BUILDING PRODUCTS

LCP PURLINS & GIRTS®

Purlin and Girt Structural System

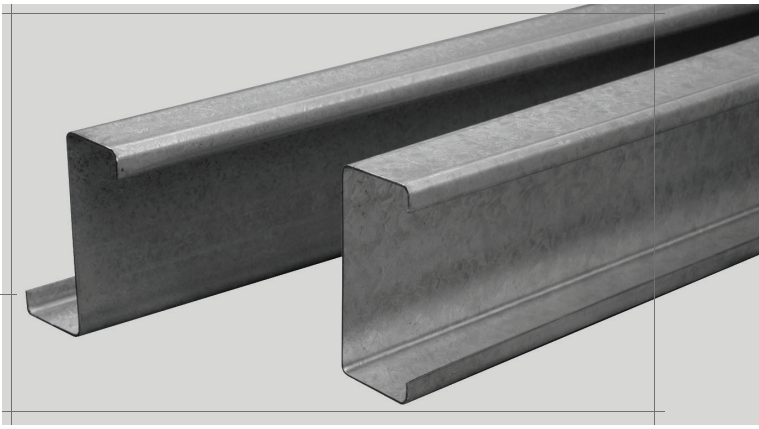
Integrity In Partnership

CERT NO. FM 59595
BS EN ISO 9001 : 2008

LCP PURLINS & GIRTS®

FEATURES

Cold formed purlins and girts are recognised as being efficient, economical structural members suitable for a wide range of building applications. **LCP Building Products Pte. Ltd.** offers a full range of section depths from 100mm to 400mm deep. LCP purlins conforms to AS/NZS 4600, BS 5950 and the latest EC3 design.



AESTHETICALLY PLEASING & COST EFFECTIVE

- High tensile steel – for high strength and low weight
- Z275 zinc coating – for economic corrosion protection
- Full range of accessories – from brackets to bolts to ensure ease of use and installation.
- Full size range – for ease of design in both C & Z sections
- Downturn lip available – For those projects requiring this feature
- Special size capability – non standard range of special shapes and channels available to suit individual requirements

MARKING

Each bundle of purlin or girt is marked to show customer's name, delivery location, invoice number, purlin type, length and mark number. Mark numbers match the marking plan supplied prior to manufacture.

MATERIALS

LCP PURLINS are cold rolled formed sections manufactured from high strength galvanised steel in base thicknesses ranging from 1.0mm BMT (G550 grade, 550 MPa minimum yield stress material) to 3.0mm BMT (G450 grade, 450 MPa minimum yield stress) with a Z275 zinc coating (275 grams per square metre minimum coating mass) in accordance with AS 1397.

High tensile steel material meeting the requirement of BC 1 : 2012 Factory Production Control Certificate.

TOLERANCES

All sections will be produced within the following tolerances:

Section length	+0mm/-10mm
Section web	±1mm
Section flange	±1mm
Internal flange angle	±1°
Internal lip angles	+5° / -2°
Hole centres	±1mm

Please contact **LCP Building Products Pte. Ltd.** for any specific tolerance details.

INSTALLATION

LCP C & Z sections are easily installed in single span, double span, Continuous Lapped and Reduced End Lap systems. For Single Span and Double Span please refer to LCP PURLINS & GIRTS quick selection table at page 12.
For Continuous Lapped and Reduced End Lap systems, please contact **LCP Building Products Pte. Ltd.**

SIMPLE END CONNECTIONS

This simple connection uses two standard bolts with a standard cleat and is common to both C and Z sections (*see Fig 1*). An overhang may sometimes be required for support of raking girts. A double cleat may also be used to join separate lengths of section above a common portal frame (*see Fig 2*).

NON-STRUCTURAL CONNECTIONS

All Z sections are rolled with broad and narrow flanges. Lapping is easily accomplished by inverting alternative sections, enabling sections to nest together. Non-structural laps formed in this way can result in substantial savings in cleats and bolts (*see Fig 3*).
For even greater economy and performance, use structural laps.

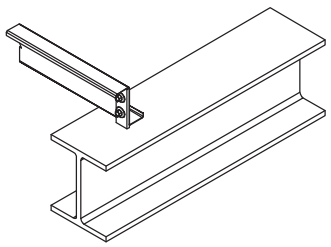
STRUCTURAL CONNECTIONS

Structural laps provide greater load carrying capacity to the section. The lap/span ratio must be 15% or greater and all laps should use six bolts, including two through the bottom flange. Z sections can be lapped in any thickness combination and allow heavier, stronger sections to be used in end bay applications (*see Fig 4*).

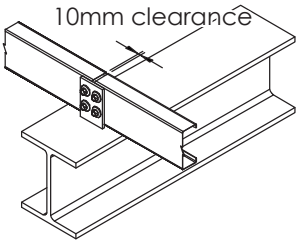
STANDARD ERECTION DETAILS

Z sections perform best when installed in single bay lengths plus structural laps. The added strength and lower deflection characteristics favourably effect building economy. Bridging must be installed prior to cladding to reduce section twist and increase performance.
C sections are simple to use and are primarily suited for single or double spans.
For best performance, install C and Z sections with the cladding flange facing up the roof or wall slope.

SIMPLE END
(Fig 1)



DOUBLE CLEAT
(Fig 2)



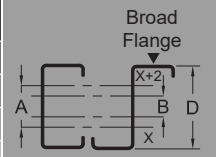
BOLTS

Bolts used in the assembly of purlins are usually M12 (Grade 4.6) nuts and bolts with either integral washers or two washers. However, 300mm and above purlin sizes require the use of M16 bolts. Please contact **LCP Building Products Pte. Ltd.** for higher grade 8.8 bolts that may be required in some installations.

HOLES

Purlins and girts are usually delivered with standard holes of Ø14mm, Ø16mm, Ø18mm, Ø22mm or slot hole Ø14x18mm & Ø18x22mm punched to details supplied. This allows purlins to be used immediately at site. The computer controlled production line allows holes almost at any position or frequency. Holes are positioned from hole details sheets provided by buyer prior to manufacturing. For other hole sizes up to Ø50mm please contact LCP Building Products Technical Department.
LCP Building Products Pte. Ltd. supply purlins and girts punched to conventional hole centres. Ensure hole detail sheets show correct hole centres and spacing required and location and type of bridging holes.

C/Z Purlin Depth 'D' (mm)	Typical Hole Centre 'A' (mm)	Typical Bridging Hole Centre 'B' (mm)
100	40	50
150	60	50
200	110	106
250	160	106
300/400	210	165



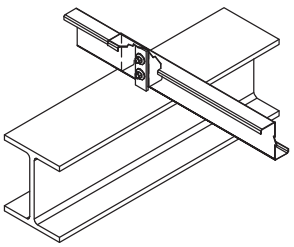
STORAGE

All sections must be kept dry during transport, stored above ground and covered to prevent moisture from entering packs. Wet packs should be broken open, dried with a cloth and separated to allow air circulation.

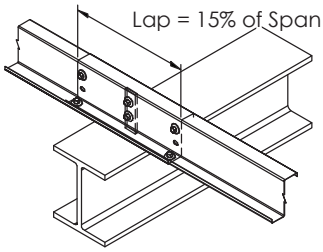
DETAILING

Care should be taken to ensure correct layout of purlin hole punching. Generally, it is recommended detail purlins with flanges facing up the roof slope. When bay spacings are the same on both ends and sides of the building, "opposite hand" details for the reverse side can be used.

NON-STRUCTURAL LAP
(Fig 3)



STRUCTURAL LAP
(Fig 4)



FASCIA

Specifically designed, or a standard C section, fascia purlins are normally subjected to lower loads and usually provide a convenient surface to mount the roof drainage gutters.
This is assisted by the use of special low profile head fascia bolts.
Should the fascia purlin, via the fascia bridging system support the wall girts, ensure sufficient allowance is made to carry this extra load.
Regular use is made of Standard C sections, eg. C250 standard sections as the fascia purlin. Available in long roll formed lengths and within standard lead times, C sections are sometimes a more economical alternative to special fascia sections.
For details of the specifically designed fascia available, please contact **LCP Building Products Pte. Ltd.** office. These sections are 230 or 260mm web depth, D with up or down turned bottom lips.

RAKING GIRTS

Raking girts are required when cladding gable ends at buildings. The girt then provides support to fixing points for claddings and flashings.
Raking girts are normally fixed beneath overhung purlins to line up with the end wall girts. Roof purlins and the raking girt will need detailing to provide hole locations.
Using standard brackets the raking girt is easily fitted to the ends of the purlins or alternatively bolted directly to the purlin flange hole.
A raking girt bracket is available for connecting raking girts to fascia purlins.

BRIDGING POSITIONS

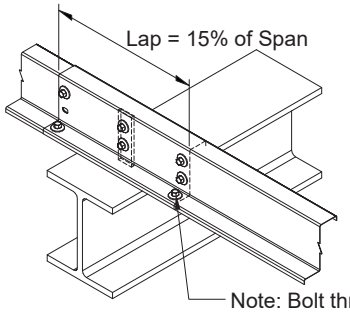
To maximize performance and optimise design loads given in the performance chart, bridging can be positioned as shown below.
Actual position dimensions may be rounded to the nearest 50mm.

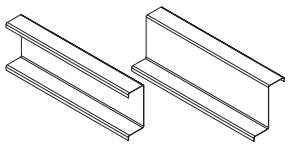
SPECIAL PROFILES

For special or large projects, **LCP Building Products Pte. Ltd.** is able to produce purlins outside the standard size range. Special purlin allowable loads are calculated with the aid of computer analysis and queries can be directed to **LCP Building Products Pte. Ltd.**

DOWNTURN LIPS

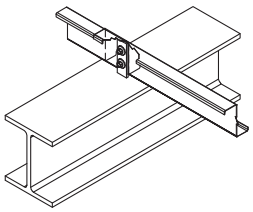
Many LCP purlins, both Z and C profiles, can be supplied with downturn lips for special projects. **LCP Building Products Pte. Ltd.** can supply "lappable" Z as well as the downturned lip which offers strength and economy. Please contact **LCP Building Products Pte. Ltd.** for details.

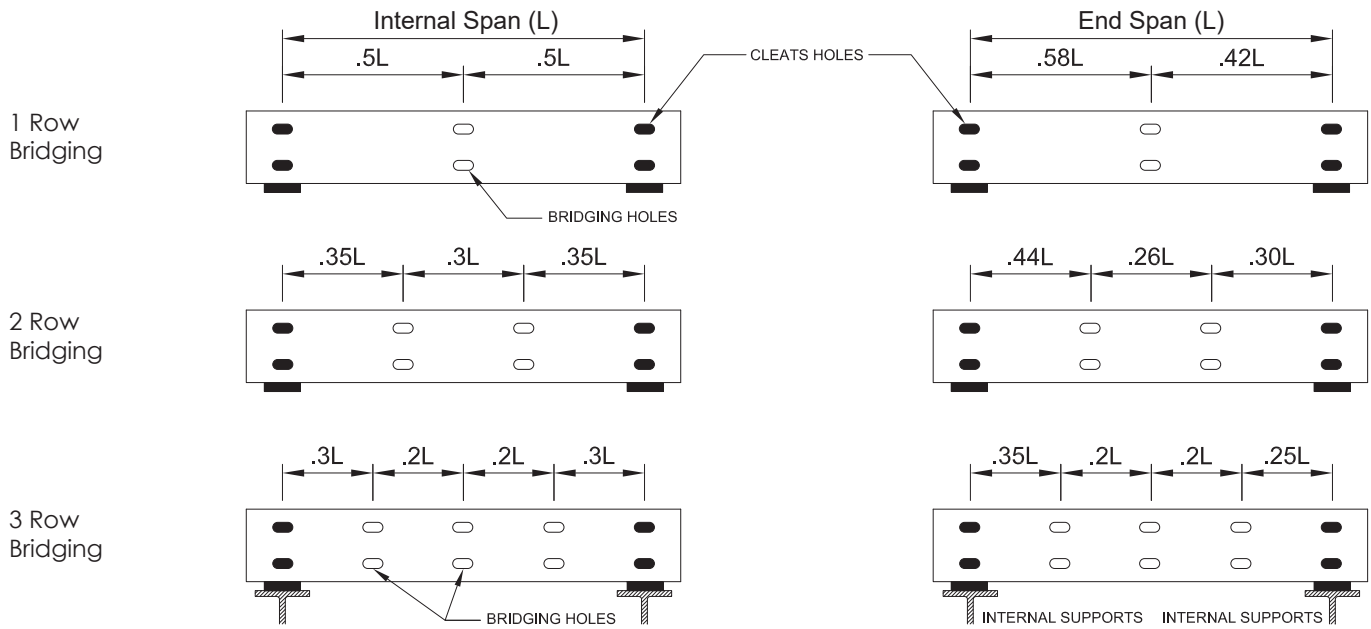




C & Z Downturn Lip

C100 Raking girt bolted directly to underside of purlin





LAP DETAILS TO SUIT APPLICATION

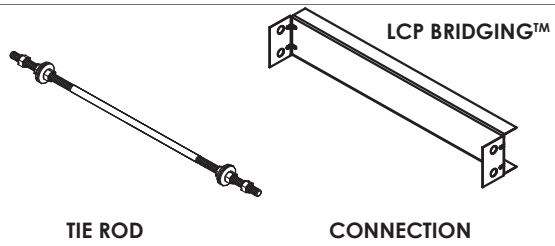
BRIDGING

To enhance performance in longer spans, bridging is generally used. Where wind uplift loading is dominant, greater economy can generally be achieved by using additional bridging in the end spans. The performance of purlins is improved considerably when the roof or wall cladding is attached, so bridging is normally required to ensure easy installation of cladding.

Generally, bridging spacing should not exceed 20 times the web depth, D. (eg. 3000mm for a 150mm deep section) or 4000mm, whichever is lower.

BRIDGING/STRUTS

This type of system is effective and bridging members may also be alternated with tie rods.



N.B. 300mm and 350mm purlins and girts require the use of heavy duty LCP bridging systems. Please refer to LCP BRIDGING brochure for further information.

INSTALLATION

Bridging can be installed up the slope of the roof, fitting fascia bridging, then all intermediate bridging. Then install the ridge bridging to pull the purlins straight, and finally adjust the fascia bridging to correct fascia purlin twist.

Alternatively, install the ridge bridging and straighten the ridge purlins, then install the immediate bridging to the fascia. Fit and adjust the fascia bridging for straightness and twist.

LCP bridging detail sheets cover the slight differences between "up the slope" and "down the slope" components.

Note that on steep roofs or where long bridging runs are used, the turn-buckles used for the ridge bridging are not intended to pull straight a large number of sagging purlins.

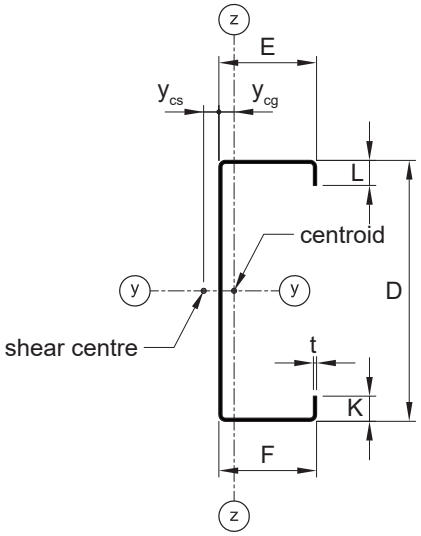
Similarly, care should be taken when girts are used on high wall, that long intermediate bridging members are not subjected to an excessive compressive load.

Please refer to page 3 for correct bridging positions.

PROPERTIES

LCP PURLINS : C Section

Size	Geometric Dimension (mm)					Mass kg/m
	t	D	E	F	L,K	
C100-10	1	102	51	51	12	1.75
C100-12	1.2	102	51	51	13	2.09
C100-15	1.5	102	51	51	14	2.60
C100-19	1.9	102	51	51	15	3.27
C100-24	2.4	102	51	51	16	4.11
C100-30	3	102	51	51	17	5.13
C125-15	1.5	127	76	76	16	3.56
C125-19	1.9	127	76	76	17	4.49
C125-24	2.4	127	76	76	18	5.64
C125-30	3	127	76	76	19	7.03
C150-12	1.2	152	64	64	15	2.87
C150-15	1.5	152	64	64	16	3.56
C150-19	1.9	152	64	64	17	4.49
C150-24	2.4	152	64	64	18	5.64
C150-30	3	152	64	64	19	7.03
C175-12	1.2	175	55	55	12	2.87
C175-15	1.5	175	55	55	13	3.56
C175-19	1.9	175	55	55	14	4.49
C175-24	2.4	175	55	55	15	5.64
C175-30	3	175	55	55	16	7.03
C200-15	1.5	203	76	76	18	4.52
C200-19	1.9	203	76	76	19	5.70
C200-24	2.4	203	76	76	20	7.17
C200-30	3	203	76	76	21	8.94
C225-15	1.5	225	64	64	19	4.52
C225-19	1.9	225	64	64	20	5.70
C225-24	2.4	225	64	64	21	7.17
C225-30	3	225	67	67	20	8.94
C250-15	1.5	254	76	76	17	5.13
C250-19	1.9	254	76	76	18	6.46
C250-24	2.4	254	76	76	20	8.13
C250-30	3	254	76	76	21	10.2
C273-15	1.5	273	68.5	68.5	15.5	5.13
C273-19	1.9	273	68.5	68.5	16.5	6.46
C273-24	2.4	273	68.5	68.5	17.5	8.13
C273-30	3	273	68.5	68.5	19	10.2
C300-19	1.9	300	96	96	28	8.06
C300-24	2.4	300	96	96	29	10.2
C300-30	3	300	96	96	30.5	12.7
C300-32	3.2	300	96	96	31	13.5
C350-24	2.4	350	125	125	27.5	12.2
C350-30	3	350	125	125	29	15.2
C350-32	3.2	350	125	125	29.5	16.2
C400-24	2.4	400	100	100	27.5	12.2
C400-30	3	400	100	100	29	15.2
C400-32	3.2	400	100	100	29.5	16.2
C402-24	2.4	400	125	125	30	13.2
C402-30	3	400	125	125	31.5	16.5
C402-32	3.2	400	125	125	32	17.6



Abbreviations

y_{sc} , z_{sc} : Shear centre

y_{sg} , z_{cg} : Centre of gravity

I_y , I_z : Second moment of area with respect to centre of gravity

W_y , W_z : Second modulus

r_y , r_z : radius of gyration

I_t , I_w : Torsional constant, Warping constant

I_p : Polar moment of area with respect to shear centre

y_j , z_j : Non-symmetry factors (zj = 0 for cross section with y-axis of symmetry)

Please contact **LCP BUILDING PRODUCTS PTE. LTD.** for any other specific size.

PROPERTIES

LCP PURLINS : Full C Section Properties [SS EN1993-1-3]

Size	Area cm^2	y_{sc} cm	z_{sc} cm	y_{cg} cm	z_{cg} cm	I_y cm^4	I_z cm^4	W_y cm^3	W_z cm^3	r_y cm	r_z cm	I_t cm^4	I_p cm^4	I_w cm^6	y_j cm
C100-10	2.15	2.34	5.10	1.68	5.10	35.6	7.47	6.97	2.18	4.07	1.86	0.007	76.3	145	6.13
C100-12	2.58	2.36	5.10	1.71	5.10	42.7	9.10	8.37	2.69	4.07	1.88	0.012	92.9	181	6.12
C100-15	3.23	2.37	5.10	1.74	5.10	53.1	11.5	10.4	3.41	4.06	1.89	0.023	117	232	6.10
C100-19	4.09	2.37	5.10	1.77	5.10	66.7	14.5	13.1	4.36	4.04	1.89	0.048	149	299	6.07
C100-24	5.16	2.35	5.10	1.80	5.10	83.2	18.2	16.3	5.52	4.01	1.88	0.096	187	381	6.02
C100-30	6.45	2.32	5.10	1.83	5.10	102	22.5	20.0	6.86	3.98	1.87	0.187	232	475	5.97
C125-15	4.43	3.55	6.35	2.64	6.35	119	34.5	18.8	6.95	5.19	2.79	0.032	319	1,081	8.48
C125-19	5.61	3.55	6.35	2.67	6.35	150	43.8	23.6	8.88	5.17	2.79	0.066	405	1,388	8.46
C125-24	7.08	3.54	6.35	2.70	6.35	188	55.1	29.5	11.3	5.15	2.79	0.132	511	1,765	8.43
C125-30	8.85	3.51	6.35	2.73	6.35	231	68.3	36.5	14.0	5.11	2.78	0.258	636	2,207	8.39
C150-12	3.54	2.81	7.60	1.94	7.60	128	19.2	16.9	4.32	6.02	2.33	0.017	225	826	8.49
C150-15	4.43	2.82	7.60	1.97	7.60	160	24.2	21.0	5.47	6.01	2.34	0.032	283	1,051	8.46
C150-19	5.61	2.82	7.60	2.00	7.60	201	30.7	26.5	6.99	5.99	2.34	0.066	359	1,345	8.42
C150-24	7.08	2.80	7.60	2.03	7.60	252	38.6	33.2	8.85	5.97	2.34	0.133	453	1,705	8.37
C150-30	8.85	2.77	7.60	2.06	7.60	312	47.8	41.0	11.0	5.94	2.32	0.259	562	2,123	8.31
C175-12	3.54	2.16	8.75	1.41	8.75	158	12.9	18.1	3.15	6.68	1.91	0.016	215	700	9.42
C175-15	4.43	2.16	8.75	1.44	8.75	198	16.2	22.6	4.01	6.68	1.92	0.032	270	890	9.37
C175-19	5.61	2.16	8.75	1.47	8.75	249	20.6	28.5	5.13	6.67	1.92	0.066	342	1,137	9.31
C175-24	7.08	2.14	8.75	1.50	8.75	313	26.0	35.8	6.50	6.65	1.92	0.132	430	1,437	9.24
C175-30	8.85	2.11	8.75	1.53	8.75	388	32.2	44.3	8.10	6.62	1.91	0.258	534	1,784	9.18
C200-15	5.63	3.23	10.2	2.18	10.2	356	42.3	35.1	7.82	7.95	2.74	0.041	560	3,239	11.0
C200-19	7.13	3.22	10.2	2.21	10.2	449	53.7	44.3	9.97	7.94	2.75	0.084	709	4,134	11.0
C200-24	9.00	3.21	10.2	2.24	10.2	564	67.7	55.6	12.6	7.92	2.74	0.169	894	5,232	10.9
C200-30	11.3	3.18	10.2	2.27	10.2	700	84.0	68.9	15.8	7.89	2.73	0.330	1,111	6,514	10.8
C225-15	5.63	2.60	11.3	1.68	11.3	412	29.5	36.6	6.24	8.55	2.29	0.041	542	2,801	12.0
C225-19	7.13	2.59	11.3	1.71	11.3	520	37.3	46.2	7.96	8.54	2.29	0.084	686	3,570	11.9
C225-24	9.00	2.57	11.3	1.74	11.3	653	47.0	58.1	10.1	8.52	2.28	0.169	864	4,507	11.8
C225-30	11.3	2.61	11.3	1.82	11.3	822	62.5	73.1	12.8	8.55	2.36	0.332	1,102	5,870	11.9
C250-15	6.38	2.97	12.7	1.91	12.7	600	44.5	47.2	7.83	9.70	2.64	0.047	793	5,230	13.7
C250-19	8.08	2.96	12.7	1.94	12.7	758	56.6	59.7	10.0	9.69	2.65	0.095	1,005	6,666	13.7
C250-24	10.2	2.98	12.7	2.00	12.7	959	72.7	75.5	13.0	9.70	2.67	0.193	1,281	8,663	13.5
C250-30	12.8	2.95	12.7	2.03	12.7	1,192	90.3	93.8	16.2	9.67	2.66	0.376	1,592	10,774	13.5
C273-15	6.38	2.50	13.7	1.56	13.7	665	34.1	48.7	6.44	10.2	2.31	0.047	803	4,611	15.4
C273-19	8.08	2.49	13.7	1.59	13.7	841	43.3	61.6	8.23	10.2	2.32	0.095	1,017	5,876	15.3
C273-24	10.2	2.47	13.7	1.62	13.7	1,059	54.6	77.6	10.4	10.2	2.31	0.192	1,281	7,421	15.2
C273-30	12.8	2.46	13.7	1.66	13.7	1,320	68.5	96.7	13.2	10.2	2.32	0.376	1,601	9,353	15.1
C300-19	10.1	4.08	15.0	2.68	15.0	1,357	124	90.5	17.9	11.6	3.51	0.120	1,935	21,557	15.9
C300-24	12.7	4.06	15.0	2.70	15.0	1,708	156	114	22.7	11.6	3.50	0.241	2,439	27,244	15.8
C300-30	15.9	4.05	15.0	2.75	15.0	2,127	195	142	28.5	11.6	3.51	0.471	3,048	34,299	15.7
C350-24	15.2	5.16	17.5	3.45	17.5	2,864	304	164	33.6	13.7	4.47	0.289	4,284	69,497	18.9
C350-30	19.1	5.15	17.5	3.49	17.5	3,570	382	204	42.4	13.7	4.48	0.566	5,360	87,464	18.8
C400-24	15.2	3.79	20.0	2.39	20.0	3,448	184	172	24.2	15.0	3.47	0.289	4,208	55,362	22.1
C400-30	19.1	3.78	20.0	2.43	20.0	4,301	230	215	30.4	15.0	3.48	0.566	5,260	69,570	22.0
C402-24	16.6	5.04	20.0	3.27	20.0	3,952	327	198	35.4	15.4	4.44	0.315	5,411	98,101	21.4
C402-30	20.7	5.03	20.0	3.32	20.0	4,929	410	246	44.6	15.4	4.45	0.615	6,767	123,336	21.3

C SECTION PROPERTIES

The following section properties are subjected to slight variation due to manufacturing tolerances (note: the total material used will not vary). Any designs carried out using these properties should be calculated using AS/NZS 4600, BS 5950 or EC3.

LCP PURLINS : Effective C-Section Properties [SS EN1993-1-3]

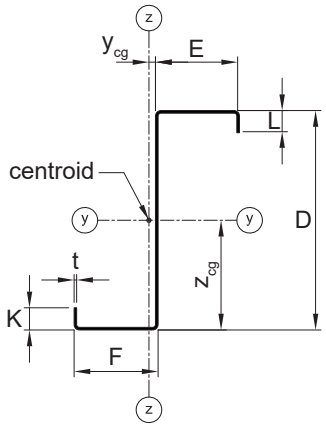
Size									Design Shear Resistance		Local Transverse Resistance ‡	
	$I^{+}_{y,eff}$ cm	$W^{+}_{y,eff}$ cm^3	$I^{-}_{y,eff}$ cm^4	$W^{-}_{y,eff}$ cm^3	$I^{+}_{z,eff}$ cm^4	$W^{+}_{z,eff}$ cm^3	$I^{-}_{z,eff}$ cm^4	$W^{-}_{z,eff}$ cm^3	$V_{bz,Rd}$ kN	$V_{by,Rd}$ kN	$R_{wz,Rd}$ kN	$R_{wy,Rd}$ kN
C100-10	25.9	4.40	25.9	4.40	6.66	1.92	4.73	1.66	11.6	26.1	6.48	8.85
C100-12	34.7	6.31	34.7	6.31	8.13	2.36	6.10	2.10	19.4	31.2	9.39	12.3
C100-15	45.9	8.68	45.9	8.68	10.2	3.00	8.24	2.76	30.3	38.8	14.7	18.4
C100-19	59.7	11.6	59.7	11.6	13.0	3.83	11.2	3.62	48.7	48.7	23.0	28.2
C100-24	75.4	14.8	75.4	14.8	16.2	4.84	15.0	4.69	62.4	60.9	37.3	42.9
C100-30	92.1	18.1	92.1	18.1	19.2	5.99	19.4	5.93	77.5	75.2	59.0	64.2
C125-15	95.3	13.1	95.3	13.1	33.6	6.71	25.3	5.95	30.3	58.3	14.9	18.4
C125-19	132	19.3	132	19.3	42.6	8.55	34.5	7.83	48.7	73.5	23.7	28.2
C125-24	176	26.7	176	26.7	53.5	10.8	46.4	10.2	77.7	92.2	36.7	42.9
C125-30	224	34.7	224	34.7	66.2	13.4	61.0	13.0	97.1	114	58.3	64.2
C150-12	94.2	10.3	94.2	10.3	18.4	4.08	12.4	3.51	13.5	38.8	9.47	12.3
C150-15	134	15.8	134	15.8	23.5	5.24	16.7	4.59	26.4	48.9	15.1	18.4
C150-19	186	23.6	186	23.6	29.8	6.68	22.9	6.04	48.7	61.6	24.0	28.2
C150-24	242	31.3	242	31.3	37.4	8.45	30.8	7.86	77.7	77.2	37.7	42.9
C150-30	305	39.9	305	39.9	46.1	10.5	40.6	10.0	117	95.5	57.6	64.2
C175-12	117	11.1	117	11.1	12.3	2.96	7.91	2.49	11.7	33.7	9.31	12.3
C175-15	165	16.8	165	16.8	15.5	3.77	10.7	3.27	22.9	41.9	15.1	18.4
C175-19	217	23.6	217	23.8	18.5	4.53	13.8	4.06	46.6	52.7	24.2	28.2
C175-24	281	31.6	281	31.6	23.3	5.73	18.7	5.29	77.7	65.9	38.2	42.9
C175-30	354	40.3	354	40.3	28.7	7.12	24.6	6.74	121	81.4	58.4	64.2
C200-15	262	21.4	262	21.4	40.8	7.45	26.8	6.35	19.7	58.3	14.9	18.4
C200-19	377	33.2	377	33.2	52.1	9.57	36.7	8.36	40.1	73.5	24.4	28.2
C200-24	525	49.8	525	49.8	65.5	12.1	49.7	10.9	77.7	92.2	38.5	42.9
C200-30	668	64.6	668	64.6	81.1	15.0	65.9	13.9	121	114	59.4	64.2
C225-15	321	24.3	321	24.3	27.8	5.80	18.1	5.06	17.7	48.9	14.7	18.4
C225-19	453	36.7	453	36.7	36.1	7.60	24.8	6.66	36.1	61.6	24.3	28.2
C225-24	616	53.2	616	53.2	45.3	9.60	33.6	8.66	73.0	77.2	38.8	42.9
C225-30	789	69.3	789	69.3	59.9	12.1	47.7	11.2	121	100	59.9	64.2
C250-15	416	26.2	416	26.2	43.0	7.47	26.4	6.18	15.7	58.3	14.3	18.4
C250-19	595	40.2	595	40.2	54.5	9.53	36.2	8.16	32.0	73.5	24.1	28.2
C250-24	849	62.0	849	62.0	70.1	12.4	50.1	10.9	64.6	92.2	39.0	42.9
C250-30	1,128	87.0	1,128	87.0	86.8	15.4	66.7	14.0	121	114	60.1	64.2
C273-15	463	27.2	463	27.2	32.6	6.09	19.9	5.04	14.6	52.5	14.1	18.4
C273-19	663	41.7	663	41.7	41.4	7.78	27.3	6.66	29.7	66.1	23.9	28.2
C273-24	925	62.3	925	62.3	52.1	9.84	37.0	8.70	60.0	82.8	39.0	42.9
C273-30	1,242	88.7	1,242	88.7	65.3	12.4	49.7	11.3	118	103	60.4	64.2
C300-19	930	49.5	930	49.5	113	15.9	75.0	14.6	27.0	93.3	23.5	28.2
C300-24	1,412	83.1	1,412	83.1	150	21.4	102	19.0	54.6	117	38.8	42.9
C300-30	1,940	122	1,940	122	190	27.5	137	24.5	107	146	60.9	64.2
C350-24	2,032	94.1	2,032	94.1	297	32.5	190	27.4	46.7	154	38.1	42.9
C350-30	2,843	141	2,843	141	372	41.0	256	35.5	91.4	191	60.9	64.2
C400-24	2,569	107	2,569	107	178	23.2	111	19.6	40.9	122	37.2	42.9
C400-30	3,587	159	3,587	159	223	29.3	149	25.4	79.9	152	60.3	64.2
C402-24	2,740	110	2,740	110	311	33.3	196	28.6	40.9	154	37.2	42.9
C402-30	3,848	164	3,848	164	399	43.2	264	37.0	79.9	191	60.3	64.2

‡ 50mm Internal support width.

PROPERTIES

LCP PURLINS : Z Section

Size	Geometric Dimension (mm)					Mass kg/m
	t	D	E	F	L,K	
Z100-10	1	102	49	53	12	1.75
Z100-12	1.2	102	49	53	13	2.09
Z100-15	1.5	102	49	53	14	2.60
Z100-19	1.9	102	49	54	15	3.27
Z100-24	2.4	102	49	55	16	4.11
Z100-30	3	102	49	56	17	5.13
Z125-15	1.5	127	74	78	16	3.56
Z125-19	1.9	127	74	79	17	4.49
Z125-24	2.4	127	74	80	18	5.64
Z125-30	3	127	74	81	19	7.03
Z150-12	1.2	152	61	65	15	2.87
Z150-15	1.5	152	61	65	16	3.56
Z150-19	1.9	152	61	66	17	4.49
Z150-24	2.4	152	61	67	18	5.64
Z150-30	3	152	61	68	19	7.03
Z175-12	1.2	175	52	56	12	2.87
Z175-15	1.5	175	52	56	13	3.56
Z175-19	1.9	175	52	57	14	4.49
Z175-24	2.4	175	52	58	15	5.64
Z175-30	3	175	52	59	16	7.03
Z200-15	1.5	203	74	79	18	4.52
Z200-19	1.9	203	74	79	19	5.70
Z200-24	2.4	203	74	80	20	7.17
Z200-30	3	203	74	81	21	8.94
Z225-15	1.5	225	62	67	19	4.52
Z225-19	1.9	225	62	67	20	5.70
Z225-24	2.4	225	62	68	21	7.17
Z225-30	3	225	62	69	20	8.94
Z250-15	1.5	254	74	79	17	5.13
Z250-19	1.9	254	74	79	18	6.46
Z250-24	2.4	254	74	80	20	8.13
Z250-30	3	254	74	81	21	10.2
Z273-15	1.5	273	66	71	15.5	5.13
Z273-19	1.9	273	66	71	16.5	6.46
Z273-24	2.4	273	66	72	17.5	8.13
Z273-30	3	273	66	73	19	10.2
Z300-19	1.9	300	93	98	28	8.06
Z300-24	2.4	300	93	100	29	10.2
Z300-30	3	300	93	100	30.5	12.7
Z300-32	3.2	300	93	101	31	13.5
Z350-24	2.4	350	121	128	27.5	12.2
Z350-30	3	350	121	129	29	15.2
Z350-32	3.2	350	121	129	29.5	16.2
Z400-24	2.4	400	96	103	27.5	12.2
Z400-30	3	400	96	104	29	15.2
Z400-32	3.2	400	96	104	29.5	16.2
Z402-24	2.4	400	121	128	30	13.2
Z402-30	3	400	121	129	31.5	16.5
Z402-32	3.2	400	121	129	32	17.6



Abbreviations

y_{sc} , z_{sc} : Shear centre

y_{sg} , z_{cg} : Centre of gravity

I_y , I_z : Second moment of area with respect to centre of gravity

W_y , W_z : Second modulus

r_y , r_z : radius of gyration

I_t , I_w : Torsional constant, Warping constant

I_p : Polar moment of area with respect to shear centre

y_j , z_j : Non-symmetry factors (z_j = 0 for cross section with y-axis of symmetry)

Please contact **LCP BUILDING PRODUCTS PTE. LTD.** for any other specific size.

Z SECTION PROPERTIES

LCP PURLINS : Full Z Section Properties [SS EN1993-1-3]															
Size	Area cm^2	y_{sc} cm	z_{sc} cm	y_{cg} cm	z_{cg} cm	I_y cm^4	I_z cm^4	W_y cm^3	W_z cm^3	r_y cm	r_z cm	I_t cm^4	I_p cm^4	I_w cm^6	z_j cm
Z100-10	2.15	0.10	4.52	0.06	5.01	35.5	13.0	6.85	2.47	4.07	2.45	0.007	49.0	193	0.54
Z100-12	2.58	0.09	4.52	0.05	5.01	42.7	15.9	8.22	3.03	4.07	2.48	0.012	59.2	238	0.54
Z100-15	3.23	0.08	4.52	0.04	5.01	53.1	20.1	10.2	3.82	4.06	2.50	0.23	74.0	302	0.54
Z100-19	4.09	0.10	4.38	0.04	4.99	66.6	25.5	12.8	4.75	4.04	2.50	0.047	93.6	376	0.66
Z100-24	5.16	0.11	4.24	0.05	4.97	83.6	33.0	16.0	6.06	4.03	2.53	0.096	119	484	0.79
Z100-30	6.45	0.12	4.10	0.05	4.95	103	40.7	19.5	7.32	3.99	2.51	0.186	148	582	0.92
Z125-15	4.43	0.08	5.86	0.04	6.27	119	62.8	18.5	8.10	5.19	3.77	0.032	183	1,425	0.45
Z125-19	5.61	0.10	5.74	0.05	6.25	150	79.5	23.2	10.1	5.17	3.77	0.065	231	1,782	0.56
Z125-24	7.08	0.12	5.62	0.06	6.23	188	102	29.1	12.9	5.16	3.80	0.132	293	2,281	0.66
Z125-30	8.85	0.13	5.51	0.06	6.21	233	130	36.0	16.1	5.14	3.83	0.259	367	2,869	0.77
Z150-12	3.54	0.08	6.90	0.04	7.50	127	30.2	16.5	4.68	5.98	2.92	0.016	158	1,077	0.65
Z150-15	4.43	0.07	6.90	0.03	7.50	158	38.2	20.5	5.90	5.98	2.94	0.032	198	1,363	0.66
Z150-19	5.61	0.08	6.73	0.03	7.48	200	49.7	25.9	7.75	5.98	2.98	0.066	253	1,765	0.81
Z150-24	7.08	0.10	6.56	0.03	7.45	251	63.3	32.4	9.49	5.96	2.99	0.132	320	2,224	0.96
Z150-30	8.85	0.10	6.39	0.03	7.43	312	80.3	40.2	11.9	5.94	3.01	0.259	402	2,798	1.12
Z175-12	3.54	0.06	7.81	0.03	8.64	158	18.9	17.8	3.39	6.67	2.31	0.016	179	952	0.88
Z175-15	4.43	0.05	7.81	0.01	8.64	197	24.0	22.2	4.29	6.67	2.33	0.032	224	1,206	0.88
Z175-19	5.61	0.06	7.58	0.01	8.61	248	30.3	27.9	5.33	6.65	2.33	0.065	284	1,510	1.09
Z175-24	7.08	0.07	7.36	0.01	8.58	313	39.3	35.1	6.79	6.65	2.36	0.132	362	1,939	1.30
Z175-30	8.85	0.07	7.14	0.00	8.55	389	50.1	43.5	8.49	6.63	2.38	0.259	457	2,441	1.51
Z200-15	5.63	0.09	9.18	0.04	10.0	355	66.5	34.5	8.46	7.95	3.44	0.041	425	4,364	0.90
Z200-19	7.13	0.07	9.18	0.02	10.0	448	84.6	43.6	10.7	7.93	3.45	0.084	538	5,554	0.90
Z200-24	9.00	0.08	9.00	0.02	9.99	566	109	54.9	13.7	7.93	3.48	0.169	683	7,104	1.07
Z200-30	11.3	0.09	8.81	0.02	9.97	704	138	68.2	17.1	7.91	3.50	0.331	857	8,937	1.25
Z225-15	5.63	0.08	10.0	0.03	11.1	411	43.5	36.0	6.52	8.54	2.78	0.041	461	3,750	1.16
Z225-19	7.13	0.06	9.99	0.01	11.1	519	55.4	45.5	8.28	8.53	2.79	0.084	583	4,769	1.18
Z225-24	9.00	0.07	9.75	0.01	11.1	655	71.3	57.3	10.5	8.53	2.82	0.169	742	6,105	1.41
Z225-30	11.3	0.07	9.51	0.00	11.0	816	90.5	71.2	13.1	8.52	2.84	0.331	932	7,680	1.64
Z250-15	6.38	0.07	11.5	0.03	13.6	602	66.9	46.9	8.50	9.72	3.24	0.047	676	7,283	1.13
Z250-19	8.08	0.06	11.5	0.01	12.6	761	85.1	59.3	10.8	9.71	3.25	0.095	855	9,266	1.13
Z250-24	10.2	0.06	11.3	0.01	12.5	958	108	74.4	13.5	9.69	3.26	0.192	1,083	11,702	1.34
Z250-30	12.8	0.06	11.0	0.00	12.5	1,195	137	92.6	16.9	9.68	3.28	0.376	1,359	14,729	1.57
Z273-15	6.38	0.06	12.2	0.02	13.5	663	47.3	48.0	6.69	10.2	2.73	0.047	721	6,181	1.36
Z273-19	8.08	0.04	12.2	0.00	13.5	838	60.3	60.7	8.50	10.2	2.73	0.095	912	7,869	1.36
Z273-24	10.2	0.05	11.9	-0.01	13.5	1,059	77.8	76.6	10.8	10.2	2.76	0.192	1,161	10,083	1.63
Z273-30	12.8	0.04	11.6	-0.02	13.4	1,322	98.8	95.3	13.5	10.2	2.78	0.376	1,460	12,701	1.89
Z300-19	10.1	0.07	13.9	0.02	14.9	1,353	188	89.4	19.2	11.6	4.32	0.119	1,551	28,852	1.06
Z300-24	12.7	0.11	13.4	0.04	14.8	1,706	240	112	24.0	11.6	4.34	0.240	1,969	36,475	1.47
Z300-30	15.9	0.08	13.4	0.01	14.8	2,129	303	140	30.3	11.6	4.37	0.471	2,462	46,219	1.47
Z350-24	15.2	0.11	16.1	0.04	17.3	2,861	470	162	36.9	13.7	5.56	0.289	3,355	95,285	1.33
Z350-30	19.1	0.11	15.9	0.04	17.3	3,569	593	201	46.1	13.7	5.58	0.566	4,200	119,656	1.52
Z400-24	15.2	0.08	18.0	0.01	19.8	3,445	261	170	25.4	15.0	4.14	0.289	3,754	74,828	1.90
Z400-30	19.1	0.08	17.7	0.00	19.8	4,300	329	212	31.7	15.0	4.16	0.566	4,709	94,021	2.17
Z402-24	16.6	0.10	18.4	0.03	19.8	3,949	489	196	38.3	15.4	5.43	0.315	4,471	134,090	1.52
Z402-30	20.7	0.10	18.1	0.02	19.8	4,928	616	244	47.8	15.4	5.46	0.615	5,599	168,375	1.74

Z SECTION PROPERTIES

LCP PURLINS : Effective Z-Section Properties [SS EN1993-1-3]

Size									Design Shear Resistance		Local Transverse Resistance ‡	
	$I^{+}_{y,eff}$ cm	$W^{+}_{y,eff}$ cm^3	$I^{-}_{y,eff}$ cm^4	$W^{-}_{y,eff}$ cm^3	$I^{+}_{z,eff}$ cm^4	$W^{+}_{z,eff}$ cm^3	$I^{-}_{z,eff}$ cm^4	$W^{-}_{z,eff}$ cm^3	$V_{bz,Rd}$ kN	$V_{by,Rd}$ kN	$R_{wz,Rd}$ kN	$R_{wy,Rd}$ kN
Z100-10	26.4	4.44	25.5	4.36	11.4	2.25	11.3	2.17	11.6	12.5	6.48	6.99
Z100-12	35.1	6.32	34.2	6.30	14.1	2.77	14.1	2.75	19.4	15.0	9.39	9.99
Z100-15	46.4	8.68	45.4	8.67	17.9	3.52	17.9	3.50	30.3	18.6	14.7	15.4
Z100-19	59.6	11.3	58.9	11.5	22.5	4.38	22.5	4.36	48.7	23.4	23.0	23.9
Z100-24	75.8	14.5	75.8	14.5	29.1	5.61	29.2	5.60	62.4	29.2	37.3	38.3
Z100-30	92.6	17.6	92.6	17.6	35.6	6.79	35.6	6.79	77.5	36.0	59.0	60.3
Z125-15	96.4	13.2	94.1	13.0	60.6	8.05	60.0	7.82	30.3	28.4	14.9	15.6
Z125-19	132	19.0	129	18.8	77.2	10.1	77.2	10.1	48.7	35.8	23.7	24.6
Z125-24	177	26.4	173	26.3	99.2	12.9	99.2	12.9	77.7	44.9	36.7	37.8
Z125-30	225	34.1	222	34.9	125	16.2	125	16.2	97.1	55.6	58.3	59.6
Z150-12	95.3	10.4	93.3	10.3	28.4	4.53	28.1	4.38	13.5	18.7	9.47	10.6
Z150-15	135	15.9	132	15.8	36.8	5.87	36.8	5.83	26.4	23.3	15.1	16.5
Z150-19	188	23.5	184	23.5	47.9	7.56	47.9	7.51	48.7	29.3	24.0	25.7
Z150-24	242	30.7	239	31.3	60.7	9.51	60.7	9.45	77.7	36.7	37.7	39.8
Z150-30	306	39.3	305	39.3	76.8	11.9	76.9	11.9	117	45.4	57.6	59.9
Z175-12	113	10.8	110	10.6	16.9	3.13	16.9	3.10	11.7	15.9	9.31	10.9
Z175-15	158	16.2	156	16.2	21.4	3.97	21.4	3.93	22.9	19.8	15.1	17.0
Z175-19	217	23.4	215	24.0	26.9	4.95	26.9	4.90	46.6	24.8	24.2	26.5
Z175-24	283	31.3	279	31.9	34.8	6.33	34.9	6.28	77.7	31.1	38.2	41.1
Z175-30	358	39.9	356	39.9	44.2	7.96	44.3	7.91	121	38.4	58.4	61.8
Z200-15	262	21.1	258	21.1	63.3	8.34	62.6	8.06	19.7	28.4	14.9	17.0
Z200-19	376	32.7	368	32.5	81.4	10.7	81.5	10.6	40.1	35.8	24.4	26.9
Z200-24	527	49.4	516	49.2	105	13.6	105	13.5	77.7	44.9	38.5	41.5
Z200-30	672	63.8	663	64.8	132	17.1	132	17.0	121	55.6	59.4	63.1
Z225-15	320	23.9	313	23.7	41.5	6.45	41.5	6.36	17.7	23.7	14.7	17.3
Z225-19	451	36.2	445	36.2	52.9	8.22	53.0	8.15	36.1	29.8	24.3	27.7
Z225-24	615	52.2	612	53.5	68.0	10.5	68.1	10.4	73.0	37.3	38.8	42.8
Z225-30	792	68.7	785	69.3	86.0	13.2	86.1	13.0	121	46.2	59.9	64.6
Z250-15	419	26.3	414	26.3	63.3	8.34	62.6	8.05	15.7	28.4	14.3	17.3
Z250-19	601	40.3	589	39.9	81.4	10.7	81.5	10.6	32.0	35.8	24.1	27.8
Z250-24	843	60.6	829	60.6	103	13.4	103	13.3	64.6	44.9	39.0	43.6
Z250-30	1,129	85.5	1,115	86.5	130	16.9	131	16.7	121	55.6	60.1	65.5
Z273-15	462	27.0	457	27.0	44.8	6.55	44.9	6.47	14.6	25.3	14.1	17.5
Z273-19	664	41.4	651	41.1	57.0	8.35	57.1	8.26	29.7	31.8	23.9	28.2
Z273-24	924	61.3	919	62.5	73.4	10.7	73.5	10.6	60.0	39.8	39.0	44.3
Z273-30	1,239	86.8	1,232	89.1	92.9	13.4	93.1	13.3	118	49.3	60.4	66.7
Z300-19	939	49.9	921	49.2	173	18.0	171	17.5	27.0	45.2	23.5	27.9
Z300-24	1,414	82.3	1,387	81.9	231	24.0	231	23.8	54.6	56.8	38.8	44.2
Z300-30	1,948	121	1,922	122	294	30.5	294	30.3	107	70.5	60.9	67.3
Z350-24	2,049	94.5	2,022	94.3	447	36.0	442	35.0	46.7	74.3	38.1	44.2
Z350-30	2,873	142	2,812	140	575	46.2	576	45.8	91.4	92.4	60.9	68.3
Z400-24	2,605	108	2,555	107	251	25.3	251	24.9	40.9	58.6	37.2	45.3
Z400-30	3,613	159	3,557	159	317	31.8	317	31.4	79.9	72.8	60.3	70.3
Z402-24	2,762	110	2,728	110	458	36.7	453	35.7	40.9	74.3	37.2	44.7
Z402-30	3,885	165	3,809	163	598	48.0	598	47.6	79.9	92.4	60.3	69.5

‡ 50mm Internal support width.

LCP PURLINS & GIRTS QUICK SELECTION TABLE

LCP C/Z PURLINS & GIRTS SPAN for Single skin metal roof

Section	Single Span [C or Z]				(Limited by transportation) Double Span [C or Z]				15% Lapping Double Span [C or Z]			
	No. of Bridging				No. of Bridging				No. of Bridging			
	0	1	2	3	0	1	2	3	0	1	2	3
C/Z100-10	2.7*	3.2	3.2	3.2	3.0*	3.3	3.3	3.3	3.2*	3.7	3.7	3.7
C/Z100-12	3.0*	3.5	3.5	3.5	3.4*	3.9	3.9	3.9	3.5*	4.3*	4.6	4.6
C/Z100-15	3.3*	3.8	3.8	3.8	3.7*	4.5*	4.6	4.6	3.9*	4.8*	5.1	5.1
C/Z100-19	3.7*	4.1	4.1	4.1	4.2*	5.0*	5.2	5.2	4.3*	5.3*	5.5	5.5
C/Z100-24	4.1*	4.4*	4.4	4.4	4.7*	5.6*	5.8	5.8	4.7*	5.9*	6.0	6.0
C/Z100-30	4.5*	4.7*	4.7	4.7	5.2*	6.2*	6.3	6.3	5.3*	6.4*	6.4*	6.4
C/Z125-15	4.3*	4.9	4.9	4.9	4.8*	5.6*	5.7	5.7	5.0*	6.2*	6.5	6.5
C/Z125-19	4.8*	5.4*	5.4	5.4	5.4*	6.5*	6.8	6.8	5.5*	7.0*	7.2	7.2
C/Z125-24	5.2*	5.8*	5.8	5.8	6.0*	7.4*	7.8*	7.8	6.1*	7.8*	7.8*	7.8
C/Z125-30	5.8*	6.3*	6.3	6.3	6.7*	8.3*	8.4*	8.4	6.7*	8.4*	8.4*	8.4
C/Z150-12	4.1*	4.8	4.8	4.8	4.5*	5.0	5.0	5.0	4.7*	5.7	5.7	5.7
C/Z150-15	4.5*	5.4	5.4	5.4	5.1*	6.0	6.0	6.0	5.2*	6.6*	7.0	7.0
C/Z150-19	5.0*	6.0	6.0	6.0	5.7*	7.1*	7.4	7.4	5.8*	7.5*	8.0	8.0
C/Z150-24	5.5*	6.5*	6.5	6.5	6.3*	7.9*	8.3	8.3	6.4*	8.2*	8.7	8.7
C/Z150-30	6.1*	6.9*	6.9	6.9	7.0*	8.5*	8.5	8.5	7.1*	8.9*	9.3*	9.3
C/Z175-12	4.1*	5.0	5.0	5.0	4.6*	5.2	5.2	5.2	4.8*	5.8	5.8	5.8
C/Z175-15	4.6*	5.8	5.8	5.8	5.2*	6.2	6.2	6.2	5.3*	6.7	6.7	6.7
C/Z175-19	5.0*	6.3	6.3	6.3	5.8*	7.1*	7.4	7.4	5.9*	7.5*	8.2	8.2
C/Z175-24	5.6*	6.9	6.9	6.9	6.4*	8.0*	8.4	8.4	6.5*	8.3*	9.1	9.1
C/Z175-30	6.2*	7.4*	7.4	7.4	7.2*	8.5*	8.5	8.5	7.2*	9.1*	9.9	9.9
C/Z200-15	5.6*	6.8	6.8	6.8	6.2*	7.1	7.1	7.1	6.5*	7.9*	8.4	8.4
C/Z200-19	6.2*	7.6	7.6	7.6	7.0*	8.5*	8.5	8.5	7.2*	9.1*	9.9	9.9
C/Z200-24	6.8*	8.4*	8.4	8.4	7.8*	8.5*	8.5	8.5	7.9*	10.3*	11.2	11.2
C/Z200-30	7.4*	9.0*	9.0	9.0	8.5*	8.5*	8.5	8.5	8.7*	11.2*	11.8*	12.1
C/Z225-15	5.7*	7.1	7.1	7.1	6.4*	7.5	7.5	7.5	6.6*	8.2*	8.7	8.7
C/Z225-19	6.3*	8.1	8.1	8.1	7.1*	8.5*	8.5	8.5	7.3*	9.4*	10.2	10.2
C/Z225-24	6.9*	8.8	8.8	8.8	7.9*	8.5*	8.5	8.5	8.0*	10.4*	11.5	11.5
C/Z225-30	7.6*	9.5*	9.5	9.5	8.5*	8.5*	8.5	8.5	8.8*	11.4*	12.3*	12.7
C/Z250-15	6.3*	7.6	7.6	7.6	6.9*	7.9*	8.1	8.1	7.4*	8.9*	9.4	9.4
C/Z250-19	6.9*	8.8*	8.9	8.9	7.8*	8.5*	8.5	8.5	8.1*	10.3*	11.0	11.0
C/Z250-24	7.7*	9.9*	9.9	9.9	8.5*	8.5*	8.5	8.5	8.9*	11.6*	12.7*	13.2
C/Z250-30	8.4*	10.7*	10.7	10.7	8.5*	8.5*	8.5	8.5	9.8*	12.7*	14.2*	14.3
C/Z273-15	6.3*	7.7	7.7	7.7	6.9*	8.0*	8.2	8.2	7.4*	9.0*	9.1	9.1
C/Z273-19	7.0*	8.9	8.9	8.9	7.9*	8.5*	8.5	8.5	8.1*	10.3*	11.1	11.1
C/Z273-24	7.7*	10.1	10.1	10.1	8.5*	8.5*	8.5	8.5	9.0*	11.6*	12.7*	13.5
C/Z273-30	8.5*	11.1*	11.1	11.1	8.5*	8.5*	8.5	8.5	9.9*	12.7*	14.2*	14.8
C/Z300-19	8.3*	10.2	10.2	10.2	8.5*	8.5*	8.5	8.5	9.7*	11.9*	12.6*	12.9
C/Z300-24	9.2*	11.7	11.7	11.7	8.5*	8.5*	8.5	8.5	10.8*	13.9*	15.1*	15.7
C/Z300-30	10.1*	12.8*	12.8*	12.8	8.5*	8.5*	8.5	8.5	11.8*	15.4*	15.8*	15.8
C/Z350-24	10.7*	13.4*	13.4*	13.4	8.5*	8.5*	8.5	8.5	12.6*	15.7*	15.8*	15.8
C/Z350-30	11.7*	14.6*	14.6*	14.6	8.5*	8.5*	8.5	8.5	13.7*	15.9*	15.8*	15.8
C/Z400-24	10.8*	13.9*	14.4*	14.4	8.5*	8.5*	8.5	8.5	12.7*	15.8*	15.8*	15.8
C/Z400-30	11.8*	15.6*	15.7*	15.7	8.5*	8.5*	8.5	8.5	13.8*	15.8*	15.8*	15.8
C/Z402-24	11.6*	14.5*	14.8*	14.8	8.5*	8.5*	8.5	8.5	13.6*	15.8*	15.8*	15.8
C/Z402-30	12.6*	16.2*	16.2*	16.2	8.5*	8.5*	8.5	8.5	14.8*	15.8*	15.8*	15.8

Notes: * denotes maximum span are outside of LCP recommended bridging requirements of minimum (20D or 4m), where D denotes web depth (refer to properties table in page 5 & 8).

Maximum roof slope adopted is 5 degrees, Serviceability Limit=L/150 and equivalent imposed DL=0.25kPa, LL=0.50kPa, WL=0.75kPa with purlin at 1.2m spacing for single skin metal roof.

LCP PURLINS & GIRTS QUICK SELECTION TABLE

LCP C/Z PURLINS & GIRTS SPAN for Double skin metal roof

Section	Single Span [C or Z]				(Limited by transportation) Double Span [C or Z]				15% Lapping Double Span [C or Z]			
	No. of Bridging				No. of Bridging				No. of Bridging			
	0	1	2	3	0	1	2	3	0	1	2	3
C/Z100-10	2.5*	2.8	2.8	2.8	2.7*	2.9	2.9	2.9	3.0*	3.4	3.4	3.4
C/Z100-12	2.8*	3.2	3.2	3.2	3.0*	3.4	3.4	3.4	3.4*	3.9	3.9	3.9
C/Z100-15	3.0*	3.4	3.4	3.4	3.4*	4.0	4.0	4.0	3.6*	4.4*	4.6	4.6
C/Z100-19	3.4*	3.7	3.7	3.7	3.8*	4.5*	4.6	4.6	4.0*	4.9*	5.0	5.0
C/Z100-24	3.7*	4.0	4.0	4.0	4.2*	5.0*	5.2	5.2	4.4*	5.4*	5.4	5.4
C/Z100-30	4.1*	4.3*	4.3	4.3	4.7*	5.5*	5.7	5.7	4.9*	5.8*	5.8	5.8
C/Z125-15	3.9*	4.4	4.4	4.4	4.3*	4.9	4.9	4.9	4.7*	5.6*	5.9	5.9
C/Z125-19	4.4*	4.9	4.9	4.9	4.9*	5.8*	6.0	6.0	5.2*	6.4*	6.5	6.5
C/Z125-24	4.8*	5.3*	5.3	5.3	5.5*	6.7*	6.9	6.9	5.7*	7.1*	7.1	7.1
C/Z125-30	5.3*	5.7*	5.7	5.7	6.1*	7.4*	7.7*	7.7	6.3*	7.7*	7.7	7.7
C/Z150-12	3.7*	4.3	4.3	4.3	4.0*	4.4	4.4	4.4	4.4*	5.2	5.2	5.2
C/Z150-15	4.1*	4.9	4.9	4.9	4.6*	5.4	5.4	5.4	4.9*	6.1*	6.4	6.4
C/Z150-19	4.6*	5.4	5.4	5.4	5.2*	6.3*	6.6	6.6	5.4*	6.9*	7.3	7.3
C/Z150-24	5.1*	5.9	5.9	5.9	5.8*	7.1*	7.4	7.4	6.0*	7.6*	7.9	7.9
C/Z150-30	5.6*	6.3*	6.3	6.3	6.4*	7.9*	8.2	8.2	6.6*	8.3*	8.5	8.5
C/Z175-12	3.8*	4.4	4.4	4.4	4.0*	4.6	4.6	4.6	4.5*	5.2	5.2	5.2
C/Z175-15	4.2*	5.2	5.2	5.2	4.7*	5.5	5.5	5.5	5.0*	6.1	6.1	6.1
C/Z175-19	4.7*	5.8	5.8	5.8	5.3*	6.4	6.4	6.4	5.5*	6.9	6.9	6.9
C/Z175-24	5.1*	6.3	6.3	6.3	5.9*	7.5	7.5	7.5	6.1*	7.7*	8.4	8.4
C/Z175-30	5.7*	6.7	6.7	6.7	6.6*	8.3	8.3	8.3	6.8*	8.4*	9.0	9.0
C/Z200-15	5.1*	6.1	6.1	6.1	5.6*	6.3	6.3	6.3	6.1*	7.3	7.3	7.3
C/Z200-19	5.7*	7.0	7.0	7.0	6.4*	7.6	7.6	7.6	6.8*	8.4*	9.0	9.0
C/Z200-24	6.3*	7.7	7.7	7.7	7.2*	8.5*	8.5	8.5	7.5*	9.6*	10.3	10.3
C/Z200-30	6.9*	8.2*	8.2	8.2	7.9*	8.5*	8.5	8.5	8.2*	10.4*	11.1	11.1
C/Z225-15	5.2*	6.4	6.4	6.4	5.8*	6.7	6.7	6.7	6.2*	7.5	7.5	7.5
C/Z225-19	5.8*	7.4	7.4	7.4	6.5*	7.9	7.9	7.9	6.9*	8.7*	9.4	9.4
C/Z225-24	6.4*	8.1*	8.1	8.1	7.3*	8.5*	8.5	8.5	7.5*	9.7*	10.7	10.7
C/Z225-30	7.0*	8.7*	8.7	8.7	8.1*	8.5*	8.5	8.5	8.3*	10.6*	11.7	11.7
C/Z250-15	5.7*	6.8	6.8	6.8	6.2*	7.0	7.0	7.0	6.9*	7.4	7.4	7.4
C/Z250-19	6.4*	8.0*	8.2	8.2	7.2*	8.4*	8.5	8.5	7.6*	9.5*	10.1	10.1
C/Z250-24	7.1*	9.0*	9.0	9.0	8.1*	8.5*	8.5	8.5	8.4*	10.7*	11.8	11.8
C/Z250-30	7.8*	9.8*	9.8	9.8	8.5*	8.5*	8.5	8.5	9.3*	11.9*	13.1	13.1
C/Z273-15	5.8*	6.9*	6.9	6.9	6.1*	6.5	6.5	6.5	6.9*	6.9	6.9	6.9
C/Z273-19	6.4*	8.1*	8.4	8.4	7.2*	8.5*	8.5	8.5	7.6*	9.5*	10.2	10.2
C/Z273-24	7.1*	9.2*	9.3	9.3	8.1*	8.5*	8.5	8.5	8.4*	10.7*	11.8	11.8
C/Z273-30	7.8*	10.1*	10.1	10.1	8.5*	8.5*	8.5	8.5	9.3*	11.9*	13.2*	13.6
C/Z300-19	7.7*	9.1*	9.4	9.4	8.4*	8.5*	8.5	8.5	9.1*	10.9*	11.5	11.5
C/Z300-24	8.6*	10.7*	10.7	10.7	8.5*	8.5*	8.5	8.5	10.2*	12.9*	13.9*	14.4
C/Z300-30	9.4*	11.7*	11.7	11.7	8.5*	8.5*	8.5	8.5	11.1*	14.3*	15.7*	15.7
C/Z350-24	9.9*	12.2*	12.3*	12.3	8.5*	8.5*	8.5	8.5	11.8*	14.5*	15.8*	15.8
C/Z350-30	10.8*	13.5*	13.5*	13.5	8.5*	8.5*	8.5	8.5	12.9*	15.8*	15.8*	15.8
C/Z400-24	10.0*	12.3*	13.2*	13.2	8.5*	8.5*	8.5	8.5	12.0*	15.8*	15.8*	15.8
C/Z400-30	11.0*	14.4*	14.5*	14.5	8.5*	8.5*	8.5	8.5	13.1*	15.8*	15.8*	15.8
C/Z402-24	10.7*	13.1*	13.6*	13.6	8.5*	8.5*	8.5	8.5	12.8*	15.8*	15.8*	15.8
C/Z402-30	11.7*	14.9*	14.9*	14.9	8.5*	8.5*	8.5	8.5	14.0*	15.8*	15.8*	15.8

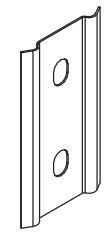
Notes: * denotes maximum span are outside of LCP recommended bridging requirements of minimum (20D or 4m), where D denotes web depth (refer to properties table in page 5 & 8).

Maximum roof slope adopted is 5 degrees, Serviceability Limit=L/150 and equivalent imposed DL=0.50kPa, LL=0.50kPa, WL=0.75kPa with purlin at 1.2m spacing for double skin metal roof.

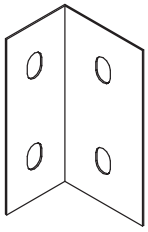
ACCESSORIES

Clamp plates and angle connectors provide a quick, easy and efficient method of connecting purlins and girts together with other non-structural framing members such as window or door surround. Large slots in all brackets allow for different purlin sizes possibilities.

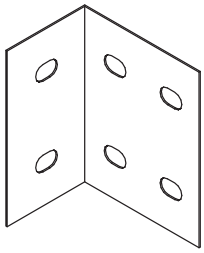
For those applications where web fixing is possible, a general purpose bracket is available to reduce fixing time and expense. All these brackets and plates are produced from galvanised steel.



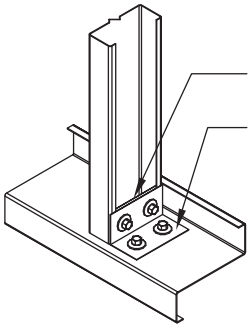
CLAMP PLATE



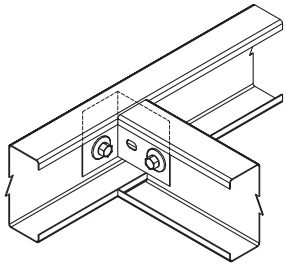
ANGLE CONNECTOR



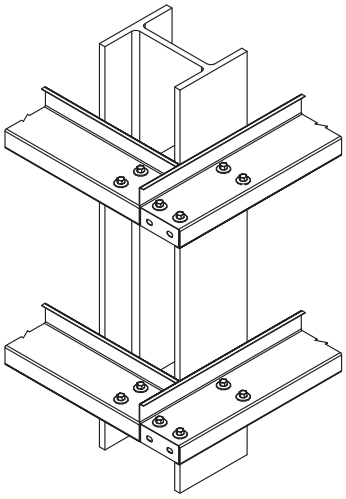
GENERAL PURPOSE BRACKET



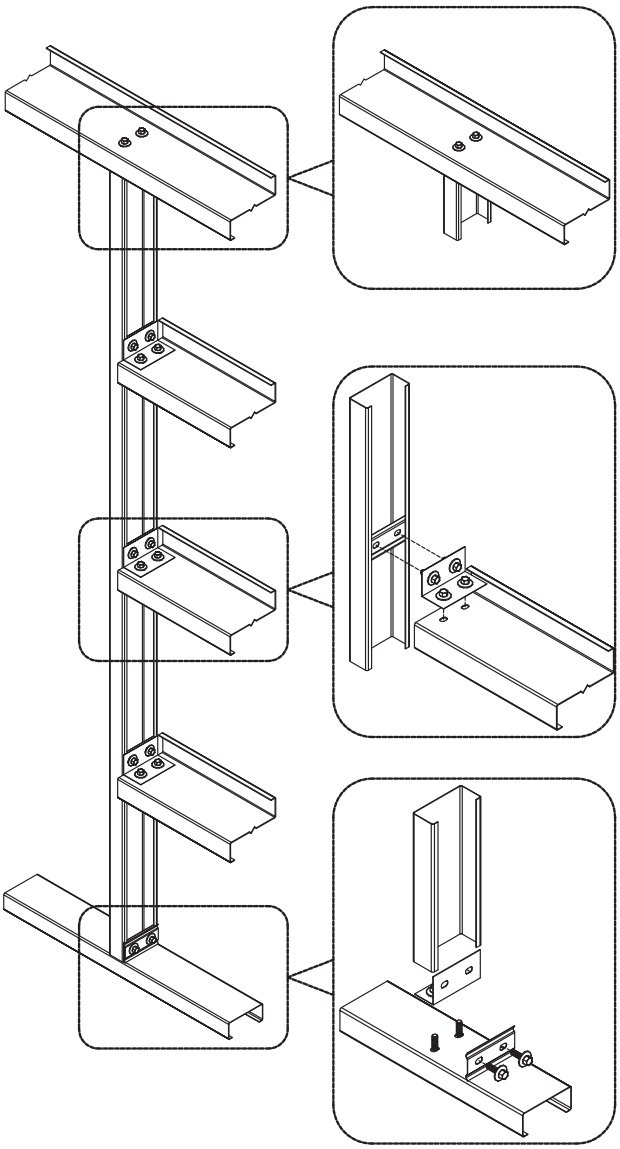
TYPICAL CONNECTION



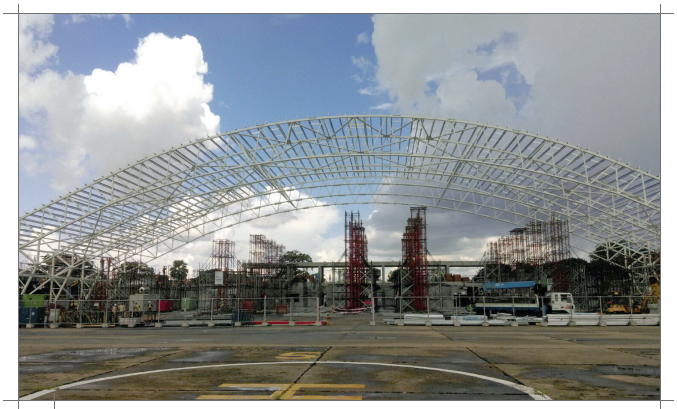
GENERAL PURPOSE BRACKET INSTALLATION



ANGLE CONNECTOR USED TO CLOSED PURLIN END AVOIDING MITRE CORNER



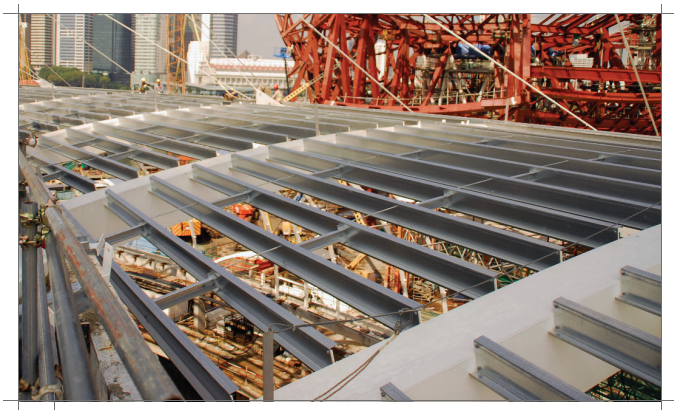
PROJECT REFERENCE



Aircraft Hangar, Cambodia

Cold Hub, Singapore

Edgen Murray, Singapore



Marina Bay Sands, Singapore

SMRT Train Depot, Singapore

Self Storage, Bahrain

Seletar Hangar, Singapore

International Cruise Terminal, Singapore

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LCP BUILDING PRODUCTS PTE. LTD.
CO. No. 200009173 C

No. 6 Gul Circle, Singapore 629562

Tel: (65) 6865-1550 Fax: (65) 6861-4218
Email: lcp@lcp.sg website: www.lcp.sg

LCP BUILDING PRODUCTS PVT. LTD.
(CO. No. U28112 TN2004 PTC053236)

Old No.6, New No.17, 4th Floor,
Viswanathapuram Main Road,
Kodambakkam, Chennai – 600 024, India

Tel: + 91-44 -298 92772
Fax: + 91-44 -298 92772
Email: lcpindia@lcpgroup.asia
website: www.lcpindia.com

A member of LCP Group of Companies

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