

Purlins & Girts

CAPACITY TABLES & TECHNICAL INFORMATION

 **STRATCO**



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INTRODUCTION

The Stratco Capacity Tables have been calculated in accordance with limit state design principles and comply with the Australian/ New Zealand Standard AS/NZS 4600:2005 Cold-formed steel structures.

They have been generated using the latest version of the purlin and girt software developed by the Centre for Advanced Structural Engineering at the University of Sydney and cover the full range of Stratco Z and C sections from 75mm through to 400mm depth.

The tables include a comprehensive range of span configurations from simple spans to continuous, lapped and combined spans. In addition, the Z and C sections are complemented by a full range of accessories to facilitate design and installation.

TESTING AND TECHNICAL SUPPORT

The effectiveness of Stratco purlins and accessories has been verified by on-site testing and trials. This data is intended for specifiers, engineers, builders, and installers and provides a comprehensive manual for the use of this product range.

Stratco have experienced technical services people in each state who can assist with any questions about the use of this product.

APPLICATIONS

Stratco purlins and girts are used to support roof and wall sheeting in industrial, commercial and rural buildings and as structural framing in medium sized buildings and relocatable accommodation as well as garages, patios and carports.

Z sections can be used over single spans, unlapped continuous and lapped continuous spans in multi-bay buildings whereas C sections can only be used over single spans and unlapped continuous spans.

PRODUCT CODING

Z and C sections have an easy to understand coding system. The first letter indicates the shape of the section, either Z or C, this is followed by five numbers, the first three indicating the nominal depth of the web, the last two indicating the base metal thickness. For example, a Z15015 is a Z section, 152mm in depth and 1.5mm base metal thickness. In addition, Stratco have introduced National computerised product coding to provide consistency of information, and to ensure clearer overall presentation. This also helps our customers in being able to order directly 'on line'; saving time, money and reducing the chance of errors.

BENEFITS OF USING STRATCO PURLIN PRODUCTS

- Designed in accordance with AS/NZS 4600: 2005, conforming to the latest requirements for both Government and private design.
- Tables are generated using the latest version of the purlin and girt software by the Centre for Advanced Structural Engineering at the University of Sydney, a recognised leader in this field of engineering and your guarantee of reliability and dependability.
- A full range of sections from 75mm to 400mm to choose from, for ease of design options.
- Stratco purlins and girts can be supplied plain, or punched using standard hole punching, spaced to your specifications.
- Tables include simple, continuous, lapped and combination spans allowing a comprehensive range of spanning options.
- Purlins and girts are manufactured from high tensile steel for increased strength and reduced weight.
- Coating mass of Z350 provides long life under normal circumstances. Z450 is also available on request.
- Stratco supply a full accessory range of brackets, tie rods, turnbuckles, bolts, as well as larger items such as fascia purlins.
- Purlins are complemented by the Rapidfix Bridging System which allows fast and easy installation, thereby reducing on site time and costs.

This booklet should be read in conjunction with the Stratco "Selection, Use and Maintenance" brochure. Stratco takes no responsibility for any misinterpretation of the details provided or for omissions. These tables are subject to change without notice. Users should satisfy themselves they are using the most up to date information available.

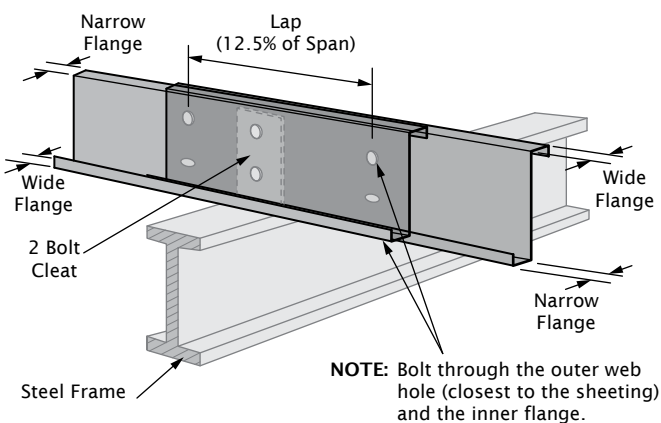
MATERIAL

Stratco purlins are manufactured from hi-tensile, zinc coated steel complying with AS1397, with a minimum yield stress of 450MPa and Z350 (g/m²) coating mass. Individual mass and steel grade for each Stratco section size is included in the table below:

Section Z or C	Thickness mm	Yield Stress MPa	Mass kg/m
75-95	0.95	550	1.26
75-12	1.2	500	1.59
75-15	1.5	450	1.97
100-10	1.0	550	1.77
100-12	1.2	500	2.10
100-15	1.5	450	2.61
100-19	1.9	450	3.29
100-24	2.4	450	4.13
150-10	1.0	550	2.40
150-12	1.2	500	2.86
150-15	1.5	450	3.58
150-19	1.9	450	4.50
150-24	2.4	450	5.66
200-12	1.2	500	3.59
200-15	1.5	450	4.49
200-19	1.9	450	5.72
200-24	2.4	450	7.20
250-15	1.5	450	5.15
250-19	1.9	450	6.49
250-24	2.4	450	8.16
300-24	2.4	450	10.07
300-30	3.0	450	12.67
350-24	2.4	450	12.19
350-30	3.0	450	15.18
400-24	2.4	450	13.16
400-30	3.0	450	16.39

Please note that not all sizes are available in all states, contact your nearest Stratco sales office to confirm individual availability.

Figure 1: Lapped Joint



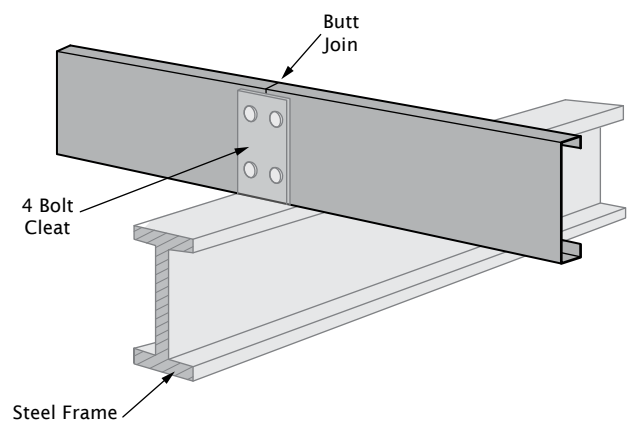
LAPPING

Stratco Z sections are designed with a wide and narrow flange which, when one is rotated through 180°, allows for two sections of the same size to fit snugly together and hence are suitable for lapping. The lapping provides two thicknesses of material over the interior supports where the bending moments and shear are most critical, resulting in increased load capacity and rigidity. Sections of the same size, but of different thickness, may be combined to create the most economical span configuration. Note that C sections cannot be lapped due to their shape and so are typically used over single spans and unlapped continuous spans.

Stratco Z sections require a lap length of 12.5% of the span (to the nearest 10mm) and must be bolted in the outer web holes (closest to the sheeting) and the inner flange hole at both ends of the lap as shown in Figure 1: Lapped Joint. The lap length is the distance between the bolt hole centres at the end of the laps.

Where purlin spans are unequal between supports, each purlin should have 6.25% of each adjacent span added, not 6.25% of that purlin's span.

Figure 2: Butt Joint

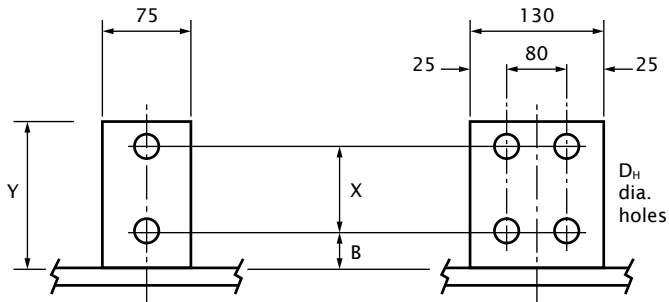


DESIGN & SPECIFICATION DATA

HOLE PUNCHING

Stratco Z and C sections can be supplied blank or punched to detail. Normally holes are punched to Australian Institute of Steel Construction gauge lines as shown in the following table, as well as as flange and centreline punching. For section sizes from 75 to 250mm inclusive, the holes are elongated 22x18mm, suitable for M12 bolts while 300mm, 350mm and 400mm sections have a 22mm diameter hole suitable for M16 bolts.

Figure 3: Hole Punching & Cleat Detail



CLEAT NOMINAL DIMENSIONS (mm)					
Nom. section size (mm)	X	B	Y	Gap	D _H
75	-	48	80	10	14
100	40	40	105	10	18
150	60*	55**	145	10	18
200	110	55	195	10	18
250	160	55	245	10	18
300	210	65	305	20	22
350	260	65	355	20	22
400	310	65	410	20	22

Punching details to AISC Standards

* 70mm in Victoria

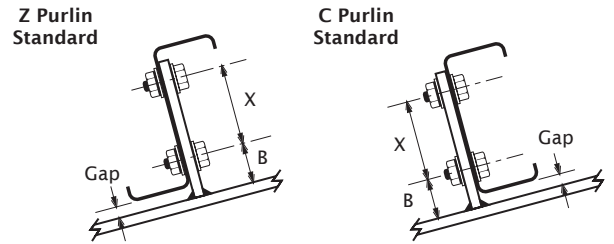
** 50mm in Victoria

BOLT SIZES

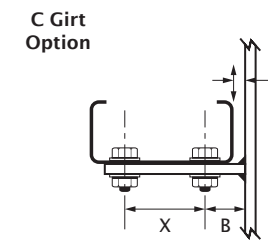
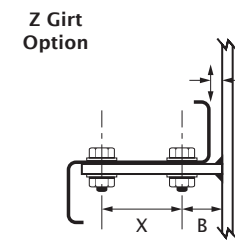
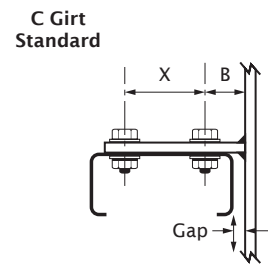
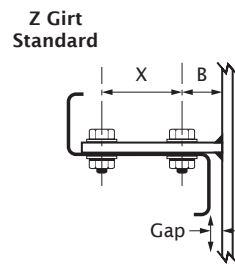
Bolting of section sizes from 100 to 250mm inclusive, at cleats and lapped joints, requires M12 grade 4.6 bolts to be used, 300mm and 350mm sections require M16 grade 4.6 bolts.

If the shear capacity of the bolts is exceeded, grade 8.8 bolts are required and this is indicated by shading in the tables.

Figure 4: Fastening to Cleats



NOTE: Z and C Section purlins must have the top flange pointing up the slope to minimise rotation.

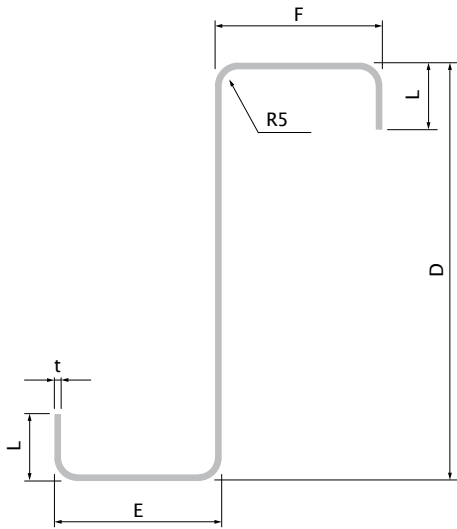


TOLERANCES

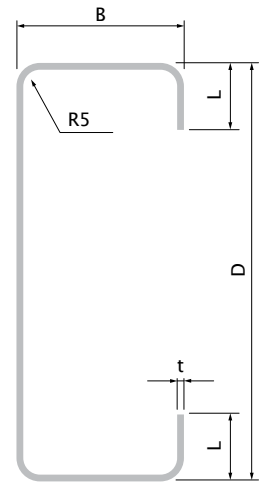
The following tolerances apply to Stratco Z and C sections:

Overall length: +0, -10mm	Depth: ±1mm
Hole Centres: ±1mm	Flange Width: ±1mm

Z AND C SECTION - DIMENSIONS



Standard Z-Section



Standard C-Section

Section Size	MATERIAL PROPERTIES (MPa)			DIMENSIONS					
	Yield Stress f_y	Ult. Tensile Strength f_u	t mm	D mm	Z Section		C Section	L mm	Mass kg/m
					E mm	F mm	B mm		
75-95	550	550	0.95	75	-	-	40	10.0	1.26
75-12	500	520	1.2	75	-	-	40	10.7	1.59
75-15	450	480	1.5	75	-	-	40	11.4	1.97
100-10	550	550	1.0	102	53	49	51	12.5	1.77
100-12	500	520	1.2	102	53	49	51	12.5	2.10
100-15	450	480	1.5	102	53	49	51	13.5	2.61
100-19	450	480	1.9	102	53	49	51	14.5	3.29
100-24	450	480	2.4	102	53	48	51	15.0	4.13
150-10	550	550	1.0	152	65	61	64	14.5	2.40
150-12	500	520	1.2	152	65	61	64	15.0	2.86
150-15	450	480	1.5	152	65	61	64	16.0	3.58
150-19	450	480	1.9	152	65	61	64	17.0	4.50
150-24	450	480	2.4	152	66	61	64	18.5	5.66
200-12	500	520	1.2	203	79	74	76	15.0	3.59
200-15	450	480	1.5	203	79	74	76	16.0	4.49
200-19	450	480	1.9	203	79	74	76	19.0	5.72
200-24	450	480	2.4	203	79	74	76	21.0	7.20
250-15	450	480	1.5	254	79	74	76	18.0	5.15
250-19	450	480	1.9	254	79	74	76	19.0	6.49
250-24	450	480	2.4	254	79	74	76	20.5	8.16
300-24	450	480	2.4	300	100	93	96	28.0	10.07
300-30	450	480	3.0	300	100	93	96	31.5	12.67
350-24	450	480	2.4	350	129	121	125	29.0	12.19
350-30	450	480	3.0	350	129	121	125	30.0	15.18
400-24	450	480	2.4	400	129	121	125	28.0	13.16
400-30	450	480	3.0	400	129	121	125	30.0	16.39

DESIGN & SPECIFICATION DATA

Z SECTION PROPERTIES

Section Size	FULL Z SECTION PROPERTIES							EFFECTIVE PROPERTIES	
	A mm ²	I _x x10 ⁶ mm ⁴	Z _x x10 ³ mm ³	I _y x10 ⁶ mm ⁴	Z _y x10 ³ mm ³	J mm ⁴	I _w x10 ⁹ mm ⁶	A _e mm ²	Z _{ex} x10 ³ mm ³
100-10	215	0.36	7.06	0.131	2.57	72	0.21	113	5.36
100-12	258	0.43	8.40	0.155	3.05	124	0.25	153	6.72
100-15	323	0.54	10.47	0.196	3.89	242	0.32	225	9.05
100-19	409	0.67	13.17	0.250	4.99	491	0.41	333	12.43
100-24	516	0.82	16.18	0.301	6.11	979	0.49	461	15.81
150-10	295	1.07	13.97	0.248	3.93	98	0.94	122	8.58
150-12	354	1.28	16.72	0.298	4.74	169	1.14	167	11.86
150-15	443	1.59	20.87	0.377	6.02	331	1.44	246	17.12
150-19	561	2.00	26.33	0.479	7.71	672	1.83	356	22.80
150-24	708	2.52	33.18	0.626	10.04	1362	2.38	534	31.37
200-12	444	2.84	27.79	0.504	6.57	214	3.48	169	16.05
200-15	555	3.55	34.73	0.636	8.34	418	4.39	253	24.32
200-19	703	4.52	44.40	0.852	11.22	860	5.91	381	36.61
200-24	900	5.70	56.11	1.100	14.59	1740	7.66	558	48.98
250-15	638	6.07	47.51	0.670	8.77	480	7.67	264	31.46
250-19	808	7.66	60.07	0.852	11.20	976	7.74	383	46.53
250-24	1020	9.64	75.77	1.086	14.38	1970	12.43	561	66.78
300-19	998	13.57	89.85	1.871	19.38	1209	29.63	449	63.60
300-24	1260	17.05	113.09	2.358	24.55	2435	37.33	637	91.91
300-30	1590	21.37	142.04	3.060	32.07	4793	48.68	915	126.30
350-24	1524	28.79	163.60	4.760	38.16	2938	99.47	664	110.30
350-30	1905	35.78	203.67	5.925	47.73	5729	123.70	939	159.60
400-24	1644	39.20	194.91	4.688	37.54	3159	131.70	657	124.20
400-30	2055	48.93	243.66	5.926	47.68	6179	166.50	943	181.20

Z_{ex} is the effective modulus at yield (bending)

A_e is the effective area at yield (compression)

C SECTION PROPERTIES

Section Size	FULL C SECTION PROPERTIES										EFFECTIVE PROPERTIES	
	A mm ²	Xc mm	Ix x10 ⁶ mm ⁴	Zx x10 ³ mm ³	Iy x10 ⁶ mm ⁴	Zy x10 ³ mm ³	Xo mm	By mm	J mm ⁴	Iw x10 ⁹ mm ⁶	Ae mm ²	Zex x10 ³ mm ³
75-95	154	12.88	0.14	3.77	0.033	1.24	31.77	93.53	46	0.04	95	2.96
75-12	194	12.97	0.17	4.74	0.041	1.60	32.01	93.19	93	0.05	140	4.02
75-15	243	13.04	0.22	5.87	0.051	2.02	32.19	92.73	182	0.06	209	5.52
100-10	215	16.06	0.36	7.19	0.075	2.22	39.93	123.20	72	0.16	113	5.36
100-12	258	15.96	0.43	8.56	0.089	2.63	39.68	122.90	124	0.19	153	6.72
100-15	323	16.11	0.54	10.67	0.112	3.35	40.09	122.40	242	0.24	225	9.05
100-19	409	16.21	0.67	13.42	0.142	4.31	40.36	121.80	491	0.31	333	12.43
100-24	516	16.11	0.83	16.69	0.175	5.39	40.13	120.90	939	0.38	461	15.87
150-10	295	18.38	1.08	14.30	0.158	3.55	46.75	171.50	99	0.71	122	8.59
150-12	354	18.43	1.29	17.14	0.190	4.28	46.88	171.10	170	0.86	167	11.88
150-15	443	18.58	1.61	21.40	0.239	5.44	47.26	170.40	333	1.09	246	17.18
150-19	561	18.67	2.03	26.98	0.303	6.98	47.51	169.60	677	1.40	357	22.85
150-24	708	18.85	2.54	33.94	0.385	9.00	48.00	168.50	1366	1.81	534	31.40
200-12	444	19.93	2.83	28.06	0.318	5.79	51.60	223.60	213	2.46	169	16.05
200-15	555	20.08	3.53	35.06	0.400	7.35	51.97	222.80	417	3.12	253	24.31
200-19	703	20.75	4.51	44.81	0.529	9.92	53.64	220.90	857	4.24	380	36.55
200-24	900	21.06	5.68	56.62	0.679	12.92	54.46	219.40	1735	5.54	558	48.98
250-15	638	18.18	6.05	47.89	0.446	7.92	48.64	276.80	479	5.47	264	31.44
250-19	808	18.26	7.63	60.54	0.566	10.14	48.86	275.50	974	6.98	383	46.50
250-24	1020	18.42	9.61	76.38	0.719	13.04	49.28	273.70	1965	8.92	561	66.72
300-24	1260	25.15	17.00	114.25	1.521	22.22	66.36	319.20	2431	27.10	636	91.86
300-30	1590	25.77	21.31	143.50	1.955	29.08	67.94	315.60	4784	35.66	916	126.30
350-24	1524	33.22	28.80	165.71	3.065	34.29	86.31	379.40	2938	72.30	663	110.30
350-30	1905	33.21	35.79	206.28	3.811	42.92	86.31	378.30	5729	90.01	933	159.60
400-24	1644	30.54	39.21	197.23	3.148	34.20	81.01	433.80	3159	95.53	657	124.20
400-30	2055	30.79	48.94	246.55	3.964	43.46	81.67	431.60	6179	121.00	943	181.20

Zex is the effective modulus at yield (bending)

Ae is the effective area at yield (compression)

DESIGN CAPACITIES

Section Size	Z SECTION				C SECTION			
	fodx MPa	Ø Msx kNm	Ø Mbdx kNm	Ø Vvy kN	fodx MPa	Ø Msx kNm	Ø Mbdx kNm	Ø Vvy kN
75-95	-	-	-	-	429	1.55	1.31	11.82
75-12	-	-	-	-	590	1.91	1.74	19.17
75-15	-	-	-	-	805	2.36	2.20	24.10
100-10	325	2.80	2.25	9.67	325	2.80	2.25	9.67
100-12	398	3.19	2.73	16.78	398	3.19	2.73	16.78
100-15	547	3.87	3.56	28.41	547	3.87	3.56	28.41
100-19	770	5.32	4.97	43.43	762	5.32	4.95	43.43
100-24	1084	6.76	6.55	54.24	1034	6.78	6.60	54.24
150-10	205	4.48	3.68	6.21	214	4.49	3.79	6.21
150-12	283	5.64	4.75	10.76	269	4.69	4.71	10.76
150-15	383	7.32	6.24	21.12	363	7.35	6.20	21.12
150-19	526	9.75	8.80	43.17	503	9.77	8.75	43.17
150-24	749	13.41	12.43	72.74	705	13.42	12.27	72.74
200-12	176	7.62	6.50	7.89	178	7.62	6.50	7.89
200-15	240	10.39	8.67	15.45	242	10.39	8.66	15.45
200-19	378	15.66	13.20	31.54	366	15.63	12.99	31.54
200-24	528	20.94	18.69	63.90	518	20.94	18.58	63.90
250-15	226	13.45	11.58	12.19	228	13.44	11.57	12.19
250-19	310	19.89	16.58	24.84	313	19.87	16.56	24.84
250-24	443	28.55	23.86	50.27	436	28.52	23.63	50.27
300-24	367	39.29	33.31	42.17	369	39.27	33.27	42.17
300-30	493	54.01	46.49	82.70	518	54.01	47.14	82.70
350-24	252	47.18	41.69	35.87	246	47.18	41.23	35.87
350-30	338	68.25	58.10	70.32	325	68.25	57.24	70.32
400-24	230	53.10	47.82	31.22	217	53.10	46.75	31.22
400-30	308	77.45	67.09	61.16	298	77.45	66.16	61.16

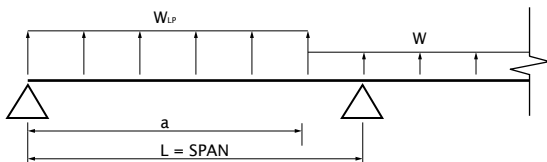
LOCAL PRESSURE ZONES

The current Loading Code, AS/NZS 1170.2:2011 Wind Actions, requires consideration of local pressure factors for the cladding and its immediate supporting elements on buildings. For details refer to Clause 5.4.4 of the standard.

To compute an equivalent wind loading for the entire member span, use the table provided to determine the local pressure zone multiplier " K_{LPZ} " which can then be applied as a multiplication factor to the uniform wind load, as specified in the relevant load capacity table. The table requires the user to initially calculate the following:

The ratio of local area to span:

" R_{LPS} " This accounts for the relative area affected.
 $= a / L$ for $K_L = 1.5$
 $= a / 2L$ for $K_L = 2.0$



The value of dimension 'a' relates to the overall building dimensions, refer AS/NZS 1170.2 for details.

The factor for adjusted local pressure:

" K_{LPA} " This accounts for the relative magnitude of external and internal pressures.
 $= [C_{pi} - K_L * C_{pe}] / [C_{pi} - C_{pe}]$

Refer AS/NZS 1170.2 for values of C_{pi} , C_{pe} , K_L .

The local pressure zone multiplier will vary depending on the local zone position and the continuity of the supporting members, the table allows for this via slightly conservative assumptions. The table is based on the assumption that local pressure surcharge is applied within the end span, since that will produce the worst effect for continuous equal spans of equal stiffness.

It may occur that the local pressure zone multiplier " K_{LPZ} " is higher for the condition of $K_L = 2.0$ over small partial span length $0.5 "a"$, than for $K_L = 1.5$ over longer "a". Check both conditions.

For consideration of $K_L = 3.0$, refer AS/NZS 1170.2.

LOCAL PRESSURE ZONE MULTIPLIER K_{LPZ}										
R_{LPS}	Factor for Adjusted Local Pressure K_{LPA}									
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0.2	1.05	1.09	1.13	1.18	1.22	1.26	1.31	1.35	1.40	1.44
0.4	1.08	1.16	1.23	1.31	1.39	1.46	1.54	1.62	1.70	1.77
0.6	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
0.8	1.11	1.23	1.34	1.45	1.57	1.68	1.79	1.91	2.02	2.13
1.0	1.12	1.24	1.35	1.47	1.59	1.71	1.82	1.94	2.06	2.18

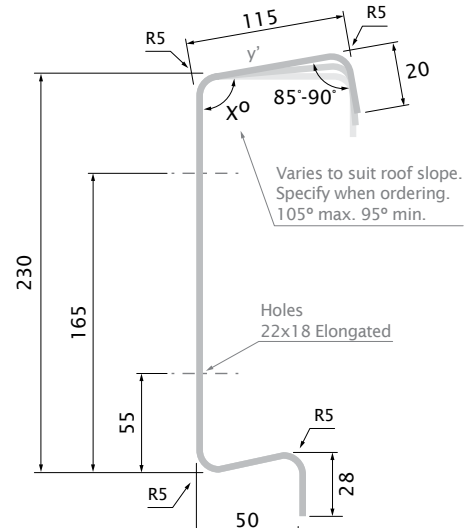
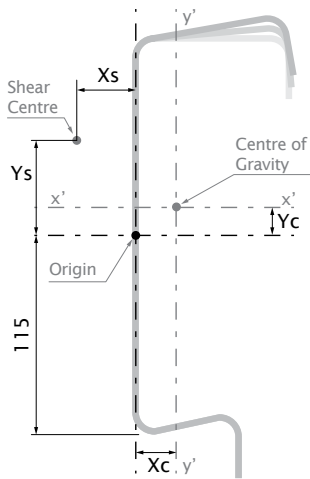
NOTE: Use linear interpolation for intermediate values (Multiplier $K_{LPZ} = 1.0$ for $R_{LPS} = 0$). For values of R_{LPS} greater than 1.0, use 1.0.

FASCIA PURLIN

Stratco manufacture a standard 230mm section suitable for a combined eave purlin and fascia situation. The top flange can be produced at any angle to suit the roof pitch and the bottom flange can be turned either up or down to provide easy fixing of wall sheeting.

In some states, the C sections can be rolled with the top flange at an angle to suit the roof pitch. In this way the purlins and fascia can all be supplied in the same section size for aesthetic requirements.

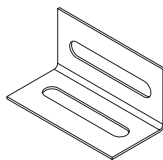
Figure 5: Fascia Purlin Dimensions



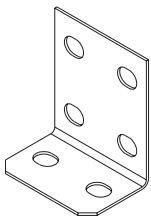
FASCIA PURLIN SECTION PROPERTIES													
Section Size	Flange Angle (°)	Second Moment of Area x10 ⁶ mm ⁴		Section Modulus 10 ³ mm ³		Torsion Constant mm ⁴	Warping Constant x10 ⁹ mm ⁴	Monosymmetry Constant mm		Shear Centre mm		Centre of Gravity mm	
		I _x	I _y	Z _x	Z _y			β _x	β _y	X _s	Y _s	X _c	Y _c
230-19	95	5.77	0.81	36.98	8.96	488	3.30	-114.40	284.40	-25.82	76.87	24.99	15.76
230-19	100	5.96	0.77	37.92	8.52	486	3.20	-103.20	300.10	-25.74	73.42	24.49	16.94
230-19	105	6.22	0.75	39.11	8.37	487	3.14	-92.61	317.00	-25.67	70.70	24.10	18.39

PURLIN ACCESSORIES & TYPICAL ASSEMBLIES

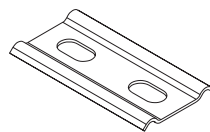
(### denotes section web depth)



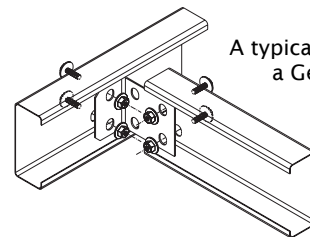
Angle Connector
code ACON###
Slotted holes allow for connections between sections of the same size.



General Purpose Bracket
code GPB###
Used for 90° connections for sections of the same web depth.

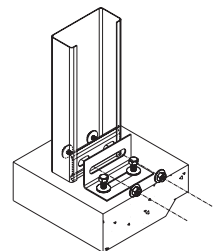
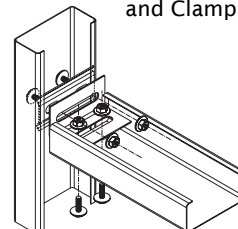


Clamp Plate
code CPLA###
Used in conjunction with Angle Connectors for connections to the open face of C sections.



A typical 90° connection using a General Purpose Bracket

A simple connection to the open face of a C section using an Angle Connector and Clamp Plate



An Angle Connector and Clamp Plate being used to anchor a C section to a concrete slab floor

BRIDGING CONFIGURATIONS

Purlins and girts possess two types of lateral instability, lateral deflection and rotation. It is assumed that sheeting with screw fasteners is a suitable lateral brace to the flange to which it is attached but bridging may still be required to prevent lateral deflection of the free flange and rotation of the section at that point.

'Rapidfix' bridging components suit all purlin sizes from 100 to 250mm. The secret of the 'Rapidfix' bridging is the bridging ends that have been specially designed to make installation easier. The new bridging ends have been designed with hook locks and receiver tags that allow single handed installation, and require no bolting. The lock ends match standard punching centres, and each 'Rapidfix' bridging strut locks into the previous bridging receiver end from the opposite side of the web in a unique way that keeps the bridging strong and visually straight.

The Stratco 'Rapidfix' bridging is an up to date and 'user friendly' system and comprises a range of components to form a complete system from floor to ridge.

Rigid bridging assemblies between purlins and girts are complemented by adjustable assemblies at the ridge, eaves and floor level, offering flexible solutions for the architect, engineer, fabricator and rigger.

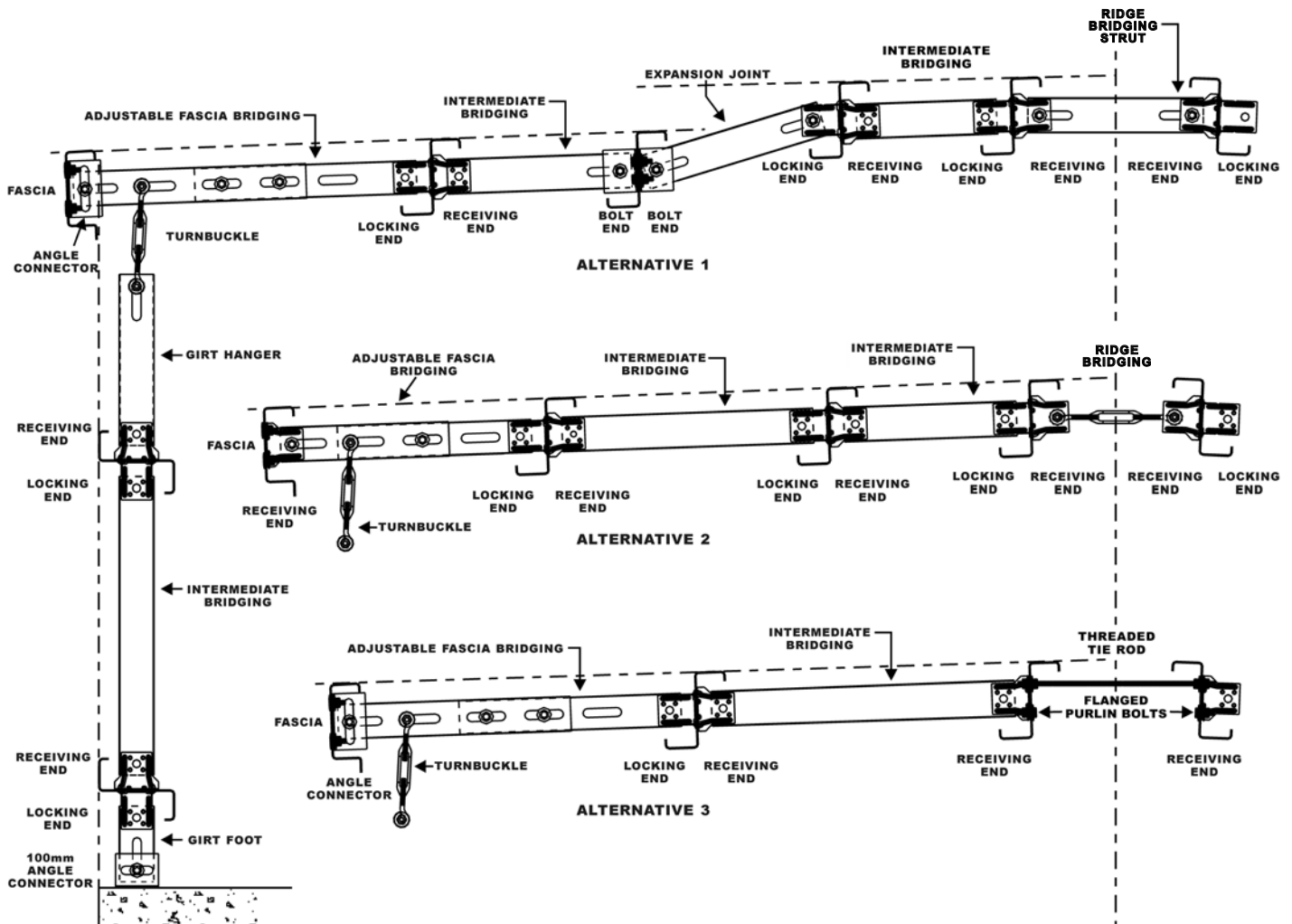
Typical bridging configurations are shown in Figure 6: Bridging Configurations.

Although the capacity tables do show 0, 1, 2 or 3 rows of bridging, Stratco recommend that the maximum unbridged length is 20 times the section depth, or 4000mm, whichever is the least.

Capacity tables have been generated with bridging spacing in accordance with Figure 7: Bridging Hole Positions (to the nearest 10mm).

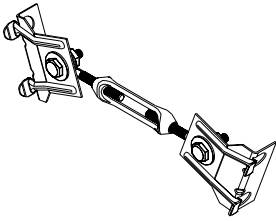
Bridging supporting the self weight of walling must be checked for axial capacity in accordance with AS/NZS 4600.

Figure 6: Bridging Configurations



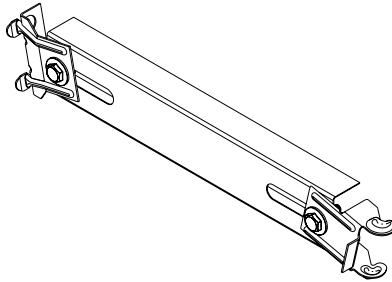
BRIDGING COMPONENTS

(### denotes section web depth, ** denotes lock, reciever or bolted end)



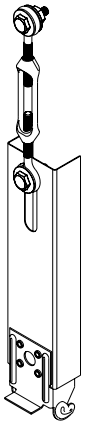
Ridge Bridging
code RIBR###**

Used to give the correct spacing between the ridge purlins.



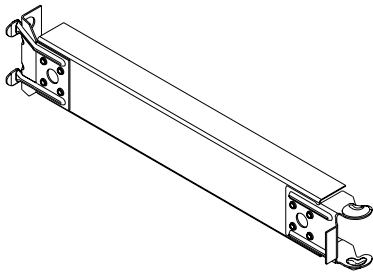
Ridge Bridging Strut
code RBST###**

Used as a Ridge Tie where the spacing between the ridge purlins exceeds 366mm.



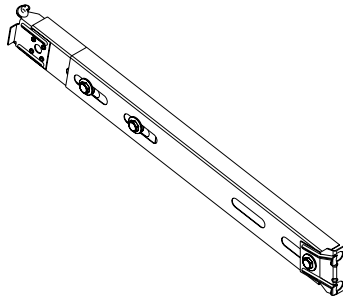
Girt Hanger
code GHAN###**

Supported from the fascia bridging to align the top girt.



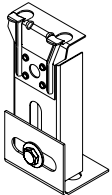
Intermediate Bridging Strut
code INBR###**

Used to space intermediate purlins and girts correctly and reduce rotation mid span between supports.



Adjustable Fascia Bridging
code AFBR###**

Supports between the fascia purlin and the adjacent intermediate purlin.

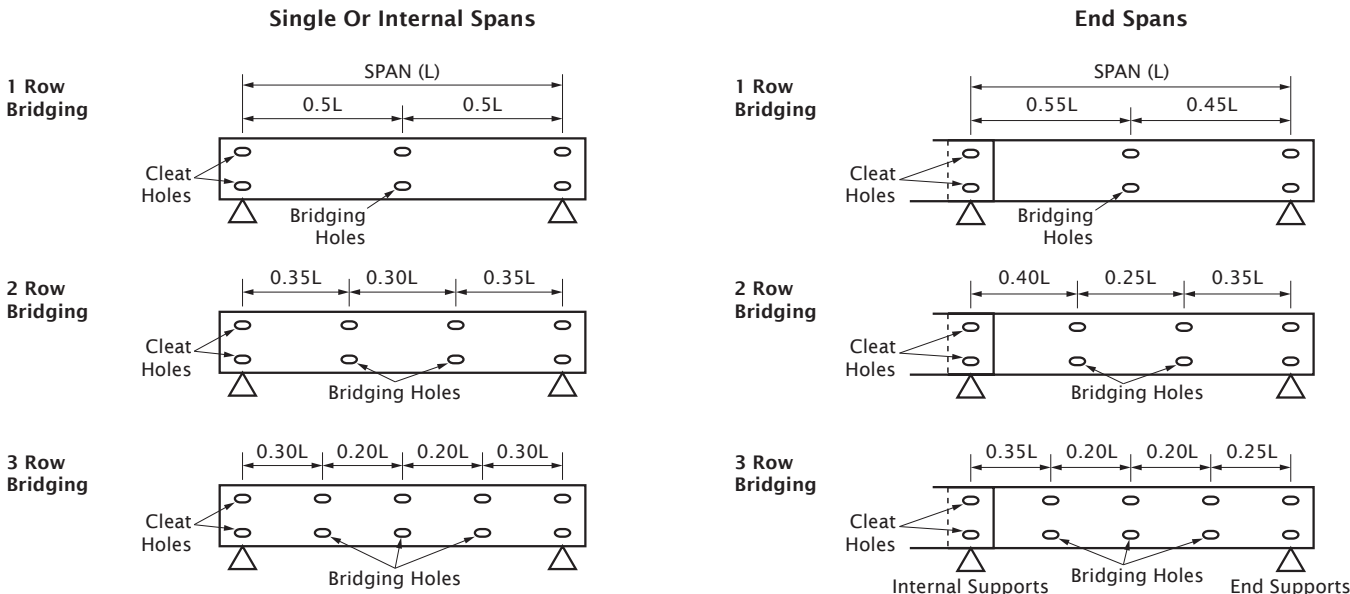


Girt Foot
code GFOT###**

Used to align and support the bottom girt above the concrete slab floor.

BRIDGING HOLE POSITIONS

Figure 7: Bridging Hole Positions



BRIDGING INSTALLATION

Bridging can be installed either up or down the roof slope, but cannot be mixed within a bridging run. As the direction of the bridging run may determine the starting and finishing components on some projects, it is useful that this is established in the design phase and communicated to Stratco at the time of ordering.

When more than one row of girt bridging is to be installed, always complete the bridging for each girt spacing before moving to the next. This is to ensure that additional loads are not placed on one run of bridging and that loads are evenly distributed.

The Stratco 'Rapidfix' bridging system is very fast and easy to install due to the specially designed 'boltless' lock and receiver ends. These ends are designed to match standard punching and the receiver end has a unique locator tab that allows both ends of the bridging strut to be held in place making installation easier for the rigger who is operating well off the ground, often in windy and difficult conditions.

PURLIN BRIDGING

There are a number of ways to install the bridging but it is generally commenced at the ridge or eave and installed progressively to the other end of the run.

A typical installation is as follows:

1. Install the ridge tie (either turnbuckle or strut style) between the top purlin either side of the ridge using the receiver tags. Make any adjustments necessary to ensure that the purlins are straight using the turnbuckle or bolts on the ridge tie.
2. Install the intermediate bridging strut by sliding the hook end through the holes in the purlin and over the previously installed receiver end on an angle, then swing the bridging strut around until the receiver is engaged in the holes of the next purlin.
3. Working towards the fascia purlin, install the rest of the intermediate bridging using the same method.
4. The adjustable fascia bridging is installed in the same way as the intermediate bridging except that the end bracket can be adjusted to suit the roof pitch and the strut itself is two piece to allow for any final adjustment that may be required.
5. This procedure from Steps 1 to 4 is now repeated for the other side of the roof ensuring that the bridging on both sides of the building is swung into place from the same end.
6. This procedure can also be commenced at the eave working up to the ridge.
7. Where fascia bridging or ridge ties are not used, the receiving end is secured using two M12 bolts.

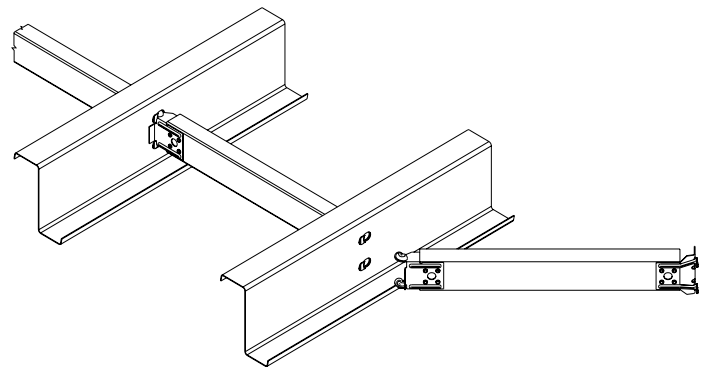
GIRT BRIDGING

Our recommended procedure is to commence at floor level and work up to the eave.

A typical installation is as follows:

1. Install the girt foot assembly to the bottom girt using the receiver tags and anchor the assembly to the slab. Due to the loads imposed on the bridging by the girts, the girt foot assembly must be anchored.
2. Make any adjustments necessary to ensure that the bottom girt is straight. If the slab is not yet poured, a temporary support is required to keep the bottom girt straight.
3. Working toward the eaves install the intermediate bridging using Step 2 described in the purlin bridging section.
4. The girt hanger is installed in the same way as the intermediate bridging except that the turnbuckle at the top is bolted to the slots in the adjustable fascia bridging.
5. Where no girt foot assembly is used, we strongly recommend that a temporary support is used under the bottom girt until after the wall sheeting is installed in that area and that the turnbuckle of the girt hanger is not used to level the girts until after the roof sheeting has been installed.

Figure 8: Purlin Bridging Installation



ORDERING

To simplify the ordering process, Stratco have produced a number of easy to follow purlin and girt accessory detail sheets. These are available from your nearest Stratco Sales Office.

ADVERSE CONDITIONS AND COMPATIBILITY

The standard Z350 (350g/m²) coating should provide satisfactory life under normal circumstances, however, some materials and aggressive environmental conditions may effect this life considerably.

These include exposure or contact with:

- Marine or industrial atmospheric conditions.
- Incompatible metals such as lead, copper and 300 grade stainless steel. (Note that corrosion can occur where water connects, or flows from these incompatible materials over galvanised steel, and direct physical contact is not necessary for corrosion to occur).
- Materials with cycles of wetness and dryness, or situations where materials which may retain moisture (such as sand, soil, or compost) are placed against galvanised materials.
- Materials treated with preservatives, such as CCA treated timber.

A non-aggressive environment is considered to be at least 1000m from rough surf, 400m from calm salt water, and 750m from industrial emissions. If unsure, please contact your nearest Stratco Sales Office. Care should be taken to avoid dissimilar metal corrosion. Details of unacceptable products may be found in the BHP Coated Steel Australia technical bulletin CTB - 12 titled "Corrosion - Dissimilar Metals".

It is also important that consideration of the eventual use of the building be taken into account when selecting the type of purlin or girt material. Applications such as intensive animal farming, use in storing or working with corrosive materials, or use in exposed situations not naturally washed by rain will all reduce the life of the galvanised material. Painting may also require special advice. In these circumstances please contact Stratco for additional information.

These issues and a range of others are included in the comprehensive Stratco brochure titled "The Selection, Use and Maintenance of Stratco Steel Products" which provides a broad, easy to understand guide to looking after your steel building products. In addition all people using this manual, or working with Stratco purlins, girts and accessories should be familiar with the BHP Coated Steel Australia recommendations outlined in their Technical Bulletins.

PACKAGING AND HANDLING

Stratco purlins and girts are supplied in strapped bundles. Bundle size is dependent on section size, length and total order, but generally, unless specified otherwise, bundles will weigh approximately 500kg (maximum) for ease of handling and craning. Under normal conditions, Stratco can supply purlins in lengths up to 12 metres. Lengths longer than this have special transport and on-site handling requirements. Care must be taken when handling long lengths. Lifting must be carried out using a suitable spreader beam with properly located lifting points and slings.

STORAGE

As sections are made from galvanised material, keeping them dry prior to use is important. If this is not possible, care must be taken to ensure that they are stacked clear of the ground, on a slope to allow water drainage, and not left tightly banded together. If these precautions are not taken, water staining and deterioration can result.

SAFETY

The installation of Stratco purlins and girts can be hazardous, and will require an adequate safety plan be in place prior to handling or installing of these products. All rigging, scaffolding and safety equipment must comply with the relevant codes, Australian standards and statutory requirements. We recommend that good trade practice be followed such as that outlined in Australian Standards AS3828-1998 (Guidelines for the erection of building steelwork) and HB39 (Installation code for metal roof and wall cladding). Users should follow the requirements outlined in the Stratco brochure titled, "The Selection, Use and Maintenance of Stratco Steel Products".

Stratco purlins are not designed to be walked on unless fully covered by correctly installed roofing materials or the correct grade of safety mesh. The manufacturing or delivery process may result in oil or grease adhering to these purlins which could increase the potential hazard.

Handling of this product must be carried out using a correctly supervised crane or appropriate lifting device. Safety harnesses must always be used during installation of Stratco purlins and girts when working off the ground, and under no circumstances must any body weight be placed on bridging, or on purlins or girts that have not been fully bolted into position and with the correct bridging installed. Bolts must be the correct size and grade, all progressively fully tightened during installation. Laps must be bolted in the outer web hole (closest to the sheeting), and the inner flange holes provided.

ABOUT THE TABLES

BEFORE YOU USE THESE TABLES

Please ensure that you are familiar with the assumptions and conditions contained in this manual by reading it fully. Whilst generally the contents are self explanatory, should you have any questions or concerns contact Stratco for advice prior to ordering or using the product.

HOW TO USE THE STRATCO PURLIN & GIRT TABLES

These tables have been produced as a design tool for engineers and building certifiers. The design capacity tables indicate the maximum allowable limit state design uniformly distributed loads that can be applied to the sections. As the tables assume uniformly distributed loads, any point loads required must be converted to uniformly distributed loads to enable the tables to be used correctly. Once the outward and inward loads on the member have been determined in accordance with the relevant standards, the appropriate table may be used to determine the best combination of section size and number of bridgings required.

ASSUMPTIONS

These tables assume that all sections are bent about the axis perpendicular to the web, and that there is continuity at any laps. It is also assumed that these sections are provided with lateral stability in the plane of the roof at internal supports and at the ends of cantilevers. In addition, these tables are based on the assumption that roofing and walling provides lateral restraint to the purlin or girt flange to which it is attached and that there is restraint against twisting and lateral movement at the bridging points. Where a section is not fully loaded it is able to resist forces other than bending, e.g. axial loads, acting on bracing of roof and wall structures. Sections subject to forces other than those inducing bending about the major axis must be designed in accordance with AS/NZS 4600. Purlins and girts must not be subjected to additional loading from stacked materials placed upon them. Care must be taken when installing and loading both purlin and roofing materials, so that the purlin shape is not buckled or distorted as this may have an adverse affect on purlin performance. The tables do not take into account the ability of any roofing or walling material to carry the published loads and this must be determined separately.

SUSPENDED LOADS

Loads suspended from the purlins must be allowed for in the design. It is recommended that loads be connected to the purlin web by hangers or similar means, and must never be connected to the purlin lips. Flange attachments must be within 25mm of the web.

DEFLECTIONS

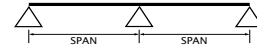
The values shown in the 'Def'n L/150' column are the uniform loads required to produce a mid-span deflection of span/150. Loads for other deflection ratios may be obtained by simple proportion.

SPAN CONFIGURATIONS

Single spans are simply supported at each end of the purlin.



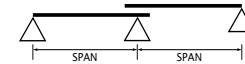
Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support.



Three continuous spans are continuous over three bays of equal span, supported at each end of the purlin and over two internal supports.



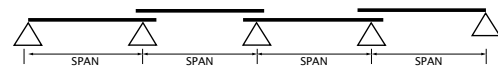
Two lapped spans are continuous over two bays, supported at each end of the purlin and lapped over a central support.



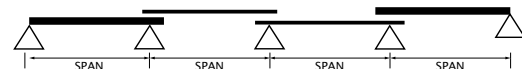
Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



Thickened end spans have the end bays with a greater thickness than the internal bays. They are supported at each end of the purlin and lapped over three or more central supports.



ECONOMICAL SPAN CONFIGURATIONS

In multi-bay buildings, the most economical purlin configurations are continuous lapped Z sections. However, in this situation, the limiting capacity for both strength and deflection is likely in the end bays, where there is only lapping at one end. There are two common methods of improving end bay performance to provide greater overall economy in the building:

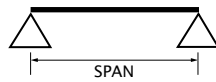
Extra end bay bridging - additional rows of bridging in the end bays may increase the outward strength, but this method does not change the deflection.

Increased end bay thickness - end bay purlins and girts may have greater thickness than internal bays, (e.g. 1.9mm end bays with 1.5mm internal). This improves both strength and deflection in the end bays and gives overall a much more efficient design and is the preferred method. Capacity tables featuring thickness combinations are included within this booklet.

DESIGN CAPACITY (kN/m)

C75 SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



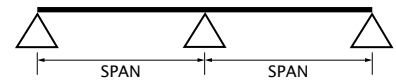
Span	C 75 - 9.5						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	10.49	10.49	10.49	10.49	10.49	10.49	13.35
1500	4.66	4.66	4.66	4.31	4.66	4.66	3.96
2000	2.62	2.62	2.62	1.86	2.62	2.62	1.67
2500	1.68	1.68	1.68	0.88	1.61	1.68	0.86
3000	1.17	1.17	1.17	0.46	0.98	1.17	0.50
3500	0.86	0.86	0.86	0.27	0.61	0.84	0.31
4000	0.66	0.66	0.66	0.17	0.38	0.60	0.21
4500	0.52	0.52	0.52	0.11	0.26	0.43	0.15

Span	C 75 - 12						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	13.88	13.88	13.88	13.88	13.88	13.88	17.14
1500	6.17	6.17	6.17	5.57	6.17	6.17	5.08
2000	3.47	3.47	3.47	2.59	3.47	3.47	2.14
2500	2.22	2.22	2.22	1.21	2.06	2.22	1.10
3000	1.54	1.54	1.54	0.65	1.30	1.54	0.64
3500	1.13	1.13	1.13	0.38	0.85	1.07	0.40
4000	0.86	0.87	0.87	0.24	0.54	0.78	0.27
4500	0.68	0.69	0.69	0.17	0.35	0.57	0.19

Span	C 75 - 15						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	17.61	17.61	17.61	17.61	17.61	17.61	21.85
1500	7.77	7.83	7.83	6.96	7.83	7.83	6.48
2000	4.30	4.40	4.40	3.29	4.35	4.40	2.73
2500	2.72	2.82	2.82	1.67	2.58	2.82	1.40
3000	1.87	1.96	1.96	0.89	1.64	1.92	0.81
3500	1.37	1.44	1.44	0.54	1.08	1.34	0.51
4000	1.04	1.10	1.10	0.35	0.73	0.97	0.34
4500	0.82	0.87	0.87	0.25	0.48	0.72	0.24

C75 CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support.



Span	C 75 - 9.5						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	10.36	10.36	10.36	10.36	10.36	10.36	32.21
1500	4.66	4.66	4.66	4.66	4.66	4.66	9.54
2000	2.62	2.62	2.62	2.62	2.62	2.62	4.03
2500	1.68	1.68	1.68	1.68	1.68	1.68	2.06
3000	1.17	1.17	1.17	1.09	1.17	1.17	1.19
3500	0.86	0.86	0.86	0.72	0.85	0.86	0.75
4000	0.65	0.66	0.66	0.49	0.61	0.66	0.50
4500	0.50	0.52	0.52	0.34	0.44	0.52	0.35

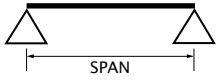
Span	C 75 - 12						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	13.67	13.67	13.68	13.68	13.68	13.68	41.32
1500	6.17	6.17	6.17	6.17	6.17	6.17	12.24
2000	3.47	3.47	3.47	3.47	3.47	3.47	5.17
2500	2.21	2.22	2.22	2.16	2.22	2.22	2.65
3000	1.51	1.54	1.54	1.41	1.54	1.54	1.53
3500	1.09	1.13	1.13	0.96	1.08	1.13	0.96
4000	0.82	0.87	0.87	0.68	0.79	0.87	0.65
4500	0.63	0.69	0.69	0.49	0.59	0.67	0.45

Span	C 75 - 15						
	Inward			Outward			Def'n L/150
	0	1	2	0	1	2	
1000	16.96	16.96	16.96	16.96	16.96	16.96	52.70
1500	7.83	7.83	7.83	7.83	7.83	7.83	15.62
2000	4.31	4.40	4.40	4.40	4.40	4.40	6.59
2500	2.71	2.82	2.82	2.70	2.82	2.82	3.37
3000	1.85	1.96	1.96	1.77	1.93	1.96	1.95
3500	1.33	1.44	1.44	1.22	1.36	1.44	1.23
4000	1.00	1.10	1.10	0.87	0.99	1.10	0.82
4500	0.78	0.87	0.87	0.64	0.74	0.84	0.58

NOTE: All gauges of section C 75 require M12 grade 4.6 bolts.

LOAD CAPACITY TABLES SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

Span	C/Z 100 - 10								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	10.12
2000	4.50	4.50	4.50	4.50	4.24	4.50	4.50	4.50	4.27
2500	2.88	2.88	2.88	2.88	2.17	2.88	2.88	2.88	2.19
3000	2.00	2.00	2.00	2.00	1.14	2.00	2.00	2.00	1.26
3500	1.47	1.47	1.47	1.47	0.68	1.40	1.47	1.47	0.80
4000	1.13	1.13	1.13	1.13	0.43	0.95	1.13	1.13	0.53
4500	0.89	0.89	0.89	0.89	0.28	0.65	0.89	0.89	0.38
5000	0.72	0.72	0.72	0.72	0.19	0.45	0.70	0.72	0.27
5500	0.60	0.60	0.60	0.60	0.14	0.32	0.54	0.60	0.21
6000	0.50	0.50	0.50	0.50	0.10	0.24	0.41	0.50	0.16
6500	0.43	0.43	0.43	0.43	0.08	0.18	0.32	0.43	0.12
7000	0.37	0.37	0.37	0.37	0.06	0.14	0.25	0.35	0.10
7500	0.32	0.32	0.32	0.32	0.05	0.11	0.19	0.29	0.08
8000	0.28	0.28	0.28	0.28	0.04	0.09	0.15	0.24	0.07

Span	C/Z 100 - 12								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	9.71	9.71	9.71	9.71	9.71	9.71	9.71	9.71	12.22
2000	5.46	5.46	5.46	5.46	4.99	5.46	5.46	5.46	5.16
2500	3.50	3.50	3.50	3.50	2.65	3.50	3.50	3.50	2.64
3000	2.43	2.43	2.43	2.43	1.45	2.42	2.43	2.43	1.53
3500	1.78	1.78	1.78	1.78	0.86	1.65	1.78	1.78	0.96
4000	1.37	1.37	1.37	1.37	0.53	1.14	1.37	1.37	0.65
4500	1.08	1.08	1.08	1.08	0.35	0.80	1.07	1.08	0.45
5000	0.87	0.87	0.87	0.87	0.24	0.56	0.82	0.87	0.33
5500	0.72	0.72	0.72	0.72	0.17	0.41	0.64	0.72	0.25
6000	0.60	0.61	0.61	0.61	0.13	0.30	0.50	0.61	0.19
6500	0.51	0.52	0.52	0.52	0.10	0.22	0.39	0.50	0.15
7000	0.44	0.45	0.45	0.45	0.08	0.17	0.31	0.41	0.12
7500	0.38	0.39	0.39	0.39	0.06	0.13	0.24	0.34	0.10
8000	0.33	0.34	0.34	0.34	0.05	0.11	0.19	0.29	0.08

Span	C/Z 100 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	12.64	12.64	12.64	12.64	12.51	12.64	12.64	12.64	15.56
2000	6.96	7.11	7.11	7.11	6.38	7.11	7.11	7.11	6.57
2500	4.39	4.55	4.55	4.55	3.57	4.55	4.55	4.55	3.36
3000	3.01	3.16	3.16	3.16	2.00	3.04	3.16	3.16	1.95
3500	2.19	2.32	2.32	2.32	1.17	2.10	2.32	2.32	1.23
4000	1.67	1.78	1.78	1.78	0.73	1.50	1.76	1.78	0.82
4500	1.31	1.41	1.41	1.41	0.48	1.09	1.34	1.41	0.58
5000	1.05	1.14	1.14	1.14	0.34	0.78	1.04	1.14	0.42
5500	0.87	0.94	0.94	0.94	0.24	0.55	0.82	0.93	0.32
6000	0.73	0.79	0.79	0.79	0.18	0.41	0.66	0.76	0.24
6500	0.62	0.67	0.67	0.67	0.14	0.31	0.53	0.63	0.19
7000	0.53	0.58	0.58	0.58	0.11	0.23	0.42	0.53	0.15
7500	0.46	0.51	0.51	0.51	0.09	0.18	0.34	0.44	0.13
8000	0.40	0.45	0.45	0.45	0.08	0.14	0.27	0.38	0.10

Span	C/Z 100 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	17.10	17.61	17.61	17.61	17.21	17.61	17.61	17.61	20.05
2000	9.29	9.91	9.90	9.90	8.64	9.91	9.90	9.91	8.46
2500	5.80	6.34	6.34	6.34	4.78	6.33	6.34	6.34	4.33
3000	3.96	4.40	4.40	4.40	2.76	4.17	4.40	4.40	2.51
3500	2.87	3.23	3.23	3.23	1.61	2.86	3.23	3.23	1.58
4000	2.17	2.48	2.48	2.48	1.02	2.02	2.42	2.48	1.06
4500	1.70	1.96	1.96	1.96	0.69	1.46	1.84	1.96	0.74
5000	1.37	1.58	1.59	1.59	0.49	1.07	1.42	1.58	0.54
5500	1.12	1.30	1.31	1.31	0.36	0.77	1.12	1.28	0.41
6000	0.94	1.09	1.10	1.10	0.28	0.56	0.89	1.04	0.31
6500	0.79	0.93	0.94	0.94	0.22	0.42	0.71	0.86	0.25
7000	0.68	0.80	0.81	0.81	0.18	0.32	0.57	0.72	0.20
7500	0.59	0.69	0.70	0.70	0.14	0.26	0.46	0.60	0.16
8000	0.52	0.61	0.62	0.62	0.12	0.20	0.37	0.51	0.13

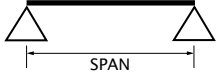
Span	C/Z 100 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	21.46	22.85	22.85	22.85	21.94	22.85	22.85	22.85	25.04
2000	11.64	12.85	12.85	12.85	11.25	12.85	12.85	12.85	10.56
2500	7.27	8.23	8.23	8.23	6.24	8.07	8.23	8.23	5.41
3000	4.95	5.71	5.71	5.71	3.64	5.34	5.71	5.71	3.13
3500	3.57	4.14	4.20	4.20	2.19	3.72	4.16	4.20	1.97
4000	2.70	3.14	3.21	3.21	1.42	2.65	3.09	3.21	1.32
4500	2.11	2.46	2.54	2.54	0.98	1.92	2.36	2.54	0.93
5000	1.69	1.98	2.06	2.06	0.71	1.40	1.84	2.02	0.68
5500	1.39	1.63	1.69	1.70	0.54	1.04	1.46	1.63	0.51
6000	1.16	1.36	1.41	1.43	0.42	0.77	1.16	1.34	0.39
6500	0.98	1.15	1.19	1.22	0.33	0.58	0.93	1.11	0.31
7000	0.84	0.99	1.02	1.05	0.27	0.46	0.75	0.93	0.25
7500	0.73	0.86	0.89	0.91	0.23	0.36	0.61	0.79	0.20
8000	0.64	0.75	0.78	0.80	0.19	0.29	0.49	0.67	0.17

NOTE: All gauges of section C/Z 100 require M12 grade 4.6 bolts.

LOAD CAPACITY TABLES SINGLE SPAN

1 SINGLE

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

Span	C/Z 200 - 12									
	Inward				Outward				Def'n	
	0	1	2	3	0	1	2	3	L/150	
2500	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	15.87	
3000	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	9.18	
3500	4.22	4.24	4.25	4.24	3.59	4.24	4.25	4.24	5.78	
4000	3.19	3.25	3.25	3.25	2.40	3.25	3.25	3.25	3.87	
4500	2.49	2.57	2.57	2.57	1.67	2.57	2.57	2.57	2.72	
5000	2.00	2.08	2.08	2.08	1.15	2.02	2.08	2.08	1.98	
5500	1.64	1.72	1.72	1.72	0.82	1.59	1.72	1.72	1.49	
6000	1.37	1.44	1.44	1.44	0.60	1.26	1.44	1.44	1.15	
6500	1.16	1.23	1.23	1.23	0.46	1.00	1.23	1.23	0.90	
7000	0.99	1.06	1.06	1.06	0.35	0.79	1.05	1.06	0.72	
7500	0.86	0.92	0.92	0.92	0.27	0.64	0.89	0.92	0.59	
8000	0.75	0.81	0.81	0.81	0.22	0.52	0.75	0.81	0.48	
8500	0.66	0.72	0.72	0.72	0.17	0.42	0.64	0.72	0.40	
9000	0.59	0.64	0.64	0.64	0.14	0.34	0.55	0.64	0.34	
9500	0.53	0.58	0.58	0.58	0.11	0.28	0.47	0.57	0.29	
10000	0.47	0.52	0.52	0.52	0.09	0.23	0.40	0.51	0.25	
10500	0.43	0.47	0.47	0.47	0.08	0.20	0.35	0.45	0.21	
11000	0.39	0.43	0.43	0.43	0.07	0.17	0.30	0.40	0.19	
11500	0.35	0.39	0.39	0.39	0.06	0.14	0.26	0.35	0.16	
12000	0.32	0.36	0.36	0.36	0.05	0.12	0.22	0.32	0.14	

Span	C/Z 200 - 15									
	Inward				Outward				Def'n	
	0	1	2	3	0	1	2	3	L/150	
2500	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	20.85	
3000	7.70	7.70	7.70	7.70	7.68	7.70	7.70	7.70	12.06	
3500	5.66	5.66	5.66	5.66	5.20	5.66	5.66	5.66	7.60	
4000	4.33	4.33	4.33	4.33	3.39	4.33	4.33	4.33	5.09	
4500	3.38	3.42	3.42	3.42	2.23	3.42	3.42	3.42	3.58	
5000	2.71	2.77	2.77	2.77	1.54	2.77	2.77	2.77	2.61	
5500	2.22	2.29	2.29	2.29	1.12	2.26	2.29	2.29	1.96	
6000	1.85	1.93	1.93	1.93	0.82	1.82	1.93	1.93	1.51	
6500	1.57	1.64	1.64	1.64	0.61	1.44	1.64	1.64	1.19	
7000	1.34	1.41	1.41	1.41	0.47	1.13	1.41	1.41	0.95	
7500	1.16	1.23	1.23	1.23	0.36	0.88	1.23	1.23	0.77	
8000	1.02	1.08	1.08	1.08	0.28	0.70	1.07	1.08	0.64	
8500	0.90	0.96	0.96	0.96	0.23	0.56	0.92	0.96	0.53	
9000	0.80	0.86	0.86	0.86	0.18	0.46	0.80	0.86	0.45	
9500	0.71	0.77	0.77	0.77	0.15	0.38	0.68	0.77	0.38	
10000	0.64	0.69	0.69	0.69	0.13	0.32	0.58	0.69	0.33	
10500	0.58	0.63	0.63	0.63	0.11	0.27	0.49	0.63	0.28	
11000	0.52	0.57	0.57	0.57	0.09	0.23	0.41	0.57	0.25	
11500	0.48	0.52	0.52	0.52	0.08	0.19	0.35	0.51	0.21	
12000	0.43	0.48	0.48	0.48	0.07	0.16	0.30	0.46	0.19	

Span	C/Z 200 - 19									
	Inward				Outward				Def'n	
	0	1	2	3	0	1	2	3	L/150	
2500	16.56	16.63	16.63	16.63	16.63	16.63	16.63	16.63	27.83	
3000	11.03	11.55	11.55	11.55	11.04	11.55	11.55	11.55	16.11	
3500	7.82	8.48	8.48	8.48	7.26	8.48	8.48	8.48	10.14	
4000	5.81	6.50	6.50	6.50	4.85	6.50	6.50	6.50	6.79	
4500	4.48	5.13	5.13	5.13	3.28	5.13	5.13	5.13	4.77	
5000	3.55	4.16	4.16	4.16	2.24	4.15	4.16	4.16	3.48	
5500	2.88	3.44	3.44	3.44	1.59	3.25	3.44	3.44	2.61	
6000	2.38	2.89	2.89	2.89	1.15	2.57	2.89	2.89	2.01	
6500	2.00	2.46	2.46	2.46	0.85	2.03	2.46	2.46	1.58	
7000	1.70	2.12	2.12	2.12	0.65	1.62	2.12	2.12	1.27	
7500	1.47	1.85	1.85	1.85	0.50	1.29	1.82	1.85	1.03	
8000	1.27	1.62	1.62	1.62	0.40	1.04	1.55	1.62	0.85	
8500	1.12	1.44	1.44	1.44	0.32	0.83	1.31	1.44	0.71	
9000	0.99	1.28	1.28	1.28	0.26	0.67	1.12	1.28	0.60	
9500	0.88	1.15	1.15	1.15	0.22	0.55	0.96	1.15	0.51	
10000	0.79	1.04	1.04	1.04	0.18	0.46	0.82	1.04	0.44	
10500	0.71	0.94	0.94	0.94	0.15	0.38	0.70	0.92	0.38	
11000	0.64	0.86	0.86	0.86	0.13	0.32	0.60	0.81	0.33	
11500	0.58	0.79	0.79	0.79	0.11	0.27	0.52	0.72	0.29	
12000	0.53	0.72	0.72	0.72	0.10	0.23	0.45	0.64	0.25	

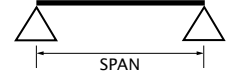
Span	C/Z 200 - 24									
	Inward				Outward				Def'n	
	0	1	2	3	0	1	2	3	L/150	
2500	21.99	23.78	23.78	23.78	23.51	23.78	23.78	23.78	35.75	
3000	14.56	16.51	16.51	16.51	15.16	16.51	16.51	16.51	20.69	
3500	10.27	12.13	12.13	12.13	10.15	12.13	12.13	12.13	13.03	
4000	7.56	9.29	9.29	9.29	6.72	9.29	9.29	9.29	8.73	
4500	5.75	7.34	7.34	7.34	4.48	7.28	7.34	7.34	6.13	
5000	4.51	5.94	5.94	5.94	3.03	5.67	5.94	5.94	4.47	
5500	3.62	4.91	4.91	4.91	2.12	4.48	4.91	4.91	3.36	
6000	2.97	4.10	4.13	4.13	1.54	3.58	4.13	4.13	2.59	
6500	2.47	3.46	3.52	3.52	1.15	2.87	3.51	3.52	2.03	
7000	2.09	2.85	3.03	3.03	0.88	2.27	2.95	3.03	1.63	
7500	1.79	2.55	2.64	2.64	0.69	1.80	2.50	2.64	1.32	
8000	1.55	2.22	2.32	2.32	0.55	1.43	2.13	2.32	1.09	
8500	1.35	1.95	2.06	2.06	0.45	1.14	1.82	2.06	0.91	
9000	1.19	1.73	1.84	1.84	0.37	0.92	1.57	1.82	0.77	
9500	1.05	1.54	1.65	1.65	0.31	0.75	1.35	1.61	0.65	
10000	0.94	1.38	1.48	1.49	0.26	0.62	1.15	1.42	0.56	
10500	0.85	1.25	1.33	1.35	0.22	0.51	0.98	1.26	0.48	
11000	0.76	1.13	1.21	1.23	0.19	0.43	0.84	1.12	0.42	
11500	0.69	1.03	1.10	1.12	0.16	0.36	0.72	1.00	0.37	
12000	0.63	0.94	1.00	1.03	0.14	0.31	0.61	0.90	0.32	

NOTE: All gauges of section C/Z 200 require M12 grade 4.6 bolts.

1 SINGLE

LOAD CAPACITY TABLES SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

Span	C/Z 250 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	8.12	8.12	8.12	8.12	8.12	8.12	8.12	8.12	20.37
3500	6.96	6.96	6.96	6.96	6.70	6.96	6.96	6.96	12.83
4000	5.49	5.79	5.79	5.79	4.61	5.79	5.79	5.79	8.60
4500	4.27	4.57	4.57	4.57	3.15	4.57	4.57	4.57	6.04
5000	3.42	3.70	3.70	3.70	2.17	3.68	3.70	3.70	4.40
5500	2.79	3.06	3.06	3.06	1.56	2.92	3.06	3.06	3.31
6000	2.33	2.57	2.57	2.57	1.14	2.34	2.57	2.57	2.55
6500	1.96	2.19	2.19	2.19	0.84	1.89	2.19	2.19	2.00
7000	1.68	1.89	1.89	1.89	0.63	1.53	1.89	1.89	1.60
7500	1.45	1.65	1.65	1.65	0.49	1.24	1.62	1.65	1.30
8000	1.27	1.45	1.45	1.45	0.38	0.99	1.39	1.45	1.07
8500	1.12	1.28	1.28	1.28	0.30	0.80	1.19	1.28	0.90
9000	0.99	1.14	1.14	1.14	0.24	0.65	1.03	1.14	0.76
9500	0.88	1.03	1.03	1.03	0.20	0.54	0.89	1.03	0.64
10000	0.79	0.93	0.93	0.93	0.16	0.45	0.77	0.92	0.55
10500	0.72	0.84	0.84	0.84	0.14	0.37	0.67	0.82	0.48
11000	0.65	0.77	0.77	0.77	0.12	0.31	0.58	0.73	0.41
11500	0.59	0.70	0.70	0.70	0.10	0.26	0.50	0.65	0.36
12000	0.54	0.64	0.64	0.64	0.08	0.22	0.43	0.59	0.32
12500	0.50	0.59	0.59	0.59	0.07	0.19	0.37	0.53	0.28

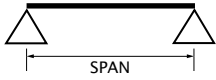
Span	C/Z 250 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	14.68	14.72	14.72	14.72	14.72	14.72	14.72	14.72	26.83
3500	10.43	10.82	10.82	10.82	9.78	10.82	10.82	10.82	16.90
4000	7.71	8.28	8.28	8.28	6.46	8.28	8.28	8.28	11.32
4500	5.91	6.54	6.54	6.54	4.31	6.54	6.54	6.54	7.95
5000	4.67	5.30	5.30	5.30	2.92	5.30	5.30	5.30	5.80
5500	3.78	4.38	4.38	4.38	2.06	4.37	4.38	4.38	4.35
6000	3.12	3.68	3.68	3.68	1.48	3.47	3.68	3.68	3.35
6500	2.61	3.14	3.14	3.14	1.09	2.74	3.14	3.14	2.64
7000	2.22	2.70	2.70	2.70	0.83	2.17	2.70	2.70	2.11
7500	1.90	2.36	2.36	2.36	0.64	1.71	2.36	2.36	1.72
8000	1.65	2.07	2.07	2.07	0.50	1.37	2.07	2.07	1.42
8500	1.45	1.83	1.83	1.83	0.40	1.09	1.78	1.83	1.18
9000	1.28	1.64	1.64	1.64	0.33	0.88	1.51	1.64	0.99
9500	1.13	1.47	1.47	1.47	0.27	0.72	1.29	1.47	0.85
10000	1.01	1.33	1.33	1.33	0.22	0.59	1.10	1.33	0.72
10500	0.91	1.20	1.20	1.20	0.19	0.49	0.94	1.20	0.63
11000	0.82	1.10	1.10	1.10	0.16	0.41	0.80	1.10	0.54
11500	0.75	1.00	1.00	1.00	0.14	0.34	0.68	0.98	0.48
12000	0.68	0.92	0.92	0.92	0.12	0.29	0.58	0.87	0.42
12500	0.62	0.85	0.85	0.85	0.10	0.25	0.50	0.77	0.37

Span	C/Z 250 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	19.19	20.99	20.99	20.99	20.31	20.99	20.99	20.99	35.05
3500	13.42	15.43	15.43	15.43	13.45	15.43	15.43	15.43	22.07
4000	9.75	11.81	11.81	11.81	8.74	11.81	11.81	11.81	14.79
4500	7.36	9.33	9.33	9.33	5.76	9.33	9.33	9.33	10.39
5000	5.73	7.56	7.56	7.56	3.85	7.56	7.56	7.56	7.57
5500	4.58	6.25	6.25	6.25	2.69	5.99	6.25	6.25	5.69
6000	3.73	5.25	5.25	5.25	1.94	4.75	5.25	5.25	4.38
6500	3.10	4.47	4.47	4.47	1.44	3.77	4.47	4.47	3.45
7000	2.61	3.86	3.86	3.86	1.10	2.96	3.86	3.86	2.76
7500	2.23	3.36	3.36	3.36	0.85	2.32	3.35	3.36	2.24
8000	1.93	2.95	2.95	2.95	0.67	1.84	2.85	2.95	1.85
8500	1.68	2.60	2.62	2.62	0.54	1.45	2.43	2.62	1.54
9000	1.48	2.30	2.33	2.33	0.44	1.17	2.08	2.33	1.30
9500	1.31	2.05	2.09	2.09	0.37	0.95	1.77	2.09	1.10
10000	1.17	1.83	1.89	1.89	0.31	0.78	1.51	1.89	0.95
10500	1.05	1.65	1.71	1.71	0.26	0.65	1.28	1.69	0.82
11000	0.94	1.49	1.56	1.56	0.22	0.54	1.08	1.50	0.71
11500	0.85	1.36	1.43	1.43	0.19	0.46	0.92	1.34	0.62
12000	0.78	1.24	1.31	1.31	0.17	0.39	0.79	1.19	0.55
12500	0.71	1.14	1.21	1.21	0.15	0.33	0.67	1.07	0.49

NOTE: All gauges of section C/Z 250 require M12 grade 4.6 bolts.

LOAD CAPACITY TABLES SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

Span	C/Z 300 - 24									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
4000	14.28	16.64	16.64	16.64	15.92	16.64	16.64	16.64	25.55	
4500	10.64	13.15	13.15	13.15	11.48	13.14	13.15	13.15	17.95	
5000	8.21	10.65	10.65	10.65	8.32	10.65	10.65	10.65	13.08	
5500	6.50	8.80	8.80	8.80	6.13	8.80	8.80	8.80	9.83	
6000	5.26	7.39	7.39	7.39	4.50	7.39	7.39	7.39	7.57	
6500	4.34	6.30	6.30	6.30	3.31	6.30	6.30	6.30	5.96	
7000	3.62	5.43	5.43	5.43	2.49	5.32	5.43	5.43	4.77	
7500	3.06	4.73	4.73	4.73	1.91	4.42	4.73	4.73	3.88	
8000	2.63	4.16	4.16	4.16	1.50	3.69	4.16	4.16	3.19	
8500	2.28	3.68	3.68	3.68	1.19	3.08	3.68	3.68	2.66	
9000	1.98	3.29	3.29	3.29	0.96	2.57	3.29	3.29	2.24	
9500	1.74	2.92	2.95	2.95	0.79	2.17	2.95	2.95	1.91	
10000	1.54	2.61	2.66	2.66	0.65	1.83	2.65	2.66	1.64	
10500	1.38	2.34	2.41	2.41	0.54	1.53	2.33	2.41	1.41	
11000	1.23	2.11	2.20	2.20	0.46	1.29	2.06	2.20	1.23	
11500	1.11	1.91	2.01	2.01	0.39	1.08	1.82	2.01	1.08	
12000	1.01	1.73	1.85	1.85	0.33	0.92	1.61	1.85	0.95	
12500	0.92	1.58	1.70	1.70	0.29	0.78	1.42	1.70	0.84	
13000	0.84	1.45	1.58	1.58	0.25	0.67	1.26	1.58	0.74	
13500	0.77	1.33	1.46	1.46	0.22	0.58	1.12	1.46	0.67	
14000	0.71	1.23	1.36	1.36	0.19	0.50	0.99	1.33	0.60	
14500	0.65	1.14	1.27	1.27	0.17	0.44	0.89	1.22	0.54	
15000	0.61	1.06	1.18	1.18	0.15	0.39	0.79	1.11	0.49	

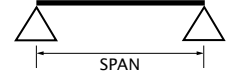
Span	C/Z 300 - 30									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
4000	18.85	23.57	23.57	23.57	21.85	23.57	23.57	23.57	32.90	
4500	13.69	18.63	18.63	18.63	16.00	18.62	18.63	18.63	23.11	
5000	10.17	15.09	15.09	15.09	11.65	15.09	15.09	15.09	16.85	
5500	7.79	12.47	12.47	12.47	8.24	12.47	12.47	12.47	12.66	
6000	6.14	10.48	10.48	10.48	5.90	10.48	10.48	10.48	9.75	
6500	4.96	8.93	8.93	8.93	4.35	8.71	8.93	8.93	7.67	
7000	4.09	7.61	7.70	7.70	3.28	7.27	7.70	7.70	6.14	
7500	3.43	6.53	6.71	6.71	2.53	6.12	6.71	6.71	4.99	
8000	2.92	5.65	5.89	5.89	1.99	5.16	5.89	5.89	4.11	
8500	2.51	4.94	5.22	5.22	1.59	4.33	5.22	5.22	3.43	
9000	2.18	4.34	4.66	4.66	1.29	3.63	4.64	4.66	2.89	
9500	1.91	3.85	4.18	4.18	1.06	3.00	4.09	4.18	2.46	
10000	1.69	3.43	3.77	3.77	0.88	2.47	3.61	3.77	2.11	
10500	1.51	3.07	3.42	3.42	0.74	2.04	3.20	3.42	1.82	
11000	1.35	2.77	3.11	3.12	0.62	1.71	2.85	3.12	1.58	
11500	1.22	2.50	2.82	2.85	0.53	1.44	2.54	2.85	1.39	
12000	1.10	2.26	2.57	2.62	0.46	1.22	2.25	2.62	1.22	
12500	1.00	2.06	2.34	2.41	0.40	1.04	2.00	2.39	1.08	
13000	0.92	1.88	2.15	2.23	0.35	0.90	1.78	2.18	0.96	
13500	0.84	1.72	1.98	2.07	0.31	0.78	1.57	1.99	0.86	
14000	0.77	1.58	1.82	1.92	0.27	0.68	1.38	1.82	0.77	
14500	0.71	1.46	1.69	1.79	0.24	0.59	1.20	1.67	0.69	
15000	0.66	1.35	1.56	1.68	0.21	0.52	1.06	1.53	0.62	

NOTE: All gauges of section C/Z 300 require M16 grade 4.6 bolts.

1 SINGLE

LOAD CAPACITY TABLES SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

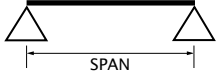
Span	C/Z 350 - 24									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
4000	17.94	17.94	17.94	17.94	17.94	17.94	17.94	17.94	41.08	
4500	14.48	15.95	15.94	15.94	15.94	15.94	15.95	15.95	28.85	
5000	11.27	13.19	13.19	13.19	12.58	13.19	13.19	13.19	21.03	
5500	8.95	10.90	10.90	10.90	9.93	10.90	10.90	10.90	15.80	
6000	7.07	9.16	9.16	9.16	7.91	9.16	9.16	9.16	12.17	
6500	5.70	7.81	7.81	7.81	6.28	7.81	7.81	7.81	9.57	
7000	4.68	6.73	6.73	6.73	4.84	6.73	6.73	6.73	7.66	
7500	3.91	5.86	5.86	5.86	3.79	5.86	5.86	5.86	6.23	
8000	3.32	5.15	5.15	5.15	3.01	5.14	5.15	5.15	5.14	
8500	2.85	4.57	4.57	4.57	2.43	4.46	4.57	4.57	4.28	
9000	2.47	4.07	4.07	4.07	2.01	3.89	4.07	4.07	3.61	
9500	2.16	3.62	3.65	3.65	1.66	3.41	3.65	3.65	3.07	
10000	1.91	3.23	3.30	3.30	1.38	3.00	3.30	3.30	2.63	
10500	1.70	2.90	2.99	2.99	1.15	2.64	2.99	2.99	2.27	
11000	1.52	2.62	2.73	2.73	0.96	2.33	2.73	2.73	1.98	
11500	1.37	2.38	2.49	2.49	0.81	2.06	2.49	2.49	1.73	
12000	1.24	2.17	2.29	2.29	0.69	1.78	2.27	2.29	1.52	
12500	1.12	1.98	2.11	2.11	0.59	1.54	2.06	2.11	1.35	
13000	1.03	1.81	1.95	1.95	0.51	1.34	1.88	1.95	1.20	
13500	0.94	1.67	1.81	1.81	0.44	1.17	1.72	1.81	1.07	
14000	0.87	1.54	1.68	1.68	0.39	1.02	1.57	1.68	0.96	
14500	0.80	1.43	1.57	1.57	0.34	0.90	1.44	1.57	0.86	
15000	0.74	1.32	1.46	1.47	0.30	0.80	1.32	1.47	0.78	

Span	C/Z 350 - 30									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
4000	25.72	28.62	28.62	28.62	28.62	28.62	28.62	28.62	53.16	
4500	18.86	22.61	22.61	22.61	22.61	22.61	22.61	22.61	37.33	
5000	14.13	18.32	18.32	18.32	17.68	18.32	18.32	18.32	27.22	
5500	10.79	15.14	15.14	15.14	13.64	15.14	15.14	15.14	20.45	
6000	8.50	12.72	12.72	12.72	10.56	12.72	12.72	12.72	15.75	
6500	6.86	10.84	10.84	10.84	8.15	10.84	10.84	10.84	12.39	
7000	5.65	9.35	9.35	9.35	6.33	9.35	9.35	9.35	9.92	
7500	4.71	8.14	8.14	8.14	5.02	8.14	8.14	8.14	8.06	
8000	3.96	7.16	7.16	7.16	4.00	7.16	7.16	7.16	6.65	
8500	3.38	6.34	6.34	6.34	3.22	6.34	6.34	6.34	5.54	
9000	2.92	5.65	5.65	5.65	2.63	5.49	5.65	5.65	4.67	
9500	2.55	5.06	5.07	5.07	2.14	4.75	5.07	5.07	3.97	
10000	2.24	4.49	4.58	4.58	1.76	4.12	4.58	4.58	3.40	
10500	1.99	4.00	4.15	4.15	1.46	3.57	4.15	4.15	2.94	
11000	1.78	3.58	3.78	3.78	1.23	3.10	3.78	3.78	2.56	
11500	1.60	3.22	3.46	3.46	1.04	2.69	3.46	3.46	2.24	
12000	1.44	2.91	3.18	3.18	0.89	2.32	3.18	3.18	1.97	
12500	1.30	2.64	2.93	2.93	0.76	2.02	2.93	2.93	1.74	
13000	1.18	2.40	2.71	2.71	0.66	1.77	2.66	2.71	1.55	
13500	1.08	2.19	2.51	2.51	0.58	1.56	2.41	2.51	1.38	
14000	0.99	2.01	2.34	2.34	0.50	1.37	2.18	2.34	1.24	
14500	0.91	1.84	2.18	2.18	0.44	1.21	1.98	2.18	1.12	
15000	0.84	1.70	2.04	2.04	0.39	1.07	1.80	2.04	1.01	

NOTE: All gauges of section C/Z 350 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES SINGLE SPAN

Single Spans are simply supported at each end of the purlin.



DESIGN CAPACITY (kN/m)

Span	C/Z 400 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	15.61	15.61	15.61	15.61	15.61	15.61	15.61	15.61	55.10
4500	13.88	13.88	13.88	13.87	13.88	13.88	13.88	13.87	38.70
5000	12.41	12.49	12.49	12.49	12.49	12.49	12.49	12.49	28.21
5500	9.81	11.35	11.35	11.35	11.05	11.35	11.35	11.35	21.19
6000	7.91	10.39	10.39	10.39	8.77	10.39	10.39	10.39	16.33
6500	6.50	8.85	8.85	8.85	6.98	8.85	8.85	8.85	12.84
7000	5.39	7.63	7.63	7.63	5.59	7.63	7.63	7.63	10.28
7500	4.50	6.65	6.65	6.65	4.41	6.65	6.65	6.65	8.36
8000	3.81	5.84	5.84	5.84	3.50	5.76	5.84	5.84	6.89
8500	3.27	5.15	5.18	5.18	2.82	4.99	5.18	5.18	5.74
9000	2.83	4.55	4.62	4.62	2.32	4.35	4.62	4.62	4.84
9500	2.48	4.04	4.14	4.14	1.92	3.80	4.14	4.14	4.11
10000	2.19	3.61	3.74	3.74	1.59	3.33	3.74	3.74	3.53
10500	1.94	3.24	3.39	3.39	1.33	2.93	3.39	3.39	3.05
11000	1.74	2.92	3.09	3.09	1.11	2.58	3.09	3.09	2.65
11500	1.56	2.65	2.83	2.83	0.94	2.27	2.81	2.83	2.32
12000	1.41	2.41	2.60	2.60	0.80	2.00	2.54	2.60	2.04
12500	1.29	2.20	2.39	2.39	0.68	1.77	2.31	2.39	1.81
13000	1.17	2.02	2.21	2.21	0.59	1.55	2.10	2.21	1.61
13500	1.08	1.85	2.05	2.05	0.51	1.36	1.91	2.05	1.43
14000	0.99	1.71	1.90	1.91	0.44	1.19	1.75	1.91	1.29
14500	0.92	1.58	1.76	1.78	0.39	1.05	1.60	1.78	1.16
15000	0.85	1.47	1.63	1.66	0.34	0.93	1.46	1.66	1.05
15500	0.79	1.36	1.52	1.56	0.30	0.83	1.34	1.55	0.95
16000	0.74	1.27	1.42	1.46	0.27	0.74	1.23	1.44	0.86

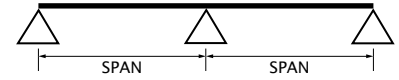
Span	C/Z 400 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	30.58	30.58	30.58	30.58	30.58	30.58	30.58	30.58	71.70
4500	22.32	26.14	26.14	26.14	26.14	26.14	26.14	26.14	50.36
5000	16.61	21.17	21.17	21.17	20.70	21.17	21.17	21.17	36.71
5500	12.64	17.50	17.50	17.50	16.34	17.50	17.50	17.50	27.58
6000	9.93	14.70	14.70	14.70	12.60	14.70	14.70	14.70	21.24
6500	8.00	12.53	12.53	12.53	9.69	12.53	12.53	12.53	16.71
7000	6.56	10.80	10.80	10.80	7.50	10.80	10.80	10.80	13.38
7500	5.43	9.41	9.41	9.41	5.94	9.41	9.41	9.41	10.88
8000	4.57	8.27	8.27	8.27	4.71	8.27	8.27	8.27	8.96
8500	3.90	7.33	7.33	7.33	3.78	7.33	7.33	7.33	7.47
9000	3.36	6.53	6.53	6.53	3.07	6.41	6.53	6.53	6.29
9500	2.93	5.84	5.87	5.87	2.50	5.62	5.87	5.87	5.35
10000	2.58	5.21	5.29	5.29	2.05	4.93	5.29	5.29	4.59
10500	2.28	4.67	4.80	4.80	1.70	4.27	4.80	4.80	3.96
11000	2.03	4.21	4.37	4.37	1.43	3.70	4.37	4.37	3.45
11500	1.82	3.81	4.00	4.00	1.21	3.19	4.00	4.00	3.02
12000	1.64	3.46	3.68	3.68	1.03	2.75	3.68	3.68	2.66
12500	1.48	3.14	3.39	3.39	0.88	2.39	3.39	3.39	2.35
13000	1.34	2.85	3.13	3.13	0.76	2.09	3.09	3.13	2.09
13500	1.23	2.60	2.90	2.90	0.66	1.84	2.83	2.90	1.87
14000	1.12	2.37	2.70	2.70	0.58	1.62	2.58	2.70	1.67
14500	1.03	2.18	2.52	2.52	0.51	1.42	2.37	2.52	1.51
15000	0.95	2.00	2.35	2.35	0.45	1.25	2.15	2.35	1.36
15500	0.88	1.85	2.20	2.20	0.40	1.11	1.95	2.20	1.23
16000	0.82	1.71	2.05	2.07	0.36	0.99	1.77	2.07	1.12

NOTE: All gauges of section C/Z 400 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

2 CONTINUOUS

LOAD CAPACITY TABLES CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support.



DESIGN CAPACITY (kN/m)

Span	C/Z 100 - 10								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	24.39
2000	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	10.29
2500	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	5.27
3000	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.05
3500	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.92
4000	1.13	1.13	1.13	1.13	1.07	1.13	1.13	1.13	1.29
4500	0.89	0.89	0.89	0.89	0.77	0.89	0.89	0.89	0.90
5000	0.72	0.72	0.72	0.72	0.56	0.71	0.72	0.72	0.66
5500	0.58	0.60	0.60	0.60	0.41	0.55	0.60	0.60	0.50
6000	0.48	0.50	0.50	0.50	0.30	0.43	0.50	0.50	0.38
6500	0.40	0.43	0.43	0.43	0.23	0.33	0.43	0.43	0.30
7000	0.33	0.37	0.37	0.37	0.18	0.26	0.36	0.37	0.24
7500	0.28	0.32	0.32	0.32	0.14	0.20	0.30	0.32	0.20
8000	0.24	0.28	0.28	0.28	0.12	0.16	0.25	0.28	0.16

Span	C/Z 100 - 12								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	9.59	9.59	9.59	9.59	9.59	9.59	9.59	9.59	29.48
2000	5.46	5.46	5.46	5.46	5.46	5.46	5.46	5.46	12.44
2500	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	6.37
3000	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	3.68
3500	1.78	1.78	1.78	1.78	1.75	1.78	1.78	1.78	2.32
4000	1.35	1.37	1.37	1.37	1.26	1.37	1.37	1.37	1.55
4500	1.04	1.08	1.08	1.08	0.92	1.08	1.08	1.08	1.09
5000	0.83	0.87	0.87	0.87	0.68	0.83	0.87	0.87	0.80
5500	0.67	0.72	0.72	0.72	0.51	0.65	0.72	0.72	0.60
6000	0.55	0.61	0.61	0.61	0.39	0.51	0.61	0.61	0.46
6500	0.46	0.52	0.52	0.52	0.30	0.41	0.50	0.52	0.36
7000	0.38	0.45	0.45	0.45	0.24	0.32	0.42	0.45	0.29
7500	0.33	0.39	0.39	0.39	0.19	0.26	0.35	0.38	0.24
8000	0.28	0.34	0.34	0.34	0.15	0.21	0.29	0.33	0.19

Span	C/Z 100 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	12.53	12.53	12.53	12.53	12.53	12.53	12.53	12.53	37.53
2000	7.04	7.11	7.11	7.11	7.11	7.11	7.11	7.11	15.83
2500	4.42	4.55	4.55	4.55	4.55	4.55	4.55	4.55	8.11
3000	3.02	3.16	3.16	3.16	3.12	3.16	3.16	3.16	4.69
3500	2.18	2.32	2.32	2.32	2.20	2.32	2.32	2.32	2.95
4000	1.65	1.78	1.78	1.78	1.60	1.76	1.78	1.78	1.98
4500	1.28	1.41	1.41	1.41	1.20	1.35	1.41	1.41	1.39
5000	1.02	1.14	1.14	1.14	0.92	1.05	1.14	1.14	1.01
5500	0.83	0.94	0.94	0.94	0.71	0.84	0.93	0.94	0.76
6000	0.69	0.79	0.79	0.79	0.54	0.67	0.77	0.79	0.59
6500	0.57	0.67	0.67	0.67	0.42	0.55	0.64	0.67	0.46
7000	0.49	0.58	0.58	0.58	0.33	0.45	0.53	0.57	0.37
7500	0.41	0.51	0.51	0.51	0.26	0.36	0.45	0.48	0.30
8000	0.36	0.44	0.45	0.45	0.21	0.29	0.38	0.42	0.25

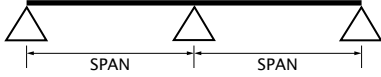
Span	C/Z 100 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	17.48	17.50	17.50	17.50	17.50	17.50	17.50	17.50	48.35
2000	9.48	9.91	9.91	9.90	9.90	9.90	9.91	9.91	20.40
2500	5.90	6.34	6.34	6.34	6.34	6.34	6.34	6.34	10.44
3000	4.01	4.40	4.40	4.40	4.29	4.40	4.40	4.40	6.04
3500	2.89	3.23	3.23	3.23	3.00	3.23	3.23	3.23	3.81
4000	2.17	2.48	2.48	2.48	2.18	2.43	2.48	2.48	2.55
4500	1.68	1.96	1.96	1.96	1.63	1.86	1.96	1.96	1.79
5000	1.34	1.59	1.59	1.59	1.24	1.44	1.59	1.59	1.31
5500	1.09	1.31	1.31	1.31	0.96	1.14	1.29	1.31	0.98
6000	0.90	1.10	1.10	1.10	0.76	0.92	1.06	1.10	0.76
6500	0.75	0.94	0.94	0.94	0.60	0.74	0.87	0.93	0.59
7000	0.63	0.81	0.81	0.81	0.48	0.61	0.73	0.78	0.48
7500	0.54	0.70	0.70	0.70	0.38	0.50	0.62	0.66	0.39
8000	0.47	0.60	0.62	0.62	0.31	0.42	0.52	0.57	0.32

Span	C/Z 100 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	22.03	22.26	22.26	22.26	22.26	22.26	22.26	22.26	60.38
2000	11.95	12.85	12.85	12.85	12.85	12.85	12.85	12.85	25.47
2500	7.45	8.23	8.23	8.23	8.17	8.23	8.23	8.23	13.04
3000	5.07	5.71	5.71	5.71	5.47	5.71	5.71	5.71	7.55
3500	3.66	4.20	4.20	4.20	3.87	4.17	4.20	4.20	4.75
4000	2.75	3.21	3.21	3.21	2.84	3.11	3.21	3.21	3.18
4500	2.13	2.54	2.54	2.54	2.14	2.39	2.54	2.54	2.24
5000	1.70	2.06	2.06	2.06	1.64	1.87	2.03	2.06	1.63
5500	1.38	1.70	1.70	1.70	1.28	1.50	1.65	1.70	1.23
6000	1.14	1.42	1.43	1.43	1.02	1.21	1.36	1.41	0.94
6500	0.96	1.20	1.22	1.22	0.82	0.99	1.13	1.18	0.74
7000	0.81	1.03	1.05	1.05	0.67	0.81	0.95	1.00	0.59
7500	0.69	0.88	0.91	0.91	0.55	0.68	0.81	0.86	0.48
8000	0.60	0.77	0.79	0.80	0.45	0.57	0.69	0.74	0.40

NOTE: All gauges of section C/Z 100 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

LOAD CAPACITY TABLES CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support



DESIGN CAPACITY (kN/m)

Span	C/Z 250 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	5.71	5.71	5.71	5.71	5.71	5.71	5.71	5.71	49.13
3500	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	30.94
4000	3.95	3.95	3.94	3.95	3.95	3.95	3.95	3.94	20.73
4500	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	14.56
5000	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	10.61
5500	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	7.97
6000	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	6.14
6500	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	4.83
7000	1.65	1.72	1.72	1.72	1.66	1.72	1.72	1.72	3.87
7500	1.42	1.54	1.54	1.54	1.38	1.54	1.54	1.54	3.14
8000	1.23	1.38	1.38	1.38	1.15	1.38	1.38	1.38	2.59
8500	1.07	1.25	1.25	1.25	0.96	1.20	1.25	1.25	2.16
9000	0.94	1.13	1.13	1.13	0.79	1.04	1.13	1.13	1.82
9500	0.83	1.03	1.03	1.03	0.66	0.90	1.03	1.03	1.55
10000	0.73	0.93	0.93	0.93	0.55	0.78	0.93	0.93	1.33
10500	0.65	0.84	0.84	0.84	0.47	0.68	0.83	0.84	1.15
11000	0.59	0.77	0.77	0.77	0.40	0.59	0.74	0.77	1.00
11500	0.53	0.70	0.70	0.70	0.34	0.51	0.66	0.70	0.87
12000	0.47	0.64	0.64	0.64	0.30	0.44	0.59	0.64	0.77
12500	0.43	0.59	0.59	0.59	0.26	0.38	0.53	0.58	0.68

Span	C/Z 250 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	64.70
3500	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	40.74
4000	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	27.29
4500	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	19.17
5000	4.80	4.97	4.97	4.97	4.97	4.97	4.97	4.97	13.97
5500	3.85	4.25	4.25	4.25	4.25	4.25	4.25	4.25	10.50
6000	3.15	3.68	3.67	3.68	3.67	3.68	3.68	3.68	8.09
6500	2.62	3.14	3.14	3.14	2.98	3.14	3.14	3.14	6.36
7000	2.20	2.70	2.70	2.70	2.42	2.70	2.70	2.70	5.09
7500	1.87	2.36	2.36	2.36	1.97	2.36	2.36	2.36	4.14
8000	1.60	2.07	2.07	2.07	1.61	2.07	2.07	2.07	3.41
8500	1.39	1.83	1.83	1.83	1.32	1.80	1.83	1.83	2.84
9000	1.21	1.64	1.64	1.64	1.09	1.53	1.64	1.64	2.40
9500	1.06	1.47	1.47	1.47	0.90	1.31	1.47	1.47	2.04
10000	0.93	1.33	1.33	1.33	0.75	1.12	1.33	1.33	1.75
10500	0.83	1.20	1.20	1.20	0.63	0.96	1.20	1.20	1.51
11000	0.74	1.10	1.10	1.10	0.54	0.82	1.10	1.10	1.31
11500	0.66	1.00	1.00	1.00	0.46	0.71	0.99	1.00	1.15
12000	0.59	0.92	0.92	0.92	0.39	0.61	0.89	0.92	1.01
12500	0.53	0.85	0.85	0.85	0.34	0.52	0.79	0.85	0.89

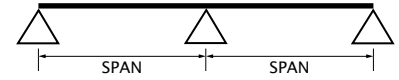
Span	C/Z 250 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	84.51
3500	11.37	11.38	11.37	11.38	11.38	11.38	11.37	11.38	53.22
4000	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	35.65
4500	7.82	8.85	8.85	8.85	8.85	8.85	8.85	8.85	25.04
5000	6.06	7.56	7.56	7.56	7.56	7.56	7.56	7.56	18.25
5500	4.81	6.25	6.25	6.25	6.21	6.25	6.25	6.25	13.72
6000	3.90	5.25	5.25	5.25	5.00	5.25	5.25	5.25	10.56
6500	3.20	4.47	4.47	4.47	4.06	4.47	4.47	4.47	8.31
7000	2.67	3.86	3.86	3.86	3.31	3.86	3.86	3.86	6.65
7500	2.26	3.36	3.36	3.36	2.68	3.36	3.36	3.36	5.41
8000	1.93	2.95	2.95	2.95	2.18	2.87	2.95	2.95	4.46
8500	1.66	2.62	2.62	2.62	1.77	2.45	2.62	2.62	3.72
9000	1.45	2.33	2.33	2.33	1.46	2.11	2.33	2.33	3.13
9500	1.27	2.09	2.09	2.09	1.20	1.81	2.09	2.09	2.66
10000	1.11	1.89	1.89	1.89	1.00	1.54	1.89	1.89	2.28
10500	0.98	1.71	1.71	1.71	0.84	1.32	1.71	1.71	1.97
11000	0.87	1.56	1.56	1.56	0.71	1.12	1.52	1.56	1.71
11500	0.78	1.43	1.43	1.43	0.61	0.96	1.36	1.43	1.50
12000	0.70	1.31	1.31	1.31	0.52	0.83	1.21	1.31	1.32
12500	0.63	1.21	1.21	1.21	0.45	0.71	1.09	1.20	1.17

NOTE: All gauges of section C/Z 250 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

2 CONTINUOUS

LOAD CAPACITY TABLES CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support.



DESIGN CAPACITY (kN/m)

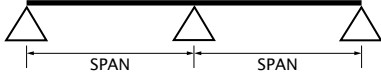
Span	C/Z 300 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	12.79	12.79	12.80	12.80	12.80	12.79	12.79	12.80	61.61
4500	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	43.27
5000	8.87	9.20	9.20	9.20	9.20	9.20	9.20	9.20	31.55
5500	6.99	7.93	7.93	7.93	7.93	7.93	7.93	7.93	23.70
6000	5.64	6.89	6.90	6.89	6.89	6.89	6.90	6.89	18.26
6500	4.63	6.05	6.04	6.05	6.05	6.05	6.05	6.04	14.36
7000	3.86	5.34	5.34	5.34	5.34	5.34	5.34	5.34	11.50
7500	3.26	4.73	4.73	4.73	4.60	4.73	4.73	4.73	9.35
8000	2.77	4.16	4.16	4.16	3.88	4.16	4.16	4.16	7.70
8500	2.38	3.68	3.68	3.68	3.29	3.68	3.68	3.68	6.42
9000	2.07	3.29	3.29	3.29	2.80	3.29	3.29	3.29	5.41
9500	1.81	2.95	2.95	2.95	2.38	2.95	2.95	2.95	4.60
10000	1.59	2.66	2.66	2.66	2.04	2.66	2.66	2.66	3.94
10500	1.40	2.41	2.41	2.41	1.75	2.34	2.41	2.41	3.41
11000	1.25	2.20	2.20	2.20	1.51	2.07	2.20	2.20	2.96
11500	1.12	2.01	2.01	2.01	1.30	1.83	2.01	2.01	2.59
12000	1.00	1.85	1.85	1.85	1.12	1.62	1.85	1.85	2.28
12500	0.90	1.70	1.70	1.70	0.96	1.44	1.70	1.70	2.02
13000	0.82	1.58	1.58	1.58	0.83	1.28	1.58	1.58	1.80
13500	0.74	1.46	1.46	1.46	0.73	1.14	1.46	1.46	1.60
14000	0.68	1.36	1.36	1.36	0.64	1.01	1.35	1.36	1.44
14500	0.62	1.27	1.27	1.27	0.56	0.91	1.23	1.27	1.29
15000	0.57	1.18	1.18	1.18	0.50	0.81	1.12	1.18	1.17

Span	C/Z 300 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	20.68	20.92	20.92	20.92	20.92	20.92	20.92	20.92	79.33
4500	15.36	17.27	17.27	17.27	17.27	17.27	17.27	17.27	55.72
5000	11.69	14.47	14.47	14.47	14.47	14.47	14.47	14.47	40.62
5500	8.98	12.28	12.28	12.28	12.28	12.28	12.28	12.28	30.52
6000	7.04	10.48	10.48	10.48	10.48	10.48	10.48	10.48	23.51
6500	5.63	8.93	8.93	8.93	8.83	8.93	8.93	8.93	18.49
7000	4.59	7.70	7.70	7.70	7.42	7.70	7.70	7.70	14.80
7500	3.82	6.71	6.71	6.71	6.28	6.71	6.71	6.71	12.04
8000	3.22	5.89	5.89	5.89	5.35	5.89	5.89	5.89	9.92
8500	2.75	5.22	5.22	5.22	4.57	5.22	5.22	5.22	8.27
9000	2.37	4.66	4.66	4.66	3.89	4.65	4.66	4.66	6.97
9500	2.06	4.18	4.18	4.18	3.33	4.09	4.18	4.18	5.92
10000	1.81	3.76	3.77	3.77	2.82	3.62	3.77	3.77	5.08
10500	1.60	3.38	3.42	3.42	2.38	3.21	3.42	3.42	4.39
11000	1.42	3.06	3.12	3.12	2.01	2.86	3.12	3.12	3.82
11500	1.27	2.78	2.85	2.85	1.71	2.56	2.85	2.85	3.34
12000	1.15	2.53	2.62	2.62	1.47	2.28	2.62	2.62	2.94
12500	1.03	2.32	2.41	2.41	1.26	2.03	2.41	2.41	2.60
13000	0.94	2.13	2.23	2.23	1.10	1.81	2.20	2.23	2.31
13500	0.85	1.96	2.07	2.07	0.96	1.61	2.01	2.07	2.06
14000	0.78	1.82	1.92	1.92	0.84	1.42	1.84	1.92	1.85
14500	0.72	1.68	1.79	1.79	0.74	1.25	1.69	1.79	1.67
15000	0.66	1.56	1.68	1.68	0.66	1.10	1.55	1.67	1.50

NOTE: All gauges of section C/Z 300 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support



DESIGN CAPACITY (kN/m)

Span	C/Z 350 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	99.05
4500	10.53	10.53	10.53	10.53	10.53	10.53	10.53	10.53	69.56
5000	9.14	9.14	9.14	9.14	9.14	9.14	9.14	9.14	50.71
5500	8.01	8.01	8.01	8.00	8.01	8.01	8.01	8.00	38.10
6000	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	29.35
6500	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28	23.08
7000	5.21	5.61	5.61	5.61	5.61	5.61	5.61	5.61	18.48
7500	4.32	5.05	5.05	5.05	5.05	5.05	5.05	5.05	15.03
8000	3.64	4.56	4.56	4.56	4.56	4.56	4.56	4.56	12.38
8500	3.10	4.13	4.13	4.13	4.13	4.13	4.13	4.13	10.32
9000	2.67	3.76	3.76	3.76	3.76	3.76	3.76	3.76	8.70
9500	2.33	3.44	3.44	3.44	3.44	3.44	3.44	3.44	7.39
10000	2.04	3.15	3.15	3.15	3.08	3.15	3.15	3.15	6.34
10500	1.80	2.90	2.90	2.90	2.73	2.90	2.90	2.90	5.48
11000	1.60	2.68	2.68	2.68	2.43	2.68	2.68	2.68	4.76
11500	1.44	2.48	2.48	2.48	2.17	2.48	2.48	2.48	4.17
12000	1.29	2.29	2.29	2.29	1.93	2.27	2.29	2.29	3.67
12500	1.17	2.11	2.11	2.11	1.72	2.07	2.11	2.11	3.25
13000	1.06	1.95	1.95	1.95	1.51	1.88	1.95	1.95	2.89
13500	0.97	1.81	1.81	1.81	1.33	1.72	1.81	1.81	2.58
14000	0.88	1.67	1.68	1.68	1.17	1.57	1.68	1.68	2.31
14500	0.81	1.55	1.57	1.57	1.04	1.44	1.57	1.57	2.08
15000	0.75	1.44	1.47	1.47	0.93	1.32	1.47	1.47	1.88

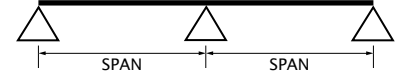
Span	C/Z 350 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	21.71	21.70	21.71	21.71	21.71	21.70	21.71	21.70	128.18
4500	18.33	18.34	18.33	18.34	18.33	18.33	18.33	18.33	90.02
5000	15.67	15.67	15.67	15.67	15.67	15.67	15.67	15.67	65.63
5500	12.30	13.53	13.53	13.53	13.53	13.53	13.53	13.53	49.30
6000	9.69	11.79	11.79	11.79	11.79	11.79	11.79	11.79	37.98
6500	7.73	10.36	10.36	10.36	10.36	10.36	10.36	10.36	29.87
7000	6.31	9.16	9.16	9.16	9.16	9.16	9.16	9.16	23.92
7500	5.25	8.14	8.14	8.14	8.14	8.14	8.14	8.14	19.45
8000	4.43	7.16	7.16	7.16	7.16	7.16	7.16	7.16	16.02
8500	3.79	6.34	6.34	6.34	6.34	6.34	6.34	6.34	13.36
9000	3.25	5.65	5.65	5.65	5.63	5.65	5.65	5.65	11.25
9500	2.81	5.07	5.07	5.07	4.91	5.07	5.07	5.07	9.57
10000	2.46	4.58	4.58	4.58	4.29	4.58	4.58	4.58	8.20
10500	2.17	4.15	4.15	4.15	3.75	4.15	4.15	4.15	7.09
11000	1.92	3.79	3.78	3.78	3.29	3.79	3.78	3.78	6.16
11500	1.72	3.46	3.46	3.46	2.89	3.46	3.46	3.46	5.39
12000	1.55	3.18	3.18	3.18	2.54	3.18	3.18	3.18	4.75
12500	1.40	2.93	2.93	2.93	2.23	2.93	2.93	2.93	4.20
13000	1.27	2.71	2.71	2.71	1.96	2.67	2.71	2.71	3.73
13500	1.15	2.51	2.51	2.51	1.73	2.42	2.51	2.51	3.33
14000	1.05	2.33	2.34	2.34	1.54	2.20	2.34	2.34	2.99
14500	0.96	2.16	2.18	2.18	1.37	1.99	2.18	2.18	2.69
15000	0.88	2.00	2.04	2.04	1.23	1.81	2.04	2.04	2.43

NOTE: All gauges of section C/Z 350 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

2 CONTINUOUS

LOAD CAPACITY TABLES CONTINUOUS SPAN

Two continuous spans are continuous over two bays of equal span, supported at each end of the purlin and over a central support.



DESIGN CAPACITY (kN/m)

Span	C/Z 400 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	11.30	11.30	11.30	11.30	11.30	11.30	11.30	11.30	132.86
4500	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81	93.31
5000	8.61	8.61	8.61	8.61	8.61	8.61	8.61	8.61	68.03
5500	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	51.11
6000	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	39.37
6500	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11	30.96
7000	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	24.79
7500	4.91	5.00	5.00	5.00	5.00	5.00	5.00	5.00	20.16
8000	4.18	4.55	4.55	4.55	4.55	4.55	4.55	4.55	16.61
8500	3.56	4.16	4.16	4.16	4.16	4.16	4.16	4.16	13.85
9000	3.06	3.81	3.81	3.81	3.81	3.81	3.81	3.81	11.66
9500	2.66	3.51	3.51	3.51	3.51	3.51	3.51	3.51	9.92
10000	2.33	3.24	3.24	3.24	3.24	3.24	3.24	3.24	8.50
10500	2.06	2.99	2.99	2.99	2.99	2.99	2.99	2.99	7.35
11000	1.83	2.78	2.78	2.78	2.70	2.78	2.78	2.78	6.39
11500	1.64	2.58	2.58	2.58	2.40	2.58	2.58	2.58	5.59
12000	1.47	2.41	2.41	2.41	2.14	2.41	2.41	2.41	4.92
12500	1.33	2.25	2.25	2.25	1.90	2.25	2.25	2.25	4.35
13000	1.21	2.10	2.10	2.10	1.70	2.10	2.10	2.10	3.87
13500	1.10	1.97	1.97	1.97	1.52	1.92	1.97	1.97	3.46
14000	1.01	1.85	1.85	1.85	1.36	1.75	1.85	1.85	3.10
14500	0.93	1.73	1.74	1.74	1.21	1.60	1.74	1.74	2.79
15000	0.86	1.61	1.64	1.64	1.07	1.47	1.64	1.64	2.52
15500	0.79	1.50	1.55	1.55	0.96	1.35	1.55	1.55	2.28
16000	0.74	1.40	1.46	1.46	0.86	1.24	1.45	1.46	2.08

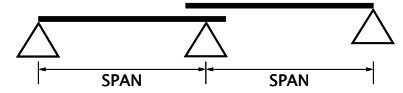
Span	C/Z 400 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	20.68	20.68	20.68	20.69	20.68	20.68	20.68	20.69	172.88
4500	17.73	17.73	17.73	17.73	17.73	17.73	17.73	17.72	121.41
5000	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	88.51
5500	13.43	13.43	13.44	13.43	13.43	13.43	13.44	13.43	66.50
6000	11.33	11.84	11.84	11.84	11.84	11.84	11.84	11.84	51.22
6500	9.02	10.51	10.51	10.51	10.51	10.51	10.51	10.50	40.29
7000	7.36	9.38	9.38	9.38	9.38	9.38	9.38	9.38	32.26
7500	6.10	8.42	8.42	8.42	8.42	8.42	8.42	8.42	26.23
8000	5.14	7.59	7.59	7.59	7.59	7.59	7.59	7.59	21.61
8500	4.36	6.88	6.88	6.88	6.88	6.88	6.88	6.88	18.02
9000	3.73	6.26	6.26	6.26	6.26	6.26	6.26	6.26	15.18
9500	3.23	5.71	5.71	5.71	5.71	5.71	5.71	5.71	12.91
10000	2.82	5.24	5.24	5.24	5.07	5.24	5.24	5.24	11.06
10500	2.49	4.80	4.80	4.80	4.49	4.80	4.80	4.80	9.56
11000	2.21	4.37	4.37	4.37	3.93	4.37	4.37	4.37	8.31
11500	1.97	4.00	4.00	4.00	3.44	4.00	4.00	4.00	7.28
12000	1.77	3.68	3.68	3.68	3.02	3.68	3.68	3.68	6.40
12500	1.59	3.39	3.39	3.39	2.64	3.39	3.39	3.39	5.67
13000	1.44	3.13	3.13	3.13	2.31	3.10	3.13	3.13	5.04
13500	1.31	2.90	2.90	2.90	2.04	2.83	2.90	2.90	4.50
14000	1.19	2.69	2.70	2.70	1.81	2.59	2.70	2.70	4.03
14500	1.09	2.49	2.52	2.52	1.62	2.38	2.52	2.52	3.63
15000	1.00	2.31	2.35	2.35	1.45	2.17	2.35	2.35	3.28
15500	0.92	2.16	2.20	2.20	1.29	1.97	2.20	2.20	2.97
16000	0.85	2.01	2.07	2.07	1.15	1.79	2.07	2.07	2.70

NOTE: All gauges of section C/Z 400 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

2 LAPPED

LOAD CAPACITY TABLES TWO LAPPED SPANS

Two lapped spans are continuous over two bays of equal span, supported at each end of the purlin and lapped over a central support.



DESIGN CAPACITY (kN/m)

Span	Z 250 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	6.43	6.43	6.43	6.43	6.43	6.43	6.43	6.43	54.84
3500	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	34.53
4000	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	23.14
4500	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	16.25
5000	3.36	3.36	3.36	3.36	3.36	3.36	3.36	3.36	11.84
5500	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	8.90
6000	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	6.86
6500	2.27	2.31	2.31	2.31	2.31	2.31	2.31	2.31	5.39
7000	1.92	2.06	2.06	2.06	2.03	2.06	2.06	2.06	4.32
7500	1.64	1.85	1.85	1.85	1.66	1.85	1.85	1.85	3.51
8000	1.42	1.67	1.67	1.67	1.37	1.67	1.67	1.67	2.89
8500	1.23	1.51	1.51	1.51	1.12	1.46	1.51	1.51	2.41
9000	1.08	1.38	1.38	1.38	0.91	1.25	1.38	1.38	2.03
9500	0.95	1.26	1.26	1.26	0.76	1.08	1.26	1.26	1.73
10000	0.83	1.15	1.15	1.15	0.64	0.92	1.14	1.15	1.48
10500	0.74	1.06	1.06	1.06	0.54	0.80	1.01	1.06	1.28
11000	0.65	0.98	0.98	0.98	0.46	0.68	0.90	0.97	1.11
11500	0.58	0.90	0.90	0.90	0.39	0.58	0.80	0.88	0.97
12000	0.52	0.82	0.82	0.82	0.34	0.50	0.72	0.79	0.86
12500	0.47	0.76	0.76	0.76	0.29	0.43	0.64	0.71	0.76

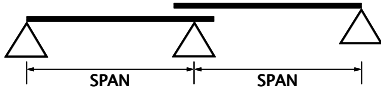
Span	Z 250 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	12.17	12.17	12.17	12.17	12.17	12.17	12.17	12.17	72.22
3500	9.93	9.93	9.92	9.92	9.93	9.93	9.92	9.92	45.48
4000	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	30.47
4500	6.92	6.95	6.95	6.95	6.95	6.95	6.95	6.95	21.40
5000	5.38	5.93	5.93	5.93	5.93	5.93	5.93	5.93	15.60
5500	4.28	5.11	5.11	5.11	5.11	5.11	5.11	5.11	11.72
6000	3.47	4.45	4.45	4.45	4.45	4.45	4.45	4.45	9.03
6500	2.86	3.90	3.90	3.90	3.59	3.90	3.90	3.90	7.10
7000	2.40	3.45	3.45	3.45	2.88	3.45	3.45	3.45	5.69
7500	2.04	3.01	3.01	3.01	2.31	3.01	3.01	3.01	4.62
8000	1.74	2.65	2.65	2.65	1.87	2.55	2.65	2.65	3.81
8500	1.50	2.35	2.35	2.35	1.52	2.15	2.35	2.35	3.18
9000	1.30	2.09	2.09	2.09	1.24	1.81	2.09	2.09	2.68
9500	1.14	1.88	1.88	1.88	1.02	1.53	1.88	1.88	2.27
10000	1.00	1.70	1.70	1.70	0.86	1.29	1.70	1.70	1.95
10500	0.89	1.54	1.54	1.54	0.72	1.09	1.52	1.54	1.68
11000	0.79	1.40	1.40	1.40	0.61	0.93	1.34	1.40	1.47
11500	0.71	1.28	1.28	1.28	0.52	0.79	1.18	1.28	1.28
12000	0.63	1.18	1.18	1.18	0.44	0.68	1.04	1.18	1.13
12500	0.57	1.09	1.09	1.09	0.38	0.58	0.92	1.07	1.00

Span	Z 250 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	16.46	16.46	16.46	16.46	16.46	16.46	16.46	16.46	94.05
3500	14.10	14.10	14.10	14.10	14.10	14.10	14.10	14.10	59.23
4000	11.50	12.30	12.30	12.30	12.30	12.30	12.30	12.30	39.68
4500	8.40	10.90	10.90	10.90	10.90	10.90	10.90	10.90	27.87
5000	6.47	9.66	9.66	9.66	9.66	9.66	9.66	9.66	20.32
5500	5.10	7.98	7.98	7.98	7.63	7.98	7.98	7.98	15.26
6000	4.12	6.71	6.71	6.71	6.08	6.71	6.71	6.71	11.76
6500	3.37	5.72	5.72	5.72	4.87	5.72	5.72	5.72	9.25
7000	2.80	4.93	4.93	4.93	3.87	4.90	4.93	4.93	7.40
7500	2.36	4.29	4.29	4.29	3.08	4.11	4.29	4.29	6.02
8000	2.01	3.77	3.77	3.77	2.47	3.47	3.77	3.77	4.96
8500	1.73	3.34	3.34	3.34	2.00	2.94	3.34	3.34	4.14
9000	1.50	2.98	2.98	2.98	1.62	2.48	2.98	2.98	3.48
9500	1.31	2.68	2.68	2.68	1.33	2.08	2.67	2.68	2.96
10000	1.16	2.42	2.42	2.42	1.11	1.75	2.35	2.42	2.54
10500	1.02	2.19	2.19	2.19	0.93	1.47	2.07	2.19	2.19
11000	0.91	1.98	2.00	2.00	0.79	1.25	1.83	2.00	1.91
11500	0.82	1.80	1.83	1.83	0.67	1.06	1.62	1.80	1.67
12000	0.73	1.64	1.68	1.68	0.58	0.90	1.43	1.62	1.47
12500	0.66	1.50	1.55	1.55	0.50	0.77	1.26	1.46	1.30

NOTE: All gauges of section Z250 require M12 grade 4.6 bolts unless indicated otherwise. Values shaded require M12 grade 8.8 bolts.

LOAD CAPACITY TABLES TWO LAPPED SPANS

Two lapped spans are continuous over two bays of equal span, supported at each end of the purlin and lapped over a central support.



DESIGN CAPACITY (kN/m)

Span	Z 300 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	14.84	14.84	14.84	14.84	14.84	14.84	14.84	14.84	68.73
4500	12.62	12.62	12.61	12.61	12.62	12.62	12.61	12.61	48.27
5000	9.84	10.85	10.85	10.85	10.85	10.85	10.85	10.85	35.19
5500	7.69	9.42	9.42	9.42	9.42	9.42	9.42	9.42	26.44
6000	6.11	8.25	8.25	8.25	8.25	8.25	8.25	8.25	20.36
6500	4.96	7.28	7.28	7.28	7.28	7.28	7.28	7.28	16.02
7000	4.08	6.46	6.46	6.46	6.46	6.46	6.46	6.46	12.82
7500	3.40	5.77	5.77	5.77	5.61	5.77	5.77	5.77	10.43
8000	2.88	5.18	5.18	5.18	4.70	5.18	5.18	5.18	8.59
8500	2.46	4.68	4.68	4.68	3.94	4.68	4.68	4.68	7.16
9000	2.13	4.20	4.20	4.20	3.31	4.20	4.20	4.20	6.03
9500	1.86	3.77	3.77	3.77	2.80	3.70	3.77	3.77	5.13
10000	1.63	3.41	3.41	3.41	2.38	3.23	3.41	3.41	4.40
10500	1.44	3.09	3.09	3.09	2.03	2.83	3.09	3.09	3.80
11000	1.29	2.81	2.81	2.81	1.73	2.48	2.81	2.81	3.31
11500	1.15	2.58	2.58	2.58	1.47	2.18	2.58	2.58	2.89
12000	1.04	2.35	2.36	2.36	1.26	1.91	2.36	2.36	2.55
12500	0.94	2.15	2.18	2.18	1.08	1.68	2.18	2.18	2.25
13000	0.85	1.97	2.01	2.01	0.94	1.48	1.98	2.01	2.00
13500	0.77	1.81	1.87	1.87	0.81	1.31	1.79	1.87	1.79
14000	0.71	1.67	1.74	1.74	0.71	1.16	1.62	1.74	1.60
14500	0.65	1.55	1.62	1.62	0.63	1.02	1.47	1.62	1.44
15000	0.59	1.43	1.51	1.51	0.56	0.90	1.34	1.51	1.30
15500	0.55	1.33	1.42	1.42	0.49	0.80	1.22	1.39	1.18
16000	0.51	1.24	1.33	1.33	0.44	0.71	1.10	1.28	1.07

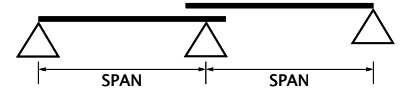
Span	Z 300 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	23.34	23.34	23.34	23.34	23.34	23.34	23.34	23.34	88.48
4500	16.73	20.74	20.74	20.74	20.74	20.74	20.74	20.74	62.14
5000	12.19	17.54	17.54	17.54	17.54	17.54	17.54	17.54	45.30
5500	9.21	14.98	14.98	14.98	14.98	14.98	14.98	14.98	34.03
6000	7.18	12.93	12.93	12.93	12.93	12.93	12.93	12.93	26.22
6500	5.75	11.26	11.26	11.26	10.98	11.26	11.26	11.26	20.62
7000	4.69	9.85	9.85	9.85	9.17	9.85	9.85	9.85	16.51
7500	3.90	8.58	8.58	8.58	7.72	8.58	8.58	8.58	13.42
8000	3.29	7.52	7.54	7.54	6.51	7.54	7.54	7.54	11.06
8500	2.81	6.59	6.68	6.68	5.47	6.60	6.68	6.68	9.22
9000	2.43	5.81	5.96	5.96	4.62	5.76	5.96	5.96	7.77
9500	2.12	5.16	5.35	5.35	3.84	5.05	5.35	5.35	6.60
10000	1.86	4.60	4.83	4.83	3.19	4.45	4.83	4.83	5.66
10500	1.65	4.13	4.38	4.38	2.67	3.93	4.38	4.38	4.89
11000	1.47	3.73	3.99	3.99	2.25	3.47	3.99	3.99	4.25
11500	1.32	3.38	3.65	3.65	1.91	3.06	3.63	3.65	3.72
12000	1.18	3.08	3.35	3.35	1.64	2.69	3.28	3.35	3.28
12500	1.07	2.81	3.09	3.09	1.41	2.37	2.97	3.09	2.90
13000	0.97	2.58	2.86	2.86	1.23	2.07	2.70	2.86	2.58
13500	0.89	2.37	2.65	2.65	1.07	1.80	2.46	2.64	2.30
14000	0.81	2.19	2.46	2.46	0.94	1.57	2.25	2.42	2.06
14500	0.75	2.03	2.28	2.30	0.83	1.37	2.05	2.23	1.86
15000	0.69	1.88	2.12	2.14	0.74	1.20	1.88	2.05	1.68
15500	0.63	1.74	1.97	2.01	0.66	1.06	1.71	1.90	1.52
16000	0.59	1.62	1.84	1.89	0.59	0.94	1.56	1.75	1.38

NOTE: All gauges of section Z300 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

2 LAPPED

LOAD CAPACITY TABLES TWO LAPPED SPANS

Two lapped spans are continuous over two bays of equal span, supported at each end of the purlin and lapped over a central support.



DESIGN CAPACITY (kN/m)

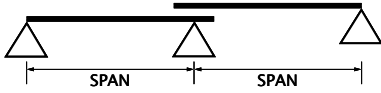
Span	Z 350 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	13.89	13.89	13.89	13.89	13.89	13.89	13.89	13.89	110.22
4500	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	77.41
5000	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	56.43
5500	9.26	9.26	9.26	9.26	9.26	9.26	9.26	9.26	42.40
6000	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	32.66
6500	6.74	7.36	7.36	7.36	7.36	7.36	7.36	7.36	25.69
7000	5.50	6.62	6.62	6.62	6.62	6.62	6.62	6.62	20.57
7500	4.56	5.98	5.98	5.98	5.98	5.98	5.98	5.98	16.72
8000	3.84	5.43	5.43	5.43	5.43	5.43	5.43	5.43	13.78
8500	3.27	4.95	4.95	4.95	4.95	4.95	4.95	4.95	11.49
9000	2.82	4.52	4.52	4.52	4.52	4.52	4.52	4.52	9.68
9500	2.45	4.15	4.15	4.15	4.15	4.15	4.15	4.15	8.23
10000	2.16	3.82	3.82	3.82	3.79	3.82	3.82	3.82	7.05
10500	1.92	3.53	3.52	3.53	3.34	3.53	3.52	3.53	6.09
11000	1.71	3.26	3.26	3.26	2.95	3.26	3.26	3.26	5.30
11500	1.54	3.03	3.03	3.03	2.61	3.03	3.03	3.03	4.64
12000	1.39	2.82	2.82	2.82	2.27	2.82	2.82	2.82	4.08
12500	1.26	2.63	2.63	2.63	1.97	2.55	2.63	2.63	3.61
13000	1.14	2.42	2.45	2.45	1.72	2.31	2.45	2.45	3.21
13500	1.04	2.23	2.30	2.30	1.51	2.11	2.30	2.30	2.87
14000	0.95	2.06	2.15	2.15	1.34	1.92	2.15	2.15	2.57
14500	0.87	1.91	2.00	2.00	1.18	1.75	2.00	2.00	2.31
15000	0.80	1.77	1.87	1.87	1.05	1.60	1.86	1.87	2.09
15500	0.74	1.65	1.75	1.75	0.94	1.46	1.73	1.75	1.89
16000	0.69	1.54	1.65	1.65	0.85	1.32	1.60	1.65	1.72

Span	Z 350 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	25.09	25.09	25.09	25.09	25.09	25.09	25.09	25.09	142.63
4500	21.38	21.38	21.38	21.37	21.38	21.38	21.38	21.38	100.18
5000	17.60	18.43	18.43	18.43	18.43	18.43	18.43	18.43	73.03
5500	13.31	16.03	16.03	16.03	16.03	16.03	16.03	16.04	54.87
6000	10.41	14.07	14.07	14.07	14.07	14.07	14.07	14.07	42.26
6500	8.35	12.43	12.43	12.43	12.43	12.43	12.43	12.43	33.24
7000	6.76	11.05	11.05	11.05	11.05	11.05	11.05	11.05	26.61
7500	5.56	9.88	9.88	9.88	9.88	9.88	9.88	9.88	21.64
8000	4.66	8.89	8.89	8.89	8.89	8.89	8.89	8.89	17.83
8500	3.95	8.03	8.03	8.03	7.97	8.03	8.03	8.03	14.87
9000	3.40	7.23	7.22	7.22	6.87	7.23	7.22	7.22	12.52
9500	2.94	6.48	6.48	6.48	5.94	6.48	6.48	6.48	10.65
10000	2.56	5.85	5.85	5.85	5.15	5.85	5.85	5.85	9.13
10500	2.25	5.31	5.31	5.31	4.47	5.31	5.31	5.31	7.89
11000	1.99	4.84	4.84	4.84	3.89	4.84	4.84	4.84	6.86
11500	1.77	4.40	4.43	4.43	3.38	4.43	4.43	4.43	6.00
12000	1.59	3.99	4.06	4.06	2.93	3.98	4.06	4.06	5.28
12500	1.43	3.63	3.75	3.75	2.56	3.58	3.75	3.75	4.67
13000	1.30	3.31	3.46	3.46	2.25	3.22	3.46	3.46	4.16
13500	1.18	3.04	3.21	3.21	1.99	2.90	3.21	3.21	3.71
14000	1.08	2.79	2.99	2.99	1.77	2.61	2.99	2.99	3.33
14500	0.99	2.57	2.78	2.78	1.57	2.36	2.78	2.78	2.99
15000	0.91	2.37	2.60	2.60	1.39	2.12	2.60	2.60	2.71
15500	0.84	2.20	2.44	2.44	1.24	1.91	2.44	2.44	2.45
16000	0.77	2.04	2.29	2.29	1.11	1.72	2.28	2.29	2.23

NOTE: All gauges of section Z350 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES TWO LAPPED SPANS

Two lapped spans are continuous over two bays of equal span, supported at each end of the purlin and lapped over a central support.



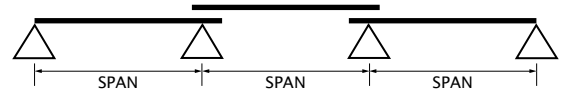
DESIGN CAPACITY (kN/m)

Span	Z 400 - 24									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
4000	12.64	12.64	12.64	12.64	12.64	12.64	12.64	12.64	12.64	147.85
4500	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	103.84
5000	9.74	9.74	9.74	9.73	9.74	9.74	9.74	9.74	9.74	75.70
5500	8.67	8.67	8.67	8.67	8.67	8.67	8.67	8.67	8.67	56.87
6000	7.78	7.78	7.78	7.78	7.78	7.78	7.78	7.78	7.78	43.81
6500	7.02	7.02	7.02	7.02	7.02	7.02	7.02	7.02	7.02	34.46
7000	6.31	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	27.59
7500	5.22	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	22.43
8000	4.39	5.31	5.31	5.31	5.31	5.31	5.31	5.31	5.31	18.48
8500	3.74	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88	15.41
9000	3.22	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	12.98
9500	2.81	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	11.04
10000	2.47	3.84	3.85	3.85	3.85	3.84	3.85	3.85	3.85	9.46
10500	2.20	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.57	8.17
11000	1.96	3.32	3.32	3.32	3.27	3.32	3.32	3.32	3.32	7.11
11500	1.76	3.10	3.10	3.10	2.89	3.10	3.10	3.10	3.10	6.22
12000	1.58	2.90	2.90	2.90	2.55	2.90	2.90	2.90	2.90	5.48
12500	1.43	2.72	2.72	2.71	2.26	2.72	2.72	2.71	2.71	4.85
13000	1.29	2.55	2.55	2.55	2.00	2.55	2.55	2.55	2.55	4.31
13500	1.18	2.40	2.40	2.40	1.76	2.34	2.40	2.40	2.40	3.85
14000	1.08	2.26	2.26	2.26	1.55	2.13	2.26	2.26	2.26	3.45
14500	0.99	2.12	2.13	2.13	1.37	1.94	2.13	2.13	2.13	3.10
15000	0.91	1.97	2.01	2.01	1.22	1.76	2.01	2.01	2.01	2.80
15500	0.84	1.83	1.90	1.90	1.09	1.61	1.90	1.90	1.90	2.54
16000	0.78	1.71	1.80	1.80	0.98	1.47	1.79	1.80	1.80	2.31
16500	0.72	1.60	1.71	1.71	0.89	1.34	1.66	1.71	1.71	2.11
17000	0.67	1.49	1.62	1.62	0.80	1.22	1.54	1.62	1.62	1.93
17500	0.63	1.40	1.54	1.54	0.73	1.12	1.44	1.54	1.54	1.77
18000	0.58	1.32	1.47	1.47	0.66	1.01	1.34	1.44	1.44	1.62

Span	Z 400 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	23.48	23.49	23.48	23.49	23.34	23.34	23.34	23.34	192.39
4500	20.28	20.28	20.27	20.28	20.28	20.28	20.28	20.27	135.11
5000	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	98.50
5500	15.57	15.59	15.59	15.59	15.59	15.59	15.59	15.59	74.00
6000	12.15	13.83	13.83	13.83	13.83	13.83	13.83	13.83	57.00
6500	9.68	12.35	12.35	12.35	12.35	12.35	12.35	12.35	44.83
7000	7.80	11.09	11.09	11.09	11.09	11.09	11.09	11.09	35.90
7500	6.41	10.01	10.01	10.01	10.01	10.01	10.01	10.01	29.19
8000	5.36	9.07	9.07	9.07	9.07	9.07	9.07	9.07	24.05
8500	4.55	8.26	8.26	8.26	8.26	8.26	8.26	8.26	20.05
9000	3.89	7.54	7.54	7.54	7.54	7.54	7.54	7.54	16.89
9500	3.35	6.91	6.91	6.91	6.91	6.91	6.91	6.91	14.36
10000	2.91	6.36	6.36	6.36	6.16	6.36	6.36	6.36	12.31
10500	2.56	5.87	5.86	5.86	5.34	5.87	5.86	5.86	10.64
11000	2.26	5.42	5.42	5.42	4.62	5.42	5.42	5.42	9.25
11500	2.01	5.03	5.03	5.03	4.00	5.03	5.03	5.03	8.10
12000	1.80	4.62	4.68	4.68	3.46	4.64	4.68	4.68	7.13
12500	1.62	4.22	4.33	4.33	3.02	4.20	4.33	4.33	6.30
13000	1.47	3.87	4.00	4.00	2.66	3.82	4.00	4.00	5.60
13500	1.33	3.56	3.71	3.71	2.35	3.47	3.71	3.71	5.00
14000	1.22	3.28	3.45	3.45	2.08	3.12	3.45	3.45	4.49
14500	1.11	3.04	3.22	3.22	1.83	2.81	3.22	3.22	4.04
15000	1.02	2.81	3.01	3.01	1.63	2.53	3.01	3.01	3.65
15500	0.94	2.60	2.82	2.82	1.45	2.27	2.82	2.82	3.31
16000	0.87	2.41	2.64	2.64	1.30	2.04	2.64	2.64	3.01
16500	0.81	2.24	2.48	2.48	1.17	1.83	2.45	2.48	2.74
17000	0.75	2.09	2.34	2.34	1.05	1.66	2.28	2.34	2.51
17500	0.70	1.95	2.21	2.21	0.94	1.50	2.13	2.21	2.30
18000	0.65	1.82	2.09	2.09	0.85	1.37	1.98	2.09	2.11

NOTE: All gauges of section Z400 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 100 - 10								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	9.82	9.82	9.81	9.81	9.82	9.82	9.81	9.81	20.26
2000	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	8.55
2500	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.38
3000	3.16	3.23	3.23	3.23	2.98	3.23	3.23	3.23	2.53
3500	2.25	2.38	2.37	2.38	1.89	2.37	2.37	2.37	1.60
4000	1.66	1.82	1.82	1.82	1.20	1.69	1.82	1.82	1.07
4500	1.26	1.44	1.44	1.44	0.80	1.20	1.44	1.44	0.75
5000	0.97	1.16	1.16	1.16	0.56	0.85	1.16	1.16	0.55
5500	0.75	0.96	0.96	0.96	0.41	0.60	0.90	0.96	0.41
6000	0.59	0.81	0.81	0.81	0.30	0.44	0.70	0.80	0.32
6500	0.46	0.69	0.69	0.69	0.23	0.34	0.54	0.65	0.25
7000	0.37	0.59	0.59	0.59	0.17	0.26	0.42	0.52	0.20
7500	0.30	0.52	0.52	0.52	0.13	0.21	0.33	0.43	0.16
8000	0.24	0.46	0.46	0.46	0.11	0.16	0.26	0.34	0.13

Span	Z 100 - 12									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
1500	14.36	14.36	14.35	14.35	14.36	14.36	14.35	14.35	24.48	
2000	8.59	8.82	8.82	8.82	8.82	8.82	8.82	8.82	10.33	
2500	5.32	5.65	5.65	5.65	5.57	5.65	5.65	5.65	5.29	
3000	3.59	3.92	3.92	3.92	3.52	3.92	3.92	3.92	3.06	
3500	2.56	2.88	2.88	2.88	2.28	2.81	2.88	2.88	1.93	
4000	1.90	2.21	2.21	2.21	1.50	2.00	2.21	2.21	1.29	
4500	1.45	1.74	1.74	1.74	1.01	1.44	1.74	1.74	0.91	
5000	1.12	1.41	1.41	1.41	0.71	1.04	1.35	1.41	0.66	
5500	0.88	1.17	1.17	1.17	0.50	0.76	1.06	1.16	0.50	
6000	0.70	0.98	0.98	0.98	0.37	0.57	0.83	0.94	0.38	
6500	0.56	0.84	0.84	0.84	0.28	0.43	0.66	0.76	0.30	
7000	0.45	0.72	0.72	0.72	0.21	0.33	0.52	0.62	0.24	
7500	0.37	0.62	0.63	0.63	0.17	0.26	0.41	0.51	0.20	
8000	0.31	0.54	0.55	0.55	0.13	0.20	0.33	0.42	0.16	

Span	Z 100 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	19.44	19.77	19.77	19.77	19.78	19.77	19.77	19.77	31.17
2000	10.48	11.49	11.49	11.49	11.49	11.49	11.49	11.49	13.15
2500	6.50	7.36	7.36	7.36	6.98	7.36	7.36	7.36	6.73
3000	4.39	5.11	5.11	5.11	4.50	5.05	5.11	5.11	3.90
3500	3.15	3.75	3.75	3.75	3.02	3.54	3.75	3.75	2.45
4000	2.35	2.87	2.87	2.87	2.06	2.56	2.86	2.87	1.64
4500	1.81	2.27	2.27	2.27	1.38	1.89	2.19	2.27	1.16
5000	1.43	1.84	1.84	1.84	0.96	1.42	1.71	1.81	0.84
5500	1.14	1.52	1.52	1.52	0.69	1.06	1.36	1.46	0.63
6000	0.92	1.27	1.28	1.28	0.50	0.77	1.09	1.19	0.49
6500	0.74	1.07	1.09	1.09	0.38	0.58	0.88	0.98	0.38
7000	0.60	0.91	0.94	0.94	0.29	0.45	0.71	0.81	0.31
7500	0.49	0.78	0.82	0.82	0.23	0.35	0.58	0.68	0.25
8000	0.41	0.67	0.71	0.72	0.19	0.28	0.46	0.57	0.21

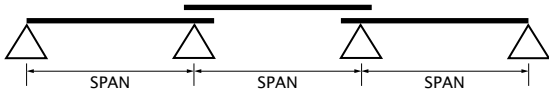
Span	Z 100 - 19									
	Inward				Outward				Def'n L/150	
	0	1	2	3	0	1	2	3		
1500	25.79	27.69	27.69	27.69	27.70	27.69	27.69	27.69	39.94	
2000	13.64	15.96	15.96	15.96	15.83	15.96	15.96	15.96	16.85	
2500	8.34	10.21	10.21	10.21	9.44	10.21	10.21	10.21	8.63	
3000	5.59	7.09	7.09	7.09	6.02	6.89	7.09	7.09	4.99	
3500	3.98	5.21	5.21	5.21	4.00	4.79	5.21	5.21	3.14	
4000	2.96	3.96	3.99	3.99	2.73	3.44	3.92	3.99	2.11	
4500	2.28	3.10	3.15	3.15	1.85	2.53	2.98	3.15	1.48	
5000	1.79	2.49	2.55	2.55	1.28	1.88	2.32	2.48	1.08	
5500	1.44	2.05	2.11	2.11	0.92	1.42	1.83	1.98	0.81	
6000	1.17	1.71	1.77	1.77	0.69	1.05	1.46	1.61	0.62	
6500	0.95	1.44	1.51	1.51	0.53	0.79	1.17	1.32	0.49	
7000	0.78	1.23	1.30	1.30	0.41	0.61	0.95	1.09	0.39	
7500	0.65	1.05	1.13	1.14	0.33	0.47	0.77	0.90	0.32	
8000	0.54	0.91	0.97	1.00	0.27	0.38	0.62	0.76	0.26	

Span	Z 100 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	32.80	35.13	35.13	35.13	35.14	35.13	35.13	35.13	49.84
2000	17.14	20.60	20.60	20.60	20.17	20.60	20.60	20.60	21.03
2500	10.38	13.24	13.24	13.24	12.17	13.22	13.24	13.24	10.77
3000	6.91	9.08	9.20	9.20	7.80	8.82	9.20	9.20	6.23
3500	4.90	6.58	6.76	6.76	5.18	6.20	6.73	6.76	3.92
4000	3.64	4.98	5.17	5.17	3.54	4.48	5.01	5.17	2.63
4500	2.80	3.89	4.09	4.09	2.45	3.29	3.84	4.01	1.85
5000	2.21	3.13	3.29	3.31	1.73	2.46	3.01	3.17	1.35
5500	1.78	2.56	2.70	2.74	1.26	1.86	2.38	2.55	1.01
6000	1.45	2.14	2.25	2.30	0.96	1.41	1.90	2.09	0.78
6500	1.20	1.81	1.91	1.95	0.74	1.07	1.53	1.71	0.61
7000	1.01	1.56	1.64	1.67	0.59	0.83	1.24	1.42	0.49
7500	0.85	1.35	1.42	1.45	0.48	0.66	1.01	1.18	0.40
8000	0.72	1.18	1.24	1.27	0.40	0.53	0.83	0.99	0.33

NOTE: All gauges of section Z100 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

LOAD CAPACITY TABLES THREE LAPPED SPANS

Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 250 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	40.93
3500	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	25.78
4000	5.06	5.06	5.06	5.06	5.06	5.06	5.06	5.06	17.27
4500	4.40	4.40	4.40	4.39	4.40	4.40	4.40	4.40	12.13
5000	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	8.84
5500	3.42	3.42	3.42	3.42	3.42	3.42	3.42	3.42	6.64
6000	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	5.12
6500	2.52	2.73	2.73	2.73	2.50	2.74	2.73	2.73	4.02
7000	2.10	2.47	2.47	2.47	1.92	2.47	2.47	2.47	3.22
7500	1.77	2.24	2.24	2.24	1.51	2.23	2.24	2.24	2.62
8000	1.51	2.04	2.04	2.04	1.22	1.85	2.04	2.04	2.16
8500	1.30	1.86	1.86	1.86	0.98	1.53	1.86	1.86	1.80
9000	1.12	1.71	1.71	1.71	0.79	1.25	1.71	1.71	1.52
9500	0.98	1.57	1.57	1.57	0.65	1.03	1.48	1.57	1.29
10000	0.86	1.45	1.45	1.45	0.53	0.86	1.29	1.43	1.11
10500	0.76	1.34	1.34	1.34	0.44	0.73	1.12	1.27	0.96
11000	0.67	1.23	1.24	1.24	0.37	0.62	0.98	1.13	0.83
11500	0.60	1.11	1.13	1.13	0.31	0.52	0.85	1.00	0.73
12000	0.53	1.01	1.04	1.04	0.27	0.45	0.74	0.89	0.64
12500	0.47	0.92	0.96	0.96	0.23	0.38	0.64	0.79	0.57

Span	Z 250 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	13.68	13.68	13.68	13.68	13.68	13.68	13.68	13.68	53.90
3500	11.34	11.34	11.34	11.33	11.34	11.34	11.34	11.33	33.94
4000	9.57	9.57	9.57	9.57	9.57	9.57	9.57	9.57	22.74
4500	7.41	8.19	8.19	8.19	8.19	8.19	8.19	8.19	15.97
5000	5.73	7.09	7.09	7.09	7.09	7.09	7.09	7.09	11.64
5500	4.51	6.19	6.19	6.19	5.92	6.19	6.19	6.19	8.75
6000	3.63	5.45	5.45	5.45	4.46	5.45	5.45	5.45	6.74
6500	2.98	4.83	4.83	4.82	3.40	4.83	4.83	4.82	5.30
7000	2.49	4.31	4.31	4.31	2.59	3.95	4.31	4.31	4.24
7500	2.10	3.81	3.81	3.81	2.02	3.20	3.81	3.81	3.45
8000	1.80	3.35	3.35	3.35	1.60	2.59	3.35	3.35	2.84
8500	1.55	2.97	2.97	2.97	1.27	2.10	2.95	2.97	2.37
9000	1.34	2.65	2.65	2.65	1.03	1.72	2.54	2.65	2.00
9500	1.18	2.38	2.38	2.38	0.84	1.40	2.18	2.38	1.70
10000	1.03	2.14	2.14	2.14	0.69	1.16	1.87	2.14	1.46
10500	0.91	1.94	1.94	1.94	0.58	0.97	1.60	1.90	1.26
11000	0.80	1.77	1.77	1.77	0.48	0.82	1.38	1.67	1.09
11500	0.71	1.61	1.62	1.62	0.41	0.69	1.18	1.47	0.96
12000	0.63	1.47	1.49	1.49	0.35	0.58	1.02	1.29	0.84
12500	0.56	1.35	1.37	1.37	0.30	0.50	0.88	1.13	0.75

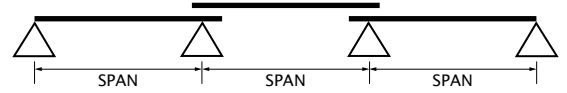
Span	Z 250 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	18.91	18.91	18.91	18.91	18.91	18.91	18.91	18.91	70.19
3500	16.21	16.21	16.21	16.21	16.21	16.21	16.21	16.21	44.20
4000	11.97	14.18	14.18	14.18	14.18	14.18	14.18	14.18	29.61
4500	8.73	12.61	12.61	12.61	12.61	12.61	12.61	12.61	20.80
5000	6.61	11.34	11.34	11.34	10.71	11.34	11.34	11.34	15.16
5500	5.17	10.10	10.10	10.10	7.98	10.10	10.10	10.10	11.39
6000	4.15	8.48	8.48	8.48	5.92	8.19	8.48	8.48	8.77
6500	3.39	7.23	7.23	7.23	4.47	6.63	7.23	7.23	6.90
7000	2.82	6.18	6.23	6.23	3.38	5.40	6.23	6.23	5.53
7500	2.38	5.31	5.43	5.43	2.60	4.34	5.43	5.43	4.49
8000	2.03	4.61	4.77	4.77	2.04	3.48	4.70	4.77	3.70
8500	1.75	4.03	4.23	4.23	1.63	2.80	4.02	4.23	3.09
9000	1.52	3.55	3.77	3.77	1.32	2.28	3.46	3.77	2.60
9500	1.33	3.16	3.38	3.38	1.08	1.85	2.98	3.34	2.21
10000	1.17	2.82	3.05	3.05	0.90	1.52	2.55	2.93	1.90
10500	1.03	2.54	2.77	2.77	0.75	1.26	2.18	2.58	1.64
11000	0.92	2.29	2.52	2.52	0.63	1.05	1.86	2.27	1.42
11500	0.82	2.08	2.31	2.31	0.54	0.89	1.58	2.01	1.25
12000	0.73	1.89	2.12	2.12	0.46	0.76	1.36	1.76	1.10
12500	0.66	1.73	1.95	1.95	0.40	0.65	1.17	1.54	0.97

NOTE: All gauges of section Z250 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

3 LAPPED

LOAD CAPACITY TABLES THREE LAPPED SPANS

Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



DESIGN CAPACITY (kN/m)

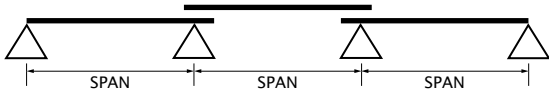
Span	Z 300 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	16.92	16.92	16.91	16.92	16.92	16.92	16.92	16.92	51.29
4500	13.96	14.59	14.58	14.58	14.59	14.58	14.58	14.58	36.03
5000	10.39	12.70	12.70	12.70	12.70	12.70	12.70	12.70	26.26
5500	7.91	11.18	11.18	11.18	11.18	11.18	11.18	11.18	19.73
6000	6.21	9.91	9.90	9.91	9.91	9.91	9.90	9.91	15.20
6500	4.99	8.83	8.82	8.81	8.83	8.83	8.83	8.81	11.95
7000	4.10	7.92	7.92	7.92	7.11	7.92	7.92	7.92	9.57
7500	3.42	7.14	7.14	7.14	5.73	7.14	7.14	7.14	7.78
8000	2.89	6.47	6.46	6.46	4.65	6.45	6.46	6.46	6.41
8500	2.48	5.86	5.88	5.88	3.76	5.47	5.87	5.88	5.35
9000	2.14	5.14	5.31	5.31	3.05	4.65	5.31	5.31	4.50
9500	1.87	4.54	4.77	4.77	2.48	3.95	4.77	4.77	3.83
10000	1.64	4.03	4.31	4.31	2.04	3.36	4.31	4.31	3.28
10500	1.46	3.60	3.91	3.91	1.70	2.88	3.87	3.91	2.84
11000	1.30	3.24	3.56	3.56	1.42	2.47	3.43	3.56	2.47
11500	1.16	2.92	3.26	3.26	1.20	2.11	3.04	3.26	2.16
12000	1.05	2.65	2.99	2.99	1.03	1.81	2.70	2.99	1.90
12500	0.95	2.41	2.76	2.76	0.88	1.54	2.40	2.74	1.68
13000	0.86	2.20	2.55	2.55	0.76	1.33	2.14	2.47	1.49
13500	0.78	2.02	2.36	2.36	0.66	1.15	1.90	2.23	1.33
14000	0.71	1.86	2.20	2.20	0.58	1.00	1.69	2.02	1.20
14500	0.65	1.71	2.04	2.05	0.51	0.87	1.51	1.83	1.08
15000	0.60	1.58	1.89	1.91	0.45	0.76	1.35	1.66	0.97
15500	0.55	1.47	1.75	1.79	0.40	0.67	1.21	1.50	0.88
16000	0.51	1.36	1.63	1.68	0.35	0.60	1.08	1.36	0.80

Span	Z 300 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	24.45	26.81	26.81	26.81	26.81	26.81	26.81	26.81	66.04
4500	16.89	23.83	23.83	23.83	23.83	23.83	23.83	23.83	46.38
5000	12.27	21.43	21.43	21.43	21.43	21.43	21.43	21.43	33.81
5500	9.27	18.64	18.64	18.64	18.64	18.64	18.64	18.64	25.40
6000	7.23	16.27	16.26	16.27	15.32	16.27	16.26	16.27	19.57
6500	5.78	14.25	14.29	14.28	12.36	14.30	14.29	14.28	15.39
7000	4.72	12.06	12.45	12.45	9.94	12.24	12.45	12.45	12.32
7500	3.93	10.31	10.85	10.85	7.90	10.38	10.85	10.85	10.02
8000	3.31	8.90	9.53	9.53	6.21	8.85	9.53	9.53	8.25
8500	2.83	7.75	8.45	8.44	4.93	7.58	8.44	8.44	6.88
9000	2.45	6.80	7.53	7.53	3.97	6.50	7.53	7.53	5.80
9500	2.14	6.00	6.76	6.76	3.24	5.55	6.76	6.76	4.93
10000	1.88	5.32	6.10	6.10	2.67	4.74	5.93	6.10	4.23
10500	1.66	4.73	5.50	5.53	2.22	3.99	5.27	5.53	3.65
11000	1.48	4.23	4.96	5.04	1.87	3.35	4.70	5.04	3.18
11500	1.33	3.80	4.50	4.61	1.59	2.82	4.20	4.55	2.78
12000	1.20	3.43	4.09	4.24	1.35	2.39	3.76	4.11	2.45
12500	1.08	3.11	3.73	3.91	1.17	2.04	3.36	3.73	2.16
13000	0.99	2.83	3.42	3.60	1.01	1.76	3.00	3.38	1.92
13500	0.90	2.58	3.14	3.31	0.88	1.52	2.68	3.08	1.72
14000	0.82	2.36	2.90	3.06	0.77	1.32	2.39	2.80	1.54
14500	0.76	2.16	2.68	2.83	0.68	1.16	2.10	2.56	1.39
15000	0.70	1.98	2.48	2.62	0.60	1.02	1.86	2.33	1.25
15500	0.64	1.83	2.30	2.44	0.54	0.90	1.63	2.11	1.14
16000	0.60	1.69	2.14	2.27	0.48	0.80	1.44	1.92	1.03

NOTE: All gauges of section Z300 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES THREE LAPPED SPANS

Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 350 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	15.33	15.33	15.32	15.33	15.33	15.33	15.33	15.33	82.26
4500	13.39	13.38	13.38	13.38	13.39	13.39	13.38	13.38	57.78
5000	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	42.12
5500	10.53	10.53	10.53	10.53	10.53	10.53	10.53	10.53	31.65
6000	8.85	9.45	9.44	9.45	9.45	9.45	9.44	9.45	24.37
6500	7.06	8.53	8.52	8.51	8.53	8.53	8.52	8.51	19.17
7000	5.75	7.74	7.74	7.74	7.74	7.74	7.74	7.74	15.35
7500	4.79	7.06	7.06	7.06	7.06	7.06	7.06	7.06	12.48
8000	4.06	6.47	6.46	6.46	6.47	6.47	6.46	6.46	10.28
8500	3.47	5.94	5.93	5.94	5.94	5.94	5.93	5.94	8.57
9000	2.99	5.47	5.47	5.47	5.47	5.47	5.47	5.47	7.22
9500	2.60	5.06	5.06	5.06	4.64	5.06	5.06	5.06	6.14
10000	2.28	4.69	4.69	4.69	3.88	4.69	4.69	4.69	5.27
10500	2.01	4.36	4.35	4.36	3.26	4.36	4.35	4.36	4.55
11000	1.79	4.06	4.06	4.05	2.77	4.01	4.05	4.05	3.96
11500	1.59	3.73	3.79	3.79	2.37	3.57	3.79	3.79	3.46
12000	1.43	3.39	3.54	3.54	2.04	3.19	3.54	3.54	3.05
12500	1.29	3.09	3.32	3.32	1.77	2.85	3.32	3.32	2.70
13000	1.17	2.83	3.11	3.12	1.56	2.52	3.08	3.11	2.40
13500	1.06	2.60	2.92	2.92	1.37	2.21	2.82	2.92	2.14
14000	0.97	2.39	2.71	2.72	1.20	1.94	2.58	2.72	1.92
14500	0.89	2.21	2.51	2.53	1.06	1.71	2.36	2.53	1.73
15000	0.82	2.05	2.33	2.37	0.94	1.51	2.17	2.34	1.56
15500	0.75	1.90	2.17	2.22	0.83	1.35	2.00	2.17	1.41
16000	0.70	1.77	2.03	2.08	0.73	1.20	1.84	2.01	1.29

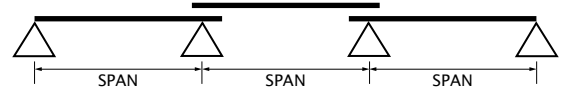
Span	Z 350 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	26.81	26.81	26.81	26.80	26.81	26.81	26.81	26.81	106.45
4500	23.83	23.83	23.83	23.83	23.83	23.83	23.83	23.83	74.77
5000	18.82	21.43	21.43	21.43	21.43	21.43	21.43	21.43	54.51
5500	14.24	18.91	18.91	18.91	18.91	18.91	18.91	18.91	40.95
6000	10.95	16.79	16.78	16.79	16.79	16.79	16.78	16.79	31.54
6500	8.66	14.99	14.98	14.96	15.00	14.99	14.98	14.96	24.81
7000	7.02	13.47	13.47	13.47	13.47	13.47	13.47	13.47	19.86
7500	5.74	12.16	12.16	12.16	12.16	12.16	12.16	12.16	16.15
8000	4.76	11.03	11.02	11.02	10.28	11.03	11.02	11.02	13.31
8500	4.02	10.04	10.03	10.04	8.60	10.04	10.03	10.04	11.09
9000	3.43	9.02	9.13	9.13	7.20	9.13	9.13	9.13	9.35
9500	2.96	7.93	8.20	8.20	6.01	8.16	8.20	8.20	7.95
10000	2.58	7.01	7.40	7.40	5.04	7.15	7.40	7.40	6.81
10500	2.26	6.22	6.71	6.71	4.29	6.27	6.71	6.71	5.89
11000	2.00	5.55	6.11	6.11	3.68	5.51	6.11	6.11	5.12
11500	1.79	4.97	5.60	5.60	3.13	4.84	5.60	5.60	4.48
12000	1.60	4.47	5.14	5.14	2.69	4.26	5.14	5.14	3.94
12500	1.44	4.03	4.74	4.74	2.33	3.74	4.74	4.74	3.49
13000	1.31	3.65	4.38	4.38	2.03	3.28	4.38	4.38	3.10
13500	1.19	3.32	4.06	4.06	1.76	2.88	3.98	4.06	2.77
14000	1.09	3.03	3.78	3.78	1.53	2.54	3.62	3.78	2.48
14500	1.00	2.77	3.52	3.52	1.34	2.26	3.29	3.52	2.24
15000	0.92	2.54	3.26	3.29	1.18	2.02	3.00	3.29	2.02
15500	0.84	2.33	3.02	3.08	1.05	1.80	2.73	3.08	1.83
16000	0.78	2.15	2.80	2.89	0.93	1.60	2.49	2.85	1.66

NOTE: All gauges of section Z350 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

3 LAPPED

LOAD CAPACITY TABLES THREE LAPPED SPANS

Three lapped spans are continuous over three bays, supported at each end of the purlin and lapped over two internal supports.



DESIGN CAPACITY (kN/m)

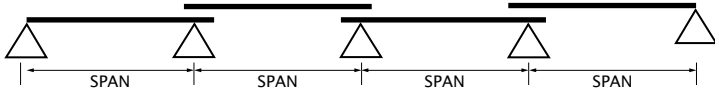
Span	Z 400 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	13.72	13.72	13.71	13.72	13.72	13.72	13.71	13.72	110.35
4500	12.05	12.06	12.05	12.05	12.05	12.05	12.05	12.05	77.50
5000	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	56.50
5500	9.61	9.61	9.61	9.61	9.61	9.61	9.61	9.61	42.45
6000	8.69	8.69	8.68	8.69	8.69	8.69	8.68	8.69	32.70
6500	7.91	7.90	7.90	7.88	7.91	7.90	7.90	7.88	25.72
7000	6.59	7.22	7.22	7.22	7.22	7.22	7.22	7.22	20.59
7500	5.50	6.64	6.64	6.64	6.64	6.64	6.64	6.64	16.74
8000	4.65	6.12	6.11	6.11	6.12	6.12	6.11	6.11	13.79
8500	3.95	5.66	5.65	5.66	5.66	5.66	5.65	5.66	11.50
9000	3.40	5.25	5.25	5.25	5.25	5.25	5.25	5.25	9.69
9500	2.95	4.89	4.89	4.89	4.89	4.89	4.89	4.89	8.24
10000	2.59	4.56	4.56	4.56	4.46	4.56	4.56	4.56	7.06
10500	2.29	4.26	4.26	4.26	3.80	4.26	4.26	4.26	6.10
11000	2.03	3.99	3.99	3.98	3.22	3.99	3.99	3.98	5.31
11500	1.81	3.75	3.75	3.75	2.75	3.75	3.75	3.75	4.64
12000	1.62	3.52	3.53	3.52	2.37	3.52	3.53	3.52	4.09
12500	1.46	3.32	3.32	3.32	2.05	3.15	3.32	3.32	3.62
13000	1.32	3.13	3.13	3.13	1.80	2.81	3.13	3.13	3.21
13500	1.20	2.87	2.96	2.96	1.58	2.51	2.96	2.96	2.87
14000	1.10	2.64	2.80	2.80	1.39	2.25	2.80	2.80	2.57
14500	1.01	2.44	2.65	2.65	1.22	1.99	2.63	2.65	2.32
15000	0.92	2.25	2.51	2.51	1.08	1.76	2.42	2.51	2.09
15500	0.85	2.09	2.39	2.39	0.95	1.56	2.22	2.39	1.90
16000	0.79	1.94	2.26	2.27	0.85	1.39	2.04	2.24	1.72
16500	0.73	1.81	2.11	2.16	0.75	1.25	1.88	2.08	1.57
17000	0.68	1.69	1.98	2.06	0.67	1.12	1.73	1.93	1.44
17500	0.63	1.58	1.85	1.95	0.60	1.02	1.59	1.80	1.32
18000	0.59	1.48	1.74	1.83	0.54	0.93	1.46	1.67	1.21

Span	Z 400 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	25.99	26.00	25.99	25.99	25.99	26.00	25.99		143.59
4500	22.68	22.68	22.67	22.67	22.68	22.67	22.67	22.66	100.85
5000	19.98	19.98	19.98	19.98	19.98	19.98	19.98	19.98	73.51
5500	16.51	17.79	17.79	17.79	17.79	17.79	17.79	17.79	55.23
6000	12.67	15.95	15.94	15.95	15.95	15.96	15.94	15.95	42.54
6500	10.02	14.38	14.37	14.34	14.39	14.38	14.37	14.35	33.46
7000	8.05	13.04	13.04	13.04	13.04	13.04	13.04	13.04	26.79
7500	6.57	11.88	11.88	11.87	11.88	11.88	11.88	11.88	21.78
8000	5.45	10.86	10.85	10.85	10.86	10.86	10.85	10.85	17.95
8500	4.58	9.97	9.96	9.97	9.96	9.97	9.96	9.97	14.96
9000	3.91	9.17	9.17	9.17	8.57	9.17	9.17	9.17	12.61
9500	3.37	8.47	8.47	8.47	7.13	8.47	8.47	8.47	10.72
10000	2.93	7.84	7.85	7.85	5.98	7.84	7.85	7.85	9.19
10500	2.57	7.28	7.28	7.28	5.08	7.28	7.28	7.28	7.94
11000	2.27	6.60	6.77	6.76	4.34	6.59	6.77	6.77	6.90
11500	2.02	5.90	6.32	6.32	3.69	5.79	6.32	6.32	6.04
12000	1.81	5.30	5.91	5.91	3.16	5.08	5.91	5.91	5.32
12500	1.63	4.77	5.47	5.47	2.73	4.45	5.47	5.47	4.71
13000	1.48	4.31	5.06	5.06	2.37	3.90	5.06	5.06	4.18
13500	1.34	3.91	4.69	4.69	2.05	3.41	4.64	4.69	3.74
14000	1.23	3.56	4.36	4.36	1.79	3.01	4.25	4.36	3.35
14500	1.12	3.25	4.06	4.07	1.57	2.67	3.90	4.07	3.01
15000	1.03	2.97	3.77	3.80	1.38	2.38	3.58	3.80	2.72
15500	0.95	2.72	3.50	3.56	1.22	2.12	3.27	3.56	2.47
16000	0.88	2.50	3.26	3.34	1.08	1.88	2.98	3.31	2.24
16500	0.82	2.31	3.04	3.14	0.96	1.68	2.71	3.07	2.05
17000	0.76	2.14	2.85	2.96	0.86	1.51	2.46	2.86	1.87
17500	0.71	1.99	2.67	2.79	0.77	1.36	2.24	2.66	1.72
18000	0.66	1.85	2.50	2.64	0.70	1.22	2.03	2.48	1.58

NOTE: All gauges of section Z400 require M16 grade 4.6 bolts unless indicated otherwise. Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES FOUR LAPPED SPANS

Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 100 - 10								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	9.35	9.35	9.34	9.34	9.35	9.35	9.34	9.34	22.04
2000	6.21	6.21	6.21	6.21	6.21	6.21	6.21	6.21	9.30
2500	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.76
3000	2.98	2.98	2.98	2.98	2.90	2.98	2.98	2.98	2.75
3500	2.15	2.19	2.19	2.19	1.90	2.19	2.19	2.19	1.74
4000	1.60	1.68	1.68	1.68	1.25	1.64	1.68	1.68	1.16
4500	1.23	1.33	1.33	1.33	0.83	1.19	1.33	1.33	0.82
5000	0.96	1.07	1.07	1.07	0.58	0.86	1.07	1.07	0.60
5500	0.77	0.89	0.89	0.89	0.42	0.62	0.87	0.89	0.45
6000	0.62	0.75	0.75	0.75	0.32	0.46	0.68	0.75	0.34
6500	0.50	0.64	0.64	0.64	0.24	0.35	0.54	0.62	0.27
7000	0.41	0.55	0.55	0.55	0.18	0.27	0.43	0.51	0.22
7500	0.34	0.48	0.48	0.48	0.14	0.21	0.34	0.42	0.18
8000	0.28	0.42	0.42	0.42	0.11	0.17	0.27	0.34	0.15

Span	Z 100 - 12								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	13.40	13.40	13.31	13.39	13.40	13.40	13.39	13.39	26.63
2000	8.09	8.14	8.14	8.14	8.14	8.14	8.14	8.14	11.23
2500	5.02	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.75
3000	3.40	3.62	3.62	3.62	3.41	3.62	3.62	3.62	3.33
3500	2.44	2.66	2.66	2.66	2.27	2.66	2.66	2.66	2.10
4000	1.82	2.04	2.04	2.04	1.53	1.92	2.04	2.04	1.40
4500	1.40	1.61	1.61	1.61	1.05	1.41	1.61	1.61	0.99
5000	1.10	1.30	1.30	1.30	0.74	1.04	1.29	1.30	0.72
5500	0.88	1.08	1.08	1.08	0.54	0.78	1.02	1.08	0.54
6000	0.72	0.90	0.90	0.90	0.39	0.58	0.81	0.89	0.42
6500	0.59	0.77	0.77	0.77	0.30	0.44	0.65	0.73	0.33
7000	0.48	0.66	0.66	0.66	0.23	0.34	0.52	0.60	0.26
7500	0.40	0.58	0.58	0.58	0.18	0.27	0.42	0.50	0.21
8000	0.34	0.51	0.51	0.51	0.14	0.21	0.34	0.42	0.18

Span	Z 100 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	18.19	18.19	18.19	18.19	18.19	18.19	18.19	18.19	33.91
2000	9.86	10.60	10.60	10.60	10.60	10.60	10.60	10.60	14.30
2500	6.13	6.79	6.79	6.79	6.60	6.79	6.79	6.79	7.32
3000	4.16	4.71	4.71	4.71	4.31	4.71	4.71	4.71	4.24
3500	2.99	3.46	3.46	3.46	2.94	3.34	3.46	3.46	2.67
4000	2.24	2.65	2.65	2.65	2.07	2.44	2.65	2.65	1.79
4500	1.74	2.09	2.09	2.09	1.45	1.82	2.06	2.09	1.26
5000	1.38	1.70	1.70	1.70	1.01	1.39	1.62	1.70	0.92
5500	1.11	1.40	1.40	1.40	0.73	1.06	1.29	1.37	0.69
6000	0.91	1.18	1.18	1.18	0.54	0.81	1.04	1.12	0.53
6500	0.76	1.00	1.00	1.00	0.41	0.61	0.85	0.93	0.42
7000	0.63	0.85	0.87	0.87	0.32	0.47	0.70	0.77	0.33
7500	0.53	0.73	0.75	0.75	0.25	0.37	0.57	0.65	0.27
8000	0.44	0.63	0.66	0.66	0.20	0.29	0.47	0.55	0.22

Span	Z 100 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	24.30	25.48	25.48	25.49	25.49	25.48	25.48	25.49	43.44
2000	12.94	14.72	14.73	14.72	14.73	14.73	14.73	14.72	18.33
2500	7.95	9.42	9.42	9.42	8.97	9.42	9.42	9.42	9.38
3000	5.34	6.54	6.54	6.54	5.80	6.49	6.54	6.54	5.43
3500	3.82	4.81	4.81	4.81	3.92	4.55	4.81	4.81	3.42
4000	2.85	3.68	3.68	3.68	2.73	3.30	3.68	3.68	2.29
4500	2.20	2.91	2.91	2.91	1.95	2.45	2.82	2.91	1.61
5000	1.74	2.34	2.36	2.35	1.37	1.85	2.20	2.33	1.17
5500	1.41	1.92	1.95	1.95	0.99	1.42	1.75	1.87	0.88
6000	1.16	1.60	1.64	1.64	0.74	1.10	1.40	1.52	0.68
6500	0.96	1.35	1.39	1.39	0.56	0.83	1.14	1.25	0.53
7000	0.81	1.15	1.20	1.20	0.44	0.64	0.93	1.04	0.43
7500	0.68	0.99	1.04	1.05	0.35	0.50	0.77	0.87	0.35
8000	0.58	0.86	0.90	0.92	0.29	0.40	0.63	0.74	0.29

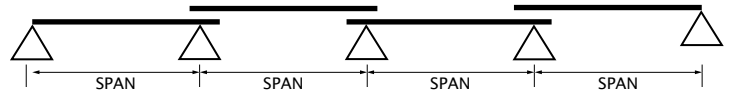
Span	Z 100 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
1500	30.89	32.33	32.32	32.33	32.33	32.33	32.32	32.33	54.21
2000	16.35	18.97	18.97	18.97	18.91	18.97	18.97	18.97	22.87
2500	9.96	12.21	12.21	12.21	11.50	12.21	12.21	12.21	11.71
3000	6.67	8.48	8.48	8.48	7.53	8.28	8.48	8.48	6.78
3500	4.75	6.15	6.23	6.23	5.09	5.85	6.23	6.23	4.27
4000	3.54	4.66	4.77	4.77	3.56	4.29	4.69	4.77	2.86
4500	2.73	3.65	3.77	3.77	2.54	3.20	3.61	3.75	2.01
5000	2.17	2.93	3.05	3.05	1.84	2.42	2.84	2.97	1.46
5500	1.75	2.41	2.52	2.52	1.35	1.86	2.27	2.40	1.10
6000	1.44	2.01	2.10	2.12	1.02	1.44	1.83	1.97	0.85
6500	1.20	1.70	1.78	1.81	0.79	1.12	1.49	1.63	0.67
7000	1.01	1.46	1.53	1.56	0.63	0.88	1.22	1.36	0.53
7500	0.86	1.27	1.33	1.35	0.51	0.70	1.01	1.14	0.43
8000	0.74	1.10	1.16	1.18	0.42	0.56	0.83	0.96	0.36

NOTE: All gauges of section Z100 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

4 LAPPED

LOAD CAPACITY TABLES FOUR LAPPED SPANS

Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 250 - 15								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	44.52
3500	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	28.03
4000	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88	18.78
4500	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.21	13.19
5000	3.69	3.69	3.69	3.69	3.69	3.69	3.69	3.69	9.62
5500	3.26	3.26	3.26	3.26	3.26	3.26	3.26	3.26	7.22
6000	2.90	2.90	2.89	2.90	2.90	2.90	2.89	2.90	5.57
6500	2.46	2.59	2.59	2.58	2.54	2.59	2.59	2.58	4.38
7000	2.08	2.33	2.33	2.33	2.01	2.33	2.33	2.33	3.50
7500	1.77	2.10	2.10	2.10	1.57	2.10	2.10	2.10	2.85
8000	1.51	1.91	1.91	1.91	1.26	1.82	1.91	1.91	2.35
8500	1.30	1.74	1.74	1.74	1.03	1.52	1.74	1.74	1.96
9000	1.13	1.59	1.59	1.59	0.84	1.28	1.59	1.59	1.65
9500	0.99	1.46	1.46	1.46	0.69	1.07	1.42	1.46	1.40
10000	0.87	1.34	1.34	1.34	0.57	0.88	1.24	1.34	1.20
10500	0.77	1.24	1.24	1.24	0.48	0.74	1.09	1.21	1.04
11000	0.68	1.14	1.14	1.14	0.40	0.63	0.96	1.08	0.90
11500	0.61	1.05	1.05	1.05	0.34	0.55	0.84	0.96	0.79
12000	0.55	0.95	0.96	0.96	0.29	0.47	0.74	0.86	0.70
12500	0.49	0.87	0.88	0.88	0.25	0.40	0.65	0.77	0.62

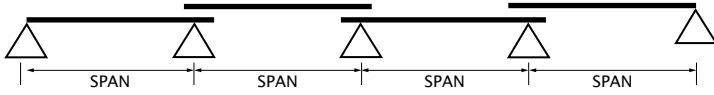
Span	Z 250 - 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	13.18	13.18	13.19	13.18	13.18	13.18	13.19	13.18	58.62
3500	10.86	10.86	10.86	10.86	10.86	10.86	10.86	10.86	36.92
4000	9.12	9.13	9.12	9.13	9.12	9.13	9.12	9.13	24.73
4500	7.32	7.76	7.76	7.76	7.77	7.76	7.76	7.75	17.37
5000	5.65	6.69	6.69	6.69	6.69	6.69	6.69	6.69	12.66
5500	4.48	5.82	5.82	5.82	5.82	5.82	5.82	5.82	9.51
6000	3.64	5.10	5.10	5.10	4.56	5.10	5.10	5.10	7.33
6500	2.98	4.50	4.50	4.49	3.51	4.50	4.50	4.49	5.76
7000	2.49	4.00	4.00	4.00	2.73	3.87	4.00	4.00	4.62
7500	2.10	3.52	3.52	3.52	2.13	3.18	3.52	3.52	3.75
8000	1.79	3.09	3.09	3.09	1.69	2.61	3.09	3.09	3.09
8500	1.55	2.74	2.74	2.74	1.36	2.15	2.74	2.74	2.58
9000	1.35	2.44	2.44	2.44	1.10	1.76	2.44	2.44	2.17
9500	1.18	2.19	2.19	2.19	0.90	1.47	2.13	2.19	1.85
10000	1.04	1.98	1.98	1.98	0.74	1.21	1.84	1.98	1.58
10500	0.92	1.79	1.79	1.79	0.62	1.01	1.59	1.79	1.37
11000	0.82	1.63	1.63	1.63	0.52	0.85	1.38	1.61	1.19
11500	0.73	1.50	1.50	1.50	0.44	0.73	1.20	1.43	1.04
12000	0.66	1.37	1.37	1.37	0.38	0.62	1.04	1.27	0.92
12500	0.59	1.27	1.27	1.27	0.32	0.53	0.90	1.12	0.81

Span	Z 250 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	76.35
3500	15.46	15.46	15.46	15.46	15.46	15.46	15.46	15.46	48.08
4000	11.92	13.54	13.54	13.54	13.54	13.54	13.54	13.54	32.21
4500	8.77	12.04	12.04	12.04	12.04	12.04	12.04	12.04	22.62
5000	6.67	11.26	11.26	11.26	10.45	11.26	11.26	11.26	16.49
5500	5.22	9.31	9.31	9.31	8.06	9.31	9.31	9.31	12.39
6000	4.18	7.83	7.83	7.83	6.13	7.83	7.83	7.83	9.54
6500	3.42	6.67	6.67	6.67	4.67	6.40	6.67	6.67	7.51
7000	2.85	5.75	5.75	5.75	3.60	5.26	5.75	5.75	6.01
7500	2.40	5.01	5.01	5.01	2.79	4.35	5.01	5.01	4.89
8000	2.05	4.38	4.40	4.40	2.19	3.55	4.40	4.40	4.03
8500	1.76	3.84	3.90	3.90	1.75	2.90	3.85	3.90	3.36
9000	1.53	3.39	3.48	3.48	1.41	2.36	3.33	3.48	2.83
9500	1.34	3.02	3.12	3.12	1.16	1.95	2.89	3.12	2.40
10000	1.18	2.70	2.82	2.82	0.96	1.60	2.51	2.80	2.06
10500	1.05	2.43	2.56	2.56	0.80	1.33	2.18	2.47	1.78
11000	0.93	2.20	2.33	2.33	0.68	1.11	1.88	2.19	1.55
11500	0.84	2.00	2.13	2.13	0.58	0.94	1.62	1.95	1.36
12000	0.75	1.82	1.96	1.96	0.50	0.80	1.39	1.73	1.19
12500	0.68	1.66	1.80	1.80	0.43	0.68	1.20	1.54	1.06

NOTE: All gauges of section Z250 require M12 grade 4.6 bolts unless indicated otherwise.
Values shaded require M12 grade 8.8 bolts.

LOAD CAPACITY TABLES FOUR LAPPED SPANS

Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 300 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	16.22	16.22	16.21	16.23	16.22	16.23	16.20	16.23	55.79
4500	13.82	13.91	13.91	13.90	13.92	13.91	13.91	13.90	39.18
5000	10.37	12.07	12.07	12.07	12.07	12.07	12.07	12.07	28.57
5500	8.00	10.57	10.57	10.57	10.57	10.57	10.57	10.57	21.46
6000	6.28	9.33	9.32	9.33	9.33	9.33	9.33	9.33	16.53
6500	5.04	8.29	8.28	8.27	8.29	8.29	8.28	8.27	13.00
7000	4.14	7.41	7.41	7.41	7.09	7.41	7.41	7.41	10.41
7500	3.45	6.65	6.65	6.65	5.78	6.65	6.65	6.65	8.46
8000	2.92	6.01	6.00	6.00	4.73	6.01	6.00	6.00	6.97
8500	2.50	5.45	5.44	5.45	3.89	5.31	5.44	5.45	5.81
9000	2.16	4.90	4.90	4.90	3.21	4.55	4.90	4.90	4.90
9500	1.89	4.34	4.40	4.40	2.65	3.91	4.40	4.40	4.17
10000	1.66	3.87	3.97	3.97	2.18	3.36	3.97	3.97	3.57
10500	1.47	3.46	3.60	3.60	1.82	2.88	3.60	3.60	3.08
11000	1.31	3.12	3.28	3.28	1.52	2.49	3.28	3.28	2.68
11500	1.17	2.82	3.00	3.00	1.29	2.16	2.93	3.00	2.35
12000	1.06	2.56	2.76	2.76	1.10	1.87	2.62	2.76	2.07
12500	0.95	2.33	2.54	2.54	0.94	1.62	2.34	2.54	1.83
13000	0.87	2.14	2.35	2.35	0.82	1.40	2.10	2.35	1.63
13500	0.79	1.96	2.18	2.18	0.71	1.21	1.88	2.15	1.45
14000	0.72	1.81	2.03	2.03	0.62	1.05	1.68	1.95	1.30
14500	0.66	1.67	1.89	1.89	0.55	0.92	1.51	1.78	1.17
15000	0.61	1.55	1.77	1.77	0.48	0.81	1.35	1.62	1.06
15500	0.56	1.44	1.65	1.65	0.43	0.71	1.22	1.47	0.96
16000	0.52	1.34	1.55	1.55	0.38	0.63	1.10	1.34	0.87

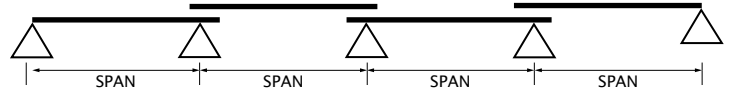
Span	Z 300 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	24.78	25.60	25.60	25.60	25.60	25.60	25.60	25.59	71.82
4500	17.15	22.75	22.75	22.76	22.76	22.76	22.75	22.75	50.44
5000	12.45	20.13	20.13	20.13	20.13	20.13	20.13	20.13	36.77
5500	9.40	17.33	17.33	17.33	17.33	17.33	17.33	17.33	27.63
6000	7.32	15.06	15.06	15.06	14.70	15.07	15.06	15.06	21.28
6500	5.86	13.19	13.19	13.18	12.02	13.19	13.19	13.18	16.74
7000	4.78	11.37	11.48	11.48	9.86	11.48	11.48	11.48	13.40
7500	3.97	9.75	10.01	10.01	8.06	9.85	10.01	10.01	10.90
8000	3.35	8.44	8.80	8.80	6.56	8.44	8.80	8.80	8.98
8500	2.86	7.36	7.79	7.79	5.26	7.27	7.79	7.79	7.49
9000	2.47	6.47	6.95	6.95	4.24	6.29	6.95	6.95	6.31
9500	2.16	5.73	6.24	6.24	3.45	5.46	6.24	6.24	5.36
10000	1.90	5.10	5.63	5.63	2.85	4.71	5.61	5.63	4.60
10500	1.68	4.56	5.11	5.11	2.37	4.07	5.00	5.11	3.97
11000	1.50	4.11	4.65	4.65	2.00	3.50	4.47	4.65	3.45
11500	1.34	3.70	4.24	4.26	1.69	2.97	4.01	4.26	3.02
12000	1.21	3.35	3.86	3.91	1.45	2.53	3.60	3.88	2.66
12500	1.10	3.04	3.53	3.60	1.25	2.16	3.25	3.53	2.35
13000	1.00	2.78	3.23	3.33	1.08	1.86	2.93	3.21	2.09
13500	0.91	2.54	2.98	3.09	0.94	1.61	2.64	2.93	1.87
14000	0.83	2.33	2.75	2.87	0.83	1.40	2.37	2.68	1.68
14500	0.77	2.15	2.54	2.67	0.73	1.22	2.13	2.45	1.51
15000	0.71	1.99	2.36	2.48	0.64	1.07	1.91	2.25	1.36
15500	0.65	1.84	2.19	2.30	0.57	0.95	1.70	2.06	1.23
16000	0.60	1.71	2.04	2.15	0.51	0.84	1.51	1.88	1.12

NOTE: All gauges of section Z300 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

4 LAPPED

LOAD CAPACITY TABLES FOUR LAPPED SPANS

Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



DESIGN CAPACITY (kN/m)

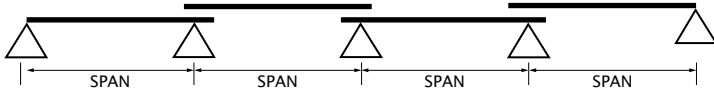
Span	Z 350 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	14.85	14.86	14.84	14.86	14.85	14.86	14.84	14.86	89.47
4500	12.93	12.92	12.91	12.91	12.93	12.92	12.91	12.90	62.84
5000	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	45.81
5500	10.11	10.11	10.11	10.11	10.11	10.10	10.11	10.11	34.42
6000	8.82	9.04	9.03	9.04	9.04	9.04	9.03	9.04	26.51
6500	7.03	8.14	8.13	8.11	8.14	8.14	8.13	8.12	20.85
7000	5.72	7.36	7.36	7.36	7.36	7.36	7.36	7.36	16.70
7500	4.74	6.69	6.69	6.69	6.69	6.69	6.69	6.69	13.57
8000	3.99	6.11	6.10	6.10	6.11	6.11	6.10	6.10	11.19
8500	3.42	5.59	5.59	5.59	5.59	5.59	5.59	5.60	9.32
9000	2.96	5.14	5.14	5.14	5.14	5.14	5.14	5.14	7.86
9500	2.59	4.74	4.74	4.74	4.64	4.74	4.74	4.74	6.68
10000	2.27	4.38	4.38	4.38	4.01	4.38	4.38	4.38	5.73
10500	2.01	4.06	4.06	4.06	3.39	4.06	4.06	4.06	4.95
11000	1.78	3.77	3.77	3.77	2.88	3.77	3.77	3.77	4.30
11500	1.60	3.52	3.52	3.52	2.47	3.43	3.52	3.52	3.77
12000	1.44	3.22	3.28	3.28	2.12	3.08	3.28	3.28	3.31
12500	1.30	2.94	3.07	3.07	1.84	2.76	3.07	3.07	2.93
13000	1.18	2.69	2.87	2.88	1.60	2.49	2.87	2.88	2.61
13500	1.07	2.48	2.70	2.70	1.41	2.24	2.66	2.70	2.33
14000	0.98	2.28	2.51	2.51	1.25	1.99	2.44	2.51	2.09
14500	0.90	2.11	2.34	2.34	1.11	1.76	2.25	2.34	1.88
15000	0.82	1.96	2.18	2.18	0.99	1.56	2.07	2.18	1.70
15500	0.76	1.82	2.04	2.05	0.88	1.39	1.91	2.04	1.54
16000	0.70	1.70	1.91	1.92	0.79	1.24	1.76	1.90	1.40

Span	Z 350 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	115.79
4500	22.76	22.76	22.75	22.76	22.75	22.76	22.76	22.75	81.32
5000	18.61	20.43	20.43	20.43	20.43	20.43	20.43	20.43	59.28
5500	14.13	17.93	17.93	17.93	17.93	17.93	17.93	17.93	44.54
6000	10.99	15.85	15.84	15.85	15.85	15.85	15.84	15.85	34.31
6500	8.67	14.10	14.09	14.07	14.10	14.10	14.09	14.07	26.98
7000	7.01	12.62	12.62	12.62	12.62	12.62	12.62	12.62	21.60
7500	5.78	11.35	11.35	11.35	11.35	11.35	11.35	11.35	17.57
8000	4.83	10.26	10.26	10.25	10.05	10.26	10.26	10.26	14.47
8500	4.07	9.31	9.31	9.32	8.51	9.31	9.31	9.32	12.07
9000	3.47	8.42	8.42	8.42	7.22	8.42	8.42	8.42	10.17
9500	2.99	7.56	7.56	7.56	6.13	7.56	7.56	7.56	8.64
10000	2.61	6.71	6.83	6.83	5.19	6.83	6.83	6.83	7.41
10500	2.29	5.98	6.19	6.19	4.39	6.06	6.19	6.19	6.40
11000	2.03	5.35	5.64	5.64	3.76	5.36	5.64	5.64	5.57
11500	1.81	4.81	5.16	5.16	3.25	4.75	5.16	5.16	4.87
12000	1.62	4.34	4.74	4.74	2.82	4.21	4.74	4.74	4.29
12500	1.46	3.93	4.37	4.37	2.44	3.74	4.37	4.37	3.79
13000	1.32	3.57	4.04	4.04	2.12	3.31	4.04	4.04	3.37
13500	1.20	3.26	3.75	3.75	1.85	2.94	3.75	3.75	3.01
14000	1.10	2.98	3.48	3.48	1.63	2.60	3.47	3.48	2.70
14500	1.01	2.73	3.25	3.25	1.43	2.30	3.17	3.25	2.43
15000	0.92	2.51	3.03	3.03	1.26	2.05	2.90	3.03	2.20
15500	0.85	2.32	2.84	2.84	1.12	1.84	2.66	2.84	1.99
16000	0.79	2.14	2.67	2.67	0.99	1.65	2.43	2.67	1.81

NOTE: All gauges of section Z350 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES FOUR LAPPED SPANS

Four lapped spans are continuous over four bays, supported at each end of the purlin and lapped over three internal supports.



DESIGN CAPACITY (kN/m)

Span	Z 400 - 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	13.36	13.37	13.35	13.37	13.36	13.37	13.34	13.37	120.02
4500	11.72	11.71	11.70	11.69	11.72	11.71	11.70	11.69	84.29
5000	10.39	10.39	10.39	10.39	10.39	10.39	10.39	10.38	61.45
5500	9.30	9.30	9.30	9.30	9.30	9.30	9.30	9.30	46.17
6000	8.39	8.39	8.38	8.39	8.39	8.39	8.38	8.39	35.56
6500	7.61	7.61	7.60	7.59	7.61	7.61	7.60	7.59	27.97
7000	6.55	6.94	6.94	6.94	6.94	6.94	6.94	6.94	22.40
7500	5.42	6.36	6.36	6.36	6.36	6.36	6.36	6.36	18.21
8000	4.58	5.85	5.84	5.84	5.85	5.85	5.84	5.84	15.00
8500	3.92	5.40	5.39	5.40	5.39	5.40	5.39	5.40	12.51
9000	3.39	4.99	4.99	4.99	4.99	4.99	4.99	4.99	10.54
9500	2.95	4.64	4.64	4.64	4.64	4.64	4.64	4.64	8.96
10000	2.58	4.31	4.31	4.31	4.31	4.31	4.31	4.31	7.68
10500	2.28	4.02	4.02	4.02	3.84	4.02	4.02	4.02	6.64
11000	2.02	3.76	3.76	3.75	3.35	3.76	3.76	3.75	5.77
11500	1.81	3.52	3.52	3.52	2.87	3.52	3.52	3.52	5.05
12000	1.63	3.31	3.31	3.31	2.47	3.31	3.31	3.31	4.45
12500	1.47	3.11	3.11	3.10	2.14	3.07	3.11	3.10	3.93
13000	1.33	2.93	2.92	2.93	1.86	2.75	2.92	2.93	3.50
13500	1.21	2.75	2.76	2.76	1.63	2.47	2.76	2.76	3.12
14000	1.11	2.53	2.61	2.61	1.45	2.22	2.61	2.61	2.80
14500	1.01	2.34	2.46	2.46	1.29	2.00	2.46	2.46	2.52
15000	0.93	2.17	2.33	2.33	1.14	1.81	2.31	2.33	2.28
15500	0.86	2.01	2.21	2.21	1.01	1.61	2.13	2.21	2.06
16000	0.79	1.87	2.10	2.10	0.90	1.44	1.96	2.10	1.88
16500	0.74	1.75	1.99	2.00	0.81	1.29	1.81	1.97	1.71
17000	0.68	1.63	1.87	1.90	0.72	1.16	1.67	1.83	1.56
17500	0.64	1.53	1.75	1.81	0.65	1.04	1.55	1.71	1.43
18000	0.59	1.44	1.65	1.72	0.58	0.94	1.43	1.60	1.32

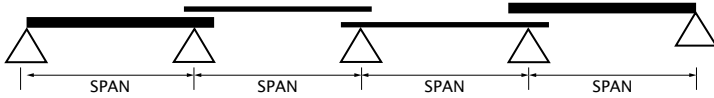
Span	Z 400 - 30								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
4000	25.16	25.17	25.14	25.17	25.16	25.18	25.14	25.18	156.18
4500	21.88	21.86	21.85	21.84	21.88	21.86	21.86	21.84	109.68
5000	19.22	19.22	19.22	19.22	19.22	19.22	19.22	19.22	79.96
5500	16.49	17.06	17.05	17.06	17.05	17.05	17.05	17.05	60.08
6000	12.71	15.24	15.22	15.24	15.24	15.24	15.22	15.24	46.27
6500	10.02	13.69	13.68	13.66	13.70	13.69	13.68	13.66	36.39
7000	8.09	12.37	12.37	12.37	12.37	12.37	12.37	12.37	29.14
7500	6.65	11.23	11.23	11.23	11.23	11.23	11.23	11.23	23.69
8000	5.51	10.24	10.23	10.23	10.24	10.24	10.23	10.23	19.52
8500	4.64	9.37	9.36	9.37	9.37	9.37	9.36	9.37	16.27
9000	3.95	8.60	8.60	8.60	8.60	8.60	8.60	8.60	13.71
9500	3.40	7.92	7.92	7.92	7.30	7.92	7.92	7.92	11.66
10000	2.96	7.32	7.32	7.32	6.17	7.32	7.32	7.32	10.00
10500	2.60	6.78	6.77	6.77	5.21	6.78	6.77	6.77	8.63
11000	2.30	6.28	6.29	6.28	4.46	6.29	6.29	6.28	7.51
11500	2.04	5.68	5.86	5.86	3.84	5.65	5.86	5.86	6.57
12000	1.83	5.15	5.46	5.46	3.32	5.04	5.46	5.46	5.78
12500	1.65	4.66	5.05	5.05	2.86	4.46	5.05	5.05	5.12
13000	1.49	4.23	4.67	4.67	2.49	3.95	4.67	4.67	4.55
13500	1.36	3.85	4.33	4.33	2.18	3.49	4.33	4.33	4.06
14000	1.24	3.52	4.03	4.03	1.91	3.08	4.02	4.03	3.64
14500	1.13	3.22	3.75	3.75	1.67	2.73	3.70	3.75	3.28
15000	1.04	2.96	3.51	3.51	1.47	2.43	3.41	3.51	2.96
15500	0.96	2.72	3.28	3.28	1.30	2.17	3.14	3.28	2.68
16000	0.89	2.51	3.08	3.08	1.16	1.95	2.91	3.08	2.44
16500	0.82	2.32	2.88	2.90	1.03	1.75	2.67	2.90	2.23
17000	0.77	2.15	2.69	2.73	0.92	1.57	2.44	2.71	2.03
17500	0.71	2.00	2.52	2.58	0.83	1.41	2.24	2.52	1.87
18000	0.67	1.86	2.37	2.44	0.75	1.27	2.05	2.36	1.71

NOTE: All gauges of section Z400 require M16 grade 4.6 bolts unless indicated otherwise.
Values shaded require M16 grade 8.8 bolts.

LOAD CAPACITY TABLES THICKENED END SPANS

Thickened end spans have the end bays with greater thickness than the internal bays. They are supported at each end of the purlin and lapped over three or more central supports.

T
THICKENED



DESIGN CAPACITY (kN/m)

Span	Z 200 - 12 / 19								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
2500	6.12	6.11	6.11	6.11	6.12	6.11	6.12	6.12	56.11
3000	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	32.47
3500	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	20.45
4000	3.42	3.42	3.42	3.41	3.42	3.42	3.42	3.41	13.70
4500	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	9.62
5000	2.52	2.51	2.51	2.52	2.52	2.51	2.51	2.52	7.01
5500	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	5.27
6000	1.88	1.92	1.92	1.92	1.92	1.92	1.92	1.92	4.06
6500	1.57	1.70	1.70	1.70	1.70	1.70	1.70	1.70	3.19
7000	1.32	1.51	1.51	1.51	1.41	1.51	1.51	1.51	2.56
7500	1.13	1.35	1.35	1.35	1.16	1.35	1.35	1.35	2.08
8000	0.97	1.22	1.22	1.22	0.95	1.20	1.22	1.22	1.71
8500	0.84	1.10	1.10	1.10	0.80	1.03	1.10	1.10	1.43
9000	0.73	1.00	1.00	1.00	0.67	0.89	1.00	1.00	1.20
9500	0.65	0.91	0.91	0.91	0.56	0.76	0.91	0.91	1.02
10000	0.57	0.82	0.82	0.82	0.47	0.66	0.81	0.82	0.88
10500	0.51	0.74	0.74	0.74	0.40	0.57	0.72	0.74	0.76
11000	0.45	0.68	0.68	0.68	0.34	0.49	0.64	0.68	0.66
11500	0.41	0.62	0.62	0.62	0.30	0.43	0.57	0.62	0.58
12000	0.36	0.57	0.57	0.57	0.26	0.38	0.51	0.56	0.51

Span	Z 250 - 15 / 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
3000	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	70.88
3500	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	44.64
4000	5.50	5.50	5.49	5.48	5.50	5.50	5.49	5.49	29.91
4500	4.72	4.72	4.72	4.71	4.72	4.72	4.72	4.72	21.00
5000	4.10	4.09	4.09	4.10	4.10	4.09	4.09	4.10	15.31
5500	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	11.50
6000	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	8.86
6500	2.64	2.82	2.81	2.81	2.82	2.82	2.81	2.81	6.97
7000	2.23	2.52	2.52	2.52	2.52	2.52	2.52	2.52	5.58
7500	1.91	2.26	2.26	2.26	2.14	2.26	2.26	2.26	4.54
8000	1.63	2.04	2.04	2.04	1.77	2.04	2.04	2.04	3.74
8500	1.41	1.85	1.85	1.85	1.48	1.85	1.85	1.85	3.12
9000	1.22	1.69	1.69	1.69	1.22	1.62	1.69	1.69	2.63
9500	1.07	1.54	1.54	1.54	1.02	1.40	1.54	1.54	2.23
10000	0.94	1.41	1.41	1.41	0.86	1.22	1.41	1.41	1.91
10500	0.83	1.30	1.30	1.30	0.73	1.06	1.29	1.30	1.65
11000	0.74	1.20	1.20	1.20	0.63	0.92	1.15	1.20	1.44
11500	0.66	1.10	1.10	1.10	0.54	0.81	1.04	1.10	1.26
12000	0.59	1.01	1.01	1.01	0.47	0.70	0.93	1.01	1.11
12500	0.53	0.93	0.93	0.93	0.41	0.60	0.84	0.91	0.98

Span	Z 200 - 15 / 24								
	Inward				Outward				Def'n L/150
	0	1	2	3	0	1	2	3	
2500	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	72.65
3000	8.72	8.72	8.72	8.72	8.72	8.72	8.72	8.72	42.04
3500	7.03	7.03	7.03	7.03	7.03	7.03	7.03	7.03	26.48
4000	5.78	5.78	5.78	5.77	5.78	5.78	5.78	5.77	17.74
4500	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	12.46
5000	3.83	4.08	4.08	4.09	4.09	4.08	4.08	4.09	9.08
5500	3.06	3.50	3.50	3.50	3.50	3.50	3.50	3.50	6.82
6000	2.49	3.02	3.02	3.03	3.02	3.02	3.02	3.03	5.26
6500	2.06	2.58	2.58	2.58	2.48	2.58	2.58	2.58	4.13
7000	1.72	2.23	2.23	2.23	2.06	2.23	2.23	2.23	3.31
7500	1.46	1.94	1.94	1.94	1.69	1.94	1.94	1.94	2.69
8000	1.25	1.71	1.71	1.71	1.38	1.71	1.71	1.71	2.22
8500	1.07	1.51	1.51	1.51	1.13	1.48	1.51	1.51	1.85
9000	0.93	1.35	1.35	1.35	0.93	1.29	1.35	1.35	1.56
9500	0.81	1.21	1.21	1.21	0.78	1.12	1.21	1.21	1.32
10000	0.71	1.09	1.09	1.09	0.66	0.97	1.09	1.09	1.14
10500	0.63	0.99	0.99	0.99	0.56	0.83	0.99	0.99	0.98
11000	0.56	0.90	0.90	0.90	0.48	0.71	0.90	0.90	0.85
11500	0.50	0.83	0.83	0.83	0.42	0.61	0.82	0.83	0.75
12000	0.45	0.76	0.76	0.76	0.37	0.53	0.74	0.76	0.66

NOTE: All gauges require M12 grade 4.6 bolts unless indicated otherwise. Values shaded require M12 grade 8.8 bolts.

