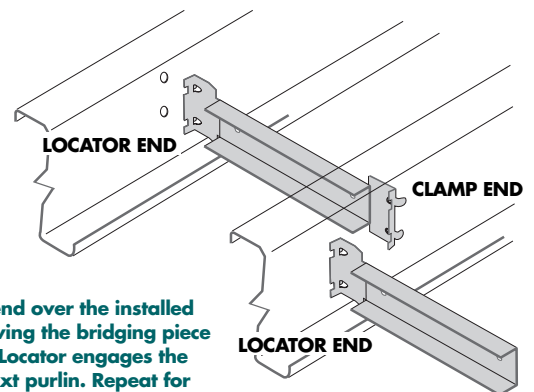


STEP 2: ADJUST FASCIA BRIDGING



STEP 3: INSERT INTERMEDIATE BRIDGING

Install the Intermediate, Locator/Clamp Bridging up the roof slope and finish at the ridge. Intermediate bridging is installed by fitting the Clamp End (the straight bracket) over the previously installed Locator (the cranked bracket) and swinging the bridging piece around until the Locator engages the holes of the next purlin.



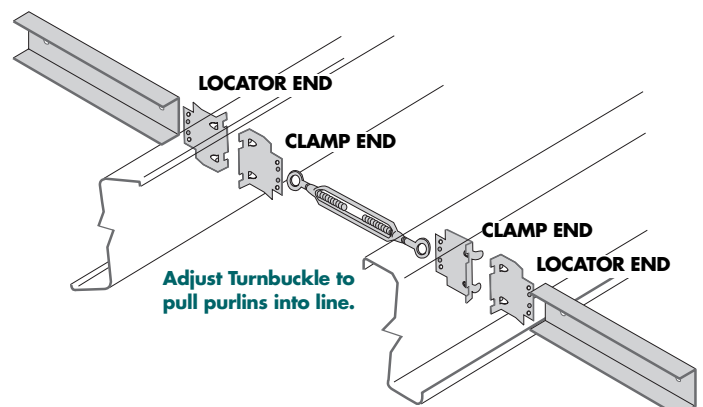
STEP 4: REPEAT WHERE APPLICABLE

Repeat Step 1 and Step 2 where applicable on the opposite side of the roof. Face bridging pieces in the same direction for a neat appearance.

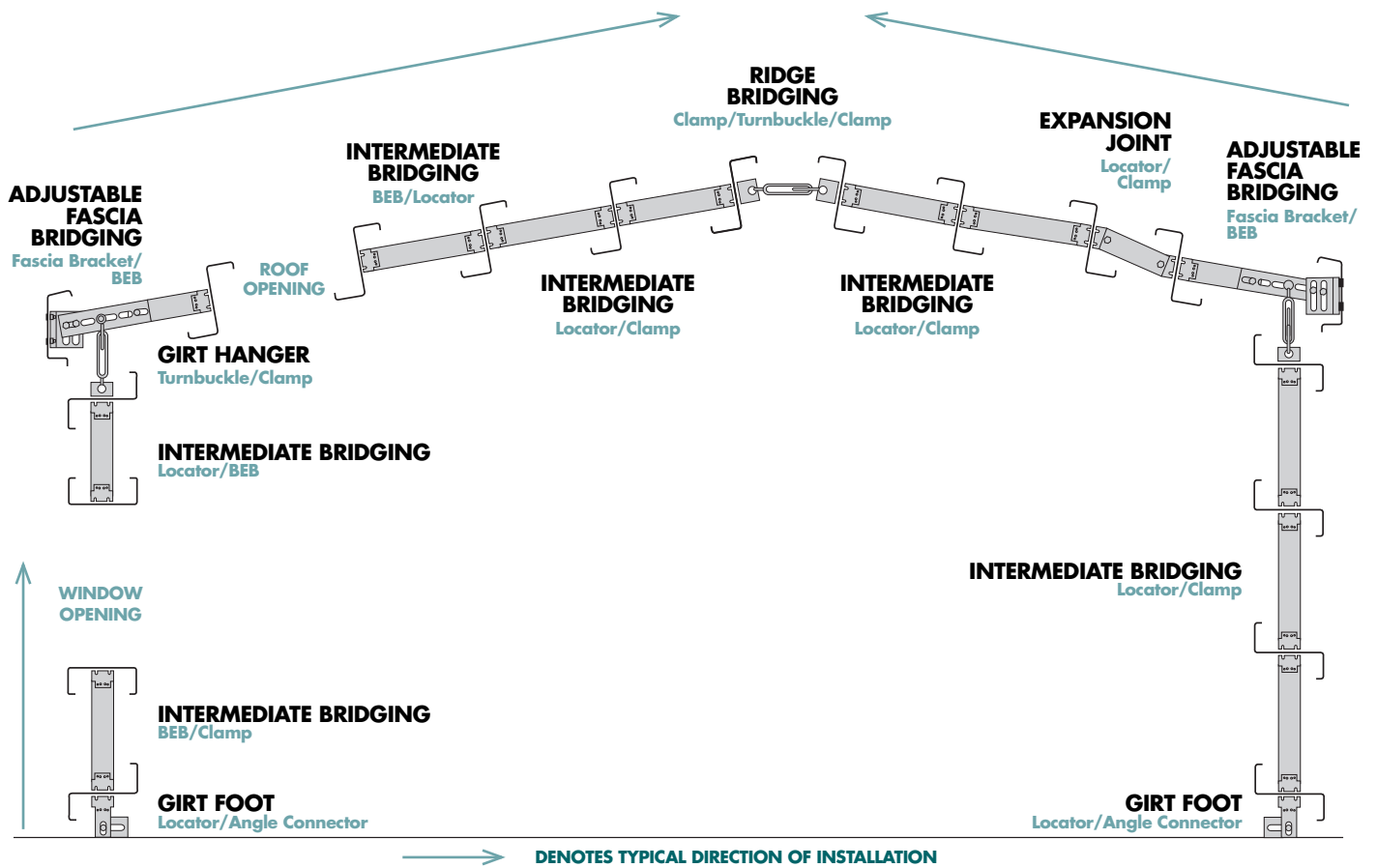
STEP 5: FIX RIDGE BRIDGING

Install the Ridge assembly by fitting the Clamp Ends over the previously installed Locator Ends and tighten the bolts or turnbuckle of the Ridge assembly.

If a Ridge assembly is not used, the last piece of Intermediate Bridging should end in a Bolted End Bracket which can accommodate a Sag Rod if required at a later date. Alternatively the standard bridging can be secured in position by installing a bolt beside the previously installed Locator



BRIDGING SYSTEM - OVERVIEW



SAFEBRIDGE® PURLINS-BRIDGING INSULATION SYSTEM

Megaspan® purlins are compatible with the SafeBridge® Purlins-Bridging Insulation System. SafeBridge® is an innovative, award winning roofing system that can be adapted to almost any commercial or industrial roof structure. Fully compliant with the current requirements of the BCA, Section J, SafeBridge® utilises the existing purlin space to provide energy efficient roof insulation without compromising roof height, wind rating or structural integrity.

KEY BENEFITS

- Can achieve high thermal performance in any climate zone (as defined by the BCA.NCC)
- Code compliant with BCA/NCC Section J.
- Utilises the purlin space without elevating the overall roof or fascia height. No roof spacers required.
- Suitable for both cyclonic and non-cyclonic regions.
- Retains the structural integrity and load points of the roof interior.
- Suits most roof pitches and complex roof designs.
- Available in foil, decorative or acoustic finishes on the internal faced insulation material.
- Creates a safer roof environment for workers during construction.

IMPORTANT DESIGN CONSIDERATIONS

The SafeBridge® system relies upon specific purlin spacing outlined below. Please ensure you consult with Bradford and Metroll early in the design phase to understand the relationship of purlin depth and spacing to R-value and the BMT relative to your ultimate roof design loads.

PURLIN & BRIDGE BAR SPACING

Standard Purlin Spacing	Bridge Bar Spacing
610mm	Maximum 1500mm
910mm	
1210mm	
1360mm	

DESIGNING FOR GREEN STAR & BUILDING CODE COMPLIANCE

Minimum energy efficiency standards for commercial buildings are mandatory in the BCA and NCC. Thermal insulation plays a key role in meeting these requirements and contributes to reductions in energy use which is a critical factor in Green Star accreditation. Choosing the right insulation also offers additional benefits of condensation control, noise dampening and control of heat flow in and out of the building.

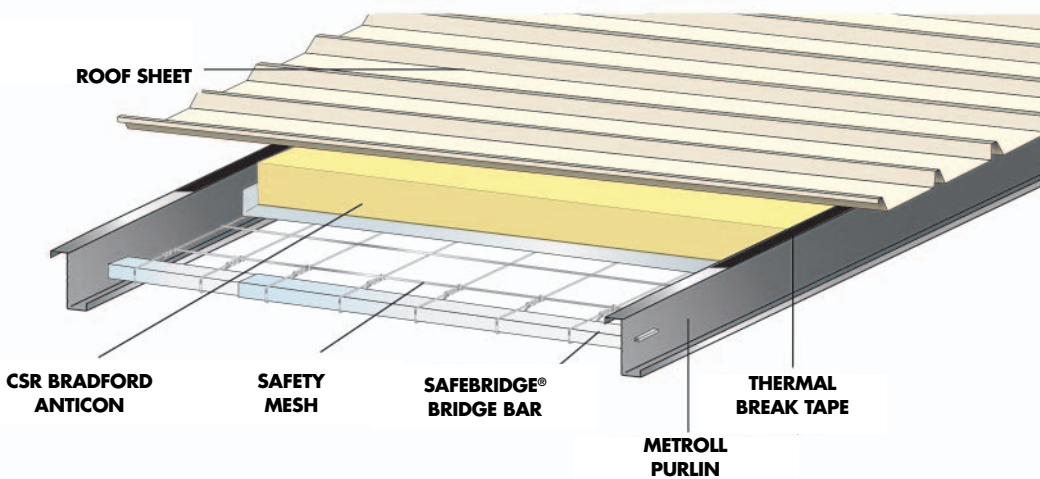
To achieve the BCA/NCC Section J thermal insulation values, the roof system must allow sufficient space under the roof sheeting for insulation to recover its design thickness and achieve its rated insulation value. Failure to provide enough space will result in compression of the insulation and reduce its performance. SafeBridge® use the depth of purlins to provide a cavity for the insulation to recover its thickness, rather than create a space above the purlin using a roof spacer. Safebridge® allows purlin spacing to be set at a predetermined height during the design phase by way of a patented bridging system and key way.

DESIGNING FOR WORKER SAFETY

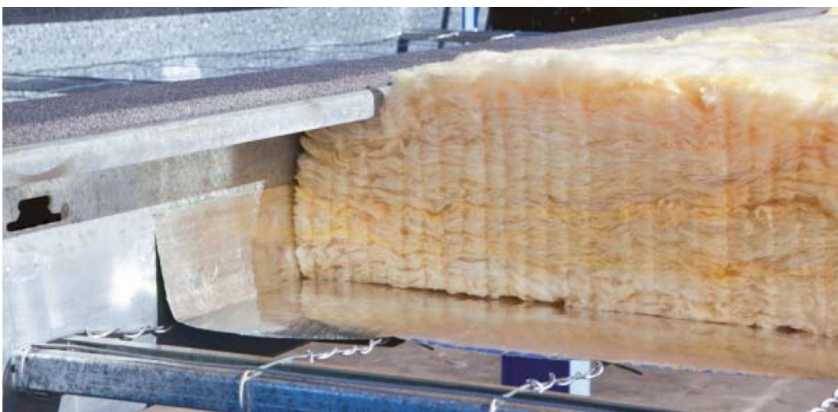
A unique feature of the SafeBridge® system is the application of safety mesh between, rather than over the top of the purlins. This eliminates the need to lap safety mesh and cover the purlins, resulting in immediate material cost savings. This method also facilitates the use of the SafeBridge® Wire Pulley system which saves installation time and also removes workers proximity to the exposed edge of the roof during construction, greatly increasing worker safety.



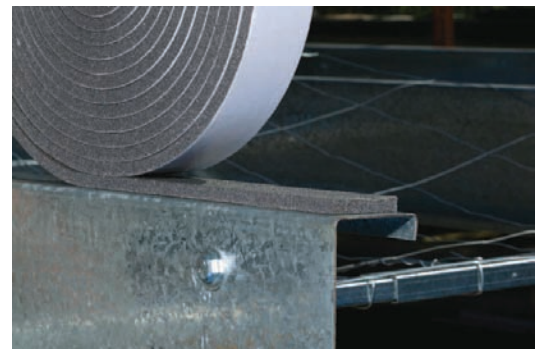
BRIDGE BAR STABILISER
Prevents purlin roll



PURLIN KEYWAY
Simple roofing screw assembly



ANTICON SB Features centre bonded foil lap to protect purlins from condensation



RO.2 THERMAL BREAK TAPE
10mm thick

Can we assist with any additional Steel Building Products?



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Mackay	07 4968 1255
Rockhampton	07 4920 0900
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Sunshine Coast	07 5493 7872
Brisbane	07 3375 0100

NSW

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Newcastle	02 4954 5799
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