

Our Quality • Your Assurance

CEE & ZED PURLINS



Formed with Hi-Tensile Galvanised Steel



Locally Produced & Custom-cut using modern machinery



FPC (BCI: 2023) certified

Contact us

Talk to us about our competitive pricing and services. We are standing by to receive your call.

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SWAN SWEE
CONSTRUCTION PTE LTD



ABOUT SWAN SWEE



SPECIAL APPLICATION

SWAN SWEE CONSTRUCTION PTE LTD WAS ESTABLISHED IN 1992

We specialize in the manufacture and supply of color-coated steel building products. Our offerings include pre-painted steel roofing, wall cladding, galvanized high-tensile structural floor decking, galvanized high-tensile purlins, and various other steel building products such as crimp-curved profiles, flashings, louver panels, ventilators, and translucent sheeting.

These products are suitable for a wide range of commercial, industrial, residential, and urban facilities.

At Swan Swee, we take pride in ensuring a seamless supply chain experience for our customers. Our extensive stock levels and reliable distribution network are strategically aligned with construction schedules to ensure that materials arrive on-site precisely when needed.

We employ a rigorous inspection and testing process to ensure compliance with applicable regulatory requirements, technical standards, codes of practice, and customer expectations.

CEE & ZED PURLINS

High Quality Material

Steel Grade and Coating Mass/Type: Galvanised Steel

Swan Swee Purlins sections are roll-formed from hot-dipped zinc coated high strength steel complied with AS1397-2021, G450 Z275 - 450 MPa minimum yield strength, 275 g/m², (300g/m² and 350g/m² zinc coating mass, on request and subject to minimum quantity and delivery lead time).

Hot dipped galvanized high tensile steel with coating mass of Z275 conform to BC1-2023 - Factory Production Control Certificate (FPC)

Hot Dipped Galvanised Steel	Steel Grade	Coating Mass	Special Coating Mass**
	G450	Z275	Z300/Z350

** Special Order with minimum quantity

Material Specification

Thickness (BMT)	1.5mm	1.9mm	2.4mm	3.0mm
Minimum Yield strength	450 MPa			
Galvanized Standard	AS1397- 2021			

Steel Grade and Coating Mass/Type: PhuizerMax™ ZM310

For high corrosive environment Swan Swee manufacture and supply Purlin with PhuizerMax™ ZM310 finished, an alloy of zinc, aluminium and magnesium coating that provides superior corrosion protection.

ZM310 - is made using a base of hot galvanized steel, dipped into a bath that contains a special metallic composition of zinc with 5% aluminium and 1% magnesium (approximately) and 94% zinc.

This 1% magnesium is crucial, because it creates a stable and resistant layer over the entire metal surface, contributing to a more effective defence against corrosion.

ZM310 - is a metal coating that ensures optimum protection of surfaces against long-term damages. This coating offers a range of unmatched benefits:

- better resistance to corrosion, up to 3 times higher than any other galvanized steel;
- better protection of surfaces exposed to particularly aggressive environments;
- the best alternative, in terms of costs-benefits, to the post-galvanizing process.

ZM310 - best suited in numerous industrial applications:

- Solar energy generation: structures for photovoltaic and thermal solar farms
- Mass Rapid Transport stations and depots
- Sea Port warehouses.
- Airport and Airport Cargo Terminals
- Agriculture and farming: chicken sheds, greenhouse structures, barns, fish farms
- Protection equipment: Sound insulation wall panels

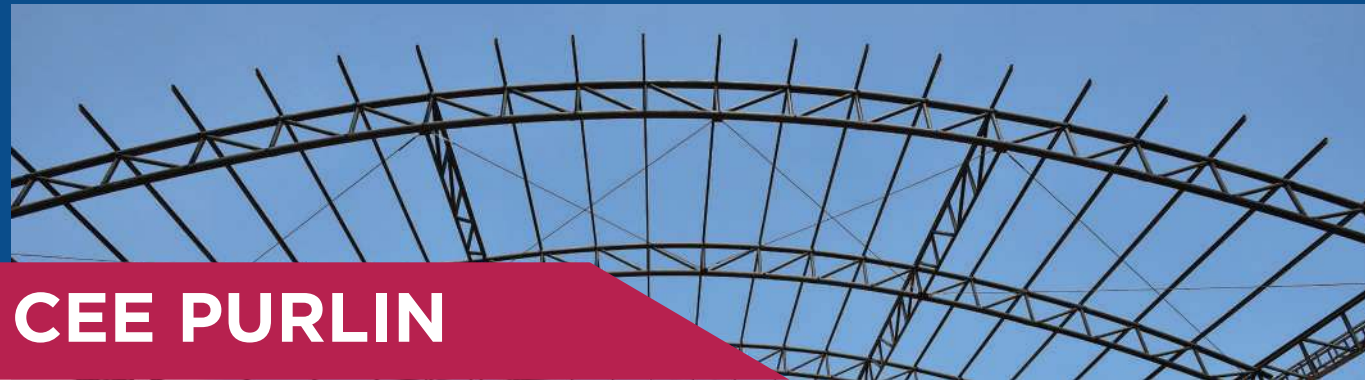
Material Specification

Thickness (BMT)	1.5mm	1.9mm	2.4mm	3.0mm
Minimum Yield strength	450 MPa			
Coating Mass 310g/m ²	Both surface based on triple spot test in accordance to EN10346:2015 (Table 12)			
Galvanized Standard	EN10346:2015 / 5450(II)			

*Note : On ident with minimum quantity

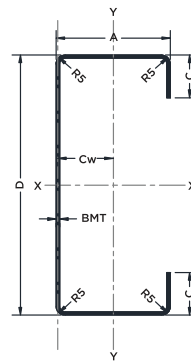
Environment	Expected Lifespan	Definition
C4*	20 Years	High Urban and Industrial atmosphere with moderate sulphur dioxide and/or coastal areas with low salinity Is suitable in industry and coastal areas with moderate salt content, chemical companies, shipyards, and swimming pools.
C5*	8 Years	Harsh industrial zones with continuous moisture exposure or marine environment with salt spray Is suitable for highly corrosive environment with high humidity and aggressive atmosphere, with almost constant condensation and highly polluting atmosphere The corrosive agents in C5 environments typically include chloride ions, sulphur dioxide, and other pollutants emitted by industrial activities. In environments within the food industry, high demands are placed on hygiene. Regular cleaning with strong chemicals can lead to corrosion. In addition to chemical pollutants, temperature fluctuations and moisture levels play a significant role in accelerating corrosion in C5 environments. The combination of moisture and airborne pollutants creates an electrolytic environment conducive to corrosion reactions, especially in the presence of oxygen.

*PhuizerMax™ ZM310 is a registered Trade Mark of Yieh Phui Taiwan.
*ISO categories of Atmospheric Environments.



CEE PURLIN

Cee Purlin section may be used in single spans and unlapped continuous span in construction with the purlins butted at internal support. It is ideal as eave purlin or where compact sections are required for detailing.

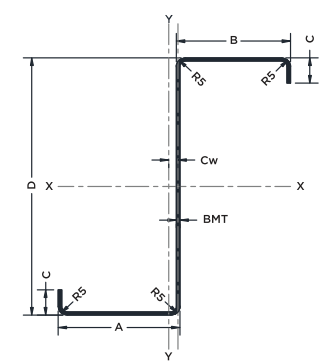


PURLIN TYPE	PRODUCT CODE	THICKNESS	DEPTH	FLANGE	LIP	MASS	MASS	AREA OF SECTION	SECOND MOMENT OF AREA		Elastic Modulus			Plastic Modulus		Radius of Gyration		Centroid from WebT
									I _x	I _y	Z _x	Z _y (Left)	Z _y (Right)	Z _{pb}	Z _{pw}	r _x	r _y	
		BMT	(D)	(A)	(C)	GALVANIZE	(ZM310)	mm ²	10 ⁴ mm ⁴	10 ⁴ mm ⁴	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	mm	mm	mm
C75	SSC 7515	1.5	75	45	15	2.14	2.10	272.5	24.9	8.0	6.6	4.7	2.9	7.7	4.1	30.22	17.09	16.36
	SSC 7519	1.9	75	45	15	2.70	2.66	342.8	31.0	9.8	8.3	5.7	3.5	9.6	5.1	30.07	16.94	16.18
	SSC 7524	2.4	75	45	15	3.26	3.35	429.2	38.3	12.0	10.2	7.0	4.3	12.0	6.4	29.88	16.75	15.94
	SSC 7530	3.0	75	45	15	4.19	4.14	530.9	46.7	14.5	12.5	8.5	5.2	14.7	7.7	29.66	16.53	15.66
C100	SSC 10015	1.5	100	50	15	2.60	2.53	325.0	52.2	11.4	10.4	6.6	3.5	12.1	5.2	40.06	18.72	16.42
	SSC 10019	1.9	100	50	15	3.28	3.22	409.3	65.2	14.1	13.0	8.2	4.3	15.1	6.5	39.91	18.56	16.24
	SSC 10024	2.4	100	50	15	4.14	4.07	513.2	81.0	17.3	16.2	10.1	5.3	18.9	8.0	39.72	18.37	16.01
	SSC 10030	3.0	100	50	15	5.18	5.09	635.9	99.1	20.9	19.8	12.1	6.4	23.2	9.8	39.49	18.14	15.74
C125	SSC 12519	1.9	125	50	15	3.71	3.61	456.8	109.6	15.2	17.5	9.8	4.4	20.5	6.6	48.99	18.26	14.55
	SSC 12524	2.4	125	50	15	4.66	4.56	573.2	136.5	18.7	21.8	12.0	5.4	25.7	8.2	48.79	18.06	14.33
	SSC 12530	3.0	125	50	15	5.81	5.70	710.9	167.6	22.6	26.8	14.5	6.6	31.7	10.0	48.55	17.83	14.08
C150	SSC 15019	1.9	150	65	15	4.48	4.45	561.3	199.6	30.7	26.6	15.6	6.8	30.8	10.5	59.64	23.39	18.73
	SSC 15024	2.4	150	65	15	5.65	5.61	705.2	249.1	37.9	33.2	19.2	8.4	38.5	13.0	59.43	23.19	18.52
	SSC 15030	3.0	150	65	15	7.03	7.02	875.9	306.8	46.2	40.9	23.4	10.2	47.6	16.0	59.19	22.95	18.26
C175	SSC 17519	1.9	175	75	16	5.21	5.12	650.6	316.0	47.0	36.1	21.1	8.9	41.6	13.8	69.69	26.87	21.29
	SSC 17524	2.4	175	75	16	6.56	6.46	818.0	394.9	58.2	45.1	26.1	11.0	52.2	17.2	69.48	26.67	21.07
	SSC 17530	3.0	175	75	16	8.17	8.08	1016.9	487.4	71.0	55.7	31.8	13.5	64.6	21.2	69.23	26.43	20.81
C200	SSC 20019	1.9	200	75	20	5.70	5.67	713.3	440.7	53.2	44.1	24.3	10.0	51.3	15.0	78.60	27.31	20.97
	SSC 20024	2.4	200	75	20	7.17	7.07	897.2	551.4	65.9	55.1	30.0	12.4	64.4	18.7	78.40	27.11	20.76
	SSC 20030	3.0	200	75	20	8.91	8.78	1115.9	681.4	80.6	68.1	36.6	15.2	79.8	23.0	78.15	26.87	20.52
C225	SSC 22519	1.9	225	75	20	6.12	6.01	760.8	580.4	55.2	51.6	26.8	10.1	60.5	15.0	87.34	26.93	19.66
	SSC 22524	2.4	225	75	20	7.70	7.59	957.2	726.7	68.4	64.6	33.1	12.6	76.0	18.7	87.13	26.73	19.46
	SSC 22530	3.0	225	75	20	9.65	9.49	1190.9	898.7	83.5	79.9	40.3	15.4	94.2	23.1	86.87	26.49	19.22
C250	SSC 25019	1.9	250	75	20	6.50	6.42	808.3	743.9	56.9	59.5	29.2	10.2	70.3	15.1	95.93	26.53	18.51
	SSC 25024	2.4	250	75	20	8.18	8.06	1017.2	931.8	70.5	74.5	36.1	12.7	88.3	18.8	95.71	26.33	18.32
	SSC 25030	3.0	250	75	20	10.20	10.03	1265.9	1153.2	86.2	92.3	44.0	15.5	109.6	23.2	95.45	26.09	18.08
C275	SSC 27519	1.9	275	75	20	6.68	6.65	855.8	932.6	58.4	67.8	31.7	10.3	80.7	15.1	104.39	26.13	17.48
	SSC 27524	2.4	275	75	20	8.56	8.40	1077.2	1168.8	72.4	85.0	39.2	12.8	101.4	18.8	104.16	25.93	17.30
C300	SSC 30019	1.9	300	100	25	8.15	7.95	1017.3	1390.0	131.6	92.7	48.5	18.0	108.3	26.7	116.89	35.96	26.15
	SSC 30024	2.4	300	100	25	10.05	9.99	1281.2	1744.1	163.8	116.3	60.3	22.5	136.1	33.4	116.67	35.76	25.95
	SSC 30030	3.0	300	100	25	12.50	12.48	1595.9	2162.8	201.3	144.2	74.0	27.7	169.2	41.3	116.41	35.51	25.71
C350	SSC 35024	2.4	350	100	25	11.10	10.93	1401.2	2507.4	171.2	143.3	68.7	22.8	169.7	33.5	133.77	34.96	23.73
	SSC 35030	3.0	350	100	25	13.83	13.66	1745.9	3111.5	210.4	177.8	84.1	28.0	211.0	41.4	133.50	34.71	23.50
C400	SSC 40024	2.4	400	100	28	12.20	12.13	1535.6	3489.2	185.6	174.5	78.1	24.3	208.7	35.0	150.74	34.77	22.56
	SSC 40030	3.0	400	100	29	15.20	15.17	1919.9	4350.3	231.5	217.5	96.1	30.5	260.6	43.9	150.53	34.72	22.58
SSC 40032	3.2	400	100	30	16.20	16.28	2052.3	4648.8	249.0	232.4	102.3	32.9	278.6	47.3	150.50	34.83	22.74	



ZED PURLIN

Zed Purlin sections with one broad and one narrow flange are designed to nest neatly and are intended for lapping at internal supports. It may be used over single spans or unlapped and lapped continuous spans in construction. Lapped continuous spans result in a considerable capacity increase in the system.

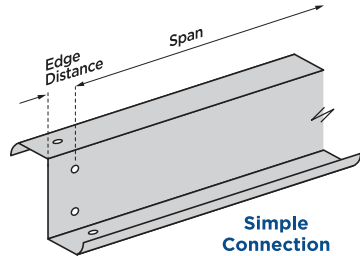
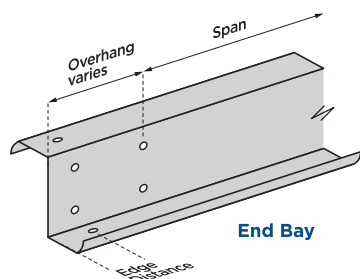
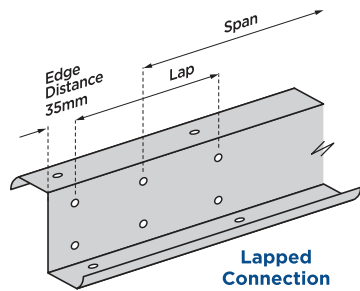


PURLIN TYPE	PRODUCT CODE	THICKNESS	DEPTH	BOARD FLANGE	NARROW FLANGE	LIP	MASS	MASS	AREA OF SECTION	SECOND MOMENT OF AREA		Elastic Modulus			Plastic Modulus		Radius of Gyration		Centroid from WebT	
										I _x	I _y	Z _x (Top)	Z _x (Bot)	Z _y (Left)	Z _y (Right)	Z _{pb}	Z _{pw}	r _x		r _y
		BMT	(D)	(A)	(B)	(C)	GALVANIZE	(ZM310)	mm ²	10 ⁴ mm ⁴	10 ⁴ mm ⁴	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	10 ³ mm ³	mm	mm	mm
Z150	SSZ 15019	1.9	152	65	61	15	4.48	4.45	557.5	201.5	46.4	26.2	26.9	7.4	7.6	30.7	10.1	60.12	28.84	1.00
	SSZ 15024	2.4	152	65	61	15	5.65	5.61	700.4	251.4	57.1	32.6	33.5	9.1	9.4	38.5	12.6	59.91	28.55	1.00
	SSZ 15030	3.0	152	65	61	15	7.03	7.02	869.9	309.7	69.2	40.2	41.3	11.1	11.4	47.6	15.5	59.67	28.21	1.00
Z175	SSZ 17519	1.9	175	74	69	18	5.21	5.12	644.9	309.7	70.9	34.9	35.9	9.9	10.2	41.0	13.4	69.30	33.17	1.25
	SSZ 17524	2.4	175	74	69	18	6.56	6.46	810.8	387.1	87.7	43.6	44.9	12.3	12.7	51.4	16.7	69.09	32.88	1.25
Z200	SSZ 20019	1.9	203	79	74	18	5.70	5.67	717.1	456.7	85.0	44.4	45.6	11.1	11.5	52.3	15.1	79.81	34.44	1.19
	SSZ 20024	2.4	203	79	74	18	7.17	7.07	902.0	571.5	105.2	55.6	57.1	13.7	14.2	65.6	18.9	79.60	34.15	1.19
	SSZ 20030	3.0	203	79	74	18	8.91	8.78	1121.9	706.3	128.2	68.7	70.5	16.8	17.4	81.4	23.3	79.34	33.81	1.18
Z225	SSZ 22519	1.9	225	78	72	20	6.12	6.01	760.8	580.2	84.8	50.8	52.3	11.2	11.7	60.5	15.2	87.33	33.38	1.35
	SSZ 22524	2.4	225	78	72	20	7.70	7.59	957.2	726.4	104.9	63.6	65.5	13.9	14.5	75.9	19.0	87.11	33.10	1.35
	SSZ 22530	3.0	225	78	72	20	9.65	9.49	1190.9	898.4	127.8	78.7	81.1	17.0	17.8	94.2	23.4	86.86	32.76	1.35
Z250	SSZ 25019	1.9	254	79	74	20	6.50	6.42	821.6	781.2	89.3	60.8	62.2	11.6	12.0	72.7	15.7	97.51	32.96	1.06
	SSZ 25024	2.4	254	79	74	20	8.18	8.06	1034.0	978.7	110.5	76.2	78.0	14.4	15.0	91.2	19.7	97.29	32.69	1.06
	SSZ 25030	3.0	254	79	74	20	10.20	10.03	1286.9	1211.4	134.7	94.3	96.5	17.6	18.3	113.2	24.3	97.02	32.36	1.06
Z300	SSZ 30019	1.9	300	100	94	25	8.15	7.95	1005.9	1364.3	185.8	89.9	92.0	19.0	19.7	106.6	25.5	116.46	42.98	1.33
	SSZ 30024	2.4	300	100	94	25	10.05	9.99	1266.8	1711.9	230.9	112.9	115.4	23.7	24.5	134.0	32.0	116.25	42.70	1.33
	SSZ 30030	3.0	300	100	94	25	12.50	12.48	1577.9	2122.6	283.1	139.9	143.1	29.1	30.2	166.5	39.6	115.98	42.36	1.32
Z350	SSZ 35024	2.4	350	100	94	25	11.10	10.93	1386.8	2463.4	231.0	139.3	142.2	23.7	24.6	167.2	32.1	133.28	40.81	1.21
	SSZ 35030	3.0	350	100	94	25	13.83	13.66	1727.9	3056.8	283.2	172.9	176.5	29.1	30.2	207.8	39.7	133.01	40.48	1.21
Z400	SSZ 40024	2.4	400	96	104	28	12.20	12.13	1535.6	3488.2	264.4	176.6	172.3	27.4	26.1	208.7	35.3	150.72	41.49	1.54
	SSZ 40030	3.0	400	96	104	29	15.20	15.17	1919.9	4349.2	330.1	220.2	214.8	34.4	32.7	260.6	44.3	150.51	41.46	1.54
SSZ 40032	3.2	400	96	104	30	16.20	16.28	2052.3	4647.5	355.9	235.3	229.5	37.1	35.3	278.6	47.7	150.48	41.65	1.54	

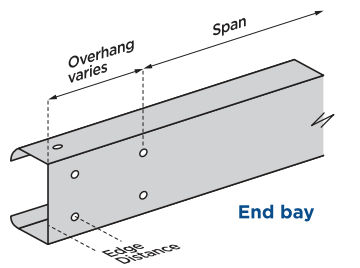
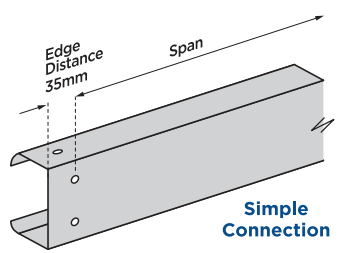
GENERAL DATA

SWAN SWEE CEE & ZED PURLIN

Z Purlin drawing



C Purlin drawing



Swan Swee Cee and Zed Purlin are accurately roll-formed from high strength zinc coated steel to provide an economical, lightweight, efficient roofing and cladding support system.

Swan Swee Cee and Zed Purlin are available to customized cut-to-length which eliminates wastage of material.

MANUFACTURING TOLERANCE

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 angle	+5/2°
Hole Centres	+/- 1mm

HOLES AND CLEAT

Purlins are supplied with holes punched to customer's requirements with recommended holes to match cleat details. Holes are positioned from hole details sheets provided by buyer prior to Swan Swee Construction Pte Ltd. Ensure hole detail sheets show correct hole centres and spacing required and location and type of bridging holes.

For special projects the size of the hole, the number of holes, and the gauge lines may be modified by negotiation. These projects will be subject to minimum order quantities and extended lead times.

Hole Punch						
C75		C100 - C400			Z150 - Z400	
Round	Elongated	Round	Elongated	Vertical Elongated	Round	Elongated
12	12x22	12	12x22	22x14	12	12x22
14	14x22	14	14x22	22x16	14	14x22
16	16x22	16	16x22	22x18	16	16x22
		18	18x22		18	18x22
		22	33x22		22	33x22

Bolt Details

Recommended standard purlin bolt (Grade 4.6) M12 x 30mm with nut.

For 300mm and above purlin sizes, M16 x 45mm bolts with nut are recommended.

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.

Storage on-site

If installation is not immediate, sections should be neatly stacked off the ground and on a slight slope so that water can drain away. Sections and accessories should not be left exposed in the open for extended periods.

Transport and Packaging

Swan Swee Purlins are available custom cut in any transportable length.

For normal deliveries nominal lengths should not exceed 12 meters.

Lengths greater than 12 meters requires special transportation and on site-handling facilities. Additional transport charges may be imposed.

Purlins are delivered in strapped bundlers. The actual quantity in each bundle will vary with section size, order, and length. The bundle mass varies from 1 to 1.5 tons.



IMPORTANT NOTE: The information published in this brochure is as far as possible accurate at the date of publication, however, prior to application in a particular situation, **Swan Swee Construction Pte Ltd.** recommends that you obtain qualified expert advice confirming the suitability of product(s) in question for the application proposed.

While **Swan Swee Construction Pte Ltd.**, accepts its legal obligations, be aware however that to the extent permitted by law, **Swan Swee Construction Pte Ltd.**, disclaims all liability (including liability for negligence) for all losses and damages resulting from the use of the information provided in this brochure.