Purlins

- Plain Channels
- Lipped Channels

Material Specifications

Base Steel Thickness: 1.6mm, 2.0mm and 2.5mm.
Steel Grade : High Tensile ASTM 446 Grade D.
Yield Stress : 400 Mpa ± 10%
Zinc Coating : Minimum 275g/m^2 Coating mass.

Tolerance

Depth : ±1mm
Flange Width : ±1mm
Length : ±1mm
Holes Centres : ±1.5mm

Design Principles

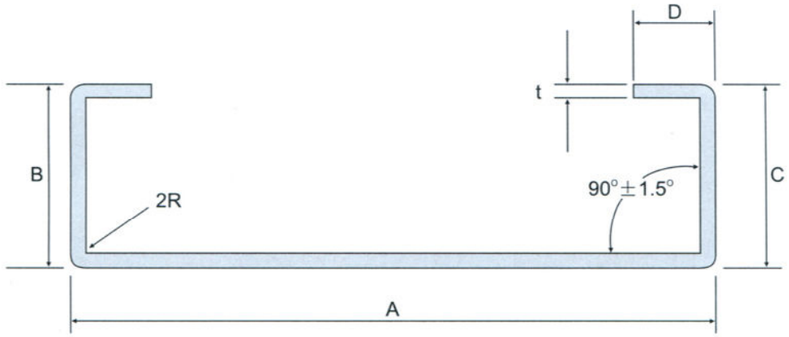
The safe load tables are calculated basing on BS 5950 Part 5-1987 With the following assumptions:

(a) Loads act parallel to the Y-axis of the Z-section.
(b) The members behave in accordance with simple theory of bending.
(c) All section properties are calculated on full section.
(d) Clause 5.2.2.2. of BS 5950 part 5 - 1987 had been used to determine the maximum permissible stress.
(e) For INWARDS LOADING, it is assumed that continuous lateral restraint has been provided by the installed roof sheeting and the full maximum permissible stress (0.6 Fy) is used.
(f) All loading are uniformly distributed along the length of the member.
(g) Bending moments and deflections are determined from simple theory of bending.
(h) For LAPPED END and LAPPED INTERIOR LOADING the bending moment and deflection coefficients are based on values determined for multi-span with 3 to 8 spans and highest coefficients are taken.
(i) The I value of a lapped section is twice that of a single section.
(j) Allowable loads for maximum deflection for values lower than span shall be modified as required.

Interpretations to the four tabulated loading cases:

- SIMPLY SUPPORTED : member is assumed to have pin-points at supports.
- DOUBLE SPAN : member is continuous over two spans with pin-joint at supports.
- LAPPED END : member is the end span of a multi-span system with structural lapping at every interior support.
- LAPED INTERLOR : member is the intermediate span of a multi-span system with structural lapping at every interior support.

HIGH TENSILE GALVANIZED PURLIN

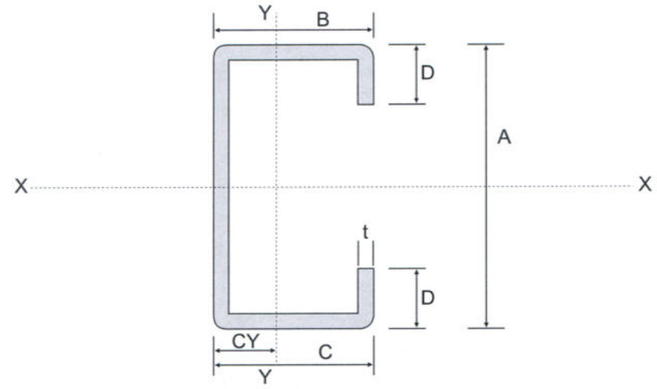


C-SECTION IDENTIFICATION	C-SECTION DIMENSIONS				
	A	B	C	D	t
	mm	mm	mm	mm	mm
JSC 1610	102	51	51	16	1.6
JSC 2010	102	51	51	16	2.0
JSC 2510	102	51	51	16	2.5
JSC 1612	127	51	51	16	1.6
JSC 2012	127	51	51	16	2.0
JSC 2512	127	51	51	16	2.5
JSC 1615	152	65	65	16	1.6
JSC 2015	152	65	65	16	2.0
JSC 2515	152	65	65	16	2.5
JSC 1620	203	71	71	16	1.6
JSC 2020	203	71	71	16	2.0
JSC 2520	203	71	71	16	2.5

DIMENSIONS

SECTION IDENTIFICATION	SECTION DIMENSIONS				
	A	B	C	D	t
	mm	mm	mm	mm	mm
JSC 2025	254	71	71	16	2.0
JSC 2525	254	71	71	16	2.5

SECTION PROPERTIES FOR HIGH TENSILE GALVANIZED PURLIN

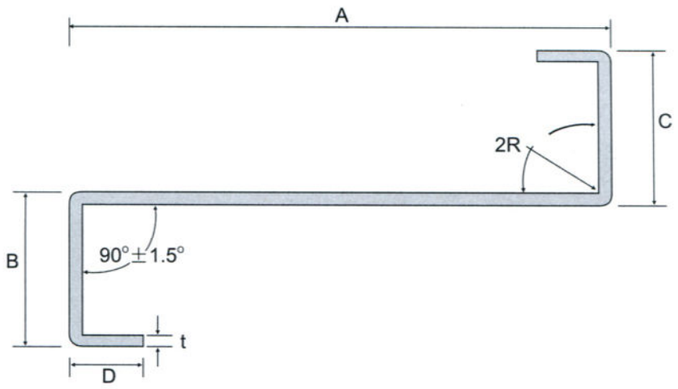


C-SECTION IDENTIFICATION	Area	Mass Per Unit	Second Moment Of Area		Section Modulus		Radius Of Gyration		
			Ix	Iy	Zx	Zy	Rx	Ry	Cy
	mm^2	kg/m	10^6mm^4	10^6mm^4	10^3mm^3	10^3mm^3	mm	mm	mm
JSC 1610	373	3.05	0.60	0.14	11.77	4.11	40.6	19.5	18.24
JSC 2010	442	3.72	0.76	0.18	14.84	5.46	41.9	20.3	18.60
JSC 2510	534	4.60	0.95	0.22	18.56	7.01	42.7	20.9	19.05
JSC 1612	408	3.20	1.00	0.15	15.72	4.29	50.0	21.4	11.08
JSC 2012	510	3.94	1.25	0.19	19.67	5.49	50.1	21.5	16.42
JSC 2512	638	4.89	1.56	0.24	24.56	7.13	50.1	21.6	17.35
JSC 1615	489	3.84	1.77	0.28	23.60	6.31	60.2	24.0	19.30
JSC 2015	608	4.77	2.19	0.35	29.20	7.74	60.0	23.9	19.60
JSC 2515	755	5.93	2.70	0.42	35.90	9.44	59.8	23.6	20.00
JSC 1620	572	4.70	3.80	0.37	37.44	7.09	80.8	25.1	19.18
JSC 2020	698	5.74	4.75	0.45	46.80	9.39	82.5	25.4	20.16
JSC 2520	855	7.03	5.94	0.61	58.52	12.23	83.4	26.8	20.80

PROPERTIES

SECTION IDENTIFICATION	Area	Mass Per Unit	Second Moment Of Area		Section Modulus		Radius Of Gyration		
			Ix	Iy	Zx	Zy	Rx	Ry	Cy
	mm^2	kg/m	10^6mm^4	10^6mm^4	10^3mm^3	10^3mm^3	mm	mm	mm
JSC 2025	840	6.60	7.89	0.50	62.16	9.34	96.9	24.4	17.26
JSC 2525	1045	8.20	9.77	0.61	76.91	11.24	96.7	24.2	17.31

HIGH TENSILE GALVANIZED PURLIN

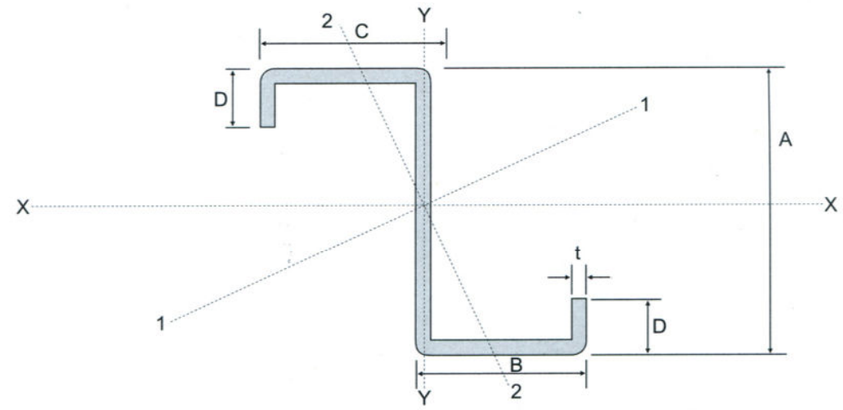


Z-SECTION IDENTIFICATION	Z-SECTION DIMENSIONS				
	A	B	C	D	t
	mm	mm	mm	mm	mm
JSC 1610	102	57	51	16	1.6
JSC 2010	102	57	51	16	2.0
JSC 2510	102	57	51	16	2.5
JSC 1612	127	57	51	16	1.6
JSC 2012	127	57	51	16	2.0
JSC 2512	127	57	51	16	2.5
JSC 1615	152	66	60	16	1.6
JSC 2015	152	66	60	16	2.0
JSC 2515	152	66	60	16	2.5
JSC 1620	203	74	67	16	1.6
JSC 2020	203	74	67	16	2.0
JSC 2520	203	74	67	16	2.5

DIMENSIONS

SECTION IDENTIFICATION	SECTION DIMENSIONS				
	A	B	C	D	t
	mm	mm	mm	mm	mm
JSZ 2025	254	74	67	16	2.0
JSZ 2525	254	74	67	16	2.5

SECTION PROPERTIES FOR HIGH TENSILE GALVANIZED PURLIN

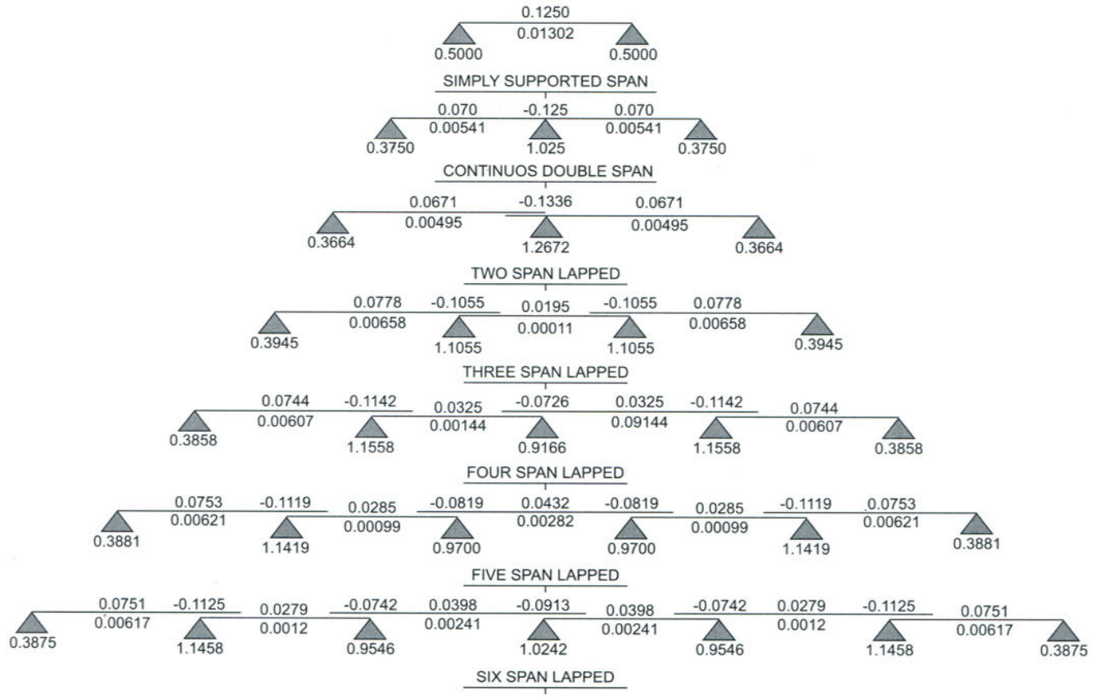


Z-SECTION IDENTIFICATION	Area	Mass Per Unit	2nd Moment Of Area		Section Modulus		Radius Of Gyration		11 AXIS	12 AXIS	ANGLE
			Ix	Iy	Zx	Zy	Rx	Ry	11	12	
	mm^2	kg/m	10^6mm^4	10^6mm^4	10^3mm^3	10^3mm^3	mm	mm	10^6mm^4	10^6mm^4	DEG
JSC 1610	373	3.05	0.62	0.25	12.16	4.94	40.8	25.8	0.70	0.16	24.5
JSC 2010	442	3.72	0.77	0.31	15.14	6.22	41.8	26.5	0.98	0.19	24.4
JSC 2510	534	4.60	0.96	1.38	18.84	7.60	42.4	26.6	1.11	0.23	24.3
JSC 1612	408	3.20	1.03	0.261	16.18	5.20	50.1	25.3	1.04	0.243	22.9
JSC 2012	510	3.94	1.28	0.38	20.16	7.60	51.1	27.3	1.30	0.351	22.7
JSC 2512	638	4.89	1.60	0.47	25.20	9.45	52.2	27.5	1.63	0.434	22.6
JSC 1615	489	3.84	1.77	0.28	23.60	6.31	60.2	24.0	2.04	0.28	22.9
JSC 2015	608	4.77	2.19	0.35	29.20	7.74	60.0	23.9	2.51	0.34	22.7
JSC 2515	755	5.93	2.70	0.42	35.90	9.44	59.8	23.6	3.06	0.46	22.6
JSC 1620	572	4.70	3.86	0.64	38.10	9.52	82.6	33.5	4.15	0.35	15.9
JSC 2020	698	5.74	4.85	0.81	47.80	12.20	84.1	34.4	5.16	0.50	15.0
JSC 2520	855	7.03	6.05	1.021	59.60	15.40	85.1	34.9	6.40	0.68	14.2

PROPERTIES

SECTION IDENTIFICATION	Area	Mass Per Unit	2nd Moment Of Area		Section Modulus		Radius Of Gyration		11 AXIS	12 AXIS	ANGLE
			Ix	Iy	Zx	Zy	Rx	Ry	11	12	
	mm	kg/m	10mm	10mm	10mm	10mm	mm	mm	10mm	10mm	DEG
JSZ 2025	839	6.60	7.87	0.72	61.07	10.03	96.9	29.3	8.25	0.34	12.6
JSZ 2525	1044	8.20	9.74	0.88	75.55	12.27	96.6	29.0	10.2	0.42	12.5

COEFFICIENTS FOR UNIFORM LOAD



A = Lapped Length = 10% of Span
B = Reaction = awl N
C = Moment = bwl^2 Nmm
D = Deflection = cwl^4mm

Where

a = Reaction Coefficient
b = Bending Moment Coefficient
c = Deflection Coefficient
w = Uniformly Distributed Load (N/mm)
l = Span (mm)
E = Modulus of Elasticity = 2 x 10 N/mm
I = Moment of Inertia of Section (mm)

SELECTION TABLE FOR SIMPLE SPAN PURLINS

Basic design with speed = 25.0 m/s
Imposed load = 0.25 KN/m²
Dead load-Metal Roofing = 0.04 KN/m²
Purlin = 0.04 KN/m²
Building = Class B
Ground roughness = 2
Span = c/c of Trusses
Spacing = c/c of Purlins
Critical pressure coefficient for pitch roof = 1.4 (uplift)
Max Roof pitch = 30°

Span (mm)	Height (m)	Spacing (mm)		
		1200	1800	2400
		JSC/JSZ	JSC/JSZ	JSC/JSZ
4000	4	1610	1610	1610
	6	1610	1610	1612
	10	1610	1610	1612
5000	4	1610	1612	2012
	6	1612	2012	2012
	10	1612	2012	1615
6000	4	2012	1615	2015
	6	1615	2015	2015
	10	1615	2015	2015
7000	4	1620	1620	2015
	6	1620	1620	2020
	10	1620	1620	2020
8000	4	2020	2020	2520
	6	2020	2020	2520
	10	2020	2020	2520

Notes: For any span more than 8m, structural Lapping is recommended.

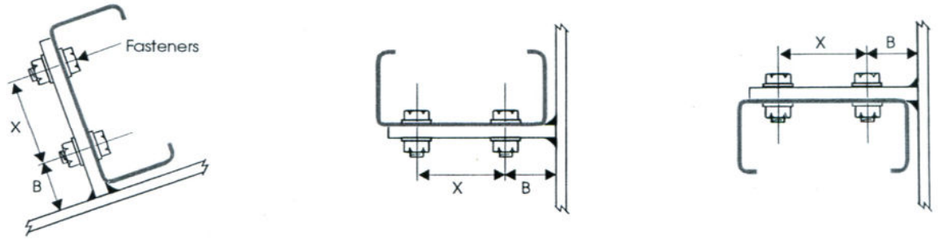
SELECTION TABLE FOR TWO-SPAN LAPPED PURLINS

Span (mm)	Height (m)	Spacing (mm)		
		1200	1800	2400
		JSC/JSZ	JSC/JSZ	JSC/JSZ
9000	4	2015	2020	2020
	6	2015	2020	2020
	10	2015	2020	2020
10000	4	2020	2020	2020
	6	2020	2020	2020
	10	2020	2020	2020
11000	4	2520	2520	2520
	6	2520	2520	2520
	10	2520	2520	2520
12000	4	2520	2520	2520
	6	2520	2520	2520
	10	2520	2520	2520

Notes: (i) Recommended lapping length is 10% of span.

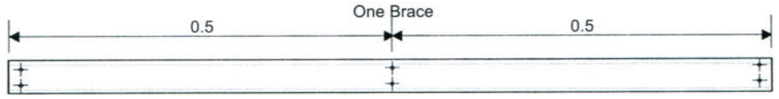
Fastening · Bridging

FASTENING TO CLEATS

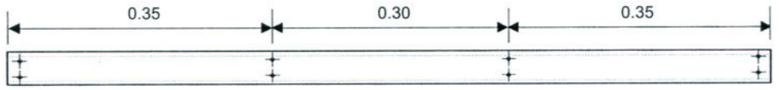


LOCATION OF BRIDGING HOLES

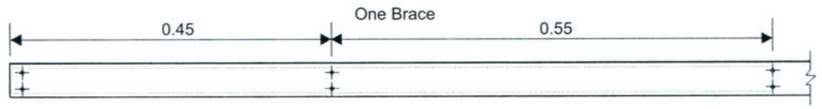
SIMPLE SPANS



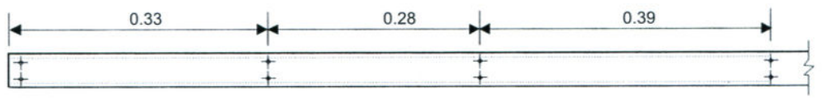
Two Braces



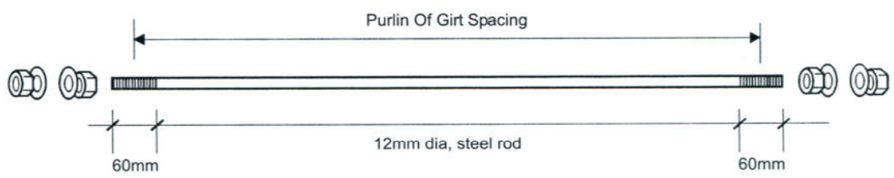
DOUBLE SPANS



Two Braces



DETAIL OF STANDARD TIE ROD

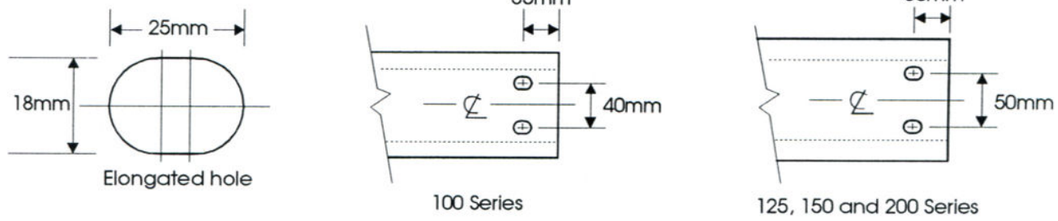


Holing · Cleats

JSC and JSZ Purlins are normally supplied with 18x25 mm elongated holes. they are intended for use with M12 bolts. Where reactions are greater than the allowable load on two M12 Grade 4.6 bolts or greater strength bolts are desired, M12 Grade 8.8 bolts are recommended.

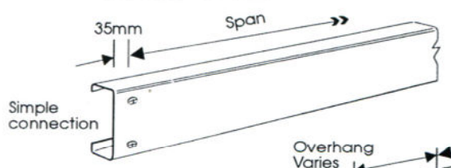
Punching to suit larger bolts may be available subject to enquiry. Purlins are also available unpunched if required.

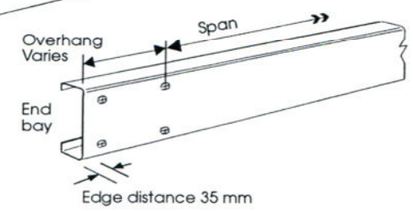
STANDARD HOLING



HOLE DETAILS & GAUGE LINES

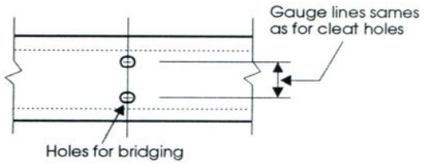
End holes - C Purlins





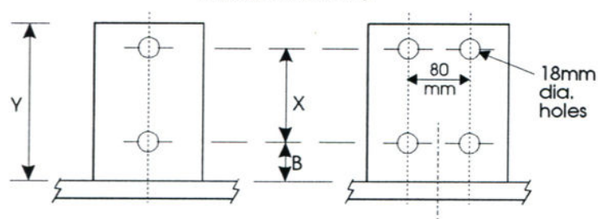
Bridging holes are located at optimum bracing distances.

Bridging holes - C Purlins



CLEATS

Holing Details Only



Recommended Dimensions

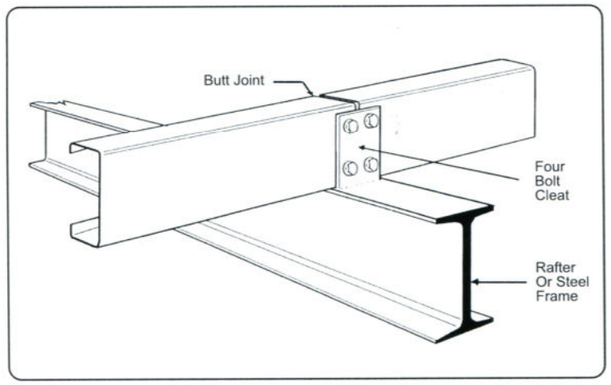
Purlin Nominal Web Depth,mm	Dimensions In mm		
	B	X	Y
100	40	40	105
125	40	50	105
150	50	50	127
200	76	50	153

Notes:

1. *8 mm is the reclommended steel thickness for clats.*
2. *Cleat dimensions shown above are not necessarily suitable for purlins and girts of other manufacture.*

PURLIN RAFTER CONNECTION

JSC PURLINS



JSC purlins are suitable for any construction in which the spans are simply supported. Typical applications are single bay buildings, recessed roofs or walls, tower structures, end walls and buildings with odd-shaped ground plans.

JSC purlins can also be used on multiple bay buildings as rows of simple span purlins or girts by providing 4-hole interior support cleats.

Where purlins of sufficient length are available, JSC purlins may also be used continuously over Two or more spans to reduce deflection.

JSZ PURLINS

A special feature of JSZ purlins is that it has one broad and one narrow flange proportioned such that the two sections of the same size when one is rotated 180, fit snugly together.

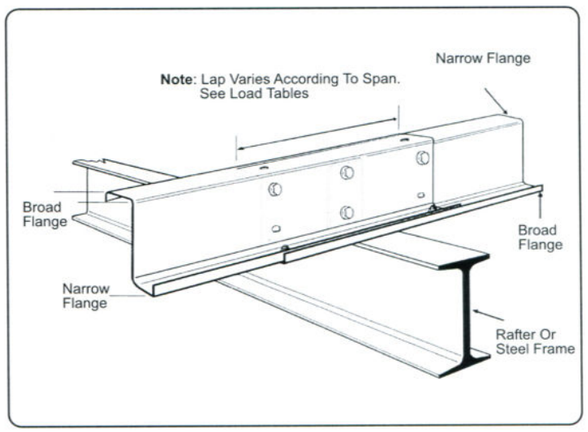
This feature makes the JSZ purlins suitable for lapping as illustrated.

JSZ purlins of the same depth but differing thicknesses can be lapped in any required combination.

Lapping over interior supports of multi-bay building produces a structurally continuous line of purlins or girts throughout the length of the building.

Structural continuity results in better economy and lapping also doubles the strength of the purlins over interior supports where bending moments are critical thereby improving the load capacity and rigidity of the system.

JSZ purlins may also be used over simple spans, for instance, where openings are close together or occur near one end of a building. For shorter spans, they may be used continuously over two spans without laps. This Results in reduced deflection compared with simple spans.



POINT LOADS

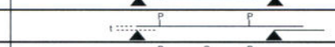
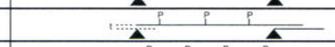
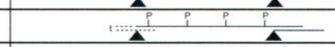
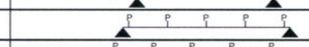
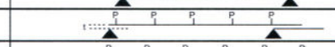
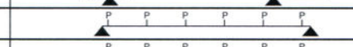
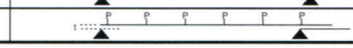
LEGEND

P = single point load (kN)
L = span (m) a = Larger distance from support (m)
b = smaller distance from support (m)
W = Equivalent uniform load (kN/m)
N = Number of point loads over one span (for 6 or more loads)

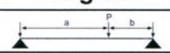
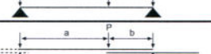
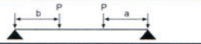
Loading conditions and Formula shown give accurate conversion of Point Loads into Uniform Loads for determination of load carrying capacity of simple spans only.
For lapped spans, the conversion depends upon the number of spans, the position of span in the continuity, and the lapping ratio. The lapped span formula shown have been devised for the worst loading condition and can be safely Used for end spans, interior spans, and any lapping ratio (greater than 0.01)
A separate set of conversion formulae would be required for deflection determination. The formula shown will give conservative (save) conversion with a margin of error betwee 3.7% and 25%.

Conversion Of Point Loads Into Equivalent Uniform Loads

Symmetrical Equidistant Point Loads

Loading Condition		Diagram	Conversion Formula
SINGLE LOAD	Simple		$W = \frac{2P}{L}$
	Lapped		$W = \frac{2.22P}{L}$
2 LOADS	Simple		$W = \frac{2.67P}{L}$
	Lapped		$W = \frac{3.16P}{L}$
3 LOADS	Simple		$W = \frac{4P}{L}$
	Lapped		$W = \frac{3.78P}{L}$
4 LOADS	Simple		$W = \frac{4.80P}{L}$
	Lapped		$W = \frac{5.12P}{L}$
5 LOADS	Simple		$W = \frac{6P}{L}$
	Lapped		$W = \frac{6.65P}{L}$
6 OR MORE LOADS	Simple		$W = \frac{1.14P}{L}$
	Lapped		$W = \frac{1.22P}{L}$

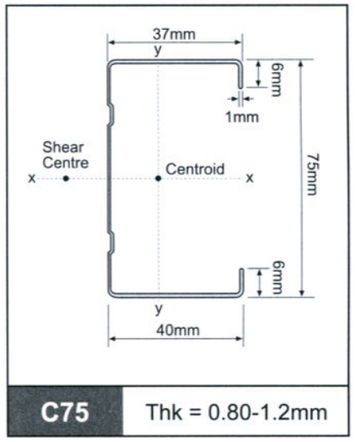
Single Eccentric And Two Symmetrical Point Loads

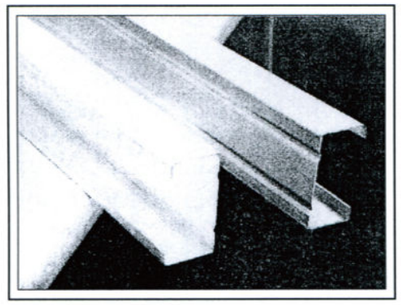
Loading Condition		Diagram	Conversion Formula
SINGLE ECCENTRIC POINT LOAD	Simple		$W = \frac{8abP}{L^3}$
	Lapped		$W = \frac{17.76ab^2P}{L^4}$
TWO SYMMETRICAL POINT LOADS	Simple		$W = \frac{8bP}{L^2}$
	Lapped		$W = \frac{9.45b(2L-3b)P}{L^3}$

JSC GALVANIZED CHANNEL

FOR LIGHT WEIGHT STEEL TRUSSES SYSTEMS.

Material Specifications.
Steel Thickness: 0.8mm, 1.0mm & 1.2mm.
Steel Grade: High Tensile Steel Grade 550 (JISG 3302 SGC 570)
Yield Strength: 550Mpa ± 10%
Tensile Strength: 650Mpa ± 10%
Zinc Coated Mass: 150g/m²





C75 Thk = 0.80-1.2mm

Section Properties & Identification

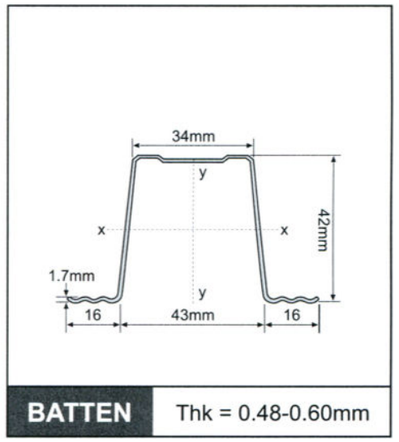
Section	Thickness (mm)	Mass (kg/m)	Area (mm^2)	I_x ($10^6 mm^4$)	I_y ($10^6 mm^4$)	Z_x ($10^3 mm^3$)	Z_y ($10^3 mm^3$)	r_x (mm)	r_y (mm)
C75.08	0.8mm	1.08	137	0.128	0.028	3.376	0.960	30.87	14.19
C75.10	1.0mm	1.35	173	0.157	0.037	4.060	1.150	30.92	14.28
C100.10	1.0mm	2.05	254	0.375	0.094	7.373	2.511	40.02	18.24
C100.12	1.2mm	2.35	296	0.450	0.106	8.832	3.022	40.15	18.96

Standard length in 6.1 meter. Cut to length sizes also available subject to enquiry.

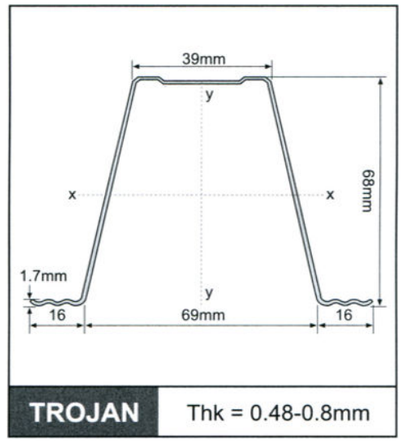
TRUSSES - BATTEN & TROJAN

FOR LIGHT WEIGHT STEEL TRUSSES SYSTEMS.

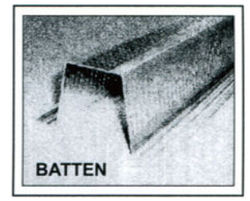
Material Specifications.
Base Steel Thickness: 0.48mm, 0.6mm & 0.8mm
Steel Grade: High Tensile Steel Grade 550 (JISG 3302 SGC 570)
Yield Strength: 550 Mpa ± 10%
Tensile Strength: 650 MPa ± 10%
Zinc Coated Mass: 120g/m²

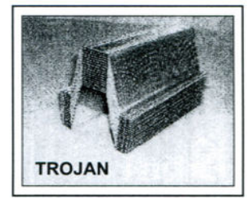


BATTEN Thk = 0.48-0.60mm



TROJAN Thk = 0.48-0.8mm

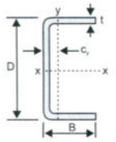




Section Properties & Identification

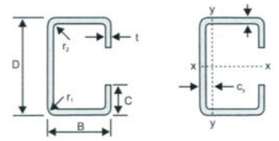
Section	Thickness (mm)	Mass (kg/m)	Area (mm^2)	I_x ($10^6 mm^4$)	I_y ($10^6 mm^4$)	Z_x ($10^3 mm^3$)	Z_y ($10^3 mm^3$)
B42.048	0.48mm	0.588	74.5	0.0200	0.0341	0.944	0.869
B42.06	0.6mm	0.732	93.1	0.0248	0.0426	1.183	1.088
T68.048	0.48mm	0.846	105.4	0.0539	0.0847	1.749	1.665
T68.06	0.6mm	1.052	131.7	0.0674	0.1060	2.186	2.081
T68.08	0.8mm	1.401	175.8	0.0899	0.1413	2.915	2.774

Standard length in 6.1 meter. Cut to length sizes also available subject to enquiry.



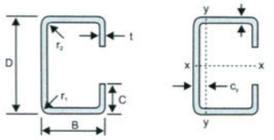
PLAIN CHANNELS

Designation Size	Mass Per Mtre	Thickness	Area of section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus case b		Plastic Modulus		Buckling Constant	Torsional Index	Warping Constant	Torsional Constant
DxB		t	A	C_y	I_x	I_y	r_x	r_y	Z_x	Z_y	S_x	S_y	u	x	H	J
mm	kg/m	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3			$dm^6 \times 10^{-3}$	cm^4
60x30	1.44	1.6	1.84	0.823	10.3	1.63	2.37	0.944	3.45	0.75	4.00	1.37	0.897	29.7	0.0101	0.0165
	2.03	2.3	2.59	0.856	14.2	2.25	2.34	0.932	4.72	1.05	5.54	1.94	0.891	20.4	0.0138	0.0490
75x45	2.00	1.6	2.56	1.30	23.9	5.37	3.06	1.45	6.37	1.68	7.22	5.85	0.891	37.7	0.0528	0.0226
	2.84	2.3	3.62	1.34	33.1	7.49	3.02	1.44	8.83	2.37	10.1	7.83	0.885	26.1	0.0739	0.0673
	3.65	3.0	4.65	1.37	41.7	9.46	2.99	1.43	11.1	3.02	12.9	9.51	0.878	19.9	0.0939	0.150
100x50	2.44	1.6	3.12	1.32	50.0	7.89	4.01	1.59	10.0	2.14	11.5	3.88	0.901	50.1	0.136	0.0274
	3.47	2.3	4.43	1.36	69.9	11.0	3.97	1.58	14.0	3.03	16.1	5.52	0.898	34.6	0.189	0.0815
	4.47	3.0	5.70	1.39	88.6	14.0	3.94	1.57	17.7	3.88	20.6	7.12	0.895	26.3	0.240	0.181
	5.87	4.0	7.47	1.43	113.3	18.0	3.89	1.55	22.7	5.05	26.6	9.37	0.890	19.5	0.307	0.430
125x50	3.92	2.3	5.00	1.21	117	11.8	4.85	1.54	18.8	3.12	22.0	5.72	0.900	43.2	0.315	0.0916
	5.06	3.0	6.45	1.24	149	15.1	4.81	1.53	23.9	4.01	28.2	7.46	0.898	32.7	0.397	0.204
	6.65	4.0	8.47	1.29	192	19.4	4.76	1.51	30.7	5.22	36.6	9.97	0.896	24.2	0.505	0.483
	7.42	4.5	9.46	1.31	212	21.4	4.74	1.51	34.0	5.81	40.6	11.2	0.895	21.3	0.555	0.689
150x65	4.91	2.3	6.27	1.61	218	25.8	5.90	2.03	29.1	5.29	33.7	9.56	0.902	52.2	1.00	0.114
	6.36	3.0	8.10	1.64	279	33.1	5.87	2.02	37.2	6.81	43.4	12.4	0.900	39.7	1.27	0.253
	8.38	4.0	10.67	1.69	361	42.9	5.82	2.00	48.2	8.91	56.6	16.5	0.898	29.4	1.63	0.601
	9.36	4.5	11.9	1.71	401	47.6	5.79	2.00	53.4	9.94	63.0	18.5	0.897	26.0	1.81	0.856
175x75	5.73	2.3	7.30	1.83	347	40.2	6.89	2.35	39.7	7.09	45.9	12.8	0.902	61.1	2.12	0.132
	7.42	3.0	9.45	1.86	445	51.5	6.86	2.33	50.8	9.14	59.1	16.6	0.901	46.5	2.70	0.294
	9.79	4.0	12.47	1.91	579	67.1	6.81	2.32	66.1	12.0	77.4	22.1	0.899	34.6	3.49	0.697
	10.95	4.5	14.0	1.93	643	74.6	6.79	2.31	73.5	13.4	86.3	24.8	0.898	30.6	3.87	0.992
200x75	6.18	2.3	7.88	1.71	473	41.7	7.75	2.30	47.3	7.21	55.4	13.0	0.899	70.0	2.88	0.142
	8.01	3.0	10.2	1.74	608	53.6	7.72	2.29	60.8	9.30	71.4	16.9	0.898	53.3	3.67	0.316
	10.60	4.0	13.5	1.78	792	69.8	7.67	2.28	79.2	12.2	94	22.7	0.897	39.5	4.74	0.75
	11.84	4.5	15.1	1.80	881	77.7	7.64	2.27	88.1	13.6	104	25.6	0.897	35.0	5.24	1.07
225x75	6.63	2.3	8.45	1.60	624	43.1	8.60	2.26	55.5	7.30	65.6	13.2	0.894	79.0	3.79	0.152
	8.59	3.0	11.0	1.63	803	55.4	8.56	2.25	71.3	9.43	84.6	17.3	0.894	60.1	4.83	0.339
	11.40	4.0	14.5	1.67	1048	72.2	8.51	2.23	93	12.4	111	23.3	0.893	44.6	6.22	0.80
	12..72	4.5	16.2	1.70	1166	80.4	8.48	2.23	104	13.8	124	26.3	0.893	39.4	6.88	1.14
250x75	7.08	2.3	9.03	1.50	802	44.3	9.43	2.22	64.2	7.39	76.5	13.4	0.888	88.2	4.84	0.163
	9.18	3.0	11.7	1.54	1032	56.9	9.39	2.21	82.5	9.54	98.8	17.6	0.888	67.1	6.17	0.361
	12.10	4.0	15.0	1.58	1349	74.3	9.34	2.19	108	12.5	130	23.9	0.888	49.8	7.95	0.86
	13.60	4.5	17.3	1.60	1502	82.7	9.31	2.18	120	14.0	145	27.1	0.888	44.0	8.79	1.22



LIPPED CHANNELS - MILD STEEL

Designation Size	Mass Per Mtre	Thickness	Inside Outside Radius		Area of section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus		Plastic Modulus		Buckling Constant	Torsional Index	Warping Constant	Torsional Constant
DxBxC		t	r_1	r_2	A	C_y	I_x	I_y	r_x	r_y	Z_x	Z_y	S_x	S_y	u	x	H	J
mm	kg/m	mm	mm	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3			$dm^6 \times 10^{-3}$	cm^4
60x30x10	1.62	1.6	4.0	2.4	2.05	1.06	11.4	2.50	2.36	1.10	3.81	1.29	4.48	2.12	0.808	35.5	0.0219	0.0182
	1.99	2.0	5.0	3.0	2.50	1.05	13.7	2.93	2.34	1.08	4.56	1.50	5.41	2.54	0.804	28.3	0.0257	0.0352
	2.25	2.3	5.8	3.5	2.83	1.05	15.2	3.20	2.32	1.06	5.06	1.64	6.05	2.57	0.801	24.5	0.0281	0.0530
75x45x15	2.31	1.6	4.0	2.4	2.93	1.72	26.8	8.59	3.03	1.71	7.15	3.09	8.27	4.62	0.776	46.7	0.129	0.0258
	2.86	2.0	5.0	3.0	3.60	1.71	32.5	10.3	3.00	1.69	8.66	3.69	10.1	5.61	0.774	37.2	0.154	0.0499
	3.24	2.3	5.8	3.5	4.09	1.71	36.5	11.5	2.99	1.67	9.73	4.11	11.4	6.31	0.772	32.2	0.171	0.0754
	4.12	3.0	7.5	4.5	5.18	1.70	44.9	13.8	2.94	1.63	12.0	4.94	14.2	7.79	0.769	24.5	0.206	0.165
	4.37	3.2	8.0	4.8	5.48	1.70	47.1	14.4	2.93	1.62	12.6	5.15	14.9	8.18	0.767	22.9	0.215	0.199
100x50x20	2.88	1.6	4.0	2.4	3.65	1.86	57.9	13.8	3.98	1.95	11.6	4.41	13.5	6.73	0.788	62.9	0.373	0.032
	3.60	2.0	5.0	3.0	4.50	1.86	70.5	16.7	3.96	1.93	14.1	5.32	16.5	8.22	0.786	50.1	0.450	0.062
	4.06	2.3	5.8	3.5	5.13	1.86	79.6	18.7	3.94	1.91	15.9	5.95	18.7	9.28	0.785	43.5	0.503	0.094
	5.18	3.0	7.5	4.5	6.53	1.85	99	22.9	3.90	1.87	19.8	7.27	23.6	11.6	0.781	33.1	0.616	0.205
	5.50	3.2	8.0	4.8	6.92	1.85	104	24.0	3.88	1.86	20.9	7.60	24.9	12.2	0.780	31.0	0.645	0.248
	6.71	4.0	10.0	6.0	8.41	1.84	123	27.7	3.83	1.82	24.7	8.79	29.8	14.5	0.775	24.7	0.747	0.478
	7.43	4.5	11.3	6.8	9.29	1.84	134	29.7	3.80	1.79	26.8	9.40	32.6	14.4	0.772	21.8	0.802	0.674
125x50x20	3.95	2.0	5.0	3.0	5.00	1.68	119	18.1	4.88	1.90	19.1	5.46	22.5	7.90	0.820	59.5	0.684	0.069
	4.51	2.3	5.8	3.5	5.70	1.68	135	20.3	4.86	1.89	21.5	6.11	25.5	8.91	0.819	51.6	0.767	0.104
	5.77	3.0	7.5	4.5	7.28	1.68	169	24.8	4.81	1.85	27.0	7.47	32.2	11.2	0.814	39.4	0.942	0.228
	6.13	3.2	8.0	4.8	7.72	1.68	178	26.0	4.80	1.84	28.4	7.82	34.0	11.8	0.813	36.9	0.987	0.275
	7.50	4.0	10.0	6.0	9.41	1.67	212	30.2	4.74	1.79	33.9	9.05	40.9	14.1	0.808	29.4	1.15	0.531
	8.31	4.5	11.3	6.8	10.4	1.66	231	32.3	4.71	1.76	36.9	9.7	45.0	15.4	0.804	26.1	1.24	0.750
150x65x20	5.50	2.3	5.8	3.5	6.97	2.11	245	40.5	5.93	2.41	32.7	9.23	38.1	13.8	0.840	59.6	2.03	0.126
	7.07	3.0	7.5	4.5	8.93	2.10	310	50.2	5.89	2.37	41.3	11.4	48.4	17.4	0.836	45.6	2.53	0.277
	7.51	3.2	8.0	4.8	9.48	2.10	327	52.7	5.87	2.36	43.6	12.0	51.2	18.4	0.835	42.7	2.66	0.336
	9.22	4.0	10.0	6.0	11.6	2.09	393	62.0	5.82	2.31	52.4	14.1	62.1	22.1	0.831	34.1	3.14	0.649
	10.25	4.5	11.3	6.8	12.9	2.09	432	67.1	5.78	2.28	57.5	15.2	68.5	24.2	0.828	30.3	3.41	0.917
175x75x20	6.31	2.3	5.8	3.5	8.00	2.34	386	60.3	6.95	2.75	44.1	11.7	51.1	17.8	0.853	68.0	3.92	0.144
	8.13	3.0	7.5	4.5	10.3	2.33	489	75.1	6.90	2.70	55.9	14.5	65.2	22.5	0.850	52.0	4.90	0.318
	8.63	3.2	8.0	4.8	10.9	2.33	518	79.1	6.88	2.69	59.1	15.3	69.1	23.7	0.849	48.7	5.17	0.385
	10.63	4.0	10.0	6.0	13.4	2.32	626	93.6	6.83	2.64	71.5	18.1	84.1	28.7	0.845	38.9	6.15	0.745
	11.84	4.5	11.3	6.8	14.9	2.31	689	102	6.80	2.61	78.7	19.6	93.0	31.6	0.842	34.6	6.71	1.05
200x75x20	6.76	2.3	5.8	3.5	8.58	2.19	527	63.0	7.84	2.71	52.7	11.9	61.5	18.0	0.860	76.8	5.22	0.154
	8.71	3.0	7.5	4.5	11.0	2.18	669	78.5	7.79	2.67	66.9	14.8	78.5	22.9	0.856	58.8	6.53	0.340
	9.27	3.2	8.0	4.8	11.7	2.18	708	82.6	7.77	2.65	70.8	15.5	83.2	24.3	0.855	55.1	6.89	0.412
	11.40	4.0	10.0	6.0	14.4	2.17	857	98	7.71	2.61	85.7	18.4	101	29.5	0.850	44.1	8.22	0.798
	12.73	4.5	11.3	6.8	16.0	2.17	945	106	7.68	2.57	94.5	19.9	112	32.6	0.847	39.2	8.98	1.13



LIPPED CHANNELS - MILD STEEL

Designation Size	Mass Per Mtre	Thickness	Inside Outside Radius		Area of section	Centre Of Gravity	Second Moment Of Area		Radius Of Gyration		Elastic Modulus		Plastic Modulus		Buckling Constant	Torsional Index	Warping Constant	Torsional Constant
DxBxC		t	r_1	r_2	A	C_y	I_x	I_y	r_x	r_y	Z_x	Z_y	S_x	S_y	u	x	H	J
mm	kg/m	mm	mm	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3			$dm^6 \times 10^{-3}$	cm^4
200x75x25	6.95	2.3	5.8	3.5	8.81	2.33	540	69.0	7.83	2.80	54.0	13.3	63.3	19.6	0.846	79.2	6.07	0.158
	8.93	3.0	7.5	4.5	11.3	2.32	687	86.3	7.78	2.76	68.7	16.7	80.8	24.9	0.843	60.6	7.62	0.349
	9.52	3.2	8.0	4.8	12.0	2.32	727	90.9	7.77	2.75	72.7	17.5	85.7	26.4	0.842	56.8	8.03	0.423
	11.70	4.0	10.0	6.0	14.8	2.31	881	108	7.71	2.70	88.1	20.8	105	32.0	0.838	45.3	9.59	0.819
	13.10	4.5	11.3	6.8	16.5	2.31	972	118	7.68	2.67	97.2	22.7	116	35.4	0.835	40.3	10.5	1.16
225x75x20	7.21	2.3	5.8	3.5	9.15	2.06	694	65.3	8.71	2.67	61.7	12.0	72.6	18.3	0.862	85.8	6.74	0.165
	9.30	3.0	7.5	4.5	11.8	2.05	883	81.4	8.66	2.63	78.4	14.9	92.8	23.4	0.858	65.8	8.46	0.363
	9.89	3.2	8.0	4.8	12.5	2.05	934	85.7	8.64	2.62	83.1	15.7	98.4	24.8	0.857	61.7	8.92	0.439
	12.20	4.0	10.0	6.0	15.4	2.05	1134	101	8.58	2.57	101	18.6	120	30.3	0.852	49.4	10.7	0.851
	13.61	4.5	11.3	6.8	17.2	2.04	1252	110	8.54	2.53	111	20.2	133	33.6	0.849	43.9	11.6	1.206
225x75x25	7.40	2.3	5.8	3.5	9.38	2.19	713	71.6	8.72	2.76	63.3	13.5	74.6	19.9	0.851	87.9	7.77	0.169
	9.54	3.0	7.5	4.5	12.1	2.19	907	89.6	8.66	2.72	80.6	16.9	95.5	25.3	0.848	67.4	9.76	0.372
	10.10	3.2	8.0	4.8	12.8	2.18	960	94.4	8.65	2.71	85.4	17.8	101	26.9	0.847	63.1	10.3	0.450
	12.50	4.0	10.0	6.0	15.8	2.18	1166	112	8.59	2.66	104	21.1	124	32.8	0.843	50.5	12.3	0.873
	14.00	4.5	11.3	6.8	17.6	2.17	1288	122	8.55	2.64	115	23.0	137	36.4	0.840	44.9	13.5	1.24
250x75x20	7.67	2.3	5.8	3.5	9.73	1.94	890	67.3	9.57	2.63	71.2	12.1	84.4	18.6	0.861	94.9	8.50	0.175
	9.89	3.0	7.5	4.5	12.5	1.94	1133	83.9	9.51	2.59	90.7	15.1	108	23.8	0.857	72.8	10.7	0.385
	10.52	3.2	8.0	4.8	13.3	1.94	1200	88.4	9.49	2.58	96.0	15.9	115	25.3	0.856	68.3	11.3	0.467
	12.99	4.0	10.0	6.0	16.4	1.93	1459	105	9.43	2.53	117	18.8	140	31.1	0.851	54.7	13.5	0.905
	14.49	4.5	11.3	6.8	18.3	1.93	1612	114	9.39	2.49	129	20.4	155	34.6	0.848	48.7	14.7	1.28
250x75x25	7.85	2.3	5.8	3.5	10	2.07	914	74.0	9.58	2.73	73.1	13.6	86.7	20.1	0.853	96.9	9.73	0.179
	10.13	3.0	7.5	4.5	12.8	2.07	1165	92.5	9.53	2.69	93.2	17.0	111	25.8	0.850	74.3	12.2	0.394
	10.80	3.2	8.0	4.8	13.6	2.07	1234	97.5	9.51	2.67	98.7	17.9	118	27.4	0.849	69.6	12.9	0.478
	13.30	4.0	10.0	6.0	16.8	2.06	1501	116	9.45	2.63	120	21.3	144	33.6	0.844	55.7	15.5	0.926
	14.85	4.5	11.3	6.8	18.7	2.06	1659	126	9.41	2.60	133	23.2	160	37.4	0.842	49.5	16.9	1.31