

## DANA SECONDARY STEEL MEMBERS

### DANA C & Z PURLINS

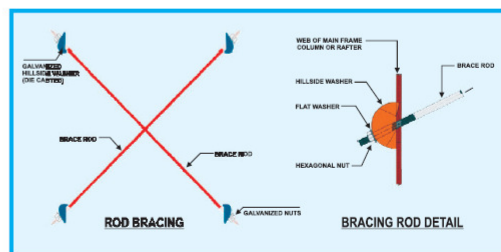
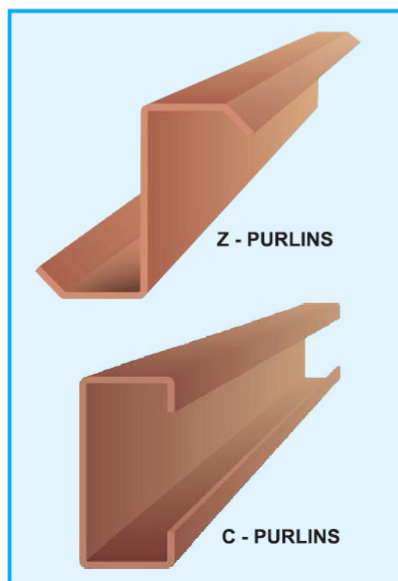
DANA's facilities are well equipped for producing Z-Purlins and C-Channels, which are the secondary structural members used to support the roof sheeting and wall cladding.

Besides being economical to use, the Z-Purlins and C-Channels provide excellent strength to weight ratio. The Z and C Channels are manufactured from galvanized coils conforming to ASTM – A653, Grade D with a minimum yield strength of 345Mpa. The range of purlins produced by DANA varies in depth from 100mm to 450mm and the related thickness varies up to 3mm thereby allowing them to cater to large spans of upto 11m.

The flange widths, lip sizes and flange angles of the sections can be set to be manufactured based on individual client needs. The same is true of the anti-sag rods and connection fasteners as well as the Z and C Channels which are customized in size to provide the flexibility of the connection to the main structure whether by utilizing the overlapped system or the sleeved system.

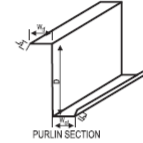
### BENEFIT OF DANA PURLINS

- High strength to weight ratio.
- Economical
- Can be used for large spans of up to 11m
- Better quality and finish
- Quick installation
- Custom made to requirement





# GOLD FORMED "Z" PURLINS



## PURLIN SECTION PROPERTIES & ALLOWABLES

Material: Grade: ASTM A653 Grade: 50(Fy=35.0 KN/M<sup>2</sup>) G90 / Z275 gm/m<sup>2</sup>

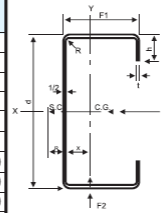
Section		142Z15	142Z20	172Z15	172Z20	202Z15	202Z20	202Z25	232Z15	232Z20
Description	Units									
Depth	D mm	142	142	172	172	202	202	202	232	232
Thickness	t mm	1.5	2.0	1.5	2.0	1.5	2.0	2.5	1.5	2.0
Top Flange	Wtf mm	50	50	65	65	65	65	65	75	75
Bot. Flange	Wbf mm	45	45	60	60	60	60	60	70	70
Lip	L mm	16	16	16	16	16	16	16	16	16
Lip Angle	Deg	45	45	45	45	45	45	45	45	45
Bend Radius	R mm	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0
Weight	W Kg/m	3.33	4.44	3.81	5.10	4.12	5.49	6.86	4.78	6.37
Area	A mm <sup>2</sup>	421.82	558.19	481.82	638.19	526.82	698.19	865.30	601.82	798.19
Ixx	cm <sup>4</sup>	135.26	177.34	221.87	291.55	322.76	424.67	521.59	487.09	641.96
Sxx (t)	cm <sup>3</sup>	19.39	25.43	26.20	34.43	32.41	42.65	52.39	42.73	56.32
Sxx (b)	cm <sup>3</sup>	18.72	24.54	25.41	33.38	31.51	41.46	50.92	41.28	54.40
Rx	cm	5.66	5.64	6.79	6.76	7.83	7.80	7.76	9.00	8.97
Iyy	cm <sup>4</sup>	36.06	47.09	44.26	57.93	44.26	57.94	71.01	64.34	84.40
Syy (l)	cm <sup>3</sup>	5.39	7.07	6.17	8.10	6.18	8.11	9.98	7.94	10.44
Syy @	cm <sup>3</sup>	5.20	6.82	5.95	7.82	5.94	7.81	9.60	7.57	9.95
Ry	cm	2.92	2.90	3.03	3.01	2.90	2.88	2.87	3.27	3.25
Allowable Shear	Va KN	14.92	29.89	12.17	29.21	10.28	24.62	46.70	8.90	21.28
Allowable BM*	Mag KN-m	3.35	4.72	4.45	6.08	5.46	7.60	10.31	6.25	9.75
Allowable BM**	Mawc KN-m	3.12	4.40	4.14	5.66	5.09	7.07	9.60	5.82	9.07
Allowable BM \$	Maws KN-m	2.23	3.14	2.96	4.04	3.63	5.05	6.86	4.16	6.48
Ultimate Shear	Vu KN	22.42	44.92	18.29	43.90	15.45	37.00	70.19	13.37	31.98
Ultimate BM*	Mug KN-m	5.32	7.49	7.05	9.64	8.67	12.05	16.36	9.92	15.46
Ultimate BM**	Muwc KN-m	4.95	6.98	6.57	8.98	8.07	11.22	15.23	9.23	14.40
Ultimate BM \$	Muws KN-m	3.54	4.98	4.69	6.41	5.76	8.02	10.88	6.59	10.28

Section		232Z25	250Z20	250Z25	260Z20	262Z25	302Z25	302Z30
Description	Units							
Depth	D mm	232	250	250	262	262	302	302
Thickness	t mm	2.5	2.0	2.5	2.0	2.5	2.5	3.0
Top Flange	Wtf mm	75	75	75	75	75	75	75
Bot Flange	Wbf mm	70	70	70	70	70	70	70
Lip	L mm	16	16	16	16	16	18	18
Lip Angle	Deg	45	45	45	45	45	45	45
Bend Radius	R mm	3.0	2.0	3.0	2.0	3.0	3.0	3.0
Weight	W Kg/m	7.96	6.71	8.39	6.90	8.63	9.79	10.97
Area	A mm <sup>2</sup>	990.30	848.19	1052.80	872.19	1082.80	1247.30	1491.80
Ixx	cm <sup>4</sup>	790.24	786.90	969.52	878.84	1083.18	1661.13	1978.11
Sxx (t)	cm <sup>3</sup>	69.34	64.15	79.05	68.33	84.23	111.79	133.12
Sxx (b)	cm <sup>3</sup>	66.95	61.80	76.13	65.89	81.20	108.29	128.95
Rx	cm	8.93	9.63	9.60	10.04	10.02	11.54	11.52
Iyy	cm <sup>4</sup>	103.67	95.30	117.14	95.31	117.15	171.05	292.50
Syy (l)	cm <sup>3</sup>	12.87	11.34	13.99	11.35	13.99	17.99	21.35
Syy @	cm <sup>3</sup>	12.26	10.75	13.26	10.75	13.25	17.13	20.33
Ry	cm	3.24	3.35	3.34	3.31	3.29	3.70	3.68
Allowable Shear	Va KN	42.29	19.68	39.05	18.74	37.15	31.56	54.73
Allowable BM*	Mag KN-m	12.55	10.93	13.88	11.66	14.84	19.48	23.61
Allowable BM**	Mawc KN-m	11.68	10.18	12.93	10.86	13.82	18.14	21.98
Allowable BM \$	Maws KN-m	8.35	7.27	9.23	7.76	9.87	12.96	15.70
Ultimate Shear	Vu KN	63.56	29.57	58.69	28.16	55.84	47.44	82.26
Ultimate BM*	Mug KN-m	19.91	17.34	22.03	18.50	23.55	30.91	37.45
Ultimate BM**	Muwc KN-m	18.54	16.15	20.51	17.23	21.92	28.78	34.87
Ultimate BM \$	Muws KN-m	13.24	11.53	14.65	12.30	15.66	20.56	24.90

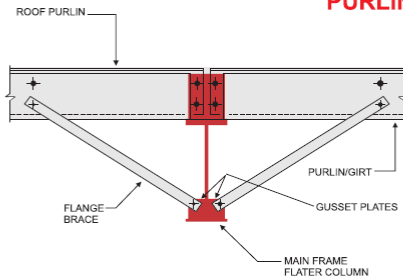
\*BM due to gravity loads (fully braced)  
 \*\*BM due to uplift for continuous spans (fully braced)  
 \$ BM due to uplift for simple spans (fully braced)

## COLD FORMED "C" PURLINS

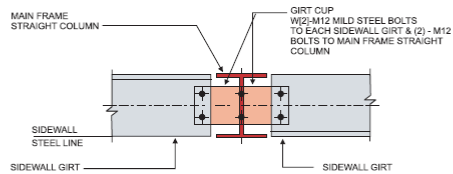
Nominal Dimensions										Sectional Properties					
Section Ref	Depth D mm	Top Flange F1 mm	Bottom Flange F2 mm	Thickness mm	A mm	B mm	L mm	Wt/m kg	Area cm square	Ixx	Iyy	Zxx	Ryy	y mm	x mm
14215	142	52	52	1.5	54	193	520	3.25	4.14	129.24	16.08	18.20	1.97	16.30	71.00
14220	142	52	52	2	54	193	520	4.30	5.48	169.66	20.82	23.90	1.95	16.33	71.00
14225	142	52	52	2.5	54	193	520	5.34	5.80	208.83	25.28	29.41	1.93	16.35	71.00
17215	172	62	62	1.5	84	218	570	3.84	4.89	224.41	25.90	26.09	2.30	18.38	86.00
17220	172	62	62	2	84	218	570	5.09	6.48	295.32	33.68	34.34	2.28	18.41	86.00
17225	172	62	62	2.5	84	218	570	6.32	8.05	364.33	41.06	42.36	2.25	18.43	86.00
20215	202	62	62	1.5	114	248	630	4.19	5.34	326.77	27.18	32.35	2.25	16.80	101.00
20220	202	62	62	2	114	248	630	5.56	7.05	430.52	35.35	42.63	2.23	16.93	101.00
20225	202	62	62	2.5	114	248	630	6.91	8.80	531.73	43.09	52.65	2.21	16.97	101.00
23215	232	62	62	1.5	114	283	720	4.55	5.79	453.17	28.27	39.07	2.21	15.64	116.00
23220	232	62	62	2	114	283	720	6.03	7.68	597.57	36.75	51.52	2.19	15.69	116.00
23225	232	62	62	2.5	114	283	720	7.50	9.55	738.72	44.80	63.68	2.17	15.74	116.00



### PURLIN FIXING DETAILS

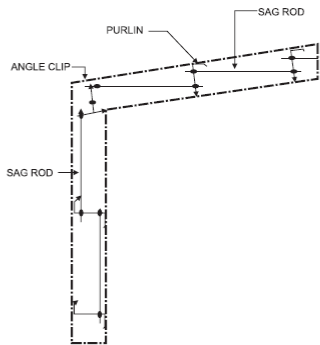


PURLIN / GIRT BUTT JOINT

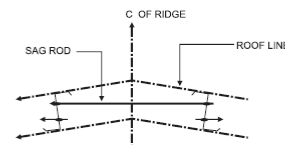


FLUSH SIDEWALL GIRTS AT MAIN FRAME STRAIGHT COLUMN

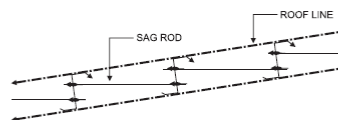
### SAG ROD INSTALLATIONS



SAG ROD AT WALL

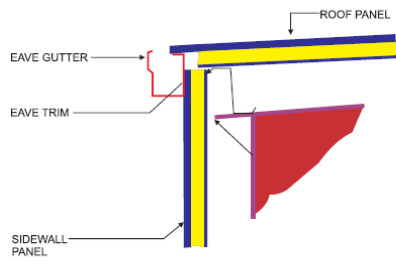


SAG ROD AT RIDGE

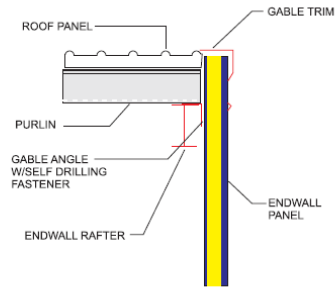


SAG ROD AT ROOF

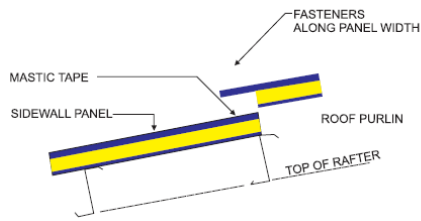
## INSTALLATION DETAILS



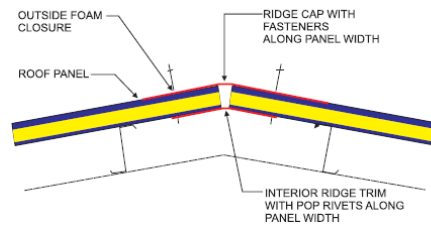
**ROOF AND WALL PANEL AT EAVE**



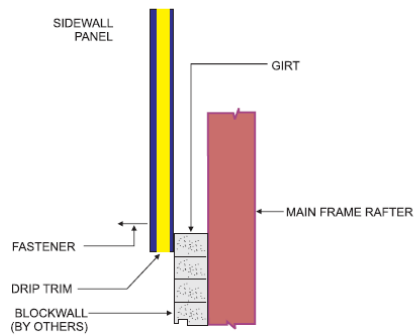
**ROOF AND WALL PANEL AT GABLE**



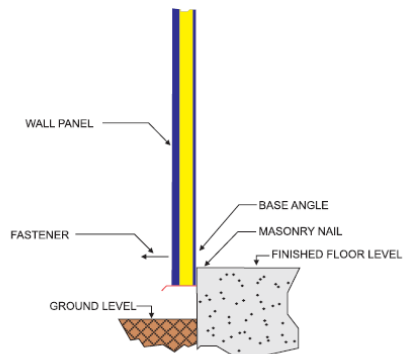
**ROOF PANEL AT END LAP**



**ROOF PANEL AT RIDGE**



**WALL PANEL ABOVE BLOCKWALL**



**WALL PANEL AT FINISHED FLOOR**