

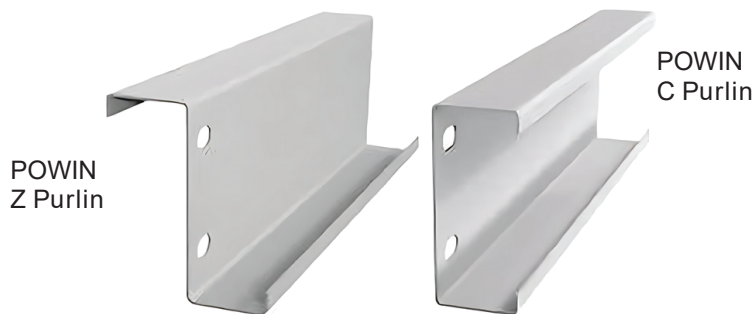


POWIN STEEL
THE ROOF FOR EVERYONE

- **C & Z Purlin**
- **Truss & Batten**
- **Robust & Resilient
Building Solution**

Quality | Service | On Time

Purlins - C & Z Purlin



Powin Steel C & Z Purlins (POWIN C Purlin & POWIN Z Purlin) are suitable for any construction in which the span are simply supported. Typical applications are single bay building, recessed roofs or walls, tower structures, end walls and building with old shaped ground plans. Where purlins of sufficient length are available, C & Z purlins may also be used continuously over two or more spans to reduce deflection. All of our raw material comes with SIRIM product certification (SIRIM MS certification) which quality is guaranteed.

Feature and benefits

- Quality services provided, competitive rates guaranteed, and good product quality.
- Pre-punched holes and custom cut lengths are offered.
- Options for thickness provided.
- High tensile steel which offers high strength and low weight.
- High level of accuracy and consistency in dimensions.

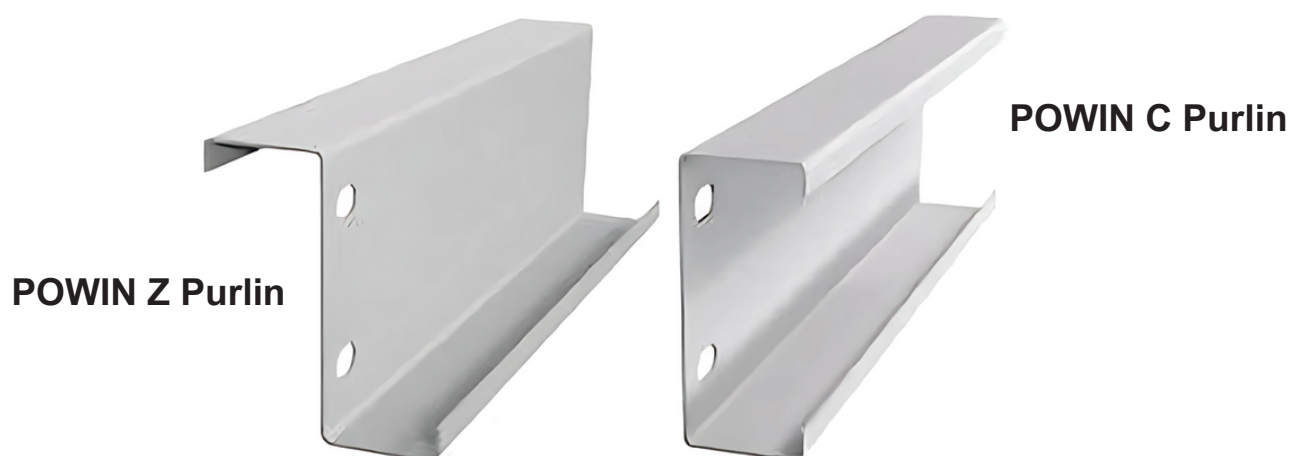


POWIN C Purlin & POWIN Z Purlin crafted with premium materials - offering lasting durability with up to 50 years* warranty against perforation protection. (*T&C apply)



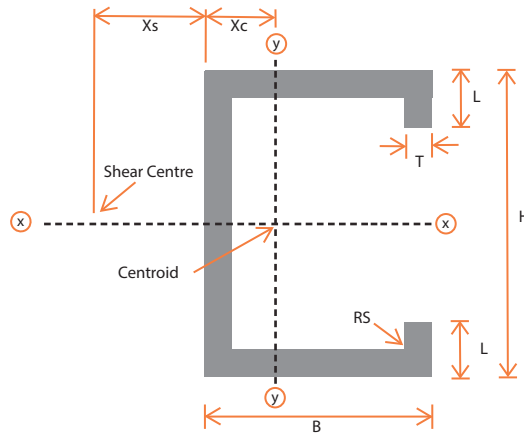
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Product Specification



Profile	Powin Steel C Purlin (POWIN C Purlin) & Powin Steel Z Purlin (POWIN Z Purlin)
Steel Thickness	1.0mm / 1.6mm / 2.0mm / 2.5mm / 3.0mm
Steel Grade	JIS G3302 / SGC 490M1 / AS 1297:2001 / SIRIM MS 2385:2011 / SIRIM MS 2660:2020
Tensile Strength	450 MPa
Zinc Coating	Z120 / Z180 / Z275 / Z350
Fire Rating	Class “O” fire rating according to – BS 476:Part 6:1989 “Method of Test for Fire Propagation for Products” – BS 476:Part 7:1997 “Fire Tests on Building Materials and Structure” Method of test to determine the classification of the surface spread of flame of products.
Available Length	Custom made lengths according to customer’s order. Option for On-Site forming service is available upon request and subject to availability. (T&C apply)
Product Tolerance	Length : ± 5 mm Web (Dim. H) : ± 3 mm Flange (Dim. B) : ± 3 mm Hole centres : ± 2 mm Lips : ± 3 mm Thickness : ± 0.18 mm
Warranties	Powin Steel provides up to 50 years* material warranties on individual project basic. (*T&C apply)
Delivery, Storage, Handling	Upon delivery, exercise care in unloading, stacking, moving, storing and erecting to prevent twisting, bending, scratching, or denting. Store in a safe, dry environment under a waterproof covering. Allow adequate ventilation to prevent condensation.
Precautions	Contact between galvanized steel and incompatible materials (eg. copper tube) must be avoided as premature corrosion could happen. Purlins should be stored off the ground in a slightly slope position.

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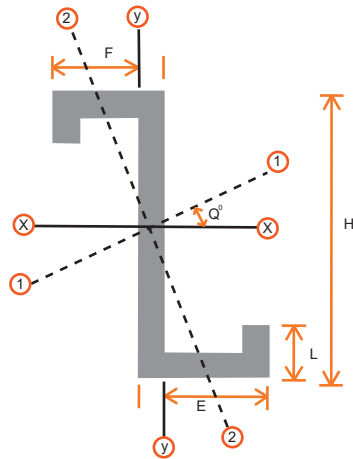
H = Web/Height
B = Flange
L = Lipped
T = Thickness

Identification			
PWC	150	200	65
C - Purlin	Normal Height	Thickness	Flange Width

POWIN C-Purlin section properties

POWIN C-Purlin Code	Dimensions				Area AS mm ²	Mass per unit length kg/m	Second moment of area		Section modulus		Radius of gyration		Torsional constant		Centroid	
	H mm	B mm	L mm	T mm			I _{xx} 10 ⁶ mm ⁴	I _{yy} 10 ⁶ mm ⁴	Z _{xx} 10 ³ mm ³	Z _{yy} 10 ³ mm ³	R _{xx} mm	R _{yy} mm	J mm ⁴	C _w mm ⁶	x mm	y mm
PWC075160	75	45	11	1.6	299	2.46	0.30	0.09	7.87	3.14	31.41	17.41	246.58	94.45	15.48	22.13
PWC075200	75	45	11	2.0	374	3.08	0.37	0.11	9.84	3.93	31.41	17.41	477.33	112.70	15.28	21.86
PWC075250	75	45	11	2.5	468	3.88	0.46	0.14	12.30	4.91	31.41	17.41	921.88	132.83	15.03	21.53
PWC075300	75	45	11	3.0	561	4.65	0.55	0.17	14.76	5.89	31.41	17.41	1575.00	150.19	14.79	21.19
PWC100160	100	50	14	1.6	371	2.80	0.62	0.15	12.49	4.50	41.02	19.79	308.02	294.32	17.04	25.24
PWC100200	100	50	14	2.0	464	3.45	0.78	0.18	15.62	5.62	41.02	19.79	597.33	354.31	16.84	24.97
PWC100250	100	50	14	2.5	580	4.40	0.98	0.23	19.52	7.03	41.02	19.79	1156.25	422.36	16.60	24.65
PWC100300	100	50	14	3.0	696	5.35	1.17	0.27	23.43	8.43	41.02	19.79	1980.00	483.13	16.36	24.32
PWC125160	125	50	14	1.6	411	3.10	1.04	0.16	16.62	4.60	50.26	19.52	342.15	462.07	15.32	23.76
PWC125200	125	50	14	2.0	514	3.82	1.30	0.20	20.77	5.75	50.26	19.52	664.00	557.82	15.14	23.51
PWC125250	125	50	14	2.5	643	4.89	1.62	0.24	25.96	7.19	50.26	19.52	1286.46	667.34	14.91	23.18
PWC125300	125	50	14	3.0	771	6.10	1.95	0.29	31.16	8.63	50.26	19.52	2205.00	766.12	14.68	22.86
PWC150160	150	65	15	1.6	499	3.85	1.85	0.31	24.68	6.82	60.89	24.73	417.25	1254.12	19.57	29.81
PWC150200	150	65	15	2.0	624	4.73	2.31	0.38	30.85	8.52	60.89	24.73	810.67	1524.20	19.38	29.55
PWC150250	150	65	15	2.5	780	5.89	2.89	0.48	38.56	10.65	60.89	24.73	1572.92	1839.06	19.15	29.23
PWC150300	150	65	15	3.0	936	7.89	3.47	0.57	46.27	12.78	60.89	24.73	2700.00	2129.65	18.92	28.90
PWC175160-65	175	65	16	1.6	539	4.15	2.63	0.32	30.08	6.92	69.86	24.38	451.38	1752.30	18.08	28.52
PWC175200-65	175	65	16	2.0	674	5.10	3.29	0.40	37.60	8.65	69.86	24.38	877.33	2132.62	17.90	28.27
PWC175250-65	175	65	16	2.5	843	6.35	4.11	0.50	47.00	10.82	69.86	24.38	1703.13	2577.64	17.68	27.95
PWC175300-65	175	65	16	3.0	1011	7.96	4.93	0.60	56.40	12.98	69.86	24.38	2925.00	2990.15	17.45	27.64
PWC175160-75	175	75	16	1.6	571	4.41	2.88	0.45	32.88	8.56	70.97	28.05	478.69	2458.67	21.84	33.36
PWC175200-75	175	75	16	2.0	714	5.42	3.60	0.56	41.10	10.70	70.97	28.05	930.67	2998.92	21.65	33.10
PWC175250-75	175	75	16	2.5	893	6.75	4.49	0.70	51.37	13.37	70.97	28.05	1807.29	3634.90	21.42	32.78
PWC175300-75	175	75	16	3.0	1071	8.42	5.39	0.84	61.65	16.04	70.97	28.05	3105.00	4228.67	21.18	32.45
PWC200160	200	75	16	1.6	611	4.76	3.90	0.47	39.01	8.67	79.89	27.68	512.82	3301.74	20.38	32.11
PWC200200	200	75	16	2.0	764	5.90	4.88	0.59	48.76	10.84	79.89	27.68	997.33	4031.39	20.20	31.86
PWC200250	200	75	16	2.5	955	7.39	6.10	0.73	60.95	13.55	79.89	27.68	1937.50	4892.64	19.97	31.54
PWC200300	200	75	16	3.0	1146	9.55	7.31	0.88	73.15	16.26	79.89	27.68	3330.00	5699.26	19.75	31.22
PWC225160	225	75	16	1.6	651	5.15	5.12	0.48	45.48	8.77	88.64	27.29	546.95	4296.13	19.10	30.97
PWC225200	225	75	16	2.0	814	6.42	6.40	0.61	56.85	10.96	88.64	27.29	1064.00	5249.68	18.93	30.72
PWC225250	225	75	16	2.5	1018	7.98	7.99	0.76	71.06	13.70	88.64	27.29	2067.71	6377.52	18.71	30.40
PWC225300	225	75	16	3.0	1221	10.30	9.59	0.91	85.27	16.44	88.64	27.29	3555.00	7436.35	18.49	30.09
PWC250160-75	250	75	16	1.6	691	5.38	6.54	0.50	52.28	8.85	97.24	26.88	581.09	5447.81	17.97	29.91
PWC250200-75	250	75	16	2.0	864	6.59	8.17	0.62	65.35	11.07	97.24	26.88	1130.67	6661.13	17.81	29.66
PWC250250-75	250	75	16	2.5	1080	8.35	10.21	0.78	81.69	13.83	97.24	26.88	2197.92	8098.52	17.60	29.36
PWC250300-75	250	75	16	3.0	1296	10.88	12.25	0.94	98.03	16.60	97.24	26.88	3780.00	9450.47	17.39	29.05
PWC250160-100	250	100	16	1.6	784	6.07	7.93	1.07	63.45	14.93	100.58	36.89	660.28	11989.85	27.93	43.31
PWC250200-100	250	100	16	2.0	980	7.58	9.91	1.33	79.32	18.67	100.58	36.89	1285.33	14720.43	27.75	45.05
PWC250160-100	250	100	16	2.5	1225	9.48	12.39	1.67	99.15	23.33	100.58	36.89	2500.00	17990.09	27.52	42.73
PWC250160-100	250	100	16	3.0	1470	11.37	14.87	2.00	118.98	28.00	100.58	36.89	4302.00	21104.25	27.29	42.41
PWC300160-75	300	75	16	1.6	784	6.28	10.26	0.57	68.38	9.88	114.38	26.89	660.28	9150.63	17.03	29.47
PWC300200-75	300	75	16	2.0	980	7.67	12.82	0.71	85.47	12.35	114.38	26.89	1285.33	11205.23	16.87	29.23
PWC300250-75	300	75	16	2.5	1225	9.68	16.03	0.89	106.84	15.44	114.38	26.89	2500.00	13648.66	16.67	28.93
PWC300300-75	300	75	16	3.0	1470	11.50	19.23	1.06	128.21	18.53	114.38	26.89	4302.00	15957.19	16.48	28.63
PWC300160-96	300	96	16	1.6	864	6.64	12.06	1.13	80.38	15.20	118.13	36.10	728.54	18016.26	25.31	41.00
PWC300200-96	300	96	16	2.0	1080	8.35	15.07	1.41	100.47	19.00	118.13	36.10	1418.67	22140.13	25.13	40.75
PWC300250-96	300	96	16	2.5	1550	10.26	18.84	1.76	125.59	23.75	118.13	36.10	2760.42	27089.79	24.92	40.44
PWC300300-96	300	96	16	3.0	1620	13.50	22.61	2.11	150.71	28.50	118.13	36.10	4752.00	31816.78	24.70	40.13
PWC350160	350	100	16	1.6	944	8.11	17.26	1.18	98.64	15.41	135.22	35.28	761.81	25527.29	23.13	38.95
PWC350200	350	100	16	2.0	1180	10.08	21.58	1.47	123.29	19.26	135.22	35.28	1552.00	31390.98	22.97	38.71
PWC350250	350	100	16	2.5	1475	12.37	26.97	1.84	154.12	24.07	135.22	35.28	3020.83	38440.30	22.76	38.40
PWC350300	350	100	16	3.0	1770	15.40	32.36	2.20	184.94	28.89	135.22	35.28	5202.00	45184.98	22.56	38.10

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H = Web/Height
B = Flange
F = Narrow Flange
E = Broad Flange
L = Lipped
T = Thickness

Identification			
PWZ	200	160	79
Z - Purlin	Normal Height	Thickness	Broad Width

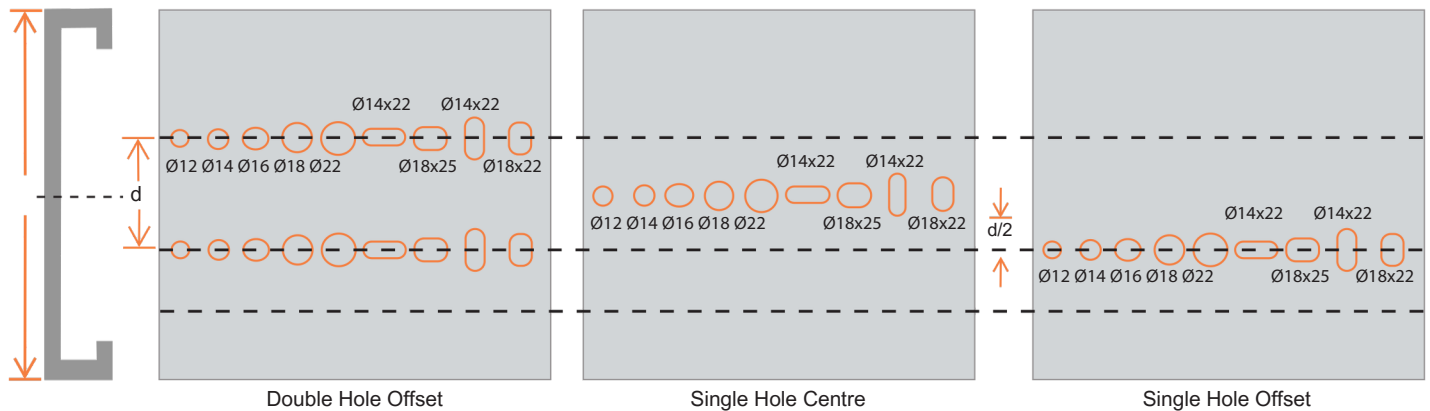
POWIN Z-Purlin section properties

POWIN Z-Purlin Code	Dimensions					Area AS mm ²	Mass per unit length kg/m	Second moment of area		Section modulus		Radius of gyration		Torsional constant	
	H	E	F	L	T			I _{xx}	I _{yy}	Z _{xx}	Z _{yy}	R _{xx}	R _{yy}	J	C _w
	mm	mm	mm	mm	mm			10 ⁶ mm ⁴	10 ⁶ mm ⁴	10 ³ mm ³	10 ³ mm ³	mm	mm	mm ⁴	10 ⁹ mm ⁶
PWZ100160	100	54	49	13	1.6	378	2.80	0.63	0.24	12.99	4.76	40.80	25.39	304.19	0.46
PWZ100200	100	54	49	13	2.0	469	3.45	0.77	0.30	15.95	5.80	40.60	25.12	588.93	0.57
PWZ100250	100	54	49	13	2.5	580	4.40	0.95	0.36	19.50	7.02	40.36	24.78	1137.61	0.71
PWZ100300	100	54	49	13	3.0	689	5.35	1.11	0.41	22.88	8.14	40.11	24.43	1943.92	0.86
PWZ125160	125	54	49	13	1.6	418	3.10	1.05	0.24	17.29	4.76	50.11	24.15	338.32	0.74
PWZ125200	125	54	49	13	2.0	519	3.82	1.29	0.30	21.28	5.80	49.90	23.88	655.60	0.93
PWZ125250	125	54	49	13	2.5	643	4.89	1.58	0.36	26.08	7.02	49.64	23.54	1267.81	1.16
PWZ125300	125	54	49	13	3.0	764	6.10	1.86	0.41	30.68	8.14	49.38	23.20	2168.92	1.39
PWZ150160	150	70	64	14	1.6	508	3.85	1.88	0.49	25.52	7.33	60.76	31.02	414.78	2.02
PWZ150200	150	70	64	14	2.0	631	4.73	2.51	0.60	31.49	8.97	60.56	30.75	804.93	2.52
PWZ150250	150	70	64	14	2.5	783	5.89	2.85	0.72	38.73	10.92	60.30	30.40	1559.48	3.15
PWZ150300	150	70	64	14	3.0	932	7.89	3.36	0.84	45.72	12.75	60.04	30.05	2672.92	3.78
PWZ175160	175	79	74	15	1.6	578	4.41	2.90	0.70	33.81	9.14	70.78	34.69	474.85	3.86
PWZ175200	175	79	74	15	2.0	719	5.42	3.58	0.85	41.79	11.20	70.58	34.41	922.27	4.83
PWZ175250	175	79	74	15	2.5	893	6.75	4.41	1.04	51.51	13.67	70.32	34.06	1788.65	6.04
PWZ175300	175	79	74	15	3.0	1064	8.42	5.22	1.21	60.94	16.01	70.06	33.71	3068.92	7.25
PWZ200160	200	79	73	15	1.6	617	4.76	3.92	0.68	39.86	9.05	79.71	33.32	507.62	5.13
PWZ200200	200	79	73	15	2.0	767	5.90	4.85	0.84	49.30	11.09	79.50	33.05	986.27	6.41
PWZ200250	200	79	73	15	2.5	953	7.39	5.98	1.02	60.82	13.54	79.22	32.70	1913.65	8.01
PWZ200300	200	79	73	15	3.0	1136	9.55	7.08	1.19	72.02	15.85	78.95	32.35	3284.92	9.61
PWZ225160	225	79	73	15	1.6	657	5.15	5.14	0.68	46.46	9.05	88.50	32.29	541.75	6.67
PWZ225200	225	79	73	15	2.0	817	6.42	6.37	0.84	57.51	11.09	88.28	32.02	1052.93	8.33
PWZ225250	225	79	73	15	2.5	1015	7.98	7.86	1.02	71.00	13.54	87.99	31.68	2043.86	10.42
PWZ225300	225	79	73	15	3.0	1211	10.30	9.32	1.19	84.15	15.85	87.71	31.33	3509.92	12.50
PWZ250160	250	79	73	15	1.6	697	5.38	6.57	0.68	53.39	9.05	97.14	31.35	575.89	8.43
PWZ250200	250	79	73	15	2.0	867	6.59	8.14	0.84	66.13	11.09	96.91	31.08	1119.60	10.54
PWZ250250	250	79	73	15	2.5	1078	8.35	10.06	1.02	81.70	13.54	96.61	30.74	2174.06	13.17
PWZ250300	250	79	73	15	3.0	1286	10.88	11.93	1.19	96.89	15.85	96.31	30.41	3734.92	15.80
PWZ300160-79	300	79	73	15	1.6	786	6.28	10.27	0.74	69.41	9.76	114.30	30.65	652.35	13.60
PWZ300200-79	300	79	73	15	2.0	979	7.67	12.73	0.90	86.04	11.98	114.05	30.39	1268.93	17.00
PWZ300250-79	300	79	73	15	2.5	1217	9.68	15.75	1.10	106.44	14.63	113.74	30.07	2465.73	21.25
PWZ300300-79	300	79	73	15	3.0	1454	11.50	18.71	1.29	126.40	17.15	113.43	29.74	4238.92	25.50
PWZ300160-100	300	100	93	15	1.6	873	6.64	12.07	1.58	81.42	16.50	117.59	42.53	726.07	27.21
PWZ300200-100	300	100	93	15	2.0	1087	8.35	14.97	1.94	101.03	20.33	117.36	42.27	1412.93	34.01
PWZ300250-100	300	100	93	15	2.5	1353	10.26	18.54	2.58	125.13	24.97	117.08	41.93	2746.98	42.52
PWZ300300-100	300	100	93	15	3.0	1616	13.50	22.05	2.80	148.77	29.44	116.80	41.60	4724.92	51.02
PWZ350160	350	100	93	15	1.6	953	8.11	17.31	1.58	100.02	16.50	134.79	40.71	794.34	38.21
PWZ350200	350	100	93	15	2.0	1187	10.08	21.49	1.94	124.18	20.33	134.56	40.45	1546.27	47.76
PWZ350250	350	100	93	15	2.5	1478	12.37	26.64	2.38	153.91	24.97	134.26	40.12	3007.40	59.70
PWZ350300	350	100	93	15	3.0	1766	15.40	31.69	2.80	183.12	29.44	133.96	39.79	5174.92	71.64

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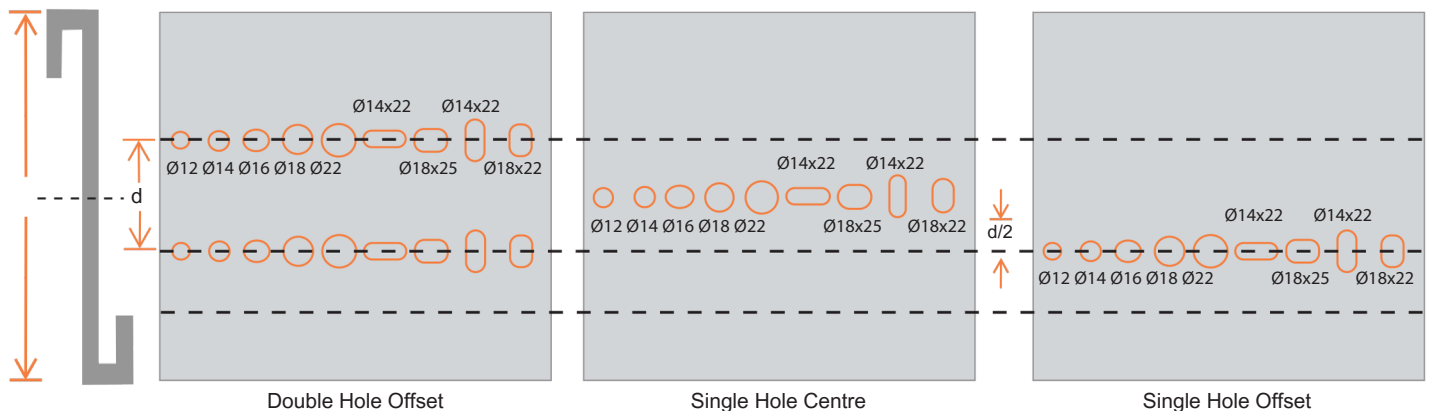
Pre-punched hole arrangements and options

Powin Steel C and Z Purlins are manufactured in lengths that are tailored towards customer needs. It is offered with punched holes as an option. The following options are for purlins with punched holes.



Height	Ø14 mm		Ø16 mm		Ø18 mm		Ø14 x 22 mm		Ø18 x 25 mm	
H (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)
100	50	25	50	50	50	25	50	25	50	25
125	50	25	50,70	25,35	50,60	25,30	50,55,60	25,27.5	50	25
150	50,80	25,40	50,70,100	25,35,50	50,60,100	25,30,50	50,55,60	25,27.5,50	50	25
175	50,80	25,40	50,70,100	25,35,50	50,60,100	25,30,50	50,55,60	25,27.5,50	50	25
200	50,80	25,40	50,70,100	25,35,50	50,60,100	25,30,50	50,55,60	25,27.5,50	50	25
250	50,80	25,40	50,70,100	25,35,50	50,60,100	25,30,50	50,55,60	25,27.5,50	50	25

Note: The following table is standard pre-punched hole distance. For special / customized hole arrangement (ie. Ø11, Ø22, Ø14x22, Ø18x22), please do not hesitate to contact us.



Height	Ø14 mm		Ø16 mm		Ø18 mm		Ø14 x 22 mm		Ø18 x 25 mm	
H (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)	d (mm)	d/2 (mm)
100	50	25	50	50	50	25	50	25	50	25
125	50,75	25,37.5	50,75	25,37.5	50,75	25,37.5	50,75	25,37.5	50,75	25,37.5
150	50,100	25,50	50,100	25,50	50,100	25,50	50,100	25,50	50,100	25,50
175	50,125	25,62.5	50,125	25,62.5	50,125	25,62.5	50,125	25,62.5	50,125	25,62.5
200	50,150	25,75	50,150	25,75	50,150	25,75	50,150	25,75	50,150	25,75
250	50,200	25,100	50,200	25,100	50,200	25,100	50,200	25,100	50,200	25,100

Note: The following table is standard pre-punched hole distance. For special / customized hole arrangement (ie. Ø11, Ø22, Ø14x22, Ø18x22), please do not hesitate to contact us.

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Recommended Span Limits

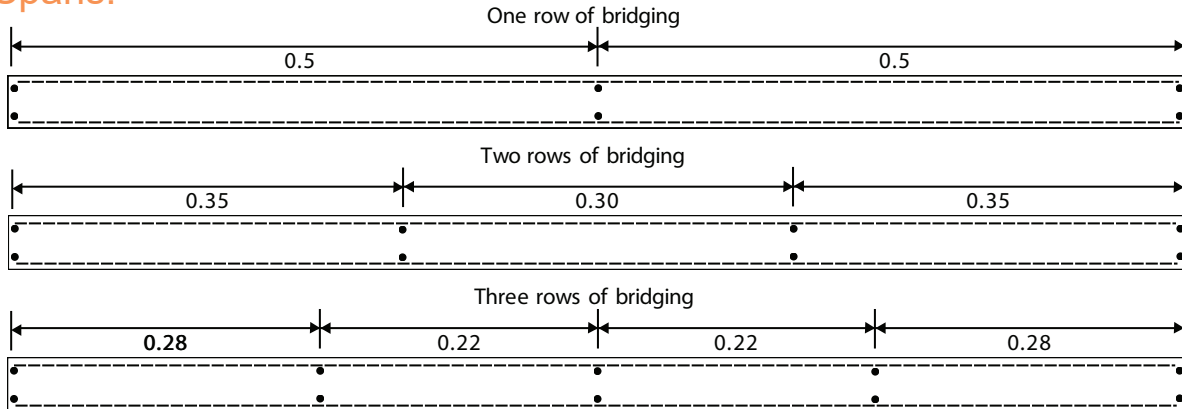
POWIN C-Purlin Code	Dimensions			Purlin Spacing					
	Web / Height	Flange	Thickness	900	1200	1500	1800	2100	2400
	mm	mm	mm	mm	mm	mm	mm	mm	mm
PWC075160	75	45	1.6	4250	3750	3350	3050	2850	2650
PWC075200	75	45	2.0	4850	4250	3800	3500	3250	3050
PWC075250	75	45	2.5	5400	4850	4350	4000	3700	3500
PWC075300	75	45	3.0	5750	5250	4850	4500	4150	3900
PWC100160	100	50	1.6	5950	5200	4650	4250	3950	3700
PWC100200	100	50	2.0	6450	5800	5200	4800	4450	4150
PWC100250	100	50	2.5	6950	6350	5850	5400	5000	4700
PWC100300	100	50	3.0	7400	6700	6250	5850	5550	5200
PWC125160	125	50	1.6	6750	5950	5350	4900	4550	4250
PWC125200	125	50	2.0	7500	6600	5950	5450	5050	4750
PWC125250	125	50	2.5	8250	7300	6600	6100	5650	5300
PWC125300	125	50	3.0	8750	7950	7250	6650	6200	5800
PWC150160	150	65	1.6	8650	7850	7250	6850	6500	6200
PWC150200	150	65	2.0	9300	8450	7850	7350	7000	6700
PWC150250	150	65	2.5	10000	9100	8450	7950	7550	7200
PWC150300	150	65	3.0	10650	9650	8950	8450	8000	7650
PWC175160-65	175	65	1.6	9700	8800	8200	7700	7300	6900
PWC175200-65	175	65	2.0	10450	9500	8800	8300	7900	7550
PWC175250-65	175	65	2.5	11250	10250	9500	8950	8500	8100
PWC175300-65	175	65	3.0	11950	10850	10100	9500	9000	8600
PWC175160-75	175	75	1.6	10000	9100	8450	7950	7550	7200
PWC175200-75	175	75	2.0	10750	9800	9300	8550	8100	7750
PWC175250-75	175	75	2.5	11600	10550	9800	9200	8750	8350
PWC175300-75	175	75	3.0	12350	11200	10400	9800	9300	8900
PWC200160	200	75	1.6	11050	10050	9350	8800	8350	7950
PWC200200	200	75	2.0	11900	10850	10050	9450	9000	8600
PWC200250	200	75	2.5	12850	11650	10850	10200	9700	9250
PWC200300	200	75	3.0	13650	12400	11500	10850	10300	9850
PWC225160	225	75	1.6	12100	11000	10200	9600	9150	8750
PWC225200	225	75	2.0	13050	11850	11000	10350	9850	9400
PWC225250	225	75	2.5	14050	12800	11850	11150	10600	10150
PWC225300	225	75	3.0	14950	13600	12600	11850	11250	10750
PWC250160-75	250	75	1.6	13150	11950	11100	10450	9800	9200
PWC250200-75	250	75	2.0	14150	12850	11950	11250	10650	10200
PWC250250-75	250	75	2.5	15250	13850	12850	12100	11500	11000
PWC250300-75	250	75	3.0	16200	14750	13700	12850	12200	11700
PWC250160-100	250	100	1.6	14050	12750	11850	10950	10200	9550
PWC250200-100	250	100	2.0	15100	13750	12750	12000	11400	10900
PWC250160-100	250	100	2.5	16300	14800	13750	12900	12250	11750
PWC250160-100	250	100	3.0	17300	15700	14600	13750	13050	12450
PWC300160-75	300	75	1.6	15050	13350	12050	11100	10350	9750
PWC300200-75	300	75	2.0	16450	14950	13900	13050	12400	11850
PWC300250-75	300	75	2.5	17750	16100	14950	14100	13350	12800
PWC300300-75	300	75	3.0	18850	17150	15900	14950	14200	13600
PWC300160-96	300	96	1.6	15450	13650	12400	11400	10650	10000
PWC300200-96	300	96	2.0	17400	15800	14650	13800	13100	12550
PWC300250-96	300	96	2.5	18700	17000	15800	14850	14100	13500
PWC300300-96	300	96	3.0	19900	18100	16800	15800	15000	14350
PWC350160	350	100	1.6	15450	13750	12500	11550	10750	10150
PWC350200	350	100	2.0	19600	17550	16000	14800	13850	13050
PWC350250	350	100	2.5	21100	19150	17800	16750	15900	15200
PWC350300	350	100	3.0	22450	20400	18900	17800	16900	16150

Note: Values derived in accordance with BS 5950: Part 5: 1987, assuming a roofing distributed load of 6.55 kg/m².

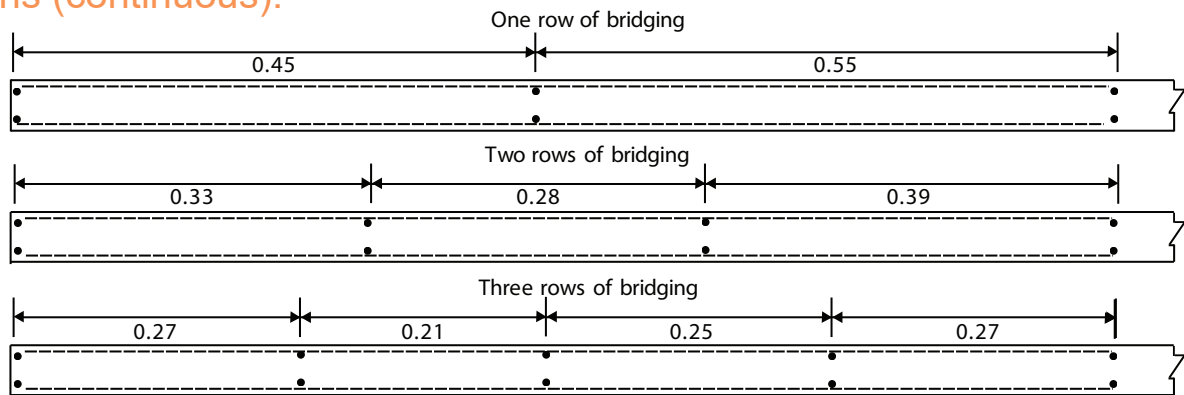
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Recommended Location of Bridging Holes

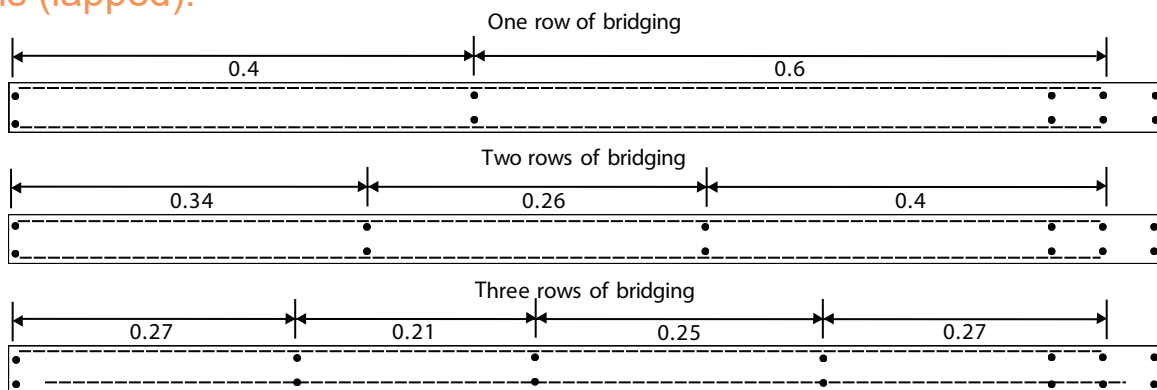
Simple Spans:



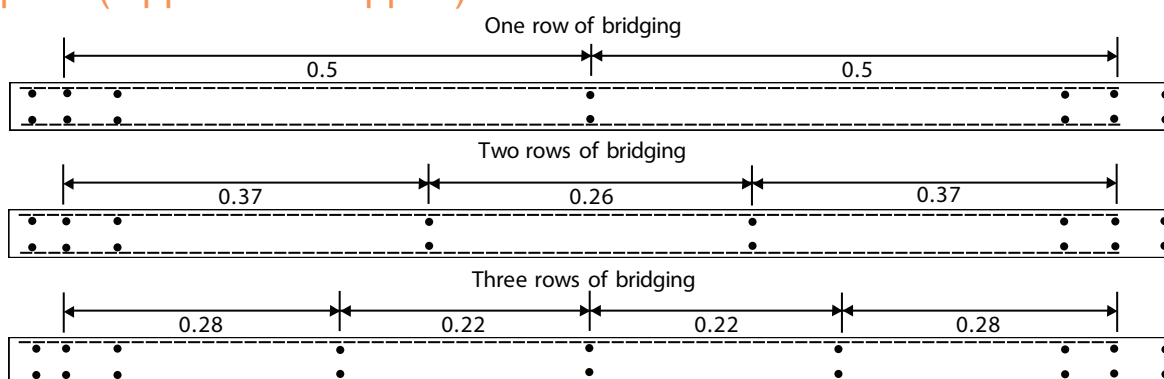
End Spans (continuous):



End Spans (lapped):



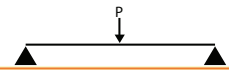
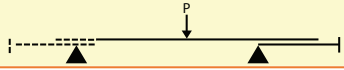
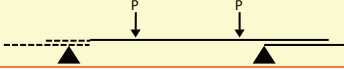
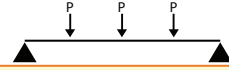
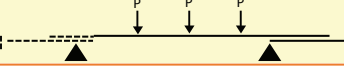
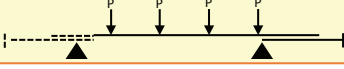
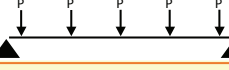
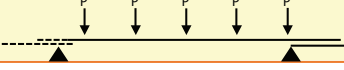
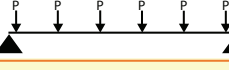
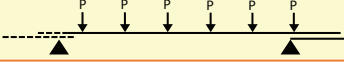
Interior Spans (lapped or unlapped):

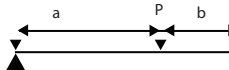
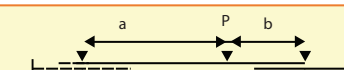
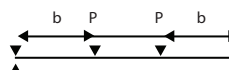


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Point Loads – Technical Overview

The provided equations convert point loads into equivalent uniform loads (EULs) for evaluating the load-bearing capacity of simple spans. For lapped spans, the conversion depends on the number of spans, their position within the structure, and the lapping ratio. Developed based on the most critical loading scenario, the formulas apply to both end and interior spans when the lapping ratio exceeds 0.10. A separate set of equations is required for deflection analysis. These formulas offer a conservative estimate with a safety margin of approximately 3.7% to 25%.

Symmetrical Equidistant Point Loads			
Loading Condition		Diagrams	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		$W = \frac{1.14NP}{L}$
	Lapped		$W = \frac{1.22NP}{L}$

Single Eccentric and Two Symmetrical Point Loads			
Loading Condition		Diagrams	Conversion Formula
SINGLE ECCENTRIC POINT LOAD	Simple		$W = \frac{8abP}{L^3}$
	Lapped		$W = \frac{17.76ab^2P}{L^3}$
TWO SYMMETRICAL POINT LOAD	Simple		$W = \frac{8bP}{L^2}$
	Lapped		$W = \frac{9.45b(2L-3b)P}{L^3}$

Notation:

P = single point load (kN)

a = larger distance from support (m)

w = equivalent uniform load (kN/m)

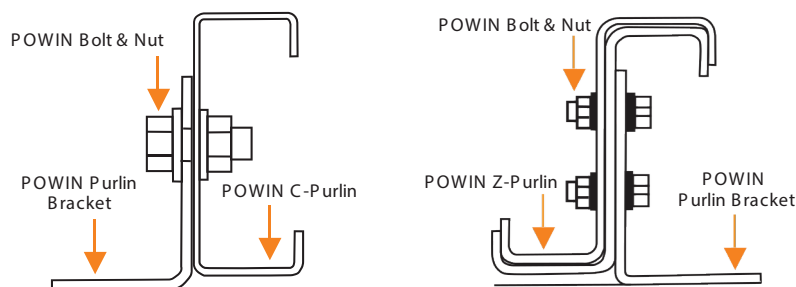
L = span length (m)

b = smaller distance from support (m)

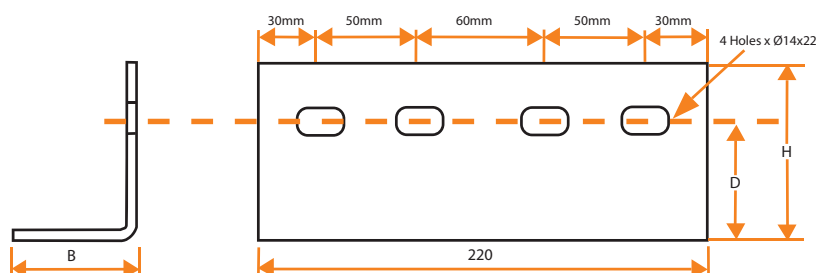
N = number of point loads over one span (applicable when N ≥ 6)

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Purlin Accessories

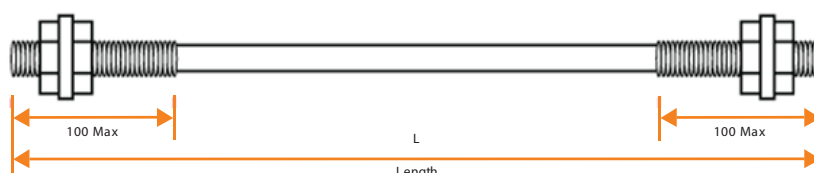


Purlin Bracket



Purlin Height	Base B (mm)	Height H (mm)	Hole Distance D (mm)	Thickness (mm)	Weight (kg)	Materials
100	59	81	56	4.5	0.995	Mild Steel
125	68	92	67	4.5	1.132	Mild Steel
150	76	104	79	4.5	1.289	Mild Steel
200	90	130	105	4.5	1.578	Mild Steel

Tie Rod / Sag Rod



Size	Tread Length (mm)	Total Length (mm)
12 mm	100 Max	L

Bolt & Nut



Type	Description
Mild Steel Bolt & Nut	1/2" x 11/4" (Zinc) with Nut / 2FW
HT Hexagon Bolt 8.8 (Zinc)	M 12 x 30mm with Nut / 2FW

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Bridging

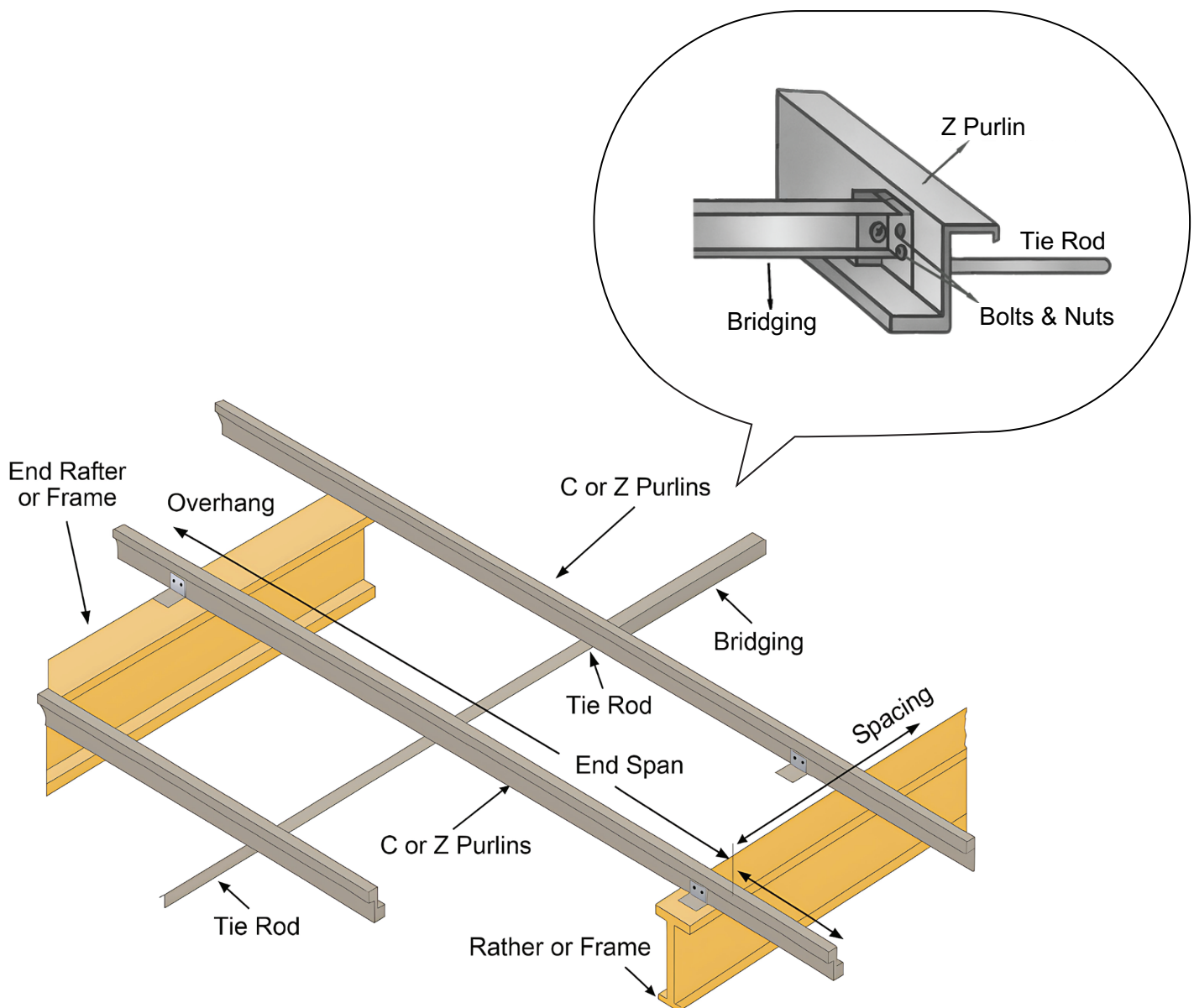
Bridging is used between purlins to provide lateral support and prevent buckling under loads. It helps improve the overall stability and strength of the roofing system. Bridging also ensures better load distribution, especially in long-span structures.

Size (mm)	Thickness (mm)	Material
100 x 50 x 14	1.6	Galvanized (G.I)

Purlin Connector

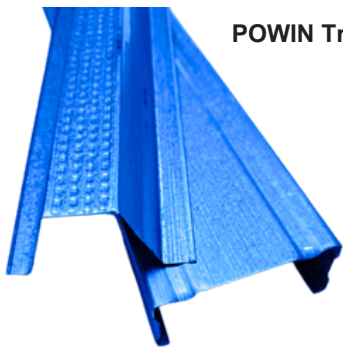
Purlin connectors are metal fittings that join purlins to each other or to the main frame. They help maintain alignment, secure connections, and allow for efficient load transfer. Together, bridging and purlin connectors enhance the performance and safety of steel roof structures.

Size (mm)	Thickness (mm)	Material
62 x 62 x 100	1.6	Galvanized (G.I)



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Multi Roof Truss & Batten



POWIN Truss

POWIN Batten

Powin Steel Multi Roof Trusses & Battens (POWIN Truss & POWIN Batten) are made from structure grade galvanized steel (GI) or aluzinc (AZ). They are versatile, easy to use and compatible with all roof claddings. Powin Steel can manufacture truss & batten to your individual requirements or available in stock lengths.

Feature and benefits

- Improved corrosion resistance for outdoor exposure as a layer of thin organic coating is giving an extra edge in decelerating the oxidation reaction.
- Better formability as its smooth surface will help in reducing friction during forming process.
- Attractive appearance as the blue colour coated is eye-catching and unique.

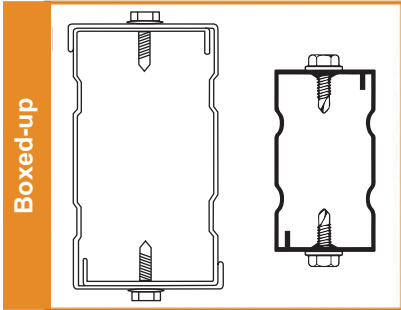
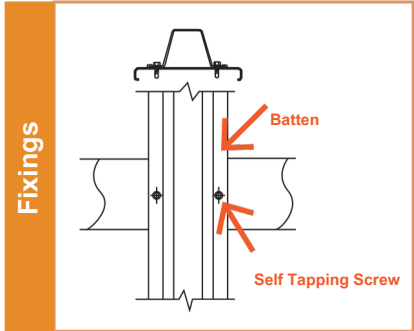
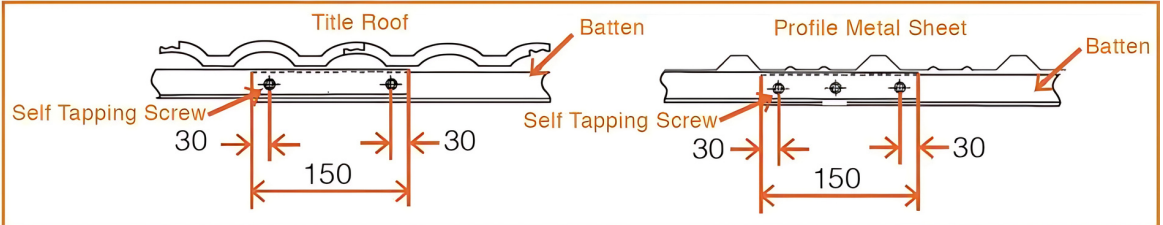


POWIN Truss & POWIN Batten crafted with premium materials - offering lasting durability with up to **50 years*** warranty against perforation protection. (*T&C apply)



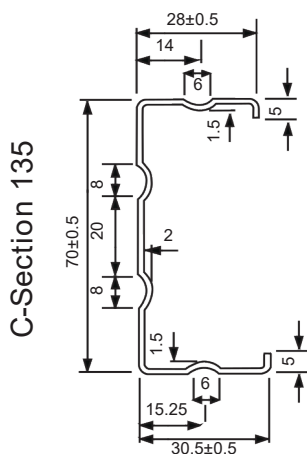
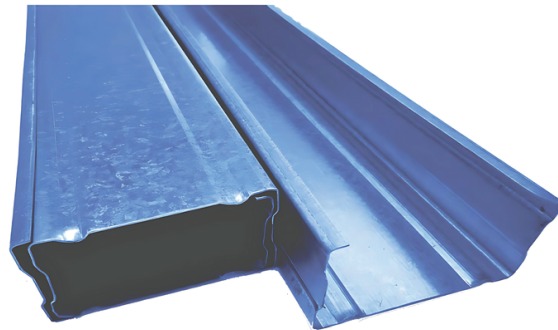
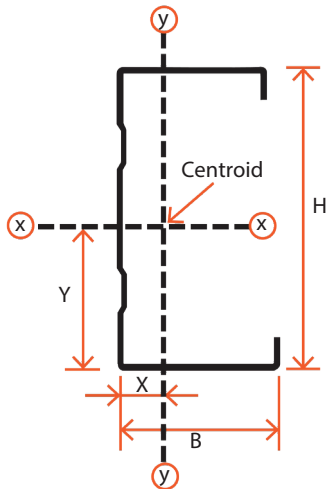
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Product Specification

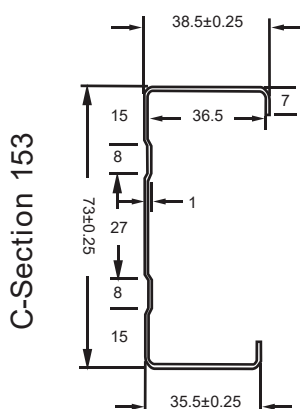
Profile	Powin Steel Truss (POWIN Truss) & Powin Steel Batten (POWIN Batten)	
Steel Thickness	0.45mm - 1.0mm	
Steel Grade	Hot dip galvanized steel (GI) Z120 / Z275 / Z350 or Aluzinc (AZ) AZ100 / AZ150	
Tensile Strength	Hi-Tensile Grade G550Mpa	
Fire rating	Class "O" fire rating according to – BS 476:Part 6:1989 "Method of Test for Fire Propagation for Products" – BS 476:Part 7:1997 "Fire Tests on Building Materials and Structure" Method of test to determine the classification of the surface spread of flame of products.	
Available Length	Standard length 6 meter. Custom made length is available according to client's order upon request and subjected to feasibility.	
Product Tolerance	Length : ± 5 mm Web (Dim. H) : ± 1 mm Flange (Dim.B) : ± 2 mm Thickness : ± 0.05 mm	
Boxed - up & Fixings	Steel truss sections that are C-shaped will have better strength, flexibility and wider spans. 	Offset must be avoided when fixing pairs of screw. 
Overlaps	Recommended overlaps to be 150 mm in length. 	
Warranties	Powin Steel provides up to 50 years* material warranties on individual project basic. (*T&C apply)	
Delivery, Storage, Handling	Upon delivery, exercise care in unloading, stacking, moving, storing and erecting to prevent twisting, bending, scratching, or denting. Store in a safe, dry environment under a waterproof covering. Allow adequate ventilation to prevent condensation. Truss and Batten should be stored off the ground on a slightly slope position.	
Precautions	Contact between galvanized steel and incompatible materials (eg. copper tube) must be avoided as premature corrosion could happen.	
Technical support	Powin Steel uses the latest technology and offers unrivalled design and support. Each project is individually designed and tailored to provide a cost effective solution that meet performance requirements of clients. Design and layouts are done in detail to enable quick and easy installations.	

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Section properties

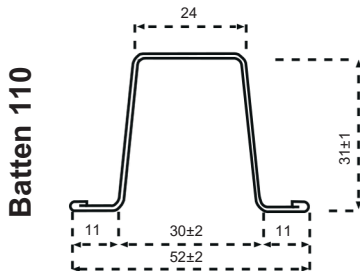
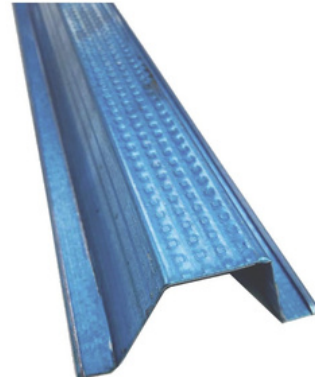
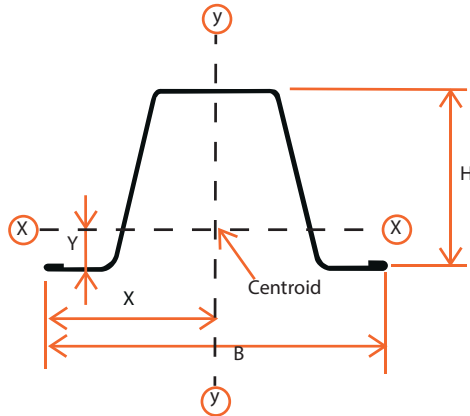


C-Section 135										
Thickness (mm)	Area (mm ²)	Weight (kg/m)	I _{xx} 10 ⁴ (mm ⁴)	I _{yy} 10 ⁴ (mm ⁴)	Z _{xx} 10 ³ (mm) ³	Z _{yy} 10 ³ (mm) ³	R _{xx} (mm)	R _{yy} (mm)	X (mm)	Y (mm)
0.75	102.4	0.89	7.776	1.023	2.178	0.461	27.6	10.0	8.3	34.3
0.80	109.1	0.94	8.272	1.085	2.317	0.489	27.6	10.0	8.3	34.3
1.0	135.7	1.18	10.226	1.328	2.864	0.598	27.5	10.0	8.3	34.3

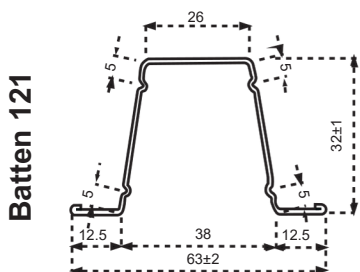


C-Section 153										
Thickness (mm)	Area (mm ²)	Weight (kg/m)	I _{xx} 10 ⁴ (mm ⁴)	I _{yy} 10 ⁴ (mm ⁴)	Z _{xx} 10 ³ (mm) ³	Z _{yy} 10 ³ (mm) ³	R _{xx} (mm)	R _{yy} (mm)	X (mm)	Y (mm)
0.75	116.9	0.99	10.187	2.012	2.738	0.756	29.5	13.1	11.4	35.8
0.80	124.6	1.05	10.840	2.137	2.914	0.803	29.5	13.1	11.4	35.8
1.0	155.1	1.30	13.421	2.628	3.608	0.988	29.4	13.0	11.4	35.8

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Batten 110										
Thickness (mm)	Area (mm ²)	Weight (kg/m)	I_{xx} 10 ⁴ (mm ⁴)	I_{yy} 10 ⁴ (mm ⁴)	Z_{xx} 10 ³ (mm) ³	Z_{yy} 10 ³ (mm) ³	R_{xx} (mm)	R_{yy} (mm)	X (mm)	Y (mm)
0.45	48.87	0.44	0.769	1.080	0.48	0.40	12.60	14.93	26	15.11
0.48	51.70	0.47	0.827	1.159	0.52	0.43	12.64	14.97	26	15.11
0.50	53.85	0.49	0.865	1.212	0.54	0.45	12.67	15.00	26	15.11
0.55	59.24	0.54	0.963	1.346	0.61	0.50	12.75	15.08	26	15.11

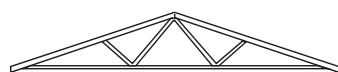


Batten 121										
Thickness (mm)	Area (mm ²)	Weight (kg/m)	I_{xx} 10 ⁴ (mm ⁴)	I_{yy} 10 ⁴ (mm ⁴)	Z_{xx} 10 ³ (mm) ³	Z_{yy} 10 ³ (mm) ³	R_{xx} (mm)	R_{yy} (mm)	X (mm)	Y (mm)
0.45	53.35	0.48	0.887	1.795	0.530	0.570	12.7	18	31.5	15.8
0.48	59.00	0.51	0.946	1.911	0.584	0.607	12.7	18	31.5	15.8
0.50	61.40	0.53	0.985	1.988	0.608	0.631	12.7	18	31.5	15.8
0.55	67.5	0.59	1.082	2.181	0.672	0.692	12.7	18	31.5	15.9

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Type of truss structure

Trusses are an extremely strong, well-accepted, cost effective option for the construction of various structure. To maximise the efficiency of the structure, an appropriate truss type should be selected the design. The following diagram provide an idea of what type of structures are out there that can benefit your design. The diagram on the right shows a few common truss designs and should not be taken as accurate as the actual design may vary from the diagram.



Regular



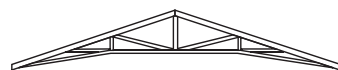
Studio



Scissors



Polynesian



Cambered



Inverted



Dual Pitch



Flat



Monopitch



Bowstring



Gambrel



Attic

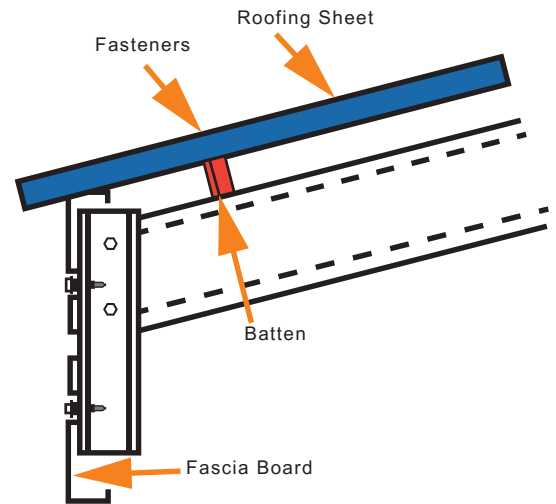
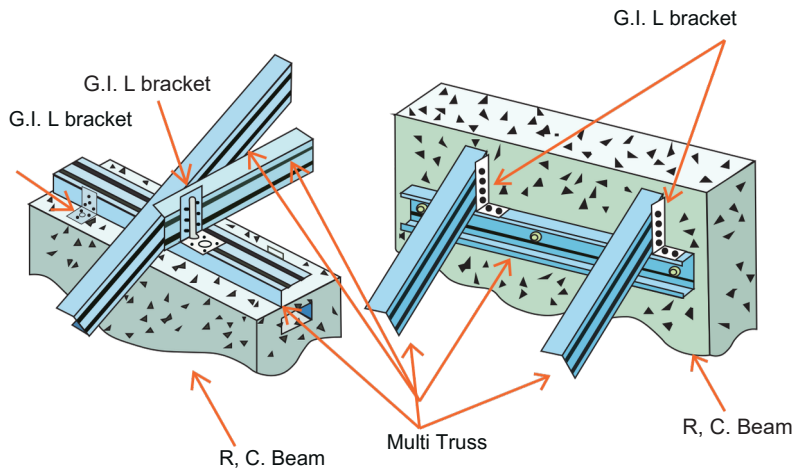


Cathedral



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Truss Accessories

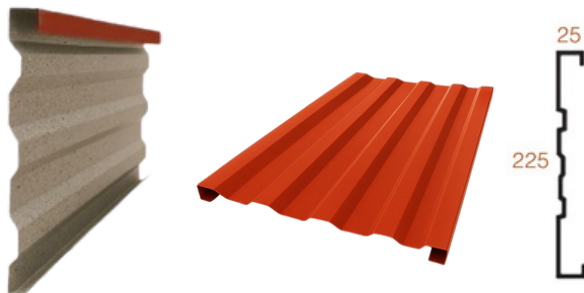


G.I. L bracket



Size (mm)	Thickness (mm)	Weight (kg)	Material
100 x 50 x 50	1.6	0.087	Galvanized (G.I)
100 x 50 x 50	2.0	0.089	Galvanized (G.I)

Fascia Board



Size (mm)	Available Thickness (mm)	Length (mm)
225	0.48	6000

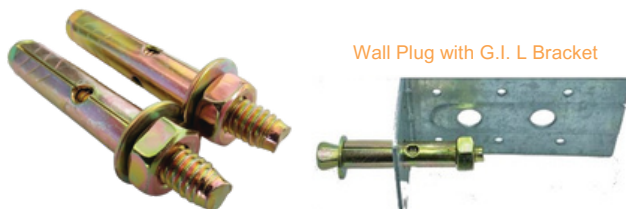
Colour Chart				
Fina Blue	Brick Red	Fantasia Green	Gravity Grey	Nada Beige
Marakan Red	Almond Brown	Phantom Grey	Aluzinc	Lily White

Skrew



Type	Size	Coating	Nut Head
Hex Head (SDS) Harden Zinc ZP	#10 x 5/8 - 24T	Zinc Plate, Harden	Hex Nut

Wall Plug / Sleeve Anchor



Type	Size
Sleeve Anchor (ACE)	3/8 x 3"

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POWIN Thermal Solution

Double Skin Roof System (0.32W/m²K U-Value)

POWIN Thermal Solution is designed to reduce heat transmission and improve indoor comfort in tropical climates. With advanced insulation and a double skin roof structure, it lowers energy use, enhances sustainability, and provides an efficient, cost-effective solution for both residential and commercial buildings.

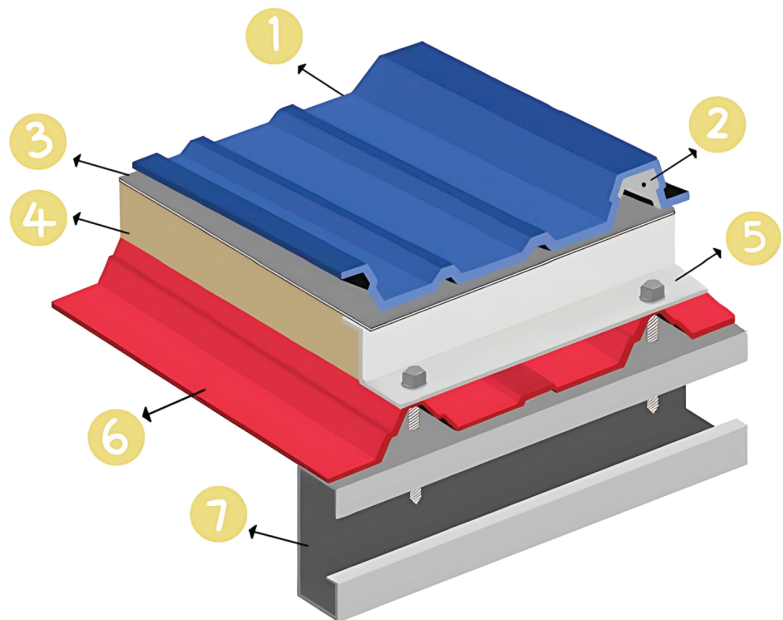
Structure

1. POWIN Clip Lock 710 (POWIN CL 710) - 0.47mm TCT AZ150 / AZ200 (*Warranty Offer : Coreshield / Ultrashield)
2. POWIN 710 Clip
3. Double Sided Aluminium Foil
4. Rockwool 50 mm thickness, 40kg/m³
5. GI Z Spacer 1.0mm thickness
6. POWIN 762 - 0.35mm TCT AZ100 / AZ150
7. POWIN C Purlin, Zinc Coating Z275 - PWC150160 (Z275) ✓ Up to 30 years* against perforation by corrosion (*T&C apply)



Application

- Data Centers
- Agricultural Facilities / Indoor Farming
- Commercial Buildings
- Industrial Warehouses
- Educational Institutions
- Healthcare Facilities
- Luxury Residential Developments
- Green Building Projects



Fire Protection System

Advanced Metal Paint Coating for Long-Lasting Protection

At Powin Steel, we offer a premium fire-resistant metal coating designed to enhance the safety and lifespan of metal deck structures. It provides effective heat protection during fire emergencies and acts as a corrosion barrier, ensuring long-term durability even in harsh environments.



Key Benefits

Fire-Resistant Formula



Long-Term Durability



Weather & UV Protection



Excellent Adhesion



Low Maintenance



Applications

Warehouses & Logistics Centers

High-Rise Commercial & Industrial Buildings

Parking Structures & Basements

Manufacturing Plants Oil & Gas or Chemical Facilities

Infrastructure Projects with Fire Safety Compliance Needs

Your Reliable Protection Partner

Combined with our advanced roofing and insulation systems, Powin Steel's fire-resistant coating enhances building safety, durability, and energy efficiency — ideal for clients seeking high performance.

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POWIN STEEL INDUSTRIES SDN. BHD.
PT 4824, Jalan TTC 33,
Kawasan Perindustrian Cheng,
75250 Melaka, Malaysia.

Tel (office) : +60 (06) 335 1290

Whatsapp : +60 16 - 661 1852
: +60 16 - 661 5627

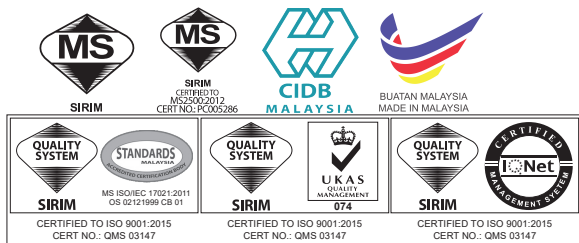
Fax : +60 (06) 336 5541

Email : sales.powinsteel@gmail.com

 www.powinsteel.com.my  有瓦遮头 | Powin Steel

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