![Steeline logo]

Steeline

Service over and above

Steeline
X-SPAN® purlins

D E S I G N   M A N U A L

CONTENTS

IMPORTANT NOTES

This Design Guide has been prepared for X-SPAN® purlins manufactured by Steeline.

X-SPAN® purlins are roll-formed from GALVASPAN® high strength zinc coated steel with strictly controlled dimensions and tolerances.

The dimensions of X-SPAN® purlins are slightly different from the standard range of C and Z purlins and generally have higher design capacities.

The design capacity tables in this manual have been calculated using the limit state design principles in accordance with Australian Standard AS4600-2005. The software used was developed University of Sydney, Centre for Advanced Structural Engineering.

DISCLAIMER

This manual has been prepared for X-SPAN® purlins manufactured by Steeline and is intended to be an aid for building professionals. It is not a substitute for professional advice. We recommend that specialist advice be sought to confirm the suitability of the products for the proposed application.

INTRODUCTION

X-SPAN® purlins are available in Z or C cross sections, with heights of 150, 200, 250, 300 and 350mm. and thicknesses of 1.2, 1.5, 1.9, 2.4 and 3.0mm (BMT). This design manual has been prepared to assist our customers to develop economic design solutions for their projects.

Steeline also manufactures or stocks accessories such as bolted and boltless bridging systems, brackets, cleats, and fasteners that can be used with the X-SPAN® purlins.

HOW TO USE THE X-SPAN® purlins DESIGN CAPACITY TABLES

The design capacity tables have been prepared using uniformly distributed loads. The tables have been prepared for inwards and outwards loads with no bridging and with 1, 2 or 3 bridgings. Inwards loads are towards the roof and outward loads are way from the roof (uplift). To use the tables, loads have to be converted to uniformly distributed loads.

Loads which give deflections of Span/150 are also given in the capacity tables. To obtain deflections for other loads linear proportioning may be used.

X-SPAN® purlins DIMENSIONS AND PROPERTIES

Table 1 lists the X-SPAN® purlins sizes available. All sizes are available with prepunched holes and with a full range of accessories including bridging, brackets, bolts, nuts and washers. Purlins without pre-punched holes are also available by contacting Steeline.

TABLE 1 – Nominal Sizes of XC and XZ, X-Span Purlins

Nominal purlin height (mm)	Available in thicknesses - BMT (mm)
150	1.2, 1.5, 1.9 and 2.4
200	
250	1.5, 1.9 and 2.4
300	1.9, 2.4 and 3.0
350	2.4 and 3.00

The C Sections have equally sized top and bottom flanges and are suitable for simply supported spans and continuous spans. Continuous spans have less deflection than single spans. C Sections cannot be lapped.

The Z Sections are manufactured with one broad flange and one narrow flange so that they can be lapped. Lapping increases the thickness of the metal over the interior supports resulting in higher load capacities in the lapped joints. Z Sections of the same depth and different thicknesses can be lapped in any required configuration. Z Sections can also be used for single and continuous spans without laps.

Material

X-SPAN® purlins are roll-formed from GALVASPAN® high-strength zinc coated steel. The strength of steel varies with the base material thickness (BMT). Table 2 indicates purlin thickness and the strength of steel.

TABLE 2 – Material Strength and Coating Mass

Purlin thickness (mm)	Min. yield stress (MPa)	Min. Ultimate tensile strength (MPa)	Z350 Min. total coating mass (g/m^2)
1.2	500	520	
1.5			
1.9	450	480	350
2.4			
3.0			

Corrosion Protection

X-SPAN® purlins are manufactured from GALVASPAN® steel and are covered by BlueScope warranty. Refer to **www.bluescopesteel.com** for warranty details.

GALVASPAN® steel is supplied with a Z350 Coating Mass, which has a minimum coating mass of 350 g/m2 (total both surfaces). This provides a long and trouble free service life without having to provide additional protection for normal non-aggressive environments.

For severe corrosive environments please consult Steeline for advice.

Cross Section Properties

The cross section properties of the X-SPAN® purlins are given in tables 3 to 5.

FIGURE 1 – X-SPAN® purlins XC Section

Note: x, y axes coincide with $\bar{x}$, $\bar{y}$ axes (respectively)
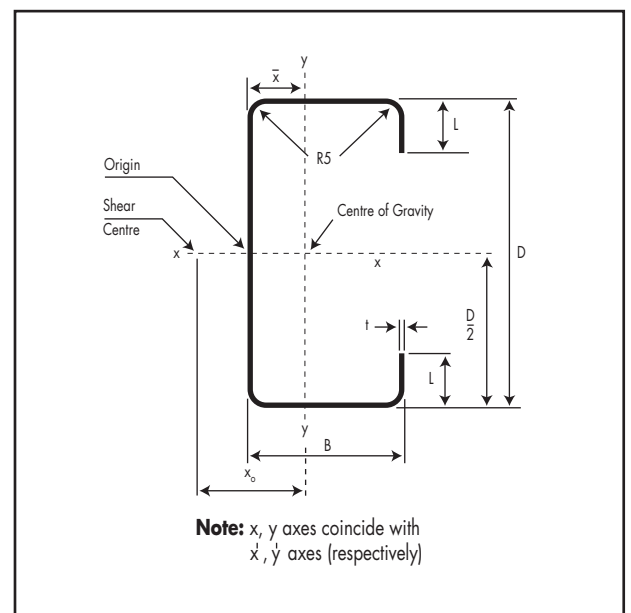
FIGURE 2 – X-SPAN® purlins XZ Section
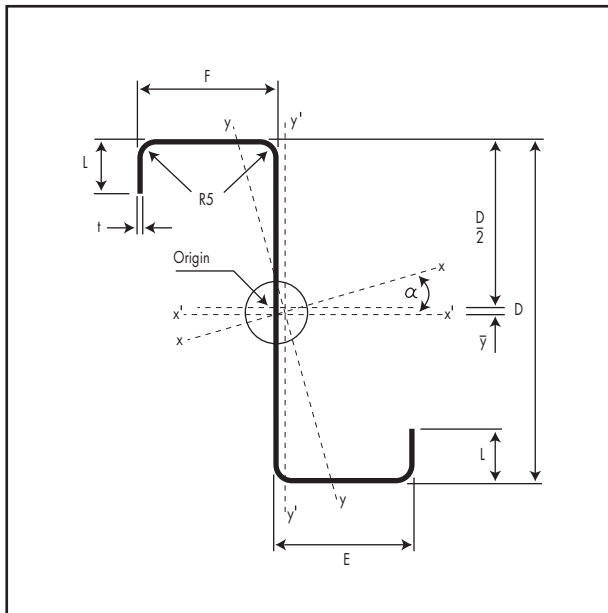
FIGURE 2A – X-SPAN® purlins XZ Section details
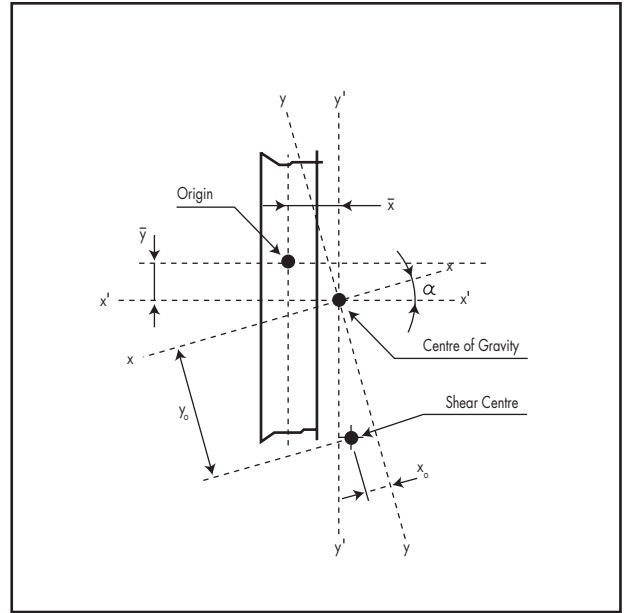
TABLE 3 – X-SPAN® purlins Section Dimensions and Weight

Section size (mm)	t (mm)	D (mm)	XZ sections			XC sections		Mass (kg/m)
			E (mm)	F (mm)	L (mm)	B (mm)	L (mm)	
150-12	1.2	150	61	57	21	58	21.5	2.86
150-15	1.5	150	61	57	21.5	58	22.5	3.58
150-19	1.9	150	61	57	22.5	58	23.5	4.50
150-24	2.4	150	61	57	23.5	58	24.5	5.66
200-12	1.2	200	74	69	21	72	20.0	3.59
200-15	1.5	200	74	69	22	72	21.0	4.49
200-19	1.9	200	74	69	25	72	24.5	5.72
200-24	2.4	200	74	69	26	72	25.5	7.20
250-15	1.5	250	76	71	22	73	22.5	5.15
250-19	1.9	250	76	71	23	73	23.5	6.49
250-24	2.4	250	76	71	24	73	24.5	8.16
300-19	1.9	300	98	91	27	93	28.5	8.01
300-24	2.4	300	98	91	28	93	29.5	10.07
300-30	3.0	300	98	91	32	93	33.5	12.67
350-24	2.4	350	124	116	33	120	32.5	12.19
350-30	3.0	350	124	116	34	120	34.0	15.18

TABLE 4 – XZ Sections - Full Section Properties

Section	Area (mm²)	Second moment of area (x 10⁶ mm⁴)		Section modulus (x 10⁴ mm³)		Torsion constant (mm⁴)	Warping constant (x 10⁹mm⁶)	Mono-symmetry constant (mm)		Shear centre (mm)		Centre of gravity (mm)		α (deg.)
		$I_{x'}$	$I_{y'}$	$Z_{x'}$	$Z_{y'}$	J	I_w	β_x	β_y	x_o	y_o	$\bar{x}$	$\bar{y}$	
XZ15012	354.4	1.233	0.2980	1.636	0.507	170.1	1.162	12.95	12.35	-1.942	-6.170	1.026	-1.008	22.08
XZ15015	442.3	1.530	0.3704	2.033	0.634	331.8	1.443	13.00	12.33	-1.947	-6.194	1.027	-1.007	22.10
XZ15019	560.4	1.923	0.4698	2.562	0.809	674.3	1.832	13.05	12.27	-1.958	-6.225	1.031	-1.004	22.21
XZ15024	706.8	2.400	0.5902	3.208	1.025	1357.0	2.300	13.13	12.22	-1.968	-6.267	1.035	-1.002	22.29
XZ20012	444.4	2.724	0.4906	2.704	0.6851	213.3	3.401	18.15	16.73	-2.319	-8.596	1.191	-1.342	18.72
XZ20015	556.3	3.396	0.6180	3.376	0.8668	417.3	4.289	18.17	16.65	-2.329	-8.614	1.196	-1.338	18.83
XZ20019	712.4	4.322	0.8213	4.306	1.159	857.3	5.749	18.15	16.35	-2.365	-8.263	1.214	-1.321	19.29
XZ20024	898.8	5.413	1.033	5.407	1.468	1726.0	7.229	18.24	16.30	-2.374	-8.669	1.217	-1.319	19.34
XZ25015	637.4	5.839	0.6643	4.645	0.9047	478.0	7.447	22.58	19.40	-2.198	-10.71	1.068	-1.462	14.38
XZ25019	807.4	7.366	0.8434	5.869	1.155	971.6	9.491	22.65	19.33	-2.207	-10.74	1.071	-1.460	14.43
XZ25024	1019.0	9.244	1.062	7.380	1.464	1956.0	11.94	22.74	19.29	-2.214	-10.79	1.074	-1.458	14.46
XZ30019	997.4	13.40	1.771	8.870	1.873	1200.0	28.19	29.27	25.70	-3.124	-13.86	1.547	-1.988	15.66
XZ30024	1259.0	16.83	2.231	11.16	2.373	2417.0	35.51	29.36	25.65	-3.133	-13.91	1.551	-1.986	15.69
XZ30030	1589.0	21.15	2.922	14.06	3.128`	4766	46.78	29.35	25.16	-3.180	-13.93	1.575	-1.963	16.08
XZ35024	1525.0	28.46	4.535	16.17	3.787	2928.0	96.48	30.43	27.66	-3.640	-14.40	1.846	-2.188	17.43
XZ35030	1904.0	35.36	5.642	20.13	5.642	5711.0	119.9	30.53	27.63	-3.647	-14.45	1.849	-2.187	17.45

TABLE 4.1 – XZ Sections - Effective Section Properties

Section	Effective cross section area at yield, A_e (mm²)	Effective section modulus at yield, Z_e (x 10³ mm³)	Distance - top of purlin to neutral axis, Y_c (mm)	Effective 2nd moment of area I_e (x 10⁶ mm⁴)
XZ15012	193.0	13.38	81.33	1.09
XZ15015	271.9	18.06	78.65	1.42
XZ15019	396.7	24.17	76.83	1.86
XZ15024	577.1	32.01	75.0	2.40
XZ20012	195.3	18.12	117.7	2.13
XZ20015	283.2	26.73	109.9	2.94
XZ20019	416.0	38.84	104.2	4.05
XZ20024	603.7	50.70	102.7	5.21
XZ25015	286.0	33.38	143.1	4.78
XZ25019	416.0	48.39	135.0	6.67
XZ25024	592.0	66.63	130.0	8.66
XZ30019	448.3	63.35	172.1	10.90
XZ30024	635.1	91.72	162.2	14.88
XZ30030	908.4	125.1	157.0	19.64
XZ35024	700.0	116.1	199.9	23.21
XZ35030	977.3	166.1	188.5	31.31

TABLE 5 – XC Sections - Full Section Properties

Section	Area (mm²)	Second moment of area (x 10^6 mm⁴)		Section modulus (x 10^4 mm³)		Torsion constant (mm⁴)	Warping constant (x 10^9 mm⁶)	Mono-symmetry constant (mm)		Shear centre (mm)		Centre of gravity (mm)		α (deg.)
		$I_{x'}$	$I_{y'}$	$Z_{x'}$	$Z_{y'}$	J	I_w	β_x	β_y	x_o	y_o	$\bar{x}$	$\bar{y}$	
XC15012	353.2	1.224	0.1733	1.645	0.4475	169.6	0.8708	0	161.9	-46.43	0	18.08	0	0
XC15015	442.3	1.523	0.2172	2.051	0.5670	331.8	1.107	0	161.1	-46.75	0	18.19	0	0
XC15019	560.4	1.913	0.2742	2.583	0.7244	674.3	1.415	0	160.1	-46.94	0	18.25	0	0
XC15024	706.8	2.387	0.3429	3.234	0.9185	1357.0	1.788	0	158.9	-47.01	0	18.27	0	0
XC20012	443.2	2.722	0.3084	2.738	0.6079	212.8	2.471	0	216.0	-52.07	0	20.07	0	0
XC20015	554.8	3.393	0.3874	3.419	0.7700	416.1	3.129	0	215.1	-52.41	0	20.19	0	0
XC20019	712.4	4.331	0.5136	4.373	1.045	857.3	4.325	0	212.6	-54.30	0	20.93	0	0
XC20024	898.8	5.425	0.6445	5.491	1.325	1726.0	5.461	0	211.4	-54.38	0	20.96	0	0
XC25015	637.4	5.833	0.4411	4.695	0.8323	478.0	5.478	0	267.1	-49.48	0	18.50	0	0
XC25019	807.4	7.358	0.5584	5.932	1.063	971.6	6.969	0	265.8	-49.67	0	18.57	0	0
XC25024	1019.0	9.233	0.7014	7.458	1.348	1956.0	8.785	0	264.5	-49.74	0	18.59	0	0
XC30019	997.4	13.360	1.145	8.964	1.719	1200.0	20.65	0	318.5	-64.77	0	24.47	0	0
XC30024	1259.0	16.78	1.440	11.28	2.178	2417.0	26.05	0	317.2	-64.85	0	24.49	0	0
XC30030	1589.0	21.08	1.862	14.19	2.874	4766.0	34.64	0	312.9	-66.69	0	25.20	0	0
XC35024	1523.0	28.42	2.898	16.35	3.401	2924.0	70.19	0	375.0	-84.52	0	32.39	0	0
XC35030	1904.0	35.37	3.623	20.39	4.287	5711.0	88.19	0	373.5	-84.84	0	32.51	0	0

TABLE 5.1 – XC Sections - Effective Section Properties

Section	Effective cross section area at yield, A_e (mm²)	Effective section modulus at yield, Z_e (x 10^3 mm³)	Distance - top of purlin to neutral axis, Y_c (mm)	Effective 2nd moment of area I_e (x 10^6 mm⁴)
XC15012	196.0	13.53	80.70	1.09
XC15015	278.3	18.29	78.10	1.43
XC15019	415.2	24.85	75.78	1.88
XC15024	577.1	31.83	75.00	2.39
XC20012	190.1	17.69	118.60	2.10
XC20015	277.2	26.21	110.60	2.90
XC20019	412.6	37.96	105.20	3.99
XC20024	594.8	50.18	103.20	5.18
XC25015	288.3	33.71	142.60	4.81
XC25019	408.7	48.76	134.60	6.56
XC25024	585.0	67.19	129.60	8.71
XC30019	460.9	64.95	170.30	11.06
XC30024	647.9	93.54	160.80	15.04
XC30030	937.5	127.90	155.50	19.89
XC35024	694.9	115.30	200.30	23.09
XC35030	977.3	166.10	188.50	31.31

Delivery Lengths

For normal deliveries the maximum lengths are up to 12 metres. For lengths greater than 12 metres the transportation hours are restricted by law and require special transportation permits. These could vary from state to state. Suitable transportation and on-site handling facilities are required for delivery lengths of over 12 metres.

Packing

X-SPAN® purlins are delivered in strapped bundles weighing up to 1 tonne.

Accessories are delivered in bags, packages or in strapped/wired bundles.

Storage

The purlins and accessories should not be left exposed to the weather for a long period of time. If the purlins and accessories are not to be used immediately, ideally they should be kept under cover sheltered from the rain. However, if this is not possible, the sections and accessories should be stacked neatly above the ground. The ground should be on a slight slope which drains the water away from the purlins.

Accessories

A full range of accessories is available from Steeline. Accessories such as bridging, purlins bolts, cleats, brackets, etc. are available. Figure 3 shows some of the accessories available.

M12 and M16 purlin bolts, nuts and washers are available in grades 4.6 (standard strength) and 8.8 (high strength).

Boltless bridging is available to securely brace both XZ and XC purlins. Bridging controls lateral deflection and twisting in the purlins and also straighten the purlins prior to fixing the cladding. Bridging is manufactured from compatible material and can be loaded in tension, compression and bending. A continuous run of bridging provides an effective stabilizer for both the wall and roof.

FIGURE 3 – Examples of Accessories available

Purlin Bolts

M12 Size PB1230 standard purlin bolt (grade 4.6): M12x30mm with nut

Fascia Bolts

PB1230 fascia bolt (grade 4.6): M12x30mm with nut

Purlin Bolts

M12 Size PB1230 standard purlin bolt (grade 4.6): M16x45mm with nut

Adaptor Bracket

(4 bolts)

200 - 150
200 - 100
150 - 100

General Purpose Bracket						6 holes: 18mm diam
Cat. NO	A	B	C	D	E	F
GPB100	14	40	14	35	50	25
GPB150	23	64	23	35	65	25
GPB200	24	110	24	35	75	25
GPB250	24	160	24	35	75	25

Clamp Plate	
Cat. NO	A mm
AC100	90
AC150	140
AC200	190
AC250	240

Angle Connector	
Cat. NO	A mm
AC100	90
AC150	140
AC200	190
AC250	240

Please contact Steeline for a comprehensive range of accessories available.

X-SPAN® is a registered trademark of Steeline Members Pty Ltd.

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HOLES AND CLEATS
Holes in X-PAN® purlins
X-SPAN® purlins Z and C sections are normally supplied with holes punched for bolting to cleat supports, lapped connections and at bridging points. Table 6 indicate the hole sizes and centres for the range of C and Z sections.

Dimensions in mm

Standard elongated punched hole.
Holes equally spaced above and below centre line.
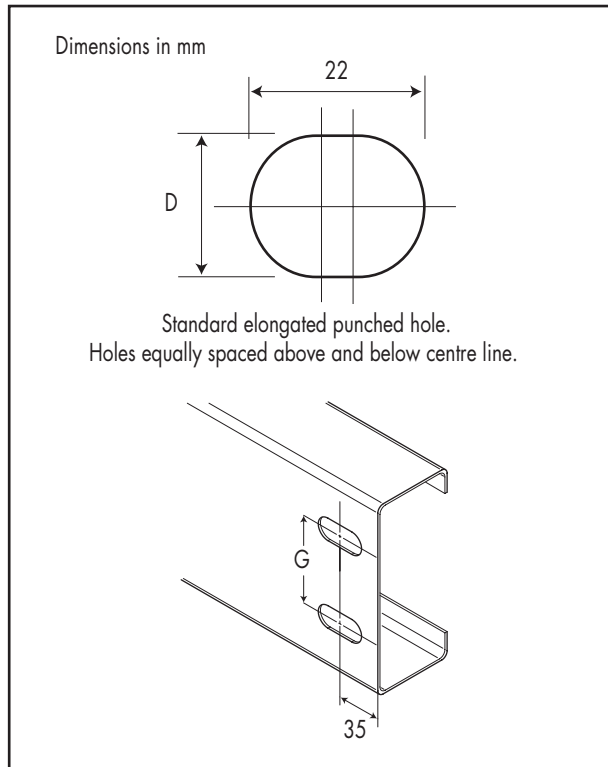
TABLE 6 – Hole sizes and centres in X-SPAN® purlins

X-Span® purlins nominal size (mm)	G (mm)	D (mm)
150 - Vic only	70	18
150 - other states	60	18
200	110	18
250	160	18
300	210	22
350	260	22

Cleats
The purlins are generally attached to cleats welded to rafters or other structural members. The cleat dimensions are shown in table 7.

The hole centres in the cleats match the holes in the purlins. The first hole from the bottom of the cleat is positioned to leave a gap of 10mm between the purlin and the rafter.
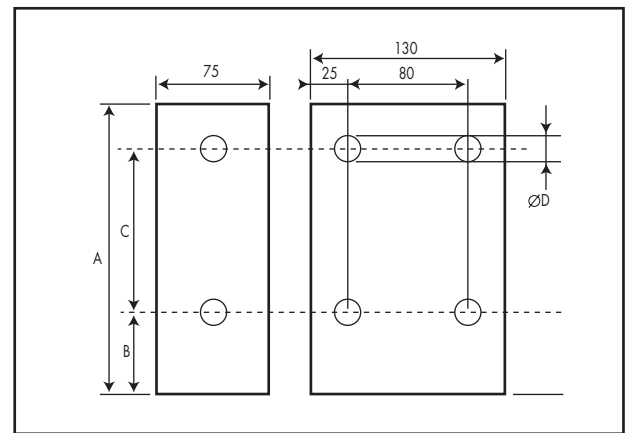
TABLE 7 – 2 and 4 hole cleats - Nominal Dimensions

Nominal Purlin Size	A	B	C	Hole Diam. D	Cleat Thickness
150	145	50	70	18	8
200	195	55	110	18	8
250	245	55	160	18	8
300	305	65	210	22	12
350	355	65	260	22	12

All dimensions are in mm. Material - Mild Steel.

Bridging Hole Positions

The bridging hole positions in the webs of the purlins are shown in figures 4A to 4D.

FIGURE 4A – Bridging Positions – Single Spans

Single Span - 1 row of bridging

Single Span - 2 rows of bridging

Single Span - 3 rows of bridging
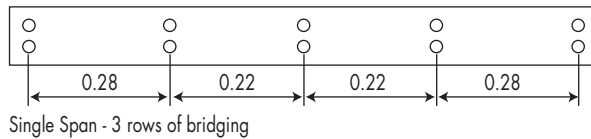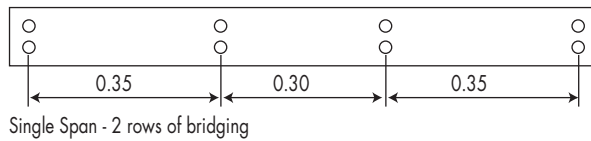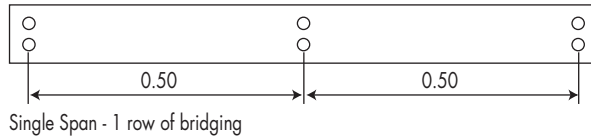
FIGURE 4C – Bridging Positions – End Spans (lapped)

End Span (lapped) - 1 row of bridging

End Span (lapped) - 2 rows of bridging

End Span (lapped) - 3 rows of bridging
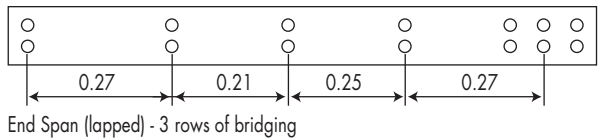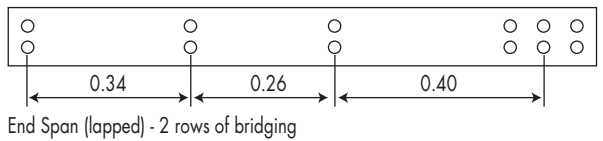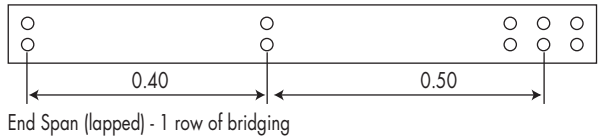
FIGURE 4B – Bridging Positions – End Spans (unlapped)

End Span - (continuous) 1 row of bridging

End Span - (continuous) - 2 rows of bridging

End Span - (continuous) - 3 rows of bridging
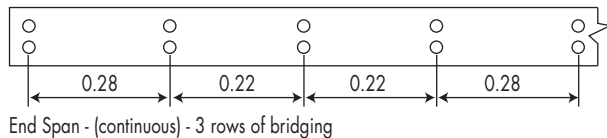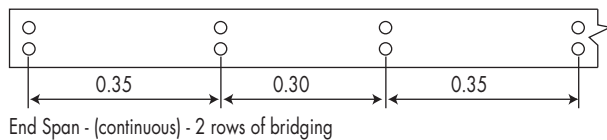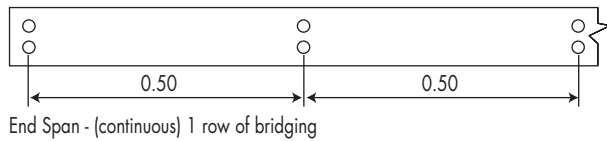
FIGURE 4D – Bridging Positions – Inside Spans

Inside Span (lapped or unlapped) - 1 row of bridging

Inside Span (lapped or unlapped) - 2 rows of bridging

Inside Span (lapped or unlapped) - 3 rows of bridging
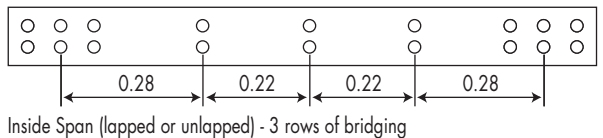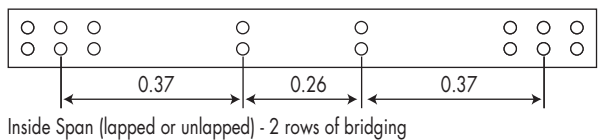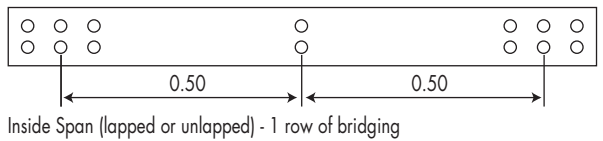
Bridging Configurations

FINISHER
Adjustable Fascia Bridging
Bolt/Lock

Bolted Starter
Bolt/Locator

Bolted Ridge Strut
Bolt/Bolt

Direction

Fascia Girt Hanger

Intermediate Bridging
Locator/Lock

OPTIONAL RIDGE TIES

Adjustable
Locator/Locator

Direction of Lay

Intermediate Lock/Locator

Turnbuckle
Ridge Tie

Sag Rod
Ridge Tie

Adjustable Girt Foot

Intermediate Bridging

Place locator end through purlin holes as per Diagram 1. Snap the next piece of bridging into place by pushing the lock into the locator.

Diagram 1.

Diagram 2.

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Ordering

To place orders for purlins and accessories please contact
your nearest Steeline store.

Alternatively, use the order forms provided on the
following two pages of this manual.

ORDER FORM – BRIDGING

Client		Job No.	
Project		Sheet No.	of
DRN	CH'D	Date	
HAVE YOU DEDUCTED 2mm FROM CLEAT CENTRES?		Yes	No
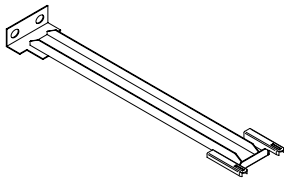
Bolted Starter
(BOLT/LOCATOR) 003

No. Req'd	O/All Length	Mark	Centre
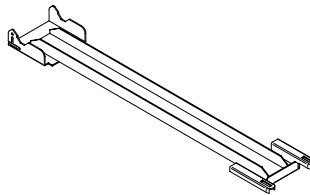
Intermediate
(LOCK/LOCATOR) 001

No. Req'd	O/All Length	Mark	Centre
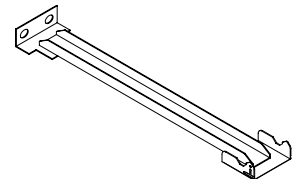
Bolted Finisher
(BOLT/LOCK) 004

No. Req'd	O/All Length	Mark	Centre
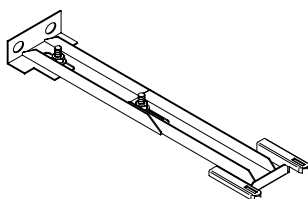
Adjustable Starter
(BOLT/LOCATOR)

No. Req'd	O/All Length	Mark	Centre	Set Angle
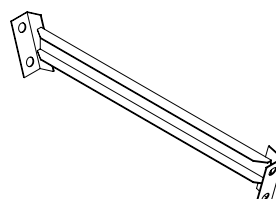
Apex Ridge Strut
(BOLT/BOLT)

No. Req'd	O/All Length	Mark	Centre	Set Angle
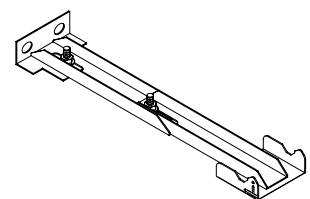
Adjustable Finisher
(BOLT/LOCK)

No. Req'd	O/All Length	Mark	Centre	Set Angle

ORDER FORM – STEELINE X-SPAN® purlins

Client				Date	/	/	Sheet No.	
Project								
By	Checked	Holes	Other Options	Finish	Delivery Date	Sales Docket	Z/C	

Broad Flange

PART No.   LENGTH   No. OFF

Broad Flange

PART No.   LENGTH   No. OFF

Broad Flange

PART No.   LENGTH   No. OFF

Broad Flange

PART No.   LENGTH   No. OFF

DESIGN PRINCIPLES FOR CAPACITY TABLES

The design capacity tables in this manual have been prepared in accordance with the requirements of AS4600:2006 using elastic flexural-torsional buckling, strength and deflection design models.

Some of the assumptions made in the models are as follows:
• Continuity at the laps
• Lateral deflection and twisting is prevented at the supports and bridging points
• The cladding prevents lateral deflection of the connecting flanges but does not provide torsional restraint
• The loads act parallel to the webs and perpendicular to the flanges of the purlins
• The Z Sections are acting as equivalent C Sections.

Loadings

The loads in design capacity tables are uniformly distributed loads. The design capacity tables have been calculated with cladding attached on the top flanges.

Span Configurations

Design capacity tables are provided for the following span configurat ions:
• Single spans – for both C and Z Sections
• Double spans – for C and Z Sections
• Double lapped spans – only Z Sections can be lapped. The lap is over the inside support and the lap length is 15% of the span
• Five lapped spans – for Z Sections. The laps are over the four internal supports. The lap lengths are 15% of the span.

For multi-span configurations, the design capacity tables are only valid for equal spans.

Bridging

The design capacity tables are provided for spans with 0, 1, 2 and 3 rows of bridging in each span.

Deflection

The choice of deflection limits is left up to the design engineer. The capacity tables include the loads at which the deflection is span/150. Deflections for other loads can be obtained by using linear proportioning.

Cleat Connections and Bolt Specifications

The capacity tables are for C or Z purlins fastened through the webs to cleats so that the load path is via the webs of the purlins. Cleats are available with 2 or 4 holes for bolting the sections to. The bolts specifications depend on the purlin size. The 150, 200 and 250mm purlins generally use standard M12, Grade 4.6 purlin bolts. The 300 and 350mm purlins generally use standard M16, Grade 4.6 bolts. In some cases where the bolts are heavily loaded, high strength Grade 8.8 purlin bolts are to be used. The tables indicate where Grade 8.8 bolts are to be used.

FIGURE 6 – Span Configurations for Design Capacity

Single Span

Span (mm)

Purlin Length = (Span + 70) mm

2 Spans (Double Spans)

Span (mm)   Span (mm)

Purlin Length = (2 x Span + 70) mm

2 Lapped Spans (Double Lapped Spans)

Lap

Span (mm)   Span (mm)

Purlin Length = (Span + 70 + Lap/2) mm

5 Lapped Spans

Lap

Span (mm)   Span (mm)   Span (mm)   Span (mm)   Span (mm)

Purlin Length = (Span + 70 + Lap/2) mm   Purlin Length = (Span + 70 + Lap/2) mm
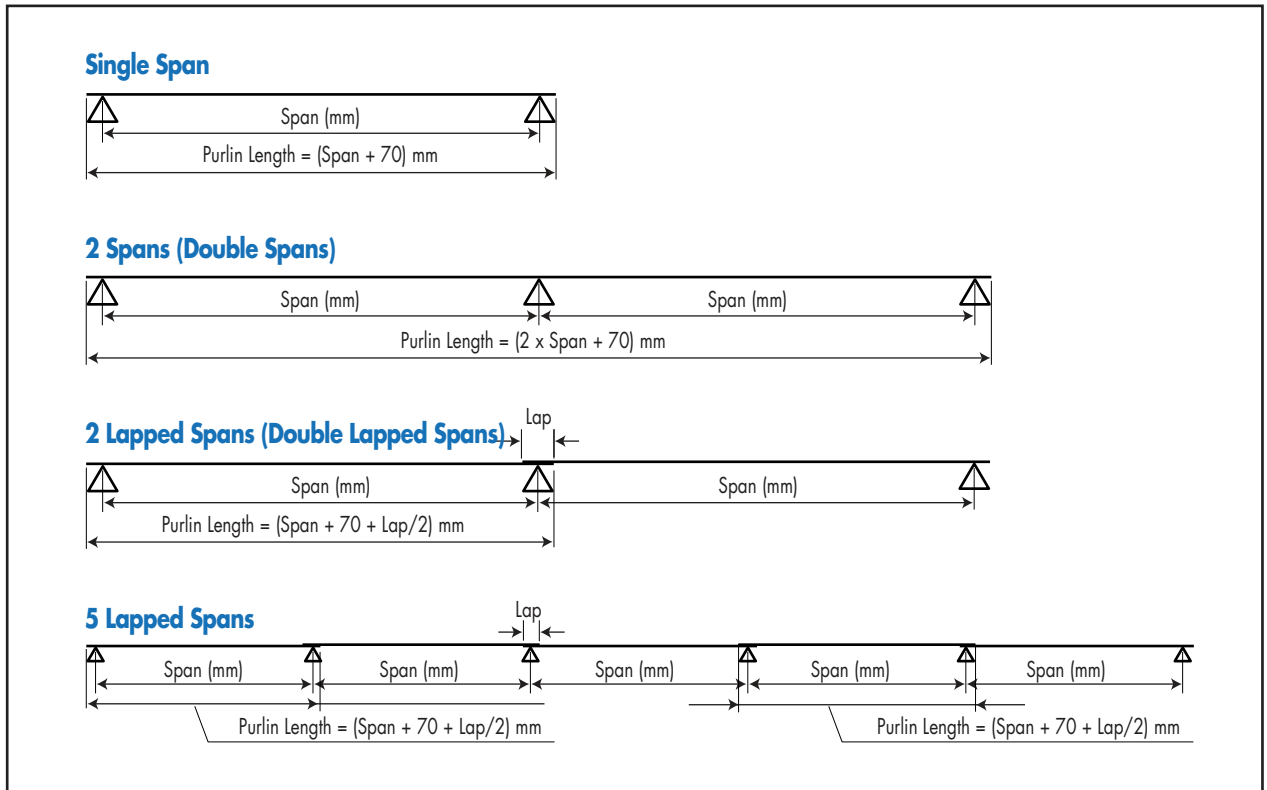
Lapped Connection

Steeline Z sections are manufactured with one narrower flange so that two Z sections can be lapped. The capacity tables for lapped spans are based on the assumption that the lap length is 15% of the span.

Figure 7 shows an example of a lapped connection using a 2-bolt cleat.

FIGURE 7 - Lapped Joint

Butt Joint

Four Bolt Cleat

Rafter or steel frame
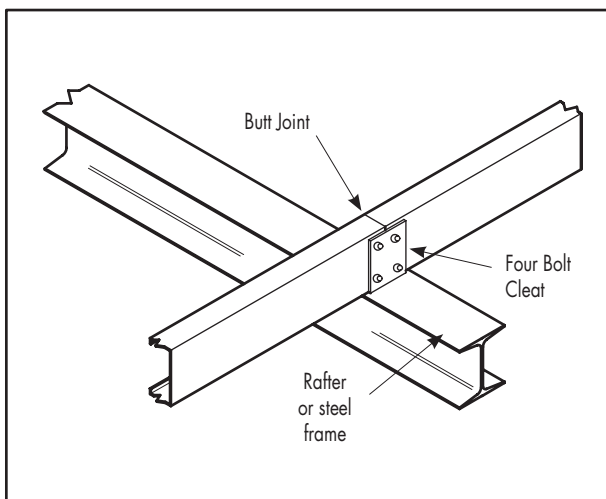
Butt Connection

Two C sections can be connected to a rafter or steel frame using a four bolt cleat. Figure 8 shows an example of a butt joint.

FIGURE 8 - C Section - Butt Joint

Broad Flange

Lap varies according to span and section size

Narrow Flange

Narrow Flange

2 Bolt Cleat

Rafter or steel frame

Bolt in web and flange at end of lap

Broad Flange

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Design Capacity for Z/C 150 Sections (kN/m)								

Single Span Loads for Z/C 15012								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	14.88
2500	6.76	6.76	6.76	6.76	6.64	6.76	6.76	6.76	7.62
3000	4.70	4.70	4.70	4.70	3.94	4.70	4.70	4.70	4.41
3500	3.45	3.45	3.45	3.45	2.32	3.45	3.45	3.45	2.78
4000	2.64	2.64	2.64	2.64	1.43	2.64	2.64	2.64	1.86
4500	2.09	2.09	2.09	2.09	0.93	2.04	2.09	2.09	1.31
5000	1.69	1.69	1.69	1.69	0.62	1.52	1.69	1.69	0.95
5500	1.40	1.40	1.40	1.40	0.43	1.13	1.40	1.40	0.72
6000	1.17	1.17	1.17	1.17	0.31	0.83	1.17	1.17	0.55
6500	1.00	1.00	1.00	1.00	0.23	0.62	0.99	1.00	0.43
7000	0.86	0.86	0.86	0.86	0.18	0.47	0.81	0.86	0.35
7500	0.75	0.75	0.75	0.75	0.14	0.37	0.66	0.75	0.28
8000	0.66	0.66	0.66	0.66	0.11	0.29	0.54	0.66	0.23
8500	0.58	0.59	0.58	0.58	0.09	0.23	0.44	0.59	0.19
9000	0.52	0.52	0.52	0.52	0.07	0.18	0.36	0.51	0.16
9500	0.46	0.47	0.47	0.47	0.06	0.15	0.29	0.43	0.14
10000	0.41	0.42	0.42	0.42	0.05	0.12	0.24	0.37	0.12
10500	0.38	0.38	0.38	0.38	0.04	0.10	0.20	0.32	0.10
11000	0.34	0.35	0.35	0.35	0.04	0.08	0.17	0.28	0.09
11500	0.31	0.32	0.32	0.32	0.03	0.07	0.14	0.24	0.08
12000	0.28	0.29	0.29	0.29	0.03	0.06	0.12	0.20	0.07

Single Span Loads for Z/C 15015								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	18.90
2500	8.56	8.63	8.63	8.63	7.96	8.63	8.63	8.63	9.68
3000	5.82	5.99	5.99	5.99	4.94	5.99	5.99	5.99	5.60
3500	4.20	4.40	4.40	4.40	3.06	4.40	4.40	4.40	3.53
4000	3.17	3.37	3.37	3.37	1.84	3.30	3.37	3.37	2.36
4500	2.48	2.66	2.66	2.66	1.18	2.46	2.66	2.66	1.66
5000	1.99	2.16	2.16	2.16	0.80	1.86	2.16	2.16	1.21
5500	1.63	1.78	1.78	1.78	0.56	1.44	1.78	1.78	0.91
6000	1.36	1.50	1.50	1.50	0.41	1.10	1.45	1.50	0.70
6500	1.15	1.28	1.28	1.28	0.31	0.82	1.19	1.28	0.55
7000	0.98	1.10	1.10	1.10	0.23	0.61	0.98	1.10	0.44
7500	0.85	0.96	0.96	0.96	0.18	0.47	0.82	0.96	0.36
8000	0.75	0.84	0.84	0.84	0.15	0.37	0.69	0.82	0.30
8500	0.66	0.75	0.75	0.75	0.12	0.29	0.58	0.70	0.25
9000	0.58	0.67	0.67	0.67	0.10	0.23	0.47	0.61	0.21
9500	0.52	0.60	0.60	0.60	0.08	0.19	0.39	0.53	0.18
10000	0.47	0.54	0.54	0.54	0.07	0.16	0.32	0.46	0.15
10500	0.43	0.49	0.49	0.49	0.06	0.13	0.26	0.40	0.13
11000	0.39	0.45	0.45	0.45	0.05	0.11	0.22	0.36	0.11
11500	0.35	0.41	0.41	0.41	0.04	0.09	0.18	0.31	0.10
12000	0.32	0.37	0.37	0.37	0.04	0.08	0.16	0.27	0.09

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Loads for Z/C 15019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	18.43	18.67	18.67	18.67	18.67	18.67	18.67	18.67	24.23
2500	11.45	11.95	11.95	11.95	10.94	11.95	11.95	11.95	12.41
3000	7.70	8.30	8.30	8.30	6.55	8.30	8.30	8.30	7.18
3500	5.51	6.10	6.10	6.10	3.95	6.10	6.10	6.10	4.52
4000	4.12	4.67	4.67	4.67	2.40	4.55	4.67	4.67	3.03
4500	3.20	3.69	3.69	3.69	1.56	3.39	3.69	3.69	2.13
5000	2.55	2.99	2.99	2.99	1.06	2.53	2.99	2.99	1.55
5500	2.08	2.47	2.47	2.47	0.75	1.91	2.45	2.47	1.17
6000	1.72	2.07	2.07	2.07	0.55	1.43	2.01	2.07	0.90
6500	1.45	1.77	1.77	1.77	0.42	1.07	1.64	1.77	0.71
7000	1.24	1.52	1.52	1.52	0.33	0.81	1.35	1.52	0.57
7500	1.07	1.33	1.33	1.33	0.26	0.62	1.11	1.31	0.46
8000	0.93	1.17	1.17	1.17	0.21	0.49	0.91	1.13	0.38
8500	0.82	1.03	1.03	1.03	0.17	0.39	0.75	0.97	0.32
9000	0.73	0.92	0.92	0.92	0.14	0.31	0.62	0.84	0.27
9500	0.65	0.82	0.83	0.83	0.12	0.26	0.51	0.72	0.23
10000	0.58	0.74	0.75	0.75	0.10	0.21	0.41	0.62	0.19
10500	0.52	0.67	0.68	0.68	0.09	0.18	0.34	0.54	0.17
11000	0.48	0.61	0.62	0.62	0.08	0.15	0.29	0.47	0.15
11500	0.43	0.56	0.57	0.57	0.07	0.13	0.24	0.40	0.13
12000	0.40	0.51	0.52	0.52	0.06	0.11	0.21	0.35	0.11

Single Span Loads for Z/C 15024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	22.85	25.41	25.41	25.41	23.95	25.41	25.41	25.41	30.73
2500	13.85	16.26	16.26	16.26	13.75	16.26	16.26	16.26	15.73
3000	9.21	11.29	11.29	11.29	8.30	11.29	11.29	11.29	9.11
3500	6.54	8.30	8.30	8.30	5.10	7.95	8.30	8.30	5.73
4000	4.86	6.29	6.35	6.35	3.15	5.76	6.35	6.35	3.84
4500	3.75	4.89	5.02	5.02	2.07	4.27	5.01	5.02	2.70
5000	2.98	3.91	4.07	4.07	1.43	3.21	3.93	4.07	1.97
5500	2.42	3.19	3.36	3.36	1.03	2.43	3.14	3.36	1.48
6000	2.00	2.65	2.82	2.82	0.77	1.85	2.54	2.82	1.14
6500	1.68	2.24	2.39	2.41	0.59	1.40	2.07	2.35	0.90
7000	1.43	1.91	2.04	2.07	0.46	1.06	1.70	1.97	0.72
7500	1.23	1.65	1.76	1.81	0.37	0.82	1.40	1.67	0.58
8000	1.07	1.44	1.54	1.59	0.30	0.65	1.16	1.43	0.48
8500	0.94	1.27	1.35	1.41	0.25	0.52	0.96	1.23	0.40
9000	0.83	1.13	1.20	1.25	0.21	0.43	0.80	1.06	0.34
9500	0.74	1.00	1.07	1.11	0.18	0.35	0.66	0.91	0.29
10000	0.67	0.90	0.96	0.99	0.16	0.29	0.55	0.79	0.25
10500	0.60	0.82	0.86	0.90	0.14	0.25	0.46	0.69	0.21
11000	0.54	0.74	0.78	0.81	0.12	0.21	0.38	0.60	0.19
11500	0.49	0.67	0.71	0.74	0.11	0.18	0.33	0.52	0.16
12000	0.45	0.62	0.65	0.68	0.09	0.16	0.28	0.45	0.14

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)
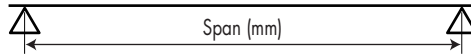
Single Span Design Capacity for Z/C 200 Sections (kN/m)

Single Span Loads for Z/C 20012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	8.01	8.01	8.01	8.01	8.01	8.01	8.01	8.01	31.12
2500	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	15.93
3000	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	9.22
3500	4.58	4.58	4.58	4.58	4.15	4.58	4.58	4.58	5.81
4000	3.65	3.71	3.71	3.71	2.80	3.71	3.71	3.71	3.89
4500	2.86	2.93	2.93	2.93	1.85	2.93	2.93	293	2.73
5000	2.29	2.37	2.37	2.37	1.26	2.32	2.37	2.37	1.99
5500	1.88	1.96	1.96	1.96	0.89	1.83	1.96	1.96	1.50
6000	1.57	1.65	1.65	1.65	0.65	1.46	1.65	1.65	1.15
6500	1.33	1.40	1.40	1.40	0.48	1.16	1.40	1.40	0.91
7000	1.14	1.21	1.21	1.21	0.36	0.93	1.21	1.21	0.73
7500	0.99	1.05	1.05	1.05	0.28	0.74	1.02	1.05	0.59
8000	0.87	0.93	0.93	0.93	0.22	0.58	0.87	0.93	0.49
8500	0.76	0.82	0.82	0.82	0.17	0.46	0.74	0.82	0.41
9000	0.68	0.73	0.73	0.73	0.14	0.37	0.64	0.73	0.34
9500	0.61	0.66	0.66	0.66	0.11	0.31	0.55	0.65	0.29
10000	0.55	0.59	0.59	0.59	0.09	0.25	0.47	0.57	0.25
10500	0.49	0.54	0.54	0.54	0.08	0.21	0.40	0.51	0.22
11000	0.45	0.49	0.49	0.49	0.07	0.18	0.34	0.45	0.19
11500	0.41	0.45	0.45	0.45	0.06	0.15	0.29	0.40	0.16
12000	0.37	0.41	0.41	0.41	0.05	0.13	0.25	0.36	0.14

Single Span Loads for Z/C 20015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	15.70	15.70	15.70	15.70	15.70	15.70	15.70	15.70	40.57
2500	12.40	12.40	12.40	12.40	12.40	12.40	12.40	12.40	20.77
3000	8.61	8.61	8.61	8.61	8.51	8.61	8.61	8.61	12.02
3500	6.33	6.33	6.33	6.33	5.57	6.33	6.33	6.33	7.57
4000	4.81	4.84	4.84	4.84	3.64	4.84	4.84	4.84	5.07
4500	3.75	3.83	3.83	3.83	2.42	3.83	3.83	3.83	3.56
5000	2.99	3.10	3.10	3.10	1.67	3.10	3.10	3.10	2.60
5500	2.44	2.56	2.56	2.56	1.16	2.50	2.56	2.56	1.95
6000	2.03	2.15	2.15	2.15	0.83	1.97	2.15	2.15	1.50
6500	1.71	1.83	1.83	1.83	0.61	1.55	1.83	1.83	1.18
7000	1.46	1.58	1.58	1.58	0.46	1.22	1.58	1.58	0.95
7500	1.26	1.38	1.38	1.38	0.36	0.96	1.38	1.38	0.77
8000	1.10	1.21	1.21	1.21	0.28	0.76	1.19	1.21	0.63
8500	0.97	1.07	1.07	1.07	0.22	0.62	1.01	1.07	0.53
9000	0.86	0.96	0.96	0.96	0.18	0.50	0.86	0.96	0.45
9500	0.76	0.86	0.86	0.86	0.15	0.40	0.73	0.86	0.38
10000	0.68	0.78	0.78	0.78	0.12	0.33	0.62	0.78	0.33
10500	0.62	0.70	0.70	0.70	0.10	0.27	0.53	0.70	0.28
11000	0.56	0.64	0.64	0.64	0.09	0.23	0.45	0.62	0.24
11500	0.51	0.59	0.59	0.59	0.08	0.19	0.38	0.55	0.21
12000	0.47	0.54	0.54	0.54	0.07	0.16	0.33	0.48	0.19

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

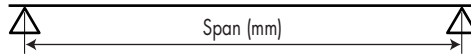## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Loads for Z/C 20019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	28.07	28.07	28.07	28.07	28.07	28.07	28.07	28.07	53.31
2500	17.44	17.97	17.97	17.97	17.97	17.97	17.97	17.97	27.29
3000	11.62	12.48	12.48	12.48	11.56	12.48	12.48	12.48	15.80
3500	8.26	9.17	9.17	9.17	7.74	9.17	9.17	9.17	9.95
4000	6.18	7.02	7.02	7.02	5.23	7.02	7.02	7.02	6.66
4500	4.78	5.55	5.55	5.55	3.35	5.55	5.55	5.55	4.68
5000	3.81	4.49	4.49	4.49	2.24	4.35	4.49	4.49	3.41
5500	3.10	3.71	3.71	3.71	1.57	3.41	3.71	3.71	2.56
6000	2.57	3.12	3.12	3.12	1.13	2.72	3.12	3.12	1.97
6500	2.17	2.66	2.66	2.66	0.84	2.19	2.66	2.66	1.55
7000	1.85	2.29	2.29	2.29	0.64	1.77	2.27	2.29	1.24
7500	1.60	2.00	2.00	2.00	0.50	1.37	1.91	2.00	1.01
8000	1.39	1.75	1.75	1.75	0.39	1.07	1.62	1.75	0.83
8500	1.22	1.55	1.55	1.55	0.32	0.84	1.39	1.55	0.69
9000	1.08	1.38	1.39	1.39	0.26	0.68	1.19	1.39	0.59
9500	0.96	1.23	1.24	1.24	0.21	0.55	1.03	1.22	0.50
10000	0.86	1.11	1.12	1.12	0.18	0.45	0.89	1.08	0.43
10500	0.77	1.00	1.02	1.02	0.15	0.37	0.76	0.95	0.37
11000	0.70	0.91	0.93	0.93	0.13	0.31	0.64	0.84	0.32
11500	0.63	0.83	0.85	0.85	0.11	0.26	0.54	0.75	0.28
12000	0.58	0.76	0.78	0.78	0.10	0.23	0.46	0.67	0.25

Single Span Loads for Z/C 20024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	38.39	38.77	38.77	38.77	38.77	38.77	38.77	38.77	68.12
2500	23.20	24.81	24.81	24.81	24.72	24.81	24.81	24.81	34.88
3000	15.22	17.23	17.23	17.23	15.85	17.23	17.23	17.23	20.19
3500	10.59	12.66	12.66	12.66	10.25	12.66	12.66	12.66	12.71
4000	7.74	9.69	9.69	9.69	6.65	9.69	9.69	9.69	8.52
4500	5.87	7.66	7.66	7.66	4.30	7.66	7.66	7.66	5.98
5000	4.59	6.20	6.20	6.20	2.90	5.96	6.20	6.20	4.36
5500	3.68	5.13	5.13	5.13	2.04	4.69	5.13	5.13	3.28
6000	3.01	4.31	4.31	4.31	1.48	3.67	4.31	4.31	2.52
6500	2.50	3.65	3.67	3.67	1.11	2.89	3.67	3.67	1.98
7000	2.11	3.12	3.17	3.17	0.85	2.27	3.11	3.17	1.59
7500	1.80	2.69	2.76	2.76	0.67	1.77	2.62	2.76	1.29
8000	1.55	2.34	2.42	2.42	0.53	1.38	2.23	242	1.06
8500	1.35	2.06	2.15	2.15	0.43	1.10	1.89	2.15	0.89
9000	1.19	1.82	1.92	1.92	0.36	0.88	1.60	1.90	0.75
9500	1.05	1.62	1.72	1.72	0.30	0.72	1.36	1.67	0.64
10000	0.94	1.46	1.55	1.55	0.25	0.59	1.16	1.48	0.55
10500	0.84	1.31	1.41	1.41	0.21	0.49	0.98	1.31	0.47
11000	0.76	1.19	1.27	1.28	0.18	0.42	0.83	1.16	0.41
11500	0.69	1.08	1.16	1.17	0.16	0.35	0.70	1.02	0.36
12000	0.62	0.99	1.06	1.08	0.14	0.30	0.59	0.90	0.32

NOTES:
1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

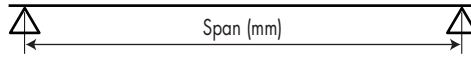## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Design Capacity for Z/C 250 Sections (kN/m)

Single Span Loads for Z/C 25015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2500	9.91	9.91	9.91	9.91	9.91	9.91	9.91	9.91	34.82
3000	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	20.15
3500	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	12.69
4000	5.87	6.15	6.15	6.15	4.95	6.15	6.15	6.15	8.50
4500	4.58	4.86	4.86	4.86	3.31	4.86	4.86	4.86	5.97
5000	3.66	3.94	3.94	3.94	2.30	3.94	3.94	3.94	4.35
5500	2.99	3.26	3.26	3.26	1.59	3.13	3.26	3.26	3.27
6000	2.49	2.74	2.74	2.74	1.14	2.51	2.74	2.74	2.52
6500	2.10	2.33	2.33	2.33	0.84	2.03	2.33	2.33	1.98
7000	1.80	2.01	2.01	2.01	0.63	1.65	2.01	2.01	1.59
7500	1.56	1.75	1.75	1.75	0.48	1.32	1.74	1.75	1.29
8000	1.36	1.54	1.54	1.54	0.38	1.05	1.49	1.54	1.06
8500	1.20	1.36	1.36	1.36	0.30	0.85	1.28	1.36	0.89
9000	1.06	1.22	1.22	1.22	0.24	0.69	1.10	1.22	0.75
9500	0.95	1.09	1.09	1.09	0.20	0.56	0.96	1.09	0.64
10000	0.85	0.99	0.99	0.99	0.16	0.46	0.83	0.98	0.54
10500	0.77	0.89	0.89	0.89	0.14	0.38	0.72	0.87	0.47
11000	0.70	0.81	0.81	0.81	0.12	0.31	0.62	0.78	0.41
11500	0.64	0.74	0.74	0.74	0.10	0.26	0.52	0.69	0.36
12000	0.58	0.68	0.68	0.68	0.08	0.22	0.45	0.62	0.32

Single Span Loads for Z/C 25019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2500	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	45.55
3000	15.13	15.48	15.48	15.48	15.33	15.48	15.48	15.48	26.36
3500	10.67	11.37	11.37	11.37	10.07	11.37	11.37	11.37	16.60
4000	7.91	8.71	8.71	8.71	6.77	8.71	8.71	8.71	11.12
4500	6.09	6.88	6.88	6.88	4.43	6.88	6.88	6.88	7.81
5000	4.82	5.57	5.57	5.57	2.95	5.57	5.57	5.57	5.69
5500	3.91	4.61	4.61	4.61	2.05	4.51	4.61	4.61	4.28
6000	3.23	3.87	3.87	3.87	1.47	3.55	3.87	3.87	3.30
6500	2.71	3.30	3.30	3.30	1.09	2.84	3.30	3.30	2.59
7000	2.31	2.84	2.84	2.84	0.82	2.27	2.84	2.84	2.08
7500	1.98	2.48	248	248	0.63	1.80	248	248	1.69
8000	1.72	2.18	2.18	2.18	0.50	1.41	2.15	2.18	1.39
8500	1.51	1.93	1.93	1.93	0.40	1.11	1.82	1.93	1.16
9000	1.33	1.72	1.72	1.72	0.32	0.89	1.56	1.72	0.98
9500	1.19	1.54	1.54	1.54	0.27	0.72	1.33	1.54	0.83
10000	1.06	1.39	1.39	1.39	0.22	0.59	1.15	1.39	0.71
10500	0.95	1.26	1.26	1.26	0.19	0.49	0.99	1.26	0.62
11000	0.86	1.15	1.15	1.15	0.16	0.41	0.84	1.11	0.54
11500	0.78	1.05	1.05	1.05	0.13	0.34	0.71	0.99	0.47
12000	0.71	0.97	0.97	0.97	0.12	0.29	0.60	0.88	0.41

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

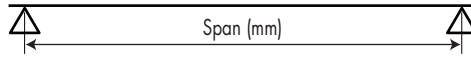## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Loads for Z/C 25024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2500	**30.05**	**31.17**	**31.17**	**31.17**	**31.17**	**31.17**	**31.17**	**31.17**	58.94
3000	19.61	**21.64**	**21.64**	**21.64**	**20.80**	**21.64**	**21.64**	**21.64**	34.11
3500	13.66	15.90	15.90	15.90	13.62	15.90	15.90	15.90	21.48
4000	10.00	12.18	12.18	12.18	8.82	12.17	12.17	12.17	14.39
4500	7.53	9.62	9.62	9.62	5.64	9.62	9.62	9.62	10.11
5000	5.85	7.79	7.79	7.79	3.78	7.79	7.79	7.79	7.37
5500	4.65	6.44	6.44	6.44	2.64	6.14	6.44	6.44	5.54
6000	3.78	5.41	5.41	5.41	1.90	4.84	5.41	5.41	4.26
6500	3.12	4.61	4.61	4.61	1.41	3.84	4.61	4.61	3.35
7000	2.62	3.98	3.98	3.98	1.08	3.01	3.98	3.98	2.69
7500	2.23	3.46	3.46	3.46	0.84	2.33	3.44	3.46	2.18
8000	1.92	3.03	3.03	3.04	0.66	1.81	2.92	3.04	1.80
8500	1.67	2.66	2.70	2.70	0.53	1.43	2.48	2.70	1.50
9000	1.47	2.36	2.41	2.41	0.44	1.15	2.12	2.41	1.26
9500	1.30	2.10	2.16	2.16	0.36	0.93	1.81	2.16	1.07
10000	1.15	1.88	1.95	1.95	0.30	0.77	1.54	1.93	0.92
10500	1.03	1.69	1.77	1.77	0.26	0.64	1.29	1.71	0.80
11000	0.93	1.53	1.61	1.61	0.22	0.53	1.08	1.51	0.69
11500	0.84	1.39	1.47	1.47	0.19	0.45	0.91	1.34	0.61
12000	0.77	1.27	1.35	1.35	0.16	0.38	0.77	1.19	0.53

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Design Capacity for Z/C 300 Sections (kN/m)

Single Span Loads for Z/C 30019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	13.90	13.90	13.90	13.90	13.90	13.90	13.90	13.90	46.12
3500	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	29.04
4000	10.42	10.42	10.42	10.42	10.42	10.42	10.42	10.42	19.46
4500	8.31	9.27	9.27	9.27	8.28	9.27	9.27	9.27	13.66
5000	6.56	7.54	7.54	7.54	6.20	7.54	7.54	7.54	9.96
5500	5.30	6.23	6.23	6.23	4.48	6.23	6.23	6.23	7.48
6000	4.36	5.23	5.23	5.23	3.29	5.23	5.23	5.23	5.77
6500	3.64	4.46	4.46	4.46	2.51	4.42	4.46	4.46	4.53
7000	3.08	3.85	3.85	3.85	1.88	3.70	3.85	3.85	3.63
7500	2.62	3.35	3.35	3.35	1.44	3.12	3.35	3.35	2.95
8000	2.25	2.94	2.94	2.94	1.13	2.64	2.94	2.94	2.43
8500	1.95	2.61	2.61	2.61	0.89	2.25	2.61	2.61	2.03
9000	1.71	2.33	2.33	2.33	0.72	1.91	2.33	2.33	1.71
9500	1.51	2.09	2.09	2.09	0.59	1.59	2.07	2.09	1.45
10000	1.34	1.88	1.88	1.88	0.48	1.32	1.84	1.88	1.25
10500	1.20	1.69	1.71	1.71	0.40	1.11	1.63	1.71	1.08
11000	1.08	1.53	1.56	1.56	0.34	0.94	1.45	1.56	0.94
11500	.98	1.40	1.43	1.43	0.29	0.81	1.30	1.43	0.82
12000	.89	1.28	1.31	1.31	0.24	0.69	1.16	1.31	0.72
12500	0.81	1.17	1.21	1.21	0.21	0.59	1.04	1.20	0.64
13000	0.74	1.08	1.12	1.12	0.18	0.50	0.93	1.10	0.57
13500	0.68	1.00	1.03	1.03	0.16	0.43	0.83	1.00	0.51
14000	0.63	0.92	0.96	0.96	0.14	0.38	0.73	0.92	0.45
14500	0.58	0.86	0.90	0.90	0.12	0.33	0.64	0.84	0.41
15000	0.54	0.80	0.84	0.84	0.11	0.29	0.57	0.77	0.37

Single Span Loads for Z/C 30024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	28.11	28.11	28.11	28.11	28.11	28.11	28.11	28.11	60.13
3500	19.67	21.62	21.62	21.62	21.62	21.62	21.62	21.62	37.87
4000	14.16	16.55	16.55	16.55	15.71	16.55	16.55	16.55	25.37
4500	10.59	13.08	13.08	13.08	11.28	13.08	13.08	13.08	17.82
5000	8.19	10.59	10.59	10.59	8.20	10.59	10.59	10.59	12.99
5500	6.49	8.75	8.75	8.75	5.99	8.75	8.75	8.75	9.76
6000	5.26	7.36	7.36	7.36	4.35	7.36	7.36	7.36	7.52
6500	4.32	6.27	6.27	6.27	3.20	6.27	6.27	6.27	5.91
7000	3.61	5.40	5.40	5.40	2.41	5.25	5.40	5.40	4.73
7500	3.05	4.71	4.71	4.71	1.85	4.36	4.71	4.71	3.85
8000	2.62	4.14	4.14	4.14	1.45	3.63	4.14	4.14	3.17
8500	2.26	3.67	3.67	3.67	1.15	3.02	3.67	3.67	2.64
9000	1.97	3.27	3.27	3.27	0.93	2.54	3.27	3.27	2.23
9500	1.73	2.91	2.93	2.93	0.76	2.13	2.93	2.93	1.89
10000	1.53	2.59	2.65	2.65	0.63	1.78	2.62	2.65	1.62
10500	1.37	2.32	2.40	2.40	0.53	1.49	2.30	2.40	1.40
11000	1.23	2.09	2.19	2.19	0.44	1.24	2.03	2.19	1.22
11500	1.11	1.90	2.00	2.00	0.38	1.04	1.79	2.00	1.07
12000	1.00	1.73	1.84	1.84	0.32	0.88	1.58	1.84	0.94
12500	0.91	1.58	1.70	1.70	0.28	0.75	1.40	1.70	0.83
13000	0.83	1.44	1.57	1.57	0.24	0.65	1.24	1.57	0.74
13500	0.77	1.33	1.45	1.45	0.21	0.56	1.10	1.43	0.66
14000	0.71	1.23	1.35	1.35	0.19	0.49	0.98	1.30	0.59
14500	0.65	1.13	1.26	1.26	0.17	0.43	0.87	1.18	0.53
15000	0.60	1.05	1.18	1.18	0.15	0.37	0.77	1.07	0.48

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.
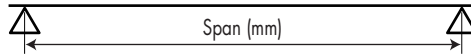
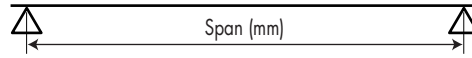## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – SINGLE SPANS

Span (mm)

Single Span Loads for Z/C 30030									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
4000	18.71	23.56	23.56	23.56	21.91	23.56	23.56	23.56	32.78
4500	13.53	18.62	18.62	18.61	15.91	18.61	18.61	18.61	23.03
5000	10.06	15.08	15.08	15.08	11.39	15.08	15.08	15.08	16.79
5500	7.71	12.46	12.46	12.46	8.01	12.46	12.46	12.46	12.61
6000	6.09	10.47	10.47	10.47	5.74	10.47	10.47	10.47	9.71
6500	4.92	8.92	8.92	8.92	4.23	8.73	8.92	8.92	7.64
7000	4.06	7.65	7.69	7.69	3.20	7.30	7.69	7.69	6.12
7500	3.41	6.56	6.70	6.70	2.47	6.13	6.70	6.70	4.97
8000	2.90	5.69	5.89	5.89	1.94	5.13	5.89	5.89	4.10
8500	2.49	4.97	5.22	5.22	1.55	4.30	5.22	5.22	3.42
9000	2.17	4.37	4.65	4.65	1.26	3.55	4.65	4.65	2.88
9500	1.90	3.87	4.18	4.18	1.03	2.93	4.10	4.18	2.45
10000	1.68	3.45	3.77	3.77	0.86	2.40	3.62	3.77	2.10
10500	1.50	3.08	3.42	3.42	0.72	1.99	3.21	3.42	1.81
11000	1.34	2.77	3.12	3.12	0.61	1.66	2.86	3.12	1.58
11500	1.21	2.50	2.83	2.85	0.52	1.40	2.53	2.85	1.38
12000	1.10	2.27	2.58	2.62	0.45	1.19	2.24	2.62	1.21
12500	1.00	2.06	2.36	2.41	0.39	1.01	1.99	2.38	1.07
13000	0.91	1.89	2.16	2.23	0.34	0.87	1.75	2.17	0.96
13500	0.84	1.73	1.99	2.07	0.30	0.76	1.53	1.98	0.85
14000	0.77	1.59	1.83	1.92	0.26	0.66	1.34	1.81	0.77
14500	0.71	1.46	1.70	1.79	0.24	0.58	1.17	1.66	0.69
15000	0.76	1.35	1.57	1.68	0.21	0.51	1.03	1.51	0.62

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

△————— Span (mm) —————△————— Span (mm) —————△

Double Span Design Capacity for Z/C 150 Sections (kN/m)

Double Span Loads for Z/C 15012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	7.22	7.22	7.21	7.22	7.22	7.22	7.22	7.22	35.89
2500	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	18.38
3000	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	10.63
3500	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	6.70
4000	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	4.49
4500	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	3.15
5000	1.69	1.69	1.69	1.69	1.65	1.69	1.69	1.69	2.30
5500	1.39	1.40	1.40	1.40	1.28	1.40	1.40	1.40	1.73
6000	1.14	1.17	1.17	1.17	0.99	1.17	1.17	1.17	1.33
6500	0.96	1.00	1.00	1.00	0.77	1.00	1.00	1.00	1.05
7000	0.81	0.86	0.86	0.86	0.59	0.86	0.86	0.86	0.84
7500	0.69	0.75	0.75	0.75	0.47	0.73	0.75	0.75	0.68
8000	0.59	0.66	0.66	0.66	0.37	0.61	0.66	0.66	0.56
8500	0.51	0.59	0.59	0.59	0.30	0.51	0.59	0.59	0.47
9000	0.44	0.52	0.52	0.52	0.25	0.42	0.52	0.52	0.39
9500	0.38	0.47	0.47	0.47	0.20	0.35	0.47	0.47	0.34
10000	0.33	0.42	0.42	0.42	0.17	0.29	0.42	0.42	0.29
10500	0.29	0.38	0.38	0.38	0.14	0.25	0.36	0.38	0.25
11000	0.26	0.35	0.35	0.35	0.12	0.21	0.32	0.35	0.22
11500	0.22	0.32	0.32	0.32	0.10	0.18	0.28	0.32	0.19
12000	0.20	0.29	0.29	0.29	0.09	0.15	0.25	0.29	0.17

Double Span Loads for Z/C 15015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	11.49	11.49	11.49	11.49	11.49	11.49	11.49	11.49	45.58
2500	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	23.34
3000	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	13.50
3500	4.25	4.40	4.40	4.40	4.40	4.40	4.40	4.40	8.50
4000	3.19	3.37	3.37	3.37	3.37	3.37	3.37	3.37	5.70
4500	2.47	2.66	2.66	2.66	2.57	2.66	2.66	2.66	4.00
5000	1.97	2.16	2.16	2.16	1.98	2.16	2.16	2.16	2.92
5500	1.60	1.78	1.78	1.78	1.55	1.78	1.78	1.78	2.19
6000	1.32	1.50	1.50	1.50	1.24	1.50	1.50	1.50	1.69
6500	1.11	1.28	1.28	1.28	1.00	1.25	1.28	1.28	1.33
7000	0.94	1.10	1.10	1.10	0.79	1.04	1.10	1.10	1.06
7500	0.81	0.96	0.96	0.96	0.62	0.87	0.96	0.96	0.86
8000	070	0.84	0.84	0.84	0.49	0.74	0.84	0.84	0.71
8500	0.61	0.75	0.75	0.75	0.39	0.63	0.74	0.75	0.59
9000	0.53	0.67	0.67	0.67	0.32	0.54	0.65	0.67	0.50
9500	0.47	0.60	0.60	0.60	0.26	0.46	0.57	0.60	0.43
10000	0.41	0.53	0.54	0.54	0.22	0.39	0.50	0.54	0.37
10500	0.36	0.48	0.49	0.49	0.19	0.33	0.44	0.49	0.32
11000	0.32	0.43	0.45	0.45	0.16	0.28	0.39	0.44	0.27
11500	0.28	0.39	0.41	0.41	0.13	0.23	0.35	0.39	0.24
12000	0.25	0.35	0.37	0.37	0.12	0.20	0.31	0.35	0.21

NOTES:
1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

Double Span Loads for Z/C 15019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span	0								deflection
2500	11.71	11.95	11.95	11.95	11.95	11.95	11.95	11.95	29.92
3000	7.93	8.30	8.30	8.30	8.30	8.30	8.30	8.30	17.31
3500	5.65	6.10	6.10	6.10	6.10	6.10	6.10	6.10	10.90
4000	4.20	4.67	4.67	4.67	4.64	4.67	4.67	4.67	7.30
4500	3.24	3.69	3.69	3.69	3.54	3.69	3.69	3.69	5.13
5000	2.56	2.99	2.99	2.99	2.72	2.99	2.99	2.99	3.74
5500	2.07	2.47	2.47	2.47	2.11	2.47	2.47	2.47	2.81
6000	1.70	2.07	2.07	2.07	1.65	2.07	2.07	2.07	2.16
6500	1.41	1.77	1.77	1.77	1.30	1.72	1.77	1.77	1.70
7000	1.19	1.52	1.52	1.52	1.03	1.44	1.52	1.52	1.36
7500	1.01	1.33	1.33	1.33	0.81	1.21	1.33	1.33	1.11
8000	0.87	1.17	1.17	1.17	0.65	1.01	1.17	1.17	0.91
8500	0.75	1.03	1.03	1.03	0.53	0.85	1.02	1.03	0.76
9000	0.65	0.92	0.92	0.92	0.43	0.72	0.90	0.92	0.64
9500	0.56	0.81	0.83	0.83	0.36	0.61	0.79	0.83	0.55
10000	0.49	0.73	0.75	0.75	0.30	0.52	0.69	0.75	0.47
10500	0.43	0.65	0.68	0.68	0.26	0.44	0.61	0.67	0.40
11000	0.38	0.59	0.62	0.62	0.22	0.37	0.54	0.61	0.35
11500	0.34	0.53	0.56	0.57	0.19	0.32	0.47	0.55	0.31
12000	0.30	0.47	0.51	0.52	0.16	0.27	0.42	0.49	0.27

Double Span Loads for Z/C 15024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2500	14.49	16.26	16.26	16.26	16.26	16.26	16.26	16.26	37.94
3000	9.63	11.29	11.29	11.29	11.29	11.29	11.29	11.29	21.95
3500	6.82	8.30	8.30	8.30	8.07	8.30	8.30	8.30	13.83
4000	5.06	6.35	6.35	6.35	5.92	6.35	6.35	6.35	9.26
4500	3.88	5.02	5.02	5.02	4.45	5.02	5.02	5.02	6.51
5000	3.06	4.07	4.07	4.07	3.42	4.04	4.07	4.07	4.74
5500	2.47	3.36	3.36	3.36	2.67	3.25	3.36	3.36	3.56
6000	2.03	2.81	2.82	2.82	2.11	2.65	2.82	2.82	2.74
6500	1.69	2.36	2.41	2.41	1.68	2.19	2.41	2.41	2.16
7000	1.42	2.01	2.07	2.07	1.34	1.82	2.06	2.07	1.73
7500	1.21	1.73	1.81	1.81	1.08	1.53	1.76	1.81	1.41
8000	1.04	1.50	1.59	1.59	0.87	1.29	1.51	1.59	1.16
8500	0.90	1.31	1.41	1.41	0.71	1.10	1.31	1.41	0.97
9000	0.78	1.16	1.25	1.26	0.59	0.93	1.14	1.24	0.81
9500	0.68	1.02	1.11	1.13	0.50	0.80	1.00	1.09	0.69
10000	0.60	0.91	0.99	1.02	0.42	0.68	0.88	0.97	0.59
10500	0.53	0.81	0.88	0.92	0.36	0.58	0.77	0.86	0.51
11000	0.47	0.73	0.79	0.84	0.31	0.50	0.68	0.77	0.45
11500	0.42	0.66	0.72	0.76	0.27	0.43	0.60	0.69	0.39
12000	0.37	0.59	0.65	0.69	0.27	0.37	0.54	0.62	0.34

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

Span (mm) Span (mm)

Double Span Design Capacity for Z/C 200 Sections (kN/m)

Double Span Loads for Z/C 20012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	6.01	6.01	6.01	6.01	6.01	6.01	6.01	6.01	75.04
2500	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	38.42
3000	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	22.23
3500	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07	14.00
4000	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	9.38
4500	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	6.59
5000	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	4.80
5500	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	3.61
6000	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	2.78
6500	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	2.19
7000	1.11	1.12	1.12	1.12	1.04	1.12	1.12	1.12	1.75
7500	0.95	1.00	1.00	1.00	0.85	1.00	1.00	1.00	1.42
8000	0.82	0.90	0.90	0.90	0.70	0.90	0.90	0.90	1.17
8500	0.72	0.81	0.81	0.81	0.58	0.79	0.81	0.81	0.98
9000	0.63	0.73	0.73	0.73	0.47	0.68	0.73	0.73	0.82
9500	0.56	0.66	0.66	0.66	0.39	0.59	0.66	0.66	0.70
10000	0.49	0.59	0.59	0.59	0.32	0.52	0.59	0.59	0.60
10500	0.44	0.54	0.54	0.54	0.27	0.45	0.54	0.54	0.52
11000	0.39	0.49	0.49	0.49	0.23	0.39	0.48	0.48	0.45
11500	0.35	0.45	0.45	0.45	0.20	0.34	0.43	0.43	0.40
12000	0.32	0.41	0.41	0.41	0.17	0.30	0.39	0.39	0.35

Double Span Loads for Z/C 20015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	11.01	11.01	11.01	11.01	11.01	11.01	11.01	11.01	97.83
2500	8.29	8.29	8.29	8.29	8.29	8.29	8.29	8.29	50.09
3000	6.47	6.47	6.47	6.47	6.47	6.47	6.47	6.47	28.98
3500	5.18	5.18	5.18	5.18	5.18	5.18	5.18	5.18	18.25
4000	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23	12.23
4500	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.52	8.59
5000	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	6.26
5500	2.44	2.53	2.53	2.53	2.53	2.53	2.53	2.53	4.70
6000	2.01	2.15	2.15	2.15	2.11	2.15	2.15	2.15	3.62
6500	1.68	1.83	1.83	1.83	1.70	1.83	1.83	1.83	2.85
7000	1.42	1.58	1.58	1.58	1.38	1.58	1.58	1.58	2.28
7500	1.21	1.38	1.38	1.38	1.13	1.38	1.38	1.38	1.86
8000	1.05	1.21	1.21	1.21	0.92	1.21	1.21	1.21	1.53
8500	0.91	1.07	1.07	1.07	0.75	1.07	1.07	1.07	1.27
9000	0.79	0.96	0.96	0.96	0.61	0.93	0.96	0.96	1.07
9500	0.69	0.86	0.86	0.86	0.52	0.80	0.86	0.86	0.91
10000	0.61	0.78	0.78	0.78	0.43	0.70	0.78	0.78	0.78
10500	0.54	0.70	0.70	0.70	0.36	0.60	0.70	0.70	0.68
11000	0.48	0.64	0.64	0.64	0.30	0.52	0.64	0.64	0.59
11500	0.43	0.59	0.59	0.59	0.26	0.45	0.59	0.59	0.52
12000	0.38	0.54	0.54	0.54	0.22	0.39	0.53	0.53	0.45

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

| | Span (mm) | | Span (mm) | |

Double Span Loads for Z/C 20019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3500	**8.55**	**8.62**	**8.62**	**8.62**	**8.62**	**8.62**	**8.62**	**8.62**	23.98
4000	**6.34**	**6.89**	**6.89**	**6.89**	**6.89**	**6.89**	**6.89**	**6.89**	16.07
4500	4.89	**5.55**	**5.55**	**5.55**	**5.55**	**5.55**	**5.55**	**5.55**	11.28
5000	3.88	4.49	4.49	4.49	4.47	4.49	4.49	4.49	8.23
5500	3.15	3.71	3.71	3.71	3.55	3.71	3.71	3.71	6.18
6000	2.60	3.12	3.12	3.12	2.85	3.12	3.12	3.12	4.76
6500	2.17	2.66	2.66	2.66	2.33	2.66	2.66	2.66	3.74
7000	1.84	2.29	2.29	2.29	1.92	2.29	2.29	2.29	3.00
7500	1.58	2.00	2.00	2.00	1.60	2.00	2.00	2.00	2.44
8000	1.36	1.75	1.75	1.75	1.31	1.71	1.75	1.75	2.01
8500	1.17	1.55	1.55	1.55	1.06	1.47	1.55	1.55	1.67
9000	1.02	1.39	1.39	1.39	0.86	1.27	1.39	1.39	1.41
9500	.89	1.24	1.24	1.24	0.71	1.10	1.24	1.24	1.20
10000	0.78	1.12	1.12	1.12	0.59	0.97	1.12	1.12	1.03
10500	0.68	1.02	1.02	1.02	0.49	0.85	1.01	1.01	0.89
11000	0.60	0.92	0.93	0.93	0.42	0.75	0.90	0.93	0.77
11500	0.54	0.83	0.85	0.85	0.36	0.66	0.81	0.85	0.68
12000	0.48	0.75	0.78	0.78	0.31	0.57	0.73	0.78	0.60
12500	0.43	0.69	0.72	0.73	0.26	0.49	0.65	0.72	0.53
13000	0.39	0.63	0.66	0.66	0.23	0.42	0.59	0.66	0.47
13500	0.35	0.57	0.62	0.62	0.20	0.36	0.54	0.61	0.42
14000	0.31	0.52	0.57	0.57	0.18	0.32	0.49	0.55	0.38

Double Span Loads for Z/C 20024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
4000	**8.23**	**9.69**	**9.69**	**9.69**	**9.69**	**9.69**	**9.69**	**9.69**	20.53
4500	**6.23**	**7.66**	**7.66**	**7.66**	**7.66**	**7.66**	**7.66**	**7.66**	14.42
5000	**4.85**	**6.20**	**6.20**	**6.20**	**6.10**	**6.20**	**6.20**	**6.20**	10.51
5500	3.87	**5.13**	**5.13**	**5.13**	4.85	**5.13**	**5.13**	**5.13**	7.90
6000	3.14	**4.31**	**4.31**	**4.31**	3.90	**4.31**	**4.31**	**4.31**	6.08
6500	2.59	3.67	3.67	3.67	3.14	3.67	3.67	3.67	4.79
7000	2.17	3.17	3.17	3.17	2.54	3.17	3.17	3.17	3.83
7500	1.83	2.76	2.76	2.76	2.06	2.73	2.76	2.76	3.12
8000	1.56	2.42	2.42	2.42	1.68	2.34	2.42	2.42	2.57
8500	1.34	2.15	2.15	2.15	1.37	2.02	2.15	2.15	2.14
9000	1.16	1.92	1.92	1.92	1.12	1.75	1.92	1.92	1.80
9500	1.02	1.71	1.72	1.72	0.93	1.51	1.72	1.72	1.53
10000	0.89	1.53	1.55	1.55	0.77	1.30	1.55	1.55	1.31
10500	0.79	1.37	1.41	1.41	0.65	1.13	1.39	1.41	1.14
11000	0.70	1.24	1.28	1.28	0.55	.98	1.24	1.28	.99
11500	0.63	1.12	1.17	1.17	0.48	0.85	1.11	1.17	0.86
12000	0.56	1.02	1.08	1.08	041	0.74	1.00	1.08	0.76
12500	0.50	0.93	0.99	0.99	0.36	0.64	0.90	0.99	0.67
13000	0.46	0.85	0.92	0.92	0.31	0.55	0.81	0.91	0.60
13500	0.41	0.77	0.85	0.85	0.28	0.48	0.73	0.83	0.53
14000	0.38	0.71	0.78	0.79	0.25	0.42	0.65	0.76	0.48
14500	0.34	0.65	0.72	0.74	0.22	0.37	0.59	0.70	0.43
15000	0.31	0.59	0.67	0.69	0.20	0.33	0.53	0.64	0.39

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

| △ | Span (mm) | △ | Span (mm) | △ |

| Double Span Design Capacity for Z/C 250 Sections (kN/m) |

Double Span Loads for Z/C 25015								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2500	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	83.96
3000	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	48.58
3500	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	30.59
4000	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	20.50
4500	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	14.40
5000	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	10.49
5500	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	7.88
6000	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	6.07
6500	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	4.78
7000	1.77	1.80	1.80	1.80	1.79	1.80	1.80	1.80	3.82
7500	1.52	1.61	1.61	1.61	1.48	1.61	1.61	1.61	3.11
8000	1.32	1.45	1.45	1.45	1.24	1.45	1.45	1.45	2.56
8500	1.15	1.31	1.31	1.31	1.02	1.31	1.31	1.31	2.14
9000	1.01	1.19	1.19	1.19	0.83	1.16	1.16	1.16	1.80
9500	0.89	1.08	1.08	1.08	0.70	1.02	1.02	1.02	1.53
10000	0.79	0.99	0.99	0.99	0.59	0.89	0.89	0.89	1.31
10500	0.70	0.89	0.89	0.89	0.49	0.78	0.78	0.78	1.13
11000	0.62	0.81	0.81	0.81	0.41	0.69	0.81	0.81	0.99
11500	0.56	0.74	0.74	0.74	0.35	0.61	0.74	0.74	0.86
12000	0.50	0.68	0.68	0.68	0.30	0.53	0.66	0.68	0.76

Double Span Loads for Z/C 25019								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3500	8.78	8.78	8.78	8.78	8.78	8.78	8.78	8.78	40.03
4000	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	26.82
4500	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	18.84
5000	4.94	5.12	5.12	5.12	5.12	5.12	5.12	5.12	13.73
5500	3.98	4.39	4.39	4.39	4.39	4.39	4.39	4.39	10.32
6000	3.27	3.80	3.80	3.80	3.78	3.80	3.80	3.80	7.95
6500	2.72	3.30	3.30	3.30	3.04	3.30	3.30	3.30	6.25
7000	2.30	2.84	2.84	2.84	2.49	2.84	2.84	2.84	5.00
7500	1.96	2.48	2.48	2.48	2.05	2.48	2.48	2.48	4.07
8000	1.68	2.18	2.18	2.18	1.69	2.18	2.18	2.18	3.3
8500	1.46	1.93	1.93	1.93	1.38	1.93	1.93	1.93	2.80
9000	1.26	1.72	1.72	1.72	1.12	1.67	1.72	1.72	2.35
9500	1.10	1.54	1.54	1.54	0.92	1.45	1.54	1.54	2.00
10000	0.97	1.39	1.39	1.39	0.76	1.26	1.39	1.39	1.72
10500	0.85	1.26	1.26	1.26	0.63	1.10	1.26	1.26	1.48
11000	0.76	1.15	1.15	1.15	0.53	0.96	1.15	1.15	1.29
11500	0.67	1.05	1.05	1.05	0.45	0.84	1.05	1.05	1.13
12000	0.60	0.97	0.97	0.97	0.39	0.73	0.96	0.97	0.99
12500	0.54	0.89	0.89	0.89	0.34	0.63	0.86	0.89	0.88
13000	0.48	0.82	0.82	0.82	0.29	0.55	0.78	0.82	0.78
13500	0.43	0.75	0.76	0.76	0.25	0.47	0.70	0.76	0.70
14000	0.39	0.69	0.71	0.71	0.22	0.41	0.63	0.71	0.62
14500	0.36	0.63	0.66	0.66	0.20	0.36	0.57	0.66	0.56
15000	0.32	0.58	0.62	0.62	0.17	0.32	0.52	0.61	0.51

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

Span (mm)   Span (mm)

Double Span Loads for Z/C 25024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
5000	6.22	7.79	7.79	7.79	7.79	7.79	7.79	7.79	17.77
5500	4.92	6.44	6.44	6.44	6.36	6.36	6.36	6.36	13.35
6000	3.97	5.41	5.41	5.41	5.11	5.11	5.11	5.11	10.28
6500	3.25	4.61	4.61	4.61	4.13	4.13	4.13	4.13	8.09
7000	2.70	3.98	3.98	3.98	3.36	3.98	3.98	3.98	6.47
7500	2.27	3.46	3.46	3.46	2.73	3.46	346	3.46	5.26
8000	1.93	3.04	3.04	3.04	2.20	3.04	3.04	3.04	4.34
8500	1.65	2.70	2.70	2.70	1.77	2.64	2.70	2.70	3.62
9000	1.43	2.41	2.41	2.41	1.43	2.28	2.41	2.41	3.05
9500	1.25	2.16	2.16	2.16	1.18	1.97	2.16	2.16	2.59
10000	1.10	1.95	1.95	1.95	0.98	1.71	1.95	1.95	2.22
10500	0.97	1.77	1.77	1.77	0.82	1.49	1.77	1.77	1.92
11000	0.86	1.61	1.61	1.61	0.70	1.29	1.61	1.61	1.67
11500	0.77	1.45	1.47	1.47	0.60	1.12	1.46	1.47	1.46
12000	0.69	1.32	1.35	1.35	0.51	0.96	1.31	1.35	1.29
12500	0.62	1.20	1.25	1.25	0.44	0.82	1.18	1.25	1.14
13000	0.56	1.09	1.15	1.15	0.39	0.71	1.06	1.15	1.01
13500	0.51	1.00	1.07	1.07	0.34	0.62	0.95	1.07	0.90
14000	0.46	0.91	0.99	0.99	0.30	0.54	0.86	0.99	0.81
14500	0.42	0.84	0.93	0.93	0.27	0.47	0.78	0.91	0.73
15000	0.38	0.77	0.86	0.86	0.24	0.42	0.70	0.84	0.66

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

Double Span Design Capacity for Z/C 300 Sections (kN/m)

Double Span Loads for Z/C 30019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	10.10	10.10	10.10	10.10	10.10	10.10	10.10	10.10	111.20
3500	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	70.03
4000	7.11	7.11	7.11	7.11	7.11	7.11	7.11	7.11	46.91
4500	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	32.95
5000	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	24.02
5500	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	18.05
6000	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	13.90
6500	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	10.93
7000	3.17	3.25	3.25	3.25	3.25	3.25	3.25	3.25	8.75
7500	2.71	2.92	2.92	2.92	2.92	2.92	2.92	2.92	7.12
8000	2.31	2.63	2.63	2.63	2.63	2.63	2.63	2.63	5.86
8500	1.99	2.39	2.39	2.39	2.37	2.39	2.39	2.39	4.89
9000	1.73	2.17	2.17	2.17	2.04	2.17	2.17	2.17	4.12
9500	1.51	1.99	1.99	1.99	1.77	1.99	1.99	1.99	3.50
10000	1.33	1.82	1.82	1.82	1.53	1.82	1.82	1.82	3.00
10500	1.18	1.67	1.67	1.67	1.30	1.67	1.67	1.67	2.59
11000	1.06	1.55	1.55	1.55	1.11	1.52	1.55	1.55	2.26
11500	0.95	1.43	1.43	1.43	0.95	1.36	1.43	1.43	1.97
12000	0.85	1.31	1.31	1.31	0.82	1.23	1.31	1.31	1.74
12500	0.77	1.21	1.21	1.21	0.71	1.11	1.21	1.21	1.54
13000	0.70	1.12	1.12	1.12	0.63	1.00	1.12	1.12	1.37
13500	0.63	1.03	1.03	1.03	0.55	0.90	1.03	1.03	1.22
14000	0.58	0.95	0.96	0.96	0.48	0.82	0.96	0.96	1.09
14500	0.53	0.88	0.90	0.90	0.42	0.74	0.89	0.89	0.99
15000	0.49	0.82	0.84	0.84	0.37	0.67	0.82	0.82	0.89

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

| ⊿ | Span (mm) | ⊿ | Span (mm) | ⊿ |

Double Span Loads for Z/C 30024									
Loading	Inwards				Outwards				Load for Span/150 deflection
Bridging	0	1	2	3	0	1	2	3	
Span									
4000	**12.79**	**12.79**	**12.79**	**12.79**	**12.79**	**12.79**	**12.79**	**12.78**	61.17
4500	**10.77**	**10.77**	**10.77**	**10.77**	**10.77**	**10.77**	**10.77**	**10.77**	42.96
5000	8.79	**9.19**	**9.19**	**9.19**	**9.19**	**9.19**	**9.19**	**9.19**	31.32
5500	6.97	7.92	7.92	7.92	7.92	7.92	7.92	7.92	23.53
6000	5.63	6.89	6.89	6.89	6.89	6.89	6.89	6.89	18.13
6500	4.63	6.04	6.04	6.04	6.04	6.04	6.04	6.04	14.26
7000	3.85	5.33	5.33	5.33	5.33	5.33	5.33	5.33	11.41
7500	3.24	4.71	4.71	4.71	4.55	4.71	4.71	4.71	9.28
8000	2.76	4.14	4.14	4.14	3.83	4.14	4.14	4.14	7.65
8500	2.37	3.67	3.67	3.67	3.24	3.67	3.67	3.67	6.38
9000	2.06	3.27	3.27	3.27	2.75	3.27	3.27	3.27	5.37
9500	1.79	2.93	2.93	2.93	2.35	2.93	2.93	2.93	4.57
10000	1.57	2.65	2.65	2.65	2.01	2.65	2.65	2.65	3.92
10500	1.39	2.40	2.40	2.40	1.73	2.40	2.40	2.40	3.38
11000	1.24	2.19	2.19	2.19	1.48	2.16	2.19	2.19	2.94
11500	1.10	2.00	2.00	2.00	1.27	1.92	2.00	2.00	2.57
12000	0.99	1.84	1.84	1.84	1.08	1.72	1.84	1.84	2.27
12500	0.89	1.70	1.70	1.70	0.93	1.53	1.70	1.70	2.00
13000	0.81	1.57	1.57	1.57	0.81	1.37	1.57	1.57	1.78
13500	0.74	1.45	1.45	1.45	0.70	1.23	1.45	1.45	1.59
14000	0.67	1.34	1.35	1.35	0.62	1.10	1.35	1.35	1.43
14500	0.61	1.23	1.26	1.26	0.54	1.00	1.26	1.26	1.28
15000	0.56	1.14	1.18	1.18	0.48	0.89	1.17	1.17	1.16

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – DOUBLE SPANS

Double Span Loads for Z/C 30030									Load for
Loading	Inwards				Outwards				Load for Span/150 deflection
Bridging	0	1	2	3	0	1	2	3	
Span									
3500	25.86	25.86	25.86	25.86	25.86	25.86	25.86	25.86	118.00
4000	20.67	20.98	20.98	20.98	20.98	20.98	20.98	20.98	79.05
4500	15.36	17.33	17.33	17.33	17.33	17.33	17.33	17.33	55.52
5000	11.56	14.52	14.52	14.52	14.52	14.52	14.52	14.52	40.48
5500	8.88	12.33	12.33	12.33	12.33	12.33	12.33	12.33	30.41
6000	6.96	10.47	10.47	10.47	10.47	10.47	10.47	10.47	23.42
6500	5.57	8.92	8.92	8.92	8.86	8.92	8.92	8.92	18.42
7000	4.55	7.69	7.69	7.69	7.44	7.69	7.69	7.69	14.75
7500	3.78	6.70	6.70	6.70	6.30	6.70	6.70	6.70	11.99
8000	3.19	5.89	5.89	5.89	5.35	5.89	5.89	5.89	9.88
8500	2.72	5.22	5.22	5.22	4.54	5.22	5.22	5.22	8.24
9000	2.35	4.65	4.65	4.65	3.87	4.65	4.65	4.65	6.94
9500	2.05	4.18	4.18	4.18	3.27	4.18	4.18	4.18	5.90
10000	1.80	3.77	3.77	3.77	2.76	3.75	3.77	3.77	5.06
10500	1.59	3.41	3.42	3.42	2.32	3.34	3.42	3.42	4.37
11000	1.41	3.08	3.12	3.12	1.96	2.99	3.12	3.12	3.80
11500	1.26	2.79	2.85	2.85	1.67	2.68	2.85	2.85	3.33
12000	1.14	2.54	2.62	2.62	1.43	2.41	2.62	2.62	2.93
12500	1.03	2.32	2.41	2.41	1.23	2.16	2.41	2.41	2.59
13000	0.93	2.13	2.23	2.23	1.07	1.94	2.23	2.23	2.30
13500	0.85	1.95	2.07	2.07	0.94	1.75	2.07	2.07	2.06
14000	0.78	1.80	1.92	1.92	0.82	1.57	1.91	1.92	1.84
14500	0.71	1.66	1.79	1.79	0.73	1.40	1.76	1.79	1.66
15000	0.65	1.54	1.68	1.68	0.65	1.25	1.62	1.68	1.50

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

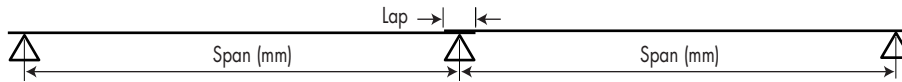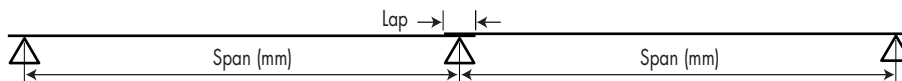## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

2-Lapped Spans Design Capacity for Z150 Sections (kN/m)

2-Lapped Span Loads for Z15012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	8.47	8.47	8.47	8.47	8.47	8.47	8.47	8.47	40.66
2500	6.36	6.36	6.36	6.36	6.36	6.36	6.36	6.36	20.82
3000	4.95	4.95	4.95	4.95	4.95	4.95	4.95	4.95	12.05
3500	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	7.59
4000	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	5.08
4500	2.66	2.68	2.68	2.68	2.68	2.68	2.68	2.68	3.57
5000	2.10	2.25	2.25	2.25	2.09	2.25	2.25	2.25	2.60
5500	1.69	1.89	1.89	1.89	1.58	1.89	1.89	1.89	1.96
6000	1.38	1.59	1.59	1.59	1.19	1.59	1.59	1.59	1.51
6500	1.14	1.35	1.35	1.35	0.90	1.35	1.35	1.35	1.18
7000	0.96	1.17	1.17	1.17	0.69	1.13	1.17	1.17	0.95
7500	0.81	1.02	1.02	1.02	0.54	0.93	1.02	1.02	0.77
8000	0.68	0.89	0.89	0.89	0.43	0.77	0.89	0.89	0.64
8500	0.58	0.79	0.79	0.79	0.35	0.64	0.79	0.79	0.53
9000	0.50	0.71	0.71	0.71	0.28	0.52	0.69	0.71	0.45
9500	0.43	0.63	0.63	0.63	0.23	0.43	0.60	0.63	0.38
10000	0.37	0.56	0.57	0.57	0.19	0.36	0.52	0.57	0.33
10500	0.32	0.50	0.52	0.52	0.16	0.30	0.45	0.52	0.28
11000	0.28	0.45	0.47	0.47	0.13	0.25	0.39	0.47	0.24
11500	0.25	0.40	0.43	0.43	0.11	0.21	0.33	0.41	0.21
12000	0.22	0.35	0.40	0.40	0.10	0.18	0.28	0.37	0.19

2-Lapped Spans Loads for Z15015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**14.09**	**14.09**	**14.09**	**14.09**	**14.09**	**14.09**	**14.09**	**14.09**	51.63
2500	**10.06**	**10.06**	**10.06**	**10.06**	**10.06**	**10.06**	**10.06**	**10.06**	26.44
3000	7.43	7.51	7.51	7.51	7.51	7.51	7.51	7.51	15.30
3500	5.30	5.79	5.79	5.79	5.79	5.79	5.79	5.79	9.63
4000	3.96	4.56	4.56	4.56	4.42	4.56	4.56	4.56	6.45
4500	3.07	3.60	3.60	3.60	3.31	3.60	3.60	3.60	4.53
5000	2.44	2.92	2.92	2.92	2.53	2.92	2.92	2.92	3.31
5500	1.98	2.41	2.41	2.41	1.98	2.41	2.41	2.41	2.48
6000	1.63	2.03	2.03	2.03	1.54	1.99	2.03	2.03	1.91
6500	1.36	1.73	1.73	1.73	1.18	1.63	1.73	1.73	1.50
7000	1.14	1.49	1.49	1.49	0.90	1.36	1.49	1.49	1.20
7500	0.96	1.29	1.30	1.30	0.70	1.13	1.30	1.30	0.98
8000	0.82	1.11	1.14	1.14	0.55	0.96	1.11	1.14	0.81
8500	0.70	0.97	1.01	1.01	0.44	0.81	0.96	1.01	0.67
9000	0.60	0.85	0.90	0.90	0.36	0.68	0.83	0.90	0.57
9500	0.52	0.75	0.81	0.81	0.30	0.57	0.72	0.80	0.48
10000	0.45	0.67	0.73	0.73	0.25	0.47	0.63	0.71	0.41
10500	0.39	0.59	0.65	0.65	0.21	0.39	0.56	0.63	0.36
11000	0.34	0.53	0.59	0.59	0.18	0.33	0.49	0.56	0.31
11500	0.30	0.48	0.53	0.63	0.15	0.28	0.43	0.50	0.27
12000	0.27	0.43	0.48	0.48	0.13	0.24	0.38	0.45	0.24

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

Lap →| |←

△ ———— Span (mm) ———— △ ———— Span (mm) ———— △

2-Lapped Spans Loads for Z15019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	22.79	22.79	22.79	22.79	22.78	22.79	22.79	22.79	66.20
2500	14.73	15.57	15.57	15.57	15.57	15.57	15.57	15.57	33.89
3000	9.70	11.22	11.22	11.22	11.22	11.22	11.22	11.22	19.61
3500	6.81	8.24	8.24	8.24	8.24	8.24	8.24	8.24	12.35
4000	5.01	6.31	6.31	6.31	6.09	6.31	6.31	6.31	8.28
4500	3.81	4.99	4.99	4.99	4.54	4.99	4.99	4.99	5.81
5000	2.98	4.04	4.04	4.04	3.42	4.04	4.04	4.04	4.24
5500	2.38	3.34	3.34	3.34	2.60	3.34	3.34	3.34	3.18
6000	1.94	2.81	2.81	2.81	1.99	2.74	2.81	2.81	2.45
6500	1.60	2.37	2.39	2.39	1.53	2.26	2.39	2.39	1.93
7000	1.33	2.02	2.06	2.06	1.17	1.87	2.06	2.06	1.54
7500	1.12	1.74	1.80	1.80	0.92	1.55	1.78	1.80	1.26
8000	0.95	1.51	1.58	1.58	0.73	1.29	1.54	1.58	1.03
8500	0.81	1.32	1.40	1.40	0.59	1.07	1.33	1.40	0.86
9000	0.70	1.15	1.25	1.25	0.49	0.90	1.15	1.25	0.73
9500	0.61	1.01	1.12	1.12	0.40	0.75	0.99	1.11	0.62
10000	0.53	0.89	1.00	1.01	0.34	0.62	0.86	0.98	0.53
10500	0.47	0.79	0.90	.90	0.29	0.52	0.75	0.87	0.46
11000	0.41	0.71	0.81	0.81	0.25	0.44	0.65	0.78	0.40
11500	0.37	0.63	0.73	0.73	0.21	0.37	0.57	0.69	0.35
12000	0.33	0.56	0.65	0.65	0.18	0.32	0.49	0.61	0.31

2-Lapped Spans Loads for Z15024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	11.64	15.27	15.27	15.27	15.06	15.27	15.27	15.27	24.87
3500	8.10	11.22	11.22	11.22	10.55	11.22	11.22	11.22	15.66
4000	5.92	8.59	8.59	8.59	7.65	8.59	8.59	8.59	10.49
4500	4.49	6.67	6.79	6.79	5.69	6.79	6.79	6.79	7.37
5000	3.50	5.30	5.50	5.50	4.30	5.35	5.50	5.50	5.37
5500	2.79	4.31	4.54	4.54	3.30	4.28	4.54	4.54	4.04
6000	2.26	3.56	3.82	3.82	2.55	3.47	3.82	3.82	3.11
6500	1.87	2.98	3.25	3.25	1.98	2.85	3.19	3.25	2.45
7000	1.56	2.52	2.81	2.81	1.54	2.36	2.69	2.81	1.96
7500	1.32	2.16	2.43	2.44	1.22	1.96	2.29	2.44	1.59
8000	1.12	1.87	2.11	2.15	0.98	1.64	1.95	2.11	1.31
8500	0.97	1.62	1.84	1.90	0.80	1.38	1.68	1.84	1.09
9000	0.84	1.42	1.62	1.70	0.66	1.16	1.45	1.61	0.92
9500	0.73	1.25	1.43	1.52	0.55	0.98	1.26	1.41	0.78
10000	0.64	1.11	1.27	1.36	0.47	0.82	1.10	1.25	0.67
10500	0.57	0.98	1.13	1.13	0.40	0.69	0.96	1.10	0.58
11000	0.51	0.88	1.02	1.02	0.35	0.59	0.84	0.98	0.51
11500	0.45	0.78	0.91	0.91	0.30	0.50	0.73	0.87	0.44
12000	0.40	0.70	0.82	0.82	0.26	0.43	0.64	0.78	0.39

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS
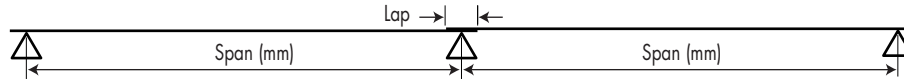
2-Lapped Spans Design Capacity for Z200 Sections (kN/m)

2-Lapped Spans Loads for Z20012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	6.81	6.81	6.81	6.81	6.81	6.81	6.81	6.81	85.01
2500	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	43.53
3000	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	25.19
3500	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	15.86
4000	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	10.63
4500	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.61	7.46
5000	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	5.44
5500	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	4.09
6000	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	3.15
6500	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	2.48
7000	1.36	1.39	1.39	1.39	1.29	1.39	1.39	1.39	1.98
7500	1.16	1.25	1.25	1.25	1.05	1.25	1.25	1.25	1.61
8000	1.00	1.13	1.13	1.13	0.83	1.13	1.13	1.13	1.33
8500	0.87	1.02	1.02	1.02	0.67	1.02	1.02	1.02	1.11
9000	0.76	0.93	0.93	0.93	0.55	0.88	0.93	0.93	0.93
9500	0.66	0.85	0.85	0.85	0.45	0.76	0.85	0.85	0.79
10000	0.58	0.78	0.78	0.78	0.38	0.66	0.78	0.78	0.68
10500	0.51	0.71	0.72	072	0.32	0.57	0.69	0.72	0.59
11000	0.45	0.64	0.66	0.66	0.27	0.50	0.62	0.66	0.51
11500	0.40	0.58	0.61	0.61	0.23	0.42	0.55	0.61	0.45
12000	0.36	0.52	0.56	0.56	0.19	0.36	0.49	0.55	0.39

2-Lapped Spans Loads for Z20015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	**12.72**	110.82
2500	**9.73**	**9.73**	**9.73**	**9.73**	**9.73**	**9.73**	**9.73**	**9.73**	56.74
3000	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	32.84
3500	6.26	6.26	6.26	6.26	6.26	6.26	6.26	6.26	20.68
4000	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	13.85
4500	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	9.73
5000	3.60	3.71	3.71	3.71	3.71	3.71	3.71	3.71	7.09
5500	2.89	3.19	3.19	3.19	3.19	3.19	3.19	3.19	5.33
6000	2.36	2.77	2.77	2.77	2.67	2.77	2.77	2.77	4.11
6500	1.96	2.42	2.42	2.42	2.12	2.42	2.42	2.42	3.23
7000	1.64	2.14	2.14	2.14	1.69	2.14	2.14	2.14	2.59
7500	1.39	1.86	1.86	1.86	1.34	1.86	1.86	1.86	2.10
8000	1.19	1.64	1.64	1.64	1.07	1.63	1.64	1.64	1.73
8500	1.02	1.45	1.45	1.45	0.89	1.40	1.45	1.45	1.44
9000	0.88	1.29	1.29	1.29	0.73	1.20	1.29	1.29	1.22
9500	0.77	1.16	1.16	1.16	0.59	1.03	1.16	1.16	1.03
10000	0.68	1.05	1.05	1.05	0.49	0.88	1.05	1.05	0.89
10500	0.60	0.95	0.95	0.95	0.41	0.75	0.95	0.95	0.77
11000	0.54	0.86	0.87	0.87	0.35	0.64	0.85	0.87	0.67
11500	0.48	0.77	0.79	0.79	0.29	0.55	0.75	0.79	0.58
12000	0.43	0.70	0.73	0.73	0.25	0.47	0.67	0.73	0.51

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

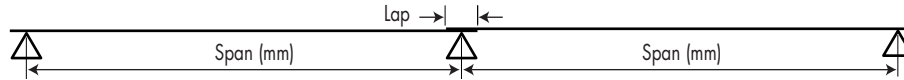## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

Lap →| |←

△ Span (mm) △ Span (mm) △

2-Lapped Spans Loads for Z20019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**23.94**	**23.94**	**23.94**	**23.94**	**23.94**	**23.94**	**23.94**	**23.94**	145.62
2500	**17.74**	**17.74**	**17.74**	**17.74**	**17.74**	**17.74**	**17.74**	**17.74**	74.56
3000	**13.65**	**13.65**	**13.65**	**13.65**	**13.65**	**13.65**	**13.65**	**13.65**	43.15
3500	**10.55**	**10.80**	**10.80**	**10.80**	**10.80**	**10.80**	**10.80**	**10.80**	27.17
4000	**7.78**	**8.73**	**8.73**	**8.73**	**8.73**	**8.73**	**8.73**	**8.73**	18.20
4500	**5.95**	**7.18**	**7.18**	**7.18**	**7.18**	**7.18**	**7.18**	**7.18**	12.78
5000	4.64	**6.01**	**6.01**	**6.01**	5.79	**6.01**	**6.01**	**6.01**	9.32
5500	3.67	**5.02**	**5.02**	**5.02**	4.55	**5.02**	**5.02**	**5.02**	7.00
6000	2.95	4.22	**4.22**	**4.22**	3.65	**4.22**	**4.22**	**4.22**	5.39
6500	2.41	3.59	3.59	3.59	2.96	3.59	3.59	3.59	4.24
7000	2.00	3.10	3.10	3.10	2.41	3.09	3.10	3.10	3.40
7500	1.68	2.69	2.70	2.70	1.90	2.62	2.70	2.70	2.76
8000	1.43	2.34	2.37	2.37	1.50	2.23	2.37	2.37	2.28
8500	1.23	2.04	2.10	2.10	1.20	1.91	2.10	2.10	1.90
9000	1.06	1.79	1.88	1.88	0.97	1.65	1.88	1.88	1.60
9500	0.93	1.59	1.68	1.68	0.80	1.43	1.67	1.68	1.36
10000	0.81	1.41	1.52	1.52	0.66	1.25	1.47	1.52	1.17
10500	0.72	1.26	1.38	1.38	0.56	1.09	1.30	1.38	1.01
11000	0.64	1.13	1.26	1.26	0.47	0.93	1.16	1.26	0.88
11500	0.57	1.02	1.15	1.15	0.40	0.79	1.03	1.15	0.77
12000	0.51	0.92	1.05	1.06	0.35	0.67	0.92	1.04	0.67

2-Lapped Spans Loads for Z20024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
4500	**6.93**	**10.36**	**10.36**	**10.36**	**10.19**	**10.36**	10.36	10.36	16.34
5000	**5.28**	**8.39**	**8.39**	**8.39**	7.91	**8.39**	8.39	8.39	11.91
5500	4.13	**6.93**	**6.93**	**6.93**	6.20	**6.93**	6.93	6.93	8.95
6000	3.32	**5.83**	**5.83**	**5.83**	4.87	**5.83**	5.83	5.83	6.89
6500	2.71	**4.95**	**4.96**	**4.96**	3.85	**4.96**	4.96	4.96	5.42
7000	2.26	**4.21**	**4.28**	**4.28**	3.05	**4.23**	4.28	4.28	4.34
7500	1.90	**3.61**	**3.73**	**3.73**	2.42	**3.58**	3.73	3.73	3.53
8000	1.62	**3.13**	**3.28**	**3.28**	1.92	**3.06**	3.28	3.28	2.91
8500	1.40	2.73	**2.90**	**2.90**	1.54	2.61	**2.90**	**2.90**	2.42
9000	1.21	2.40	2.59	2.59	1.26	2.23	2.59	2.59	2.04
9500	1.06	2.12	2.32	2.32	1.04	1.91	2.28	2.32	1.74
10000	0.94	1.88	2.10	2.10	0.87	1.63	2.02	2.10	1.49
10500	0.83	1.67	1.90	1.90	0.73	1.40	1.79	1.90	1.29
11000	0.74	1.49	1.73	1.73	0.62	1.20	1.59	1.73	1.12
11500	0.66	1.34	1.58	1.58	0.53	1.02	1.41	1.57	0.98
12000	0.59	1.20	1.43	1.43	0.46	0.88	1.25	1.42	0.86
12500	0.54	1.08	1.30	1.30	0.40	0.75	1.11	1.29	0.76
13000	0.48	0.98	1.19	1.19	0.35	0.65	0.99	1.17	0.68
13500	0.44	0.89	1.09	1.09	0.31	0.57	0.88	1.06	0.61
14000	0.40	0.81	1.00	1.00	0.28	0.50	0.78	0.96	0.54
14500	0.37	0.73	0.91	0.91	0.25	0.44	0.69	0.87	0.49
15000	0.34	0.67	0.84	0.84	0.22	0.39	0.61	0.79	0.44

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

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STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS
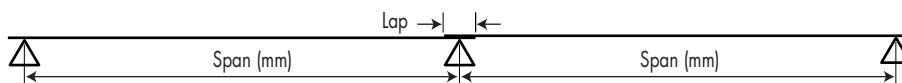
2-Lapped Spans Design Capacity for Z250 Sections (kN/m)									

2-Lapped Spans Loads for Z25015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59	185.75
2500	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	95.10
3000	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	55.04
3500	5.63	5.63	5.63	5.63	5.63	5.63	5.63	5.63	34.66
4000	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	23.22
4500	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	16.31
5000	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	11.89
5500	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	8.93
6000	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79	6.88
6500	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	5.41
7000	2.12	2.23	2.23	2.23	2.23	2.23	2.23	2.23	4.33
7500	1.79	2.01	2.01	2.01	1.84	2.01	2.01	2.01	3.52
8000	1.53	1.82	1.82	1.82	1.47	1.82	1.82	1.82	2.90
8500	1.31	1.65	1.65	1.65	1.19	1.65	1.65	1.65	2.42
9000	1.14	1.51	1.51	1.51	0.99	1.51	1.51	1.51	2.04
9500	0.99	1.38	1.38	1.38	0.81	1.32	1.38	1.38	1.73
10000	0.87	1.27	1.27	1.27	0.67	1.15	1.27	1.27	1.49
10500	0.78	1.17	1.17	1.17	0.56	1.01	1.17	1.17	1.28
11000	0.69	1.06	1.08	1.08	0.47	0.88	1.06	1.08	1.12
11500	0.62	0.95	1.00	1.00	0.40	0.76	0.95	1.00	0.98
12000	0.56	0.87	0.93	0.93	0.34	0.65	0.85	0.93	0.86
12500	0.50	0.79	0.85	0.85	0.29	0.56	0.76	0.85	0.76
13000	0.45	0.72	0.79	0.79	0.25	0.49	0.69	0.77	0.68
13500	0.40	0.66	0.73	0.73	0.22	0.43	0.62	0.71	0.60
14000	0.36	0.60	0.67	0.68	0.19	0.38	0.56	0.64	0.54
14500	0.33	0.55	0.61	0.63	0.17	0.33	0.50	0.59	0.49
15000	0.30	0.51	0.57	0.59	0.15	0.29	0.45	0.54	0.44

2-Lapped Spans Loads for Z25019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**20.84**	**20.84**	**20.84**	**20.84**	**20.84**	**20.84**	**20.84**	**20.84**	243.04
2500	**16.06**	**16.06**	**16.06**	**16.06**	**16.06**	**16.06**	**16.06**	**16.06**	124.44
3000	**12.83**	**12.83**	**12.83**	**12.83**	**12.83**	**12.83**	**12.83**	**12.83**	72.01
3500	**10.50**	**10.50**	**10.50**	**10.50**	**10.50**	**10.50**	**10.50**	**10.50**	45.35
4000	**8.76**	**8.76**	**8.76**	**8.76**	**8.76**	**8.76**	**8.76**	**8.76**	30.38
4500	**7.39**	**7.41**	**7.41**	**7.41**	**7.41**	**7.41**	**7.41**	**7.41**	21.34
5000	**5.75**	**6.34**	**6.34**	**6.34**	**6.34**	**6.34**	**6.34**	**6.34**	15.56
5500	**4.55**	**5.48**	**5.48**	**5.48**	**5.48**	**5.48**	**5.48**	**5.48**	11.69
6000	3.67	**4.78**	**4.78**	**4.78**	**4.76**	**4.78**	**4.78**	**4.78**	9.00
6500	3.00	**4.20**	**4.20**	**4.20**	**3.82**	**4.20**	**4.20**	**4.20**	7.08
7000	2.49	**3.72**	**3.72**	**3.72**	3.08	**3.72**	**3.72**	**3.72**	5.67
7500	2.10	**3.31**	**3.31**	**3.31**	2.47	**3.31**	**3.31**	**3.31**	4.61
8000	1.78	**2.94**	**2.94**	**2.94**	1.97	**2.94**	**2.94**	**2.94**	3.80
8500	1.53	**2.61**	**2.61**	**2.61**	1.57	2.51	**2.61**	**2.61**	3.17
9000	1.32	**2.33**	**2.33**	**2.33**	1.27	2.15	**2.33**	**2.33**	2.67
9500	1.15	**2.07**	**2.09**	**2.09**	1.04	1.85	**2.09**	**2.09**	2.27
10000	1.01	1.84	1.88	1.88	0.86	1.60	1.88	1.88	1.94
10500	0.89	1.64	1.71	1.71	0.72	1.39	1.71	1.71	1.68
11000	0.79	1.47	1.56	1.56	0.61	1.20	1.53	1.56	1.46
11500	0.71	1.32	1.42	1.42	0.51	1.03	1.35	1.42	1.28
12000	0.63	1.19	1.31	1.31	0.44	0.88	1.20	1.31	1.13
12500	0.57	1.08	1.21	1.21	0.38	0.75	1.07	1.21	1.00
13000	0.51	0.98	1.12	1.12	0.33	0.65	0.96	1.12	0.89
13500	0.46	0.89	1.03	1.03	0.29	0.56	0.86	1.02	0.79
14000	0.42	0.81	0.96	0.96	0.25	0.49	0.77	0.92	0.71
14500	0.38	0.74	0.88	0.90	0.22	0.43	0.69	0.84	0.64
15000	0.35	0.68	0.81	0.84	0.20	0.38	0.61	0.76	0.58

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

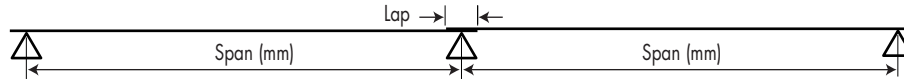## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

	2-Lapped Spans Loads for Z25024								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
5500	**5.09**	**8.71**	**8.71**	**8.71**	**8.14**	**8.71**	**8.71**	**8.71**	15.12
6000	**4.08**	**7.32**	**7.32**	**7.32**	**6.44**	**7.32**	**7.32**	**7.32**	11.65
6500	3.33	**6.24**	**6.24**	**6.24**	**5.13**	**6.24**	**6.24**	**6.24**	9.16
7000	2.77	**5.38**	**5.38**	**5.38**	**4.04**	**5.38**	**5.38**	**5.38**	7.34
7500	2.33	**4.68**	**4.68**	**4.68**	3.16	**4.68**	**4.68**	**4.68**	5.96
8000	1.99	**4.06**	**4.12**	**4.12**	2.49	**4.01**	**4.12**	**4.12**	4.91
8500	1.71	**3.54**	**3.65**	**3.65**	2.00	**3.42**	**3.65**	**3.65**	4.10
9000	1.48	**3.10**	**3.25**	**3.25**	1.62	**2.93**	**3.25**	**3.25**	3.45
9500	1.30	**2.73**	**2.92**	**2.92**	1.33	**2.52**	**2.92**	**2.92**	2.94
10000	1.14	**2.42**	**2.63**	**2.63**	1.11	2.17	**2.63**	**2.63**	2.52
10500	1.01	2.16	**2.39**	**2.39**	0.93	1.85	**2.34**	**2.39**	2.17
11000	0.90	1.93	**2.18**	**2.18**	0.79	1.57	2.08	**2.18**	1.89
11500	0.81	1.73	1.99	1.99	0.67	1.33	1.84	1.99	1.65
12000	0.72	1.56	1.83	1.83	0.58	1.13	1.64	1.83	1.46
12500	0.65	1.41	1.69	1.69	0.50	0.97	1.46	1.68	1.29
13000	0.59	1.27	1.55	1.56	0.44	0.84	1.30	1.53	1.15
13500	0.54	1.15	1.41	1.45	0.38	0.73	1.16	1.39	1.02
14000	0.49	1.04	1.29	1.34	0.34	0.63	1.03	1.26	0.92
14500	0.44	0.94	1.19	1.25	0.30	0.56	0.91	1.14	0.83
15000	0.41	0.85	1.09	1.17	0.27	0.49	0.80	1.04	0.75

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

Lap →| |←

△ ———— Span (mm) ———— △ ———— Span (mm) ———— △
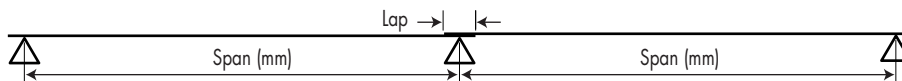
2-Lapped Spans Design Capacity for Z300 Sections (kN/m)

2-Lapped Spans Loads for Z30019

Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
4000	8.27	8.27	8.27	8.27	8.27	8.27	8.27	8.27	53.14
4500	7.16	7.16	7.16	7.16	7.16	7.16	7.16	7.16	37.33
5000	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	27.21
5500	5.54	5.54	5.54	5.54	5.54	5.54	5.54	5.54	20.44
6000	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	15.75
6500	4.15	4.41	4.41	4.41	4.41	4.41	4.41	4.41	12.39
7000	3.44	3.97	3.97	3.97	3.97	3.97	3.97	3.97	9.92
7500	2.90	3.59	3.59	3.59	3.59	3.59	3.59	3.59	8.06
8000	2.47	3.26	3.26	3.26	3.26	3.26	3.26	3.26	6.64
8500	2.13	2.97	2.97	2.97	2.97	2.97	2.97	2.97	5.54
9000	1.86	2.72	2.72	2.72	2.57	2.72	2.72	2.72	4.67
9500	1.64	2.50	2.50	2.50	2.15	2.50	2.50	2.50	3.97
10000	1.45	2.30	2.30	2.30	1.80	2.30	2.30	2.30	3.40
10500	1.29	2.13	2.13	2.13	1.52	2.13	2.13	2.13	2.94
11000	1.15	1.97	1.97	1.97	1.29	1.97	1.97	1.97	2.56
11500	1.03	1.83	1.83	1.83	1.12	1.78	1.83	1.83	2.24
12000	0.92	1.68	1.70	1.70	0.97	1.59	1.70	1.70	1.97
12500	0.83	1.53	1.59	1.59	0.83	1.43	1.59	1.59	1.74
13000	0.75	1.40	1.48	1.48	0.72	1.29	1.48	1.48	1.55
13500	0.68	1.28	1.39	1.39	0.62	1.16	1.37	1.39	1.38
14000	0.62	1.18	1.30	1.30	0.54	1.04	1.25	1.30	1.24
14500	0.57	1.09	1.21	1.21	0.48	0.92	1.15	1.21	1.12
15000	0.52	1.01	1.13	1.13	0.42	0.81	1.05	1.13	1.01

2-Lapped Spans Loads for Z30024

Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
4000	**15.30**	**15.31**	**15.30**	**15.31**	**15.31**	**15.30**	**15.30**	**15.30**	69.30
4500	**13.04**	**13.04**	**13.04**	**13.04**	**13.04**	**13.04**	**13.04**	**13.04**	48.67
5000	**9.96**	**11.23**	**11.23**	**11.24**	**11.24**	**11.24**	**11.23**	**11.24**	35.48
5500	7.70	**9.77**	**9.77**	**9.77**	**9.77**	**9.77**	**9.77**	**9.77**	26.66
6000	6.08	**8.57**	**8.57**	**8.57**	**8.57**	**8.57**	**8.57**	**8.57**	20.53
6500	4.89	**7.57**	**7.57**	**7.57**	**7.57**	**7.57**	**7.57**	**7.57**	16.15
7000	4.02	**6.73**	**6.73**	**6.73**	**6.73**	**6.73**	**6.73**	**6.73**	12.93
7500	3.35	**6.02**	**6.02**	**6.02**	5.74	**6.02**	**6.02**	**6.02**	10.51
8000	2.84	5.41	5.41	5.41	4.77	5.41	5.41	5.41	8.66
8500	2.43	4.89	4.89	4.89	3.99	4.89	4.89	4.89	7.22
9000	2.10	4.42	4.42	4.42	3.36	4.42	4.42	4.42	6.08
9500	1.83	3.94	3.97	3.97	2.84	3.97	3.97	3.97	5.17
10000	1.61	3.50	3.58	3.58	2.39	3.57	3.58	3.58	4.44
10500	1.43	3.12	3.25	3.25	2.01	3.15	3.25	3.25	3.83
11000	1.27	2.79	2.96	2.96	1.69	2.79	2.96	2.96	3.33
11500	1.14	2.51	2.71	2.71	1.43	2.47	2.71	2.71	2.92
12000	1.02	2.27	2.49	2.49	1.23	2.19	2.49	2.49	2.57
12500	0.93	2.06	2.29	2.29	1.06	1.94	2.29	2.29	2.27
13000	0.84	1.87	2.12	2.12	0.91	1.72	2.12	2.12	2.02
13500	0.76	1.70	1.97	1.97	0.80	1.54	1.95	1.97	1.80
14000	0.70	1.56	1.83	1.83	0.70	1.38	1.77	1.83	1.62
14500	0.64	1.42	1.70	1.70	0.61	1.23	1.62	1.70	1.46
15000	0.59	1.31	1.59	1.59	0.54	1.09	1.47	1.59	1.31

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 2 LAPPED SPANS

Lap →| |←
△ Span (mm) △ Span (mm) △
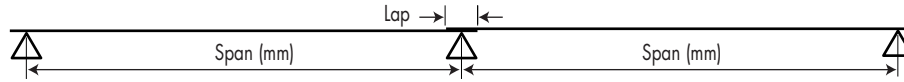
2-Lapped Spans Loads for Z30030									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
5000	**11.99**	**18.35**	**18.35**	**18.36**	**18.35**	**18.35**	**18.35**	**18.35**	45.85
5500	**9.07**	**15.71**	**15.71**	**15.71**	**15.71**	**15.71**	**15.71**	**15.71**	34.45
6000	7.09	**13.58**	**13.58**	**13.58**	**13.58**	**13.58**	**13.58**	**13.58**	26.54
6500	5.67	**11.84**	**11.84**	**11.84**	**11.54**	**11.84**	**11.84**	**11.84**	20.87
7000	4.64	**10.40**	**10.40**	**10.40**	**9.62**	**10.40**	**10.40**	**10.40**	16.71
7500	3.86	**9.05**	**9.06**	**9.06**	**8.02**	**9.06**	**9.06**	**9.06**	13.59
8000	3.26	**7.84**	**7.97**	**7.97**	**6.70**	**7.97**	**7.97**	**7.97**	11.19
8500	2.79	**6.84**	**7.06**	**7.06**	**5.56**	**7.06**	**7.06**	**7.06**	9.33
9000	2.41	**6.01**	**6.29**	**6.29**	**4.60**	**6.29**	**6.29**	**6.29**	7.86
9500	2.10	**5.32**	**5.65**	**5.65**	**3.79**	**5.57**	**5.65**	**5.65**	6.69
10000	1.85	**4.73**	**5.10**	**5.10**	**3.14**	**4.93**	**5.10**	**5.10**	5.73
10500	1.63	4.22	**4.62**	**4.62**	2.62	**4.38**	**4.62**	**4.62**	4.95
11000	1.46	3.78	**4.21**	**4.21**	2.21	3.90	**4.21**	**4.21**	4.31
11500	1.31	3.39	3.85	3.85	1.88	3.47	3.85	3.85	3.77
12000	1.18	3.06	3.54	3.54	1.61	3.09	3.54	3.54	3.32
12500	1.06	2.77	3.26	3.26	1.39	2.75	3.24	3.26	2.93
13000	0.97	2.52	3.02	3.02	1.21	2.44	2.95	3.02	2.61
13500	0.88	2.28	2.80	2.80	1.06	2.16	2.70	2.80	2.33
14000	0.81	2.08	2.60	2.60	0.93	1.91	2.47	2.60	2.09
14500	0.74	1.89	2.41	2.42	0.82	1.68	2.26	2.42	1.88
15000	0.68	1.73	2.23	2.27	0.73	1.48	2.08	2.27	1.70

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS
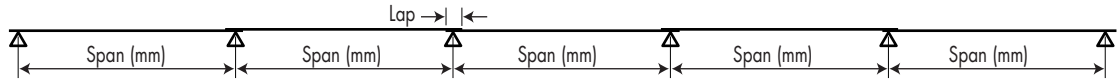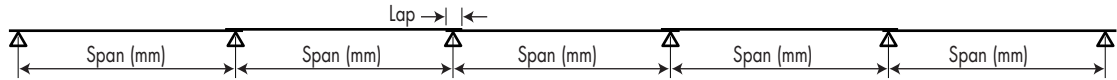

	5-Lapped Spans Design Capacity for Z/C 150 Sections (kN/m)								

	5-Lapped Span Loads for Z/C 15012								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	9.23	9.22	9.23	9.23	9.23	9.22	9.23	9.23	32.01
2500	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	16.39
3000	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	9.48
3500	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	5.97
4000	3.76	3.76	3.76	3.75	3.76	3.76	3.76	3.75	4.00
4500	2.94	3.16	3.16	3.16	2.84	3.16	3.16	3.16	2.81
5000	2.31	2.68	2.68	2.69	2.01	2.68	2.68	2.69	2.05
5500	1.85	2.25	2.25	2.25	1.43	2.25	2.25	2.25	1.54
6000	1.50	1.89	1.89	1.89	1.04	1.81	1.89	1.89	1.19
6500	1.23	1.61	1.61	1.61	0.78	1.44	1.61	1.61	0.93
7000	1.02	1.39	1.39	1.39	0.59	1.14	1.39	1.39	0.75
7500	0.85	1.21	1.21	1.21	0.46	0.91	1.21	1.21	0.61
8000	0.71	1.07	1.07	1.07	0.36	0.72	1.02	1.07	0.50
8500	0.60	0.94	0.94	0.94	0.29	0.57	0.86	0.94	0.42
9000	0.52	0.84	0.84	0.84	0.23	0.46	0.72	0.84	0.35
9500	0.44	0.76	0.76	0.76	0.19	0.38	0.61	0.74	0.30
10000	0.38	0.68	0.68	0.68	0.16	0.32	0.51	0.64	0.26
10500	0.33	0.61	0.62	0.62	0.13	0.26	0.42	0.56	0.22
11000	0.29	0.55	0.56	0.56	0.11	0.22	0.36	0.49	0.19
11500	0.25	0.49	0.52	0.52	0.09	0.18	0.30	0.42	0.17
12000	0.22	0.44	047	0.47	0.08	0.16	0.26	0.37	0.15

	5-Lapped Span Loads for Z/C 15015								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**16.03**	**16.03**	**16.03**	**16.03**	**16.03**	**16.02**	**16.03**	**16.03**	40.65
2500	**11.71**	**11.71**	**11.71**	**11.71**	**11.71**	**11.71**	**11.71**	**11.71**	20.81
3000	8.41	**8.92**	**8.92**	**8.92**	**8.92**	**8.92**	**8.92**	**8.92**	12.04
3500	6.00	6.95	6.96	6.96	6.76	6.95	6.96	6.96	7.58
4000	4.48	5.43	5.43	5.43	4.82	5.43	5.43	5.43	5.08
4500	3.45	4.29	4.29	4.29	3.55	4.29	4.29	4.29	3.57
5000	2.72	3.48	3.48	3.48	2.61	3.43	3.48	3.48	2.60
5500	2.18	2.87	2.87	2.87	1.86	2.72	2.87	2.87	1.95
6000	1.77	2.42	2.42	2.42	1.34	2.18	2.42	2.42	1.51
6500	1.45	2.06	2.06	2.06	1.00	1.76	2.05	2.06	1.18
7000	1.21	1.77	1.77	1.77	0.76	1.45	1.72	1.77	0.95
7500	1.01	1.54	1.55	1.55	0.59	1.18	1.45	1.55	0.77
8000	0.85	1.34	1.36	1.36	0.46	0.95	1.23	1.36	0.64
8500	0.72	1.17	1.20	1.20	0.37	0.75	1.04	1.17	0.53
9000	0.62	1.03	1.07	1.07	0.30	0.60	0.90	1.02	0.45
9500	0.53	0.91	0.96	0.96	0.25	0.49	0.78	0.89	0.38
10000	0.46	0.81	0.87	0.87	0.21	0.40	0.66	0.78	0.33
10500	0.40	0.72	0.79	0.79	0.17	0.33	0.56	0.68	0.28
11000	0.35	0.65	0.72	0.72	0.15	0.28	0.47	0.61	0.24
11500	0.31	0.58	0.64	0.66	0.13	0.24	0.40	0.54	0.21
12000	0.27	0.52	0.58	0.60	0.11	0.20	0.34	0.48	0.19

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

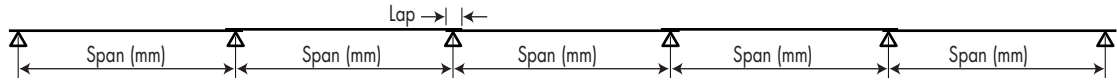## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

Lap →| |←

| Span (mm) | Span (mm) | Span (mm) | Span (mm) | Span (mm) |

5-Lapped Span Loads for Z/C 15019								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	**27.11**	**27.11**	**27.11**	**27.11**	**27.11**	**27.11**	**27.11**	**27.11**	52.11
2500	**16.52**	**18.71**	**18.72**	**18.72**	**18.72**	**18.72**	**18.72**	**18.72**	26.68
3000	**10.73**	**13.38**	**13.38**	**13.38**	**13.34**	**13.38**	**13.38**	**13.38**	15.44
3500	7.44	**9.82**	**9.82**	**9.82**	**9.33**	**9.82**	**9.82**	**9.82**	9.72
4000	5.41	**7.53**	**7.53**	**7.53**	6.56	**7.53**	**7.53**	**7.53**	6.51
4500	4.08	**5.94**	**5.94**	**5.94**	4.68	**5.94**	**5.94**	**5.94**	4.58
5000	3.17	4.82	4.82	4.82	3.36	4.72	4.82	4.82	3.34
5500	2.51	3.98	3.98	3.98	2.40	3.76	3.98	3.98	2.51
6000	2.03	3.34	3.35	3.35	1.74	2.99	3.35	3.35	1.93
6500	1.66	2.82	2.85	2.85	1.30	2.39	2.82	2.85	1.52
7000	1.38	2.41	2.46	2.46	0.99	1.92	2.38	2.46	1.22
7500	1.16	2.08	2.14	2.14	0.77	1.54	2.00	2.14	0.99
8000	098	1.80	1.88	1.88	0.62	1.23	1.68	1.86	0.81
8500	0.84	1.58	1.67	1.67	0.50	0.98	1.42	1.62	0.68
9000	0.73	1.38	1.49	1.49	0.41	0.79	1.20	1.41	0.57
9500	0.63	1.22	1.33	1.33	0.34	0.65	1.02	1.23	0.49
10000	0.55	1.08	1.20	1.20	0.28	0.53	0.86	1.07	0.42
10500	0.48	0.96	1.08	1.09	0.24	0.44	0.73	0.93	0.36
11000	0.43	0.86	0.97	1.00	0.21	0.37	0.62	0.81	0.31
11500	0.38	0.77	0.88	0.91	0.18	0.32	0.52	0.71	0.27
12000	0.33	0.69	0.79	0.83	0.15	0.27	0.44	0.62	0.24

5-Lapped Span Loads for Z/C 15024								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	**12.80**	**18.21**	**18.21**	**18.21**	**17.06**	**18.21**	**18.21**	**18.21**	19.58
3500	**8.78**	**13.37**	**13.37**	**13.37**	**11.69**	**13.37**	**13.37**	**13.37**	12.33
4000	6.33	**10.13**	**10.24**	**10.24**	8.25	**10.14**	**10.24**	**10.24**	8.26
4500	4.74	**7.84**	**8.09**	**8.09**	5.92	**7.72**	**8.09**	**8.09**	5.80
5000	3.66	**6.23**	**6.55**	**6.55**	4.28	**6.00**	**6.55**	**6.55**	4.23
5500	2.90	**5.06**	**5.41**	**5.41**	3.10	4.73	5.33	**5.41**	3.18
6000	2.35	4.18	**4.55**	**4.55**	2.27	3.77	4.36	**4.55**	2.45
6500	1.94	3.50	3.88	3.88	1.71	3.03	3.60	3.86	1.93
7000	1.62	2.97	3.33	3.34	1.32	2.44	3.00	3.26	1.54
7500	1.37	2.55	2.87	2.91	1.04	1.98	2.52	2.78	1.25
8000	1.17	2.21	2.50	2.56	0.83	1.60	2.13	2.38	1.03
8500	1.01	1.92	2.19	2.27	0.68	1.29	1.80	2.05	0.86
9000	0.88	1.69	1.94	2.02	0.56	1.04	1.53	1.78	0.73
9500	0.77	1.49	1.72	1.80	0.47	0.86	1.31	1.55	0.62
10000	0.68	1.33	1.53	1.62	0.40	0.71	1.11	1.35	0.53
10500	0.60	1.18	1.37	1.45	0.34	0.60	0.95	1.18	0.46
11000	0.53	1.06	1.23	1.31	0.29	0.50	0.81	1.04	0.40
11500	0.47	0.95	1.10	1.18	0.25	0.43	0.69	0.91	0.35
12000	0.43	0.86	1.00	1.07	0.22	0.37	0.59	0.80	0.31

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

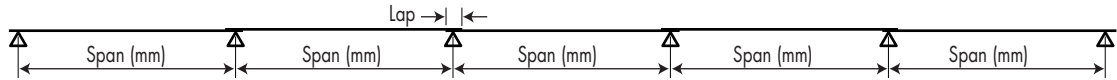## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

5-Lapped Spans Design Capacity for Z/C 200 Sections (kN/m)

5-Lapped Span Loads for Z/C 20012									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	7.21	7.21	7.21	7.21	7.21	7.21	7.21	7.21	66.92
2500	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	34.26
3000	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	19.83
3500	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	12.49
4000	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	8.37
4500	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	5.88
5000	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	4.28
5500	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	3.22
6000	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.48
6500	1.77	1.77	1.79	1.79	1.54	1.79	1.79	1.79	1.95
7000	1.49	1.61	1.61	1.61	1.18	1.61	1.61	1.61	1.56
7500	1.27	1.46	1.46	1.46	0.92	1.46	1.46	1.46	1.27
8000	1.09	1.33	1.33	1.33	0.73	1.29	1.33	1.33	1.05
8500	0.93	1.21	1.21	1.21	0.58	1.08	1.21	1.21	0.87
9000	0.80	1.11	1.11	1.11	0.48	0.91	1.11	1.11	0.73
9500	0.70	1.02	1.02	1.02	0.39	0.76	0.98	1.02	0.62
10000	0.61	0.94	0.94	0.94	0.32	0.63	0.86	0.94	0.54
10500	0.53	0.85	0.86	0.86	0.27	0.53	0.75	0.85	0.46
11000	0.47	0.77	0.79	0.79	0.22	0.44	0.66	0.76	0.40
11500	0.41	0.70	0.72	0.72	0.19	0.38	0.58	0.68	0.35
12000	0.37	0.63	0.66	0.66	0.16	0.32	0.51	0.61	0.31

5-Lapped Span Loads for Z/C 20015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	13.68	13.68	13.68	13.68	13.68	13.68	13.68	13.68	87.24
2500	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	44.67
3000	8.52	8.52	8.52	8.52	8.52	8.52	8.52	8.52	25.85
3500	7.02	7.02	7.02	7.02	7.02	7.02	7.02	7.02	16.28
4000	5.89	5.89	5.89	5.89	5.89	5.89	5.89	5.89	10.90
4500	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	7.66
5000	3.89	4.31	4.31	4.31	4.31	4.31	4.31	4.31	5.58
5500	3.10	3.75	3.75	3.75	3.47	3.75	3.75	3.75	4.20
6000	2.51	3.28	3.28	3.28	2.63	3.28	3.28	3.28	3.23
6500	2.07	2.90	2.90	2.90	1.99	2.90	2.90	2.90	2.54
7000	1.73	2.55	2.55	2.55	1.56	2.50	2.55	2.55	2.04
7500	1.46	2.22	2.22	2.22	2.22	2.08	2.22	2.22	1.65
8000	1.25	1.95	1.95	1.95	0.95	1.73	1.95	1.95	1.36
8500	1.08	1.73	1.73	1.73	0.76	1.44	1.73	1.73	1.14
9000	0.94	1.54	1.54	1.54	0.61	1.19	1.54	1.54	0.96
9500	0.83	1.38	1.38	1.38	0.50	0.99	1.34	1.38	0.81
10000	0.73	1.25	1.25	1.25	0.41	0.82	1.17	1.25	0.70
10500	0.64	1.13	1.13	1.13	0.34	0.70	1.02	1.13	0.60
11000	0.56	1.03	1.03	1.03	0.29	0.59	0.89	1.03	0.52
11500	0.50	0.93	0.95	0.95	0.24	0.50	0.77	0.93	0.46
12000	0.44	0.85	0.87	0.87	0.21	0.42	0.67	0.83	0.40

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

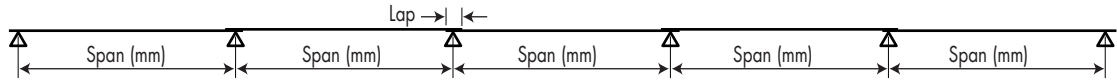## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

Lap →| |←

| Span (mm) | Span (mm) | Span (mm) | Span (mm) | Span (mm) |

5-Lapped Span Loads for Z/C 20019
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	26.36	26.36	26.36	26.36	26.36	26.36	26.36	26.36	114.62
2500	19.90	19.90	19.90	19.90	19.90	19.90	19.90	19.90	58.69
3000	15.63	15.63	15.63	15.63	15.63	15.63	15.63	15.63	33.96
3500	11.81	12.56	12.56	12.56	12.56	12.56	12.56	12.56	21.39
4000	8.52	10.31	10.31	10.29	10.31	10.31	10.31	10.31	14.33
4500	6.28	8.59	8.59	8.59	8.25	8.59	8.59	8.59	10.06
5000	4.78	7.22	7.22	7.22	6.29	7.22	7.22	7.22	7.34
5500	3.75	5.98	5.98	5.98	4.88	5.98	5.98	5.98	5.51
6000	3.01	5.03	5.03	5.03	3.74	5.01	5.03	5.03	4.25
6500	2.46	4.28	4.28	4.28	2.78	4.11	4.28	4.28	3.34
7000	2.05	3.70	3.70	3.70	2.10	3.41	3.70	3.70	2.67
7500	1.73	3.18	3.22	3.22	1.62	2.85	3.22	3.22	2.17
8000	1.47	2.76	2.83	2.83	1.28	2.41	2.82	2.83	1.79
8500	1.26	2.41	2.51	2.51	1.02	2.04	2.43	2.51	1.49
9000	1.09	2.13	2.24	2.24	0.82	1.72	2.11	2.24	1.26
9500	0.95	1.88	2.01	2.01	0.67	1.42	1.83	2.01	1.07
10000	0.84	1.68	1.81	1.81	0.56	1.16	1.61	1.80	0.92
10500	0.74	1.50	1.64	1.64	0.47	0.96	1.41	1.60	0.79
11000	0.66	1.35	1.50	1.50	0.40	0.81	1.25	1.42	0.69
11500	0.58	1.22	1.37	1.37	0.34	0.68	1.10	1.27	0.60
12000	0.52	1.11	1.26	1.26	0.29	0.58	0.97	1.13	0.53

5-Lapped Span Loads for Z/C 20024
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
2000	47.30	47.30	47.30	47.30	47.30	47.30	47.30	47.30	146.48
2500	34.01	34.31	34.31	34.31	34.31	34.31	34.31	34.31	75.00
3000	21.20	25.94	25.94	25.94	25.94	25.94	25.94	25.94	43.40
3500	14.05	19.97	19.97	19.97	19.97	19.97	19.97	19.97	27.33
4000	9.78	15.63	15.63	15.63	15.12	15.63	15.63	15.63	18.31
4500	7.12	12.34	12.34	12.34	11.28	12.34	12.34	12.34	12.86
5000	5.40	10.00	10.00	10.00	8.42	10.00	10.00	10.00	9.38
5500	4.23	8.26	8.26	8.26	6.32	8.26	8.26	8.26	7.04
6000	3.40	6.93	6.93	6.93	4.74	6.84	6.93	6.93	5.43
6500	2.78	5.82	5.92	5.92	3.54	5.63	5.92	5.92	4.27
7000	2.32	4.94	5.10	5.10	2.69	4.68	5.10	5.10	3.42
7500	1.96	4.24	4.44	4.44	2.08	3.87	4.44	4.44	2.78
8000	1.67	3.68	3.91	3.91	1.65	3.20	3.86	3.91	2.29
8500	1.44	3.21	3.46	3.46	1.32	2.66	3.33	3.46	1.91
9000	1.25	2.82	3.09	3.09	1.07	2.20	2.89	3.09	1.61
9500	1.10	2.49	2.77	2.77	0.88	1.82	2.52	2.77	1.37
10000	0.97	2.21	2.50	2.50	0.74	1.50	2.18	2.46	1.17
10500	0.86	1.97	2.27	2.27	0.62	1.25	1.90	2.18	1.01
11000	0.77	1.76	2.07	2.07	0.53	1.05	1.65	1.95	0.88
11500	0.69	1.59	1.88	1.89	0.45	0.88	1.43	1.74	0.77
12000	0.62	1.43	1.71	1.74	0.39	0.75	1.24	1.55	0.68
12500	0.56	1.30	1.56	1.60	0.34	0.65	1.08	1.38	0.60
13000	0.50	1.18	1.43	1.48	0.30	0.56	0.93	1.23	0.53
13500	0.46	1.07	1.31	1.37	0.26	0.49	0.81	1.10	0.48
14000	0.42	0.98	1.20	1.28	0.23	0.43	0.70	0.98	0.43
14500	0.38	0.89	1.10	1.19	0.21	0.37	0.61	0.88	0.38
15000	0.35	0.81	1.02	1.10	0.18	0.33	0.54	0.78	0.35

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

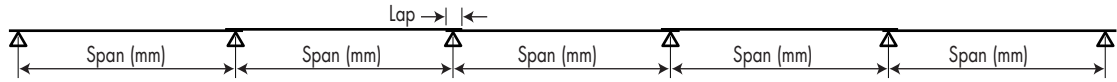## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

Lap →| |←

| Span (mm) | Span (mm) | Span (mm) | Span (mm) | Span (mm) |

5-Lapped Spans Design Capacity for Z/C 250 Sections (kN/m)

5-Lapped Span Loads for Z/C 25015									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	7.24	7.24	7.24	7.24	7.24	7.24	7.24	7.24	43.33
3500	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	27.28
4000	5.22	5.22	5.20	5.22	5.22	5.22	5.22	5.20	18.28
4500	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	12.84
5000	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	9.36
5500	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	7.03
6000	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	5.42
6500	2.65	2.83	2.83	2.83	2.74	2.83	2.83	2.83	4.26
7000	2.21	2.56	2.56	2.56	2.11	2.56	2.56	2.56	3.41
7500	1.87	2.32	2.32	2.32	1.68	2.32	2.32	2.32	2.77
8000	1.60	2.12	2.12	2.12	1.31	2.12	2.12	2.12	2.29
8500	1.39	1.94	1.94	1.94	1.04	1.89	1.94	1.94	1.91
9000	1.21	1.78	1.78	1.78	0.84	1.61	1.78	1.78	1.61
9500	1.06	1.64	1.64	1.64	0.68	1.36	1.64	1.64	1.36
10000	0.93	1.51	1.51	1.51	0.56	1.13	1.48	1.51	1.17
10500	0.82	1.40	1.40	1.40	0.46	0.95	1.31	1.40	1.01
11000	0.72	1.27	1.30	1.30	0.39	0.81	1.15	1.29	0.88
11500	0.64	1.15	1.20	1.20	0.33	0.69	1.02	1.16	0.77
12000	0.57	1.04	1.10	1.10	0.28	0.59	0.90	1.04	0.68
12500	0.51	0.95	1.02	1.02	0.24	0.50	0.80	0.94	0.60
13000	0.45	0.87	0.94	0.94	0.21	0.43	0.70	0.85	0.53
13500	0.41	0.80	0.87	0.87	0.18	0.37	0.61	0.77	0.48
14000	0.37	0.73	0.80	0.81	0.16	0.32	0.53	0.70	0.43
14500	0.33	0.67	0.74	0.76	0.14	0.28	0.47	0.63	0.38
15000	0.30	0.62	0.68	0.71	0.12	0.25	0.42	0.57	0.35

5-Lapped Span Loads for Z/C 25019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	14.05	14.05	14.05	14.05	14.05	14.05	14.05	14.05	56.69
3500	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	35.70
4000	9.83	9.83	9.83	9.81	9.83	9.83	9.83	9.81	23.92
4500	7.83	8.41	8.41	8.41	8.41	8.41	8.41	8.41	16.80
5000	5.96	7.28	7.28	7.28	7.28	7.28	7.28	7.28	12.24
5500	4.67	6.36	6.36	6.36	6.30	6.36	6.36	6.36	9.20
6000	3.74	5.61	5.61	5.61	4.85	5.61	5.61	5.61	7.09
6500	3.06	4.97	4.97	4.97	3.68	4.97	4.97	4.97	5.57
7000	2.54	4.43	4.43	4.43	2.78	4.43	4.43	4.43	4.46
7500	2.14	3.98	3.98	3.98	2.14	3.74	3.98	3.98	3.63
8000	1.82	3.51	3.51	3.51	1.67	3.13	3.51	3.51	2.99
8500	1.57	3.11	3.11	3.11	1.33	2.63	3.11	3.11	2.49
9000	1.36	2.77	2.77	2.77	1.07	2.21	2.77	2.77	2.10
9500	1.18	2.46	2.49	2.49	0.88	1.85	2.42	2.49	1.79
10000	1.04	2.19	2.25	2.25	0.72	1.54	2.11	2.25	1.53
10500	0.92	1.95	2.04	2.04	0.60	1.27	1.84	2.04	1.32
11000	0.81	1.75	1.86	1.86	0.51	1.06	1.61	1.86	1.15
11500	0.72	1.58	1.70	1.70	0.43	0.89	1.42	1.68	1.01
12000	0.65	1.43	1.56	1.56	0.37	0.76	1.24	1.49	0.89
12500	0.58	1.30	1.44	1.44	0.32	0.65	1.09	1.34	0.78
13000	0.52	1.18	1.33	1.33	0.27	0.56	0.95	1.20	0.70
13500	0.47	1.08	1.23	1.23	0.24	0.48	0.82	1.08	0.62
14000	0.43	0.99	1.15	1.15	0.21	0.42	0.71	0.97	0.56
14500	0.39	0.90	1.07	1.07	0.19	0.37	0.62	0.87	0.50
15000	0.35	0.83	0.98	1.00	0.16	0.32	0.54	0.78	0.45

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

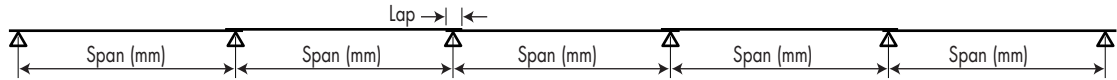## STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

	5-Lapped Span Loads for Z/C 25024								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	73.35
3500	17.64	20.94	20.94	20.94	20.94	20.94	20.94	20.94	46.19
4000	12.11	17.30	17.30	17.27	17.30	17.30	17.30	17.27	30.94
4500	8.79	14.50	14.50	14.50	14.50	14.50	14.50	14.50	21.73
5000	6.65	12.31	12.31	12.32	11.14	12.31	12.31	12.32	15.84
5500	5.19	10.38	10.38	10.38	8.46	10.38	10.38	10.38	11.90
6000	4.16	8.73	8.73	8.73	6.29	8.73	8.73	8.72	9.17
6500	3.40	7.43	7.43	7.43	4.66	7.38	7.43	7.43	7.21
7000	2.83	6.41	6.41	6.41	3.52	6.12	6.41	6.41	5.77
7500	2.39	5.50	5.58	5.58	2.72	5.08	5.58	5.58	4.69
8000	2.04	4.76	4.91	4.91	2.14	4.24	4.91	4.91	3.87
8500	1.76	4.14	4.35	4.35	1.71	3.55	4.35	4.35	3.23
9000	1.53	3.63	3.88	3.88	1.38	2.92	3.79	3.88	2.72
9500	1.34	3.21	3.48	3.48	1.13	2.40	3.29	3.48	2.31
10000	1.18	2.85	3.14	3.14	0.94	1.97	2.87	3.14	1.98
10500	1.04	2.54	2.85	2.85	0.79	1.63	2.50	2.85	1.71
11000	0.93	2.28	2.60	2.60	0.66	1.36	2.19	2.55	1.49
11500	0.83	2.05	2.37	2.37	0.57	1.15	1.90	2.28	1.30
12000	0.75	1.85	2.18	2.18	0.49	0.98	1.65	2.03	1.15
12500	0.67	1.68	2.01	2.01	0.42	0.84	1.42	1.82	1.01
13000	0.61	1.52	1.85	1.86	0.37	0.72	1.22	1.63	0.90
13500	0.55	1.38	1.70	1.72	0.32	0.62	1.05	1.46	0.81
14000	0.50	1.26	1.56	1.60	0.28	0.54	0.91	1.31	0.72
14500	0.46	1.15	1.43	1.49	0.25	0.48	0.80	1.16	0.65
15000	0.42	1.04	1.32	1.40	0.22	0.42	0.70	1.03	0.59

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS
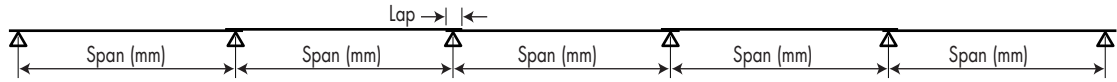

5-Lapped Spans Design Capacity for Z/C 300 Sections (kN/m)

5-Lapped Span Loads for Z/C 30019									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	12.32	12.32	12.32	12.32	12.32	12.32	12.32	12.32	99.17
3500	10.39	10.39	10.39	10.39	10.39	10.39	10.39	10.39	62.44
4000	8.95	8.95	8.95	8.92	8.95	8.92	8.92	8.92	41.84
4500	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	29.38
5000	6.89	6.89	6.88	6.89	6.89	6.89	6.88	6.89	21.42
5500	6.13	6.13	6.13	6.13	6.13	6.13	6.13	6.13	16.09
6000	5.31	5.50	5.50	5.50	5.50	5.50	5.50	5.50	12.40
6500	4.33	4.96	4.96	4.96	4.96	4.96	4.96	4.96	9.75
7000	3.61	4.50	4.50	4.49	4.50	4.49	4.49	4.49	7.81
7500	3.07	4.10	4.10	4.10	4.10	4.10	4.10	4.10	6.35
8000	2.61	3.75	3.75	3.75	3.58	3.75	3.75	3.75	5.23
8500	2.24	3.44	3.44	3.44	2.89	3.44	3.44	3.44	4.36
9000	1.94	3.17	3.17	3.17	2.36	3.17	3.17	3.17	3.67
9500	1.69	2.93	2.93	2.93	1.96	2.93	2.93	2.93	3.12
10000	1.49	2.71	2.71	2.71	1.64	2.71	2.71	2.71	2.68
10500	1.32	2.52	2.52	2.52	1.36	2.43	2.52	2.52	2.31
11000	1.17	2.34	2.34	2.34	1.14	2.14	2.34	2.34	2.01
11500	1.05	2.18	2.18	2.18	0.96	1.89	2.18	2.18	1.76
12000	0.94	1.98	2.04	2.04	0.82	1.65	2.03	2.04	1.55
12500	0.85	1.81	1.91	1.91	0.70	1.43	1.84	1.91	1.37
13000	0.77	1.66	1.79	1.79	0.61	1.24	1.66	1.79	1.22
13500	0.70	1.52	1.67	1.67	0.53	1.08	1.51	1.66	1.09
14000	0.64	1.40	1.55	1.55	0.46	0.95	1.37	1.53	0.98
14500	0.58	1.30	1.45	1.45	0.40	0.84	1.25	1.40	0.88
15000	0.54	1.20	1.35	1.35	0.35	0.75	1.13	1.29	0.79

5-Lapped Span Loads for Z/C 30024									
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									deflection
3000	**23.96**	**23.96**	**23.96**	**23.96**	**23.96**	**23.96**	**23.96**	**23.96**	129.30
3500	**19.97**	**19.97**	**19.97**	**19.97**	**19.97**	**19.97**	**19.97**	**19.97**	81.43
4000	**16.98**	**16.98**	**16.98**	**16.94**	**16.98**	**16.98**	**16.94**	**16.94**	54.55
4500	**13.98**	**14.62**	**14.62**	**14.62**	**14.62**	**14.62**	**14.62**	**14.62**	38.31
5000	**10.35**	**12.73**	**12.73**	**12.74**	**12.74**	**12.74**	**12.74**	**12.74**	27.93
5500	7.89	**11.19**	**11.19**	**11.19**	**11.19**	**11.19**	**11.19**	**11.19**	20.99
6000	6.20	**9.91**	**9.91**	**9.91**	**9.91**	**9.91**	**9.91**	**9.91**	16.16
6500	4.99	**8.83**	**8.83**	**8.83**	**8.83**	**8.83**	**8.83**	**8.83**	12.71
7000	4.09	**7.92**	**7.91**	**7.91**	**7.18**	**7.92**	**7.91**	**7.91**	10.18
7500	3.42	**7.13**	**7.13**	**7.13**	5.84	**7.13**	**7.13**	**7.13**	8.28
8000	2.89	**6.45**	**6.45**	**6.45**	4.75	**6.45**	**6.45**	**6.45**	6.82
8500	2.48	5.86	5.86	5.86	3.84	5.86	5.86	5.86	5.69
9000	2.14	5.20	5.27	5.27	3.10	5.09	5.27	5.27	4.79
9500	1.87	4.59	4.73	4.73	2.53	4.40	4.73	4.73	4.07
10000	1.65	4.07	4.27	4.27	2.08	3.81	4.27	4.27	3.49
10500	1.46	3.63	3.87	3.87	1.73	3.31	3.87	3.87	3.02
11000	1.30	3.25	3.53	3.53	1.45	2.87	3.53	3.53	2.62
11500	1.17	2.93	3.23	3.23	1.23	2.51	3.21	3.23	2.30
12000	1.05	2.64	2.97	2.97	1.05	2.19	2.87	2.97	2.02
12500	0.95	2.40	2.73	2.73	0.90	1.91	2.58	2.73	1.79
13000	0.86	2.18	2.53	2.53	0.78	1.66	2.31	2.53	1.59
13500	0.79	1.99	2.34	2.34	0.68	1.45	2.08	2.34	1.42
14000	0.72	1.82	2.18	2.18	0.59	1.26	1.87	2.18	1.27
14500	0.66	1.67	2.03	2.03	0.52	1.10	1.68	2.00	1.15
15000	0.60	1.54	1.90	1.90	0.46	0.96	1.51	1.83	1.03

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.

STEELINE X-SPAN® purlins DESIGN CAPACITY TABLES – 5 LAPPED SPANS

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Span (mm)	Span (mm)	Span (mm)	Span (mm)	Span (mm)

5-Lapped Span Loads for Z/C 30030								
Loading	Inwards				Outwards				Load for
Bridging	0	1	2	3	0	1	2	3	Span/150
Span									defl3.90ction
5500	**9.32**	**18.68**	**18.68**	**18.68**	**18.68**	**18.68**	**18.68**	**18.68**	27.12
6000	7.27	**16.29**	**16.29**	**16.29**	15.59	**16.29**	**16.29**	**16.29**	20.89
6500	5.82	**14.24**	**14.24**	**14.22**	12.55	**14.24**	**14.24**	**14.22**	16.43
7000	4.76	**12.40**	**12.40**	**12.40**	10.12	**12.40**	**12.40**	**12.40**	13.15
7500	3.96	**10.62**	**10.80**	**10.80**	8.04	**10.80**	**10.80**	**10.80**	10.69
8000	3.34	**9.18**	**9.50**	**9.50**	6.36	**9.41**	**9.50**	**9.50**	8.81
8500	2.86	**8.00**	**8.41**	**8.41**	5.05	**8.14**	**8.41**	**8.41**	7.35
9000	2.47	**7.02**	**7.50**	**7.50**	4.07	**7.08**	**7.50**	**7.50**	6.19
9500	2.15	**6.20**	**6.73**	**6.73**	3.32	**6.18**	**6.73**	**6.73**	5.26
10000	1.89	**5.49**	**6.08**	**6.08**	2.74	**5.38**	**6.08**	**6.08**	4.51
10500	1.68	**4.88**	**5.51**	**5.51**	2.28	4.69	**5.51**	**5.51**	3.90
11000	1.50	4.36	**5.02**	**5.02**	1.92	4.07	**4.94**	**5.02**	3.39
11500	1.34	3.91	**4.60**	**4.60**	1.63	3.51	4.43	**4.60**	2.97
12000	1.21	3.53	**4.22**	**4.22**	1.39	3.02	4.00	**4.22**	2.61
12500	1.10	3.18	3.88	3.89	1.20	2.59	3.61	3.89	2.31
13000	1.00	2.88	3.56	3.60	1.04	2.23	3.26	3.59	2.05
13500	0.91	2.61	3.27	3.33	0.91	1.93	2.94	3.29	1.83
14000	0.83	2.37	3.02	3.10	0.79	1.67	2.65	3.01	1.64
14500	0.77	2.16	2.79	2.89	0.70	1.46	2.39	2.77	1.48
15000	0.71	1.97	2.59	2.70	0.62	1.29	2.14	2.54	1.34

NOTES: 1. Interpolation is permitted for intermediate spans.
2. Design loads are for purlins supported by cleats using 2 bolts per cleat.
3. Loads shown in BOLD require M12, G8.8 bolts for purlin sizes 150 to 250mm and M16, G8.8 bolts for sizes 300 and 350mm.