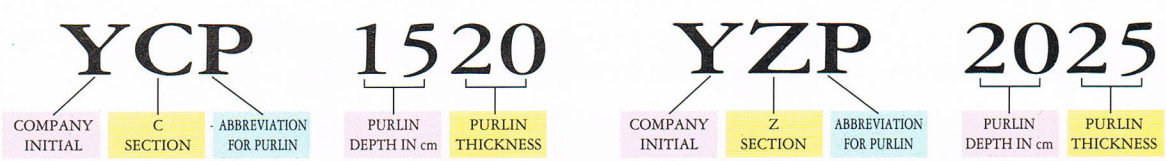
COLD FORMED GALVANISED HIGH TENSILE 'C & Z' PURLIN

YODOFORM

CH YODOFORM SDN. BHD.

CONTENTS

SECTION CODE IDENTIFICATION



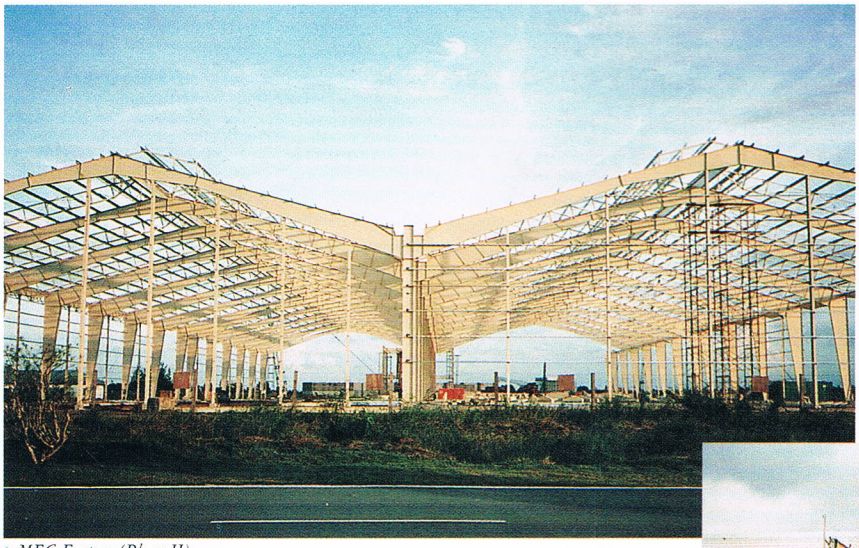
YODOFORM

INTRODUCTION

CH YODOFORM SDN. BHD., with its cold roll-forming manufacturing facility at Jln Kapar, Klang Selangor is strategically located to provide technical advice and service to meet production orders for both local and overseas markets. All YODOFORM sections are precisely cold-formed from imported high tensile zinc coated steel which conform to all international standards.

• *Johor Bharu & Singapore Second Link (Immigration & Toll Plaza) Gelang Patah, Johor.*

YODOFORM Zed and C-Sections are supplied cut-to-length and pre-punched holes. This obviate any fabrication and painting at site. Thus the sections are ready for immediate erection upon delivery. Due to lightweight, high strength of the steel and the zin coated surface, YODOFORM sections are versatiles, economical and requires minimal maintenance throughtout the life span of the building. Design aids and load tables are provided to enable designers to make quick selections and section properties details analysis, Our technical representatives are readily at your convenience to solve problems and to assist with design services. Quality control at our factory remain rigid - your assurrance that YODOFORM will always be complied to your specific requirements.



• *MEC Factory (Phase II).*

• *MEC Factory (Phase II).*

• *MEC Factory (Phase I).*

If you should require any Further information or assistance, Please contact our sales office.
Lot: 3846, 8th Mile, Jalan Kapar, Klang, Selangor.
Tel: 03-3910001 (Hunting Line) Fax: 603-3918098

MATERIAL SPECIFICATIONS

Base Steel Thickness : 1.6mm, 2.0mm and 2.5mm.
Steel Grade : High Tensile ASTM 446 Grade D.
Yield Stress : 345 MPa minimum.
Tensile Strength : 450 MPa minimum.
Zinc Coating : minimum 275 g/m^{2}Coating mass.

TOLERENCES

Depth : ± 1mm
Flange width : ± 7mm
Length : ± 1mm
Holes centres : ± 1.5mm
Lips : ± 2mm

PACKING

YODOFORM steel purlins are supplied in strapped bundles. Actual numbers vary with section size and length but bundle mass is limited to approximately one tonne.

HANDLING AND STORAGE

YODOFORM C & Z purlins should not be allowed to get wet. They should be stacked clear off the ground and protected by waterproof covering to prevent water and / or condensation becoming trapped between adjacent surfaces. If bundles become wet, the purlins should be separated, wiped with a dry cloth and placed so that air circulation completes the drying. These procedures are recommended to avoid unsightly damage to the coating which could reduce the life of the product.
Care must be taken when handling long length bundles. Lifting should only be carried out using a suitable beam with lifting points and carefully located slings.

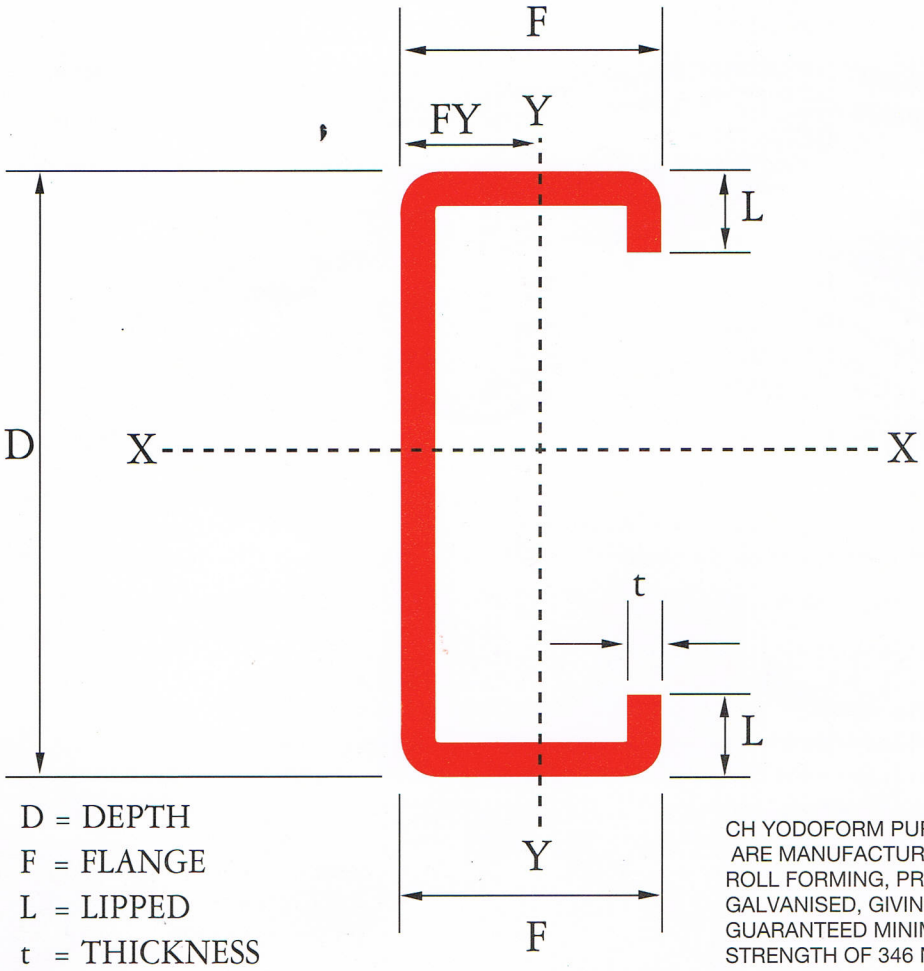
DESIGN PRINCIPLES

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

(a) Loads act parallel to the Y-axis of the Z-section.
(b) The members behave in accordance with simple theory of bending.
(c) All section properties are calculated on full section.
(d) Clause 5.2.2.2 of BS 5950 Part 5-1987 had been used to determine the maximum permissible stress.
(e) For INWARDS LOADING, itis assumed that continuous lateral restraint has been provided by the installed roof sheeting and the full maximum permissible stress (0.6 Fy) is used.
(f) All loading are uniformly distributed along the length of the member.
(g) Bending moments and deflections are determined from simple theory of bending.
(h) For LAPPED END and LAPPED INTERIOR LOADING the bending moment and deflection coefficients are based on values determines for multi-span with 3 to 8 spans and highest coefficients are taken.
(i) The I value of a lapped section is twice that of a single section.
(j) Allowable loads for maximum deflection for values lower than $\frac{\text{SPAN}}{240}$ shall be modified as required.

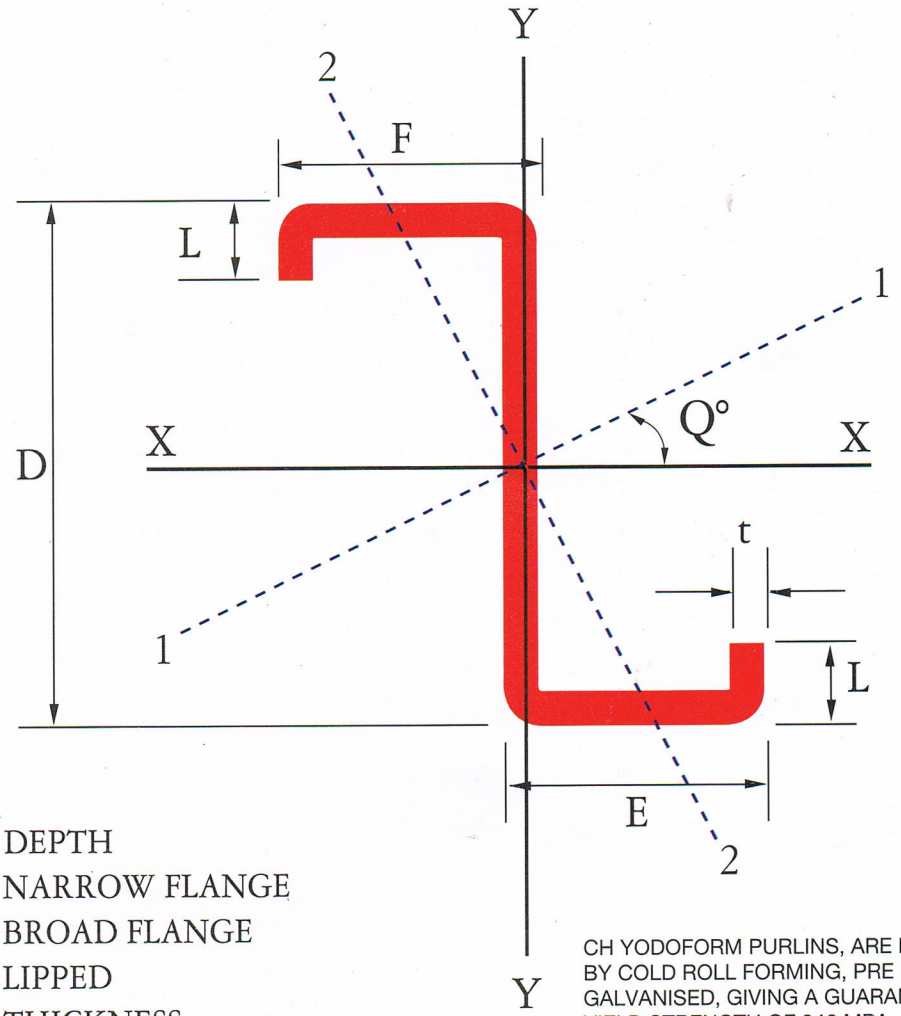
Interpretations to the four tabulated loading cases:

(1) SIMPLY SUPPORTED - member is assumed to have pin-points at supports.
(2) DOUBLE SPAN - member is continuous over two spans with pin-joint at supports.
(3) LAPPED END - member is the end span of multi-span system with structural lapping at every interior supports.
(4) LAPPED INTERIOR - member is the intermediate span of a multi-span system with structural lapping at every interior supports.



CH YODOFORM PURLINS ARE MANUFACTURED BY COLD ROLL FORMING, PRE HOT DIPPED GALVANISED, GIVING A GUARANTEED MINIMUM YIELD STRENGTH OF 346 MPA.

C SECTION IDENTI-FICATION	SECTION DIMENSIONS				AREA	MASS PER UNIT LENGTH	SECOND MOMENT OF AREA		SECOND MODULUS		RADIUS OF GYRATION		
	D	F	L	t			Ix	Iy	Zx	Zy	Rx	Ry	FY
	mm	mm	mm	mm	mm^2	kg/m	$10^6 mm^4$	$10^6 mm^4$	$10^3 mm^3$	$10^3 mm^3$	mm	mm	mm
YCP 1016	102	51	16	1.6	373	3.05	0.60	0.14	11.77	4.11	40.6	19.5	18.24
YCP 1020	102	51	16	2.0	442	3.72	0.76	0.18	14.84	5.46	41.9	20.3	18.60
YCP 1025	102	51	16	2.5	534	4.60	0.95	0.22	18.56	7.01	42.7	20.9	19.05
YCP 1216	127	51	16	1.6	408	3.20	1.00	0.15	15.72	4.29	50.0	21.4	11.08
YCP 1220	127	51	16	2.0	510	3.94	1.25	0.19	19.67	5.49	50.1	21.5	16.42
YCP 1225	127	51	16	2.5	638	4.89	1.56	0.24	24.56	7.13	50.1	21.6	17.35
YCP 1516	153	71	16	1.6	512	4.01	1.99	0.34	26.30	6.90	62.30	25.8	21.69
YCP 1520	153	71	16	2.0	598	4.92	2.48	0.41	32.42	8.61	64.4	26.2	23.36
YCP 1525	153	71	16	2.5	731	6.01	3.11	0.50	40.65	10.24	65.2	26.3	24.11
YCP 1716	175	71	16	1.6	539	4.27	2.63	0.34	29.70	7.00	69.8	25.2	18.05
YCP 1720	175	71	16	2.0	670	5.26	3.25	0.45	35.33	8.93	69.6	25.8	18.48
YCP 1725	175	71	16	2.5	835	6.67	4.04	0.54	45.45	10.85	69.6	25.9	19.20
YCP 2016	203	71	16	1.6	572	4.70	3.80	0.37	37.44	7.09	80.8	25.1	19.18
YCP 2020	203	71	16	2.0	698	5.74	4.75	0.45	46.80	9.39	82.5	25.4	20.16
YCP 2025	203	71	16	2.5	855	7.03	5.94	0.61	58.52	12.23	83.4	26.8	20.80
YCP 2520	250	78	18	2.0	840	6.59	7.63	0.58	61.08	10.08	95.3	26.3	18.83
YCP 2525	250	78	18	2.5	1050	8.24	9.52	0.73	76.18	12.85	95.2	26.4	18.85



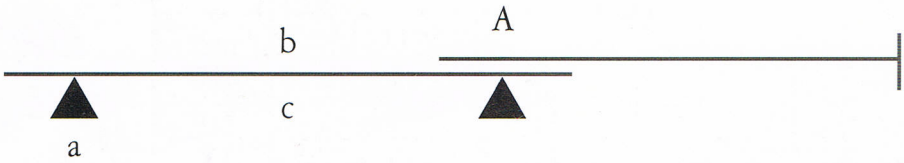
D = DEPTH
F = NARROW FLANGE
E = BROAD FLANGE
L = LIPPED
t = THICKNESS

CH YODOFORM PURLINS, ARE MANUFACTURED BY COLD ROLL FORMING, PRE HOT DIPPED GALVANISED, GIVING A GUARANTEED MINIMUM YIELD STRENGTH OF 346 MPA.

Z SECTION IDENTI-FICATION	SECTION DIMENSIONS					AREA	MASS PER UNIT LENGTH	SECOND MOMENT OF AREA		SECOND MODULUS		RADIUS OF GYRATION		1-1 AXIS	2-2 AXIS	ANGLE
	D	E	F	L	t			Ix	Iy	Zx	Zy	Rx	Ry	I 1	I 2	
	mm	mm	mm	mm	mm	mm	kg/m	$10^6 mm^4$	$10^6 mm^4$	$10^3 mm^3$	$10^3 mm^3$	mm	mm	$10^6 mm^4$	$10^6 mm^4$	DEG
YZP 1016	102	57	51	16	1.6	373	3.05	0.62	0.250	12.16	4.94	40.60	25.8	0.70	0.160	24.5
YZP 1020	102	57	51	16	2.0	442	3.72	0.77	0.310	15.14	6.22	41.80	26.5	0.98	0.190	24.4
YZP 1025	102	57	51	16	2.5	534	4.60	0.96	0.380	18.84	7.60	42.40	26.6	1.11	0.230	24.3
YZP 1216	127	57	51	16	1.6	408	3.20	1.03	0.261	16.18	5.20	50.1	25.3	1.30	0.351	22.7
YZP 1220	127	57	51	16	2.0	510	3.94	1.28	0.380	20.16	7.60	51.1	27.3	1.63	0.434	22.6
YZP 1225	127	57	51	16	2.5	638	4.89	1.60	0.470	25.20	9.45	52.2	27.5	2.32	0.335	23.3
YZP 1516	153	74	67.5	16	1.6	512	4.01	2.01	0.646	26.30	9.69	62.70	35.5	2.32	0.335	23.3
YZP 1520	153	74	67.5	16	2.0	598	4.92	2.50	0.811	32.70	12.20	65.40	37.2	2.86	0.451	22.7
YZP 1525	153	74	67.5	16	2.5	731	6.01	3.12	1.031	40.70	15.60	66.20	38.1	3.53	0.619	22.1
YZP 1716	175	74	67.5	16	1.6	539	4.27	2.64	0.507	29.83	6.98	69.98	30.6	-	-	-
YZP 1720	175	74	67.5	16	2.0	670	5.26	3.27	0.620	36.95	8.70	69.86	30.4	-	-	-
YZP 1725	175	74	67.5	16	2.5	835	6.67	4.04	0.755	45.65	9.90	69.56	30.1	-	-	-
YZP 2016	203	74	67.5	16	1.6	572	4.70	3.86	0.635	38.10	9.52	82.60	33.5	4.15	0.350	15.9
YZP 2020	203	74	67.5	16	2.0	698	5.74	4.85	0.811	47.80	12.20	84.10	34.4	5.16	0.501	15.0
YZP 2025	203	74	67.5	16	2.5	855	7.03	6.05	1.021	59.60	15.40	85.10	34.9	6.40	0.675	14.2
YZP 2520	250	78	72	20	2.0	840	6.59	7.67	0.85	61.32	11.07	95.53	31.86	-	-	-
YZP 2525	250	78	72	21	2.5	1050	8.24	9.52	1.08	76.18	14.01	95.23	32.00	-	-	-

BENDING MOMENT COEFFICIENTS

COEFFICIENTS FOR UNIFORMLY LOADED SECTIONS	
SIMPLE SPAN	0.5000 — 0.1250 / 0.01302 — 0.5000
DOUBLE SPAN	0.3750 — 0.070 / 0.00541 — 1.250 — -0.1250 — 0.070 / 0.00541 — 0.3750
TWO SPAN LAPPED	0.3664 — 0.0671 / 0.00495 — 1.2672 — -0.1336 — 0.0671 / 0.00495 — 0.3664
THREE SPAN	0.3945 — 0.0778 / 0.00658 — 1.1055 — -0.1055 — 0.0195 / -0.00011 — 1.1055 — -0.1055 — 0.0778 / 0.00658 — 0.3945
FOUR SPAN	0.3858 — 0.0744 / 0.00607 — 1.1558 — -0.1142 — 0.0325 / 0.00144 — 0.9166 — -0.0726 — 0.0325 / 0.09144 — 1.1558 — -0.1142 — 0.0744 / 0.00607 — 0.3858
FIVE SPAN	0.3881 — 0.0753 / 0.00621 — 1.1419 — -0.1119 — 0.0286 / 0.00099 — 0.9700 — -0.0819 — 0.0432 / 0.00282 — 0.9700 — -0.0819 — 0.0286 / 0.00099 — 1.1419 — -0.1119 — 0.0753 / 0.00621 — 0.3881
SIX SPAN	0.3875 — 0.0751 / 0.00617 — 1.1458 — -0.1125 — 0.0297 / 0.00112 — 0.9546 — -0.0742 — 0.0398 / 0.00241 — 1.0242 — -0.0913 — 0.0398 / 0.00241 — 0.9546 — -0.0742 — 0.0297 / 0.00112 — 1.1458 — -0.1125 — 0.0751 / 0.00617 — 0.3875



A = Lapped Length = 10% Of Span

R = Reaction = $aw\ell N$

M = Moment = $bw\ell^2 Nmm$

D = Deflection = $\frac{cw\ell^4 mm}{EI}$

Where

a = Reaction Coefficient

b = Bending Moment Coefficient

c = Deflection Coefficient

w = Uniformly Distributed Load (N/mm)

ℓ = Span (mm)

E = Modulus OF Elasticity = $2 \times 10^5 N/mm^2$

I = Moment Of Inertia Of Section (mm^4)

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1016 AND YCP 1016					
	SIMPLE SPAN			SIMPLE SPAN		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	1.95	1.32	0.77	1.95	1.95	1.81
4000	1.49	0.81	0.51	1.49	1.44	1.21
4500	1.18	0.52	0.36	1.18	0.93	0.86
5000	0.96	0.35	0.26	0.96	0.62	0.63
5500	0.79	0.24	0.19	0.79	0.43	0.47
6000	0.66	0.17	0.15	0.66	0.31	0.36
6500	0.57	0.13	0.12	0.57	0.22	0.28
7000	0.49	0.09	0.09	0.49	0.17	0.23
7500	0.42	0.07	0.08	0.42	0.13	0.18
8000	0.37	0.06	0.06	0.37	0.10	0.15
8500	0.33	0.04	0.05	0.33	0.08	0.13
9000	0.29	0.04	0.04	0.29	0.06	0.11
9500	0.26	0.03	0.04	0.26	0.05	0.09
10000	0.24	0.02	0.03	0.24	0.04	0.08
15000	0.22	0.02	0.02	0.22	0.03	0.07

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1020 AND YCP 1020					
	SIMPLE SPAN			SIMPLE SPAN		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	2.34	1.60	0.89	2.34	2.34	2.14
4000	1.79	0.98	0.60	1.79	1.74	1.44
4500	1.42	0.63	0.42	1.42	1.12	1.01
5000	1.15	0.42	0.31	1.15	0.75	0.74
5500	0.95	0.29	0.23	0.95	0.52	0.55
6000	0.80	0.21	0.18	0.80	0.37	0.43
6500	0.68	0.15	0.14	0.68	0.27	0.34
7000	0.59	0.11	0.11	0.59	0.20	0.27
7500	0.51	0.09	0.09	0.51	0.15	0.22
8000	0.45	0.07	0.08	0.45	0.12	0.18
8500	0.40	0.05	0.06	0.40	0.09	0.15
9000	0.35	0.04	0.05	0.35	0.08	0.13
9500	0.32	0.03	0.04	0.32	0.06	0.11
10000	0.29	0.03	0.04	0.29	0.05	0.09
15000	0.26	0.02	0.03	0.26	0.04	0.08

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1025 AND YCP 1025					
	SIMPLE SPAN			DOUBLE SPAN		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	3.14	2.16	1.17	3.14	3.14	2.80
4000	2.40	1.32	0.78	2.40	2.36	1.88
4500	1.90	0.85	0.55	1.90	1.51	1.32
5000	1.54	0.57	0.40	1.54	1.01	0.96
5500	1.27	0.40	0.30	1.27	0.70	0.73
6000	1.07	0.28	0.23	1.07	0.50	0.56
6500	0.91	0.21	0.18	0.91	0.37	0.44
7000	0.78	0.15	0.14	0.78	0.28	0.35
7500	0.68	0.12	0.12	0.68	0.21	0.29
8000	0.60	0.09	0.10	0.60	0.16	0.24
8500	0.53	0.07	0.08	0.53	0.13	0.19
9000	0.47	0.06	0.07	0.47	0.10	0.16
9500	0.43	0.05	0.06	0.43	0.08	0.14
10000	0.38	0.04	0.05	0.38	0.07	0.12
10500	0.35	0.03	0.04	0.35	0.06	0.11

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1516 AND YCP 1516											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	4.00	4.00	2.68	4.00	4.00	6.42	6.59	6.59	5.59	7.14	7.14	13.23
4000	3.06	3.06	1.79	3.06	3.06	4.30	5.04	5.04	3.75	5.47	5.47	8.86
4500	2.42	2.42	1.26	2.42	2.42	3.02	3.99	3.98	2.63	4.32	4.32	6.23
5000	1.96	1.84	0.92	1.96	1.96	2.20	3.22	3.02	1.91	3.48	3.48	4.52
5500	1.62	1.43	0.69	1.62	1.62	1.66	2.66	2.35	1.43	2.77	2.77	3.37
6000	1.36	1.13	0.53	1.36	1.36	1.28	2.22	1.85	1.09	2.23	2.23	2.56
6500	1.16	0.90	0.42	1.16	1.16	1.00	1.89	1.47	0.86	1.84	1.84	2.01
7000	1.00	0.72	0.33	1.00	1.00	0.80	1.65	1.18	0.70	1.79	1.79	1.66
7500	0.87	0.58	0.27	0.87	0.87	0.65	1.43	0.95	0.57	1.55	1.55	1.34
8000	0.77	0.46	0.23	0.77	0.77	0.54	1.26	0.75	0.46	1.33	1.33	1.09
8500	0.68	0.36	0.19	0.68	0.65	0.45	1.11	0.59	0.39	1.15	1.10	0.91
9000	0.60	0.29	0.16	0.60	0.52	0.38	0.99	0.48	0.33	1.00	0.88	0.76
9500	0.54	0.24	0.13	0.54	0.42	0.32	0.88	0.39	0.28	0.87	0.71	0.64
10000	0.49	0.20	0.11	0.49	0.35	0.28	0.80	0.32	0.24	0.77	0.58	0.55
10500	0.44	0.16	0.10	0.44	0.29	0.24	0.72	0.26	0.21	0.69	0.48	0.48

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1520 AND YCP 1520											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	4.87	4.87	3.17	4.87	4.87	7.61	8.02	8.02	6.63	8.69	8.69	15.68
4000	3.73	3.73	2.12	3.73	3.73	5.09	6.14	6.14	4.44	6.66	6.66	10.50
4500	2.94	2.94	1.49	2.94	2.94	3.58	4.85	4.85	3.12	5.26	5.26	7.38
5000	2.39	2.31	1.09	2.39	2.39	2.61	3.92	3.79	2.27	4.24	4.24	5.36
5500	1.97	1.80	0.82	1.97	1.97	1.96	3.23	2.96	1.69	3.37	3.37	3.99
6000	1.66	1.48	0.63	1.66	1.66	1.51	2.71	2.42	1.30	2.72	2.72	3.03
6500	1.41	1.16	0.61	1.41	1.41	1.19	2.30	1.89	1.02	2.24	2.24	2.38
7000	1.22	0.89	0.39	1.22	1.22	0.95	2.00	1.47	0.83	2.17	2.17	1.96
7500	1.06	0.69	0.32	1.06	1.06	0.78	0.74	1.14	0.67	1.88	1.88	1.59
8000	0.93	0.55	0.26	0.93	0.93	0.64	1.53	0.90	0.55	1.61	1.61	1.30
8500	0.83	0.44	0.22	0.83	0.77	0.53	1.35	0.71	0.46	1.39	1.32	1.08
9000	0.74	0.35	0.19	0.74	0.62	0.45	1.20	0.57	0.39	1.21	1.06	0.90
9500	0.66	0.29	0.16	0.66	0.51	0.38	1.08	0.47	0.33	1.06	0.88	0.76
10000	0.60	0.23	0.14	0.60	0.42	0.33	0.97	0.38	0.28	0.94	0.70	0.65
10500	0.54	0.19	0.12	0.54	0.35	0.28	0.88	0.32	0.24	0.83	0.58	0.56

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 1525 AND YCP 1525											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	7.08	7.08	4.14	7.60	7.08	9.96	11.67	11.67	8.68	12.65	12.65	20.52
4000	5.42	5.42	2.78	5.42	5.42	6.67	8.93	8.93	5.81	9.68	9.68	13.74
4500	4.28	4.28	1.95	4.28	4.28	4.68	7.06	7.06	4.08	7.65	7.65	9.65
5000	3.47	3.29	1.42	3.47	3.47	3.41	5.70	5.40	2.97	6.16	6.16	7.01
5500	2.87	2.54	1.07	2.87	2.87	2.56	4.71	4.16	2.22	4.90	4.90	5.23
6000	2.41	1.98	0.83	2.41	2.41	1.98	3.94	3.23	1.70	3.95	3.95	3.97
6500	2.05	1.56	0.65	2.05	2.05	1.56	3.35	2.54	1.33	3.27	3.27	3.11
7000	1.77	1.20	0.52	1.77	1.77	1.24	2.92	1.97	1.08	3.16	3.16	2.56
7500	1.54	0.93	0.42	1.54	1.54	1.01	2.53	1.53	0.88	2.74	2.74	2.08
8000	1.36	0.73	0.35	1.36	1.30	0.83	2.22	1.20	0.72	2.35	2.23	1.70
8500	1.20	0.58	0.29	1.20	1.04	0.69	1.96	0.96	0.60	2.03	1.77	1.41
9000	1.07	0.47	0.24	1.07	0.84	0.59	1.75	0.77	0.51	1.77	1.42	1.18
9500	0.96	0.38	0.21	0.96	0.68	0.50	1.57	0.63	0.43	1.55	1.15	0.99
10000	0.87	0.32	0.16	0.87	0.56	0.38	1.41	0.51	0.36	1.37	0.94	0.85
10500	0.73	0.26	0.16	0.79	0.47	0.37	1.28	0.42	0.31	1.21	0.78	0.73

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 2016 AND YCP 2016											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END SPAN			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	5.88	5.88	5.23	5.88	5.88	12.54	9.68	9.68	10.93	10.50	6.35	25.85
4000	4.50	4.50	3.50	4.50	4.50	8.41	7.41	7.41	7.33	8.04	5.12	17.32
4500	3.56	3.45	2.46	3.56	3.56	5.90	5.86	5.86	5.14	6.35	4.08	12.16
5000	2.88	2.72	1.79	2.88	2.88	4.30	4.73	4.34	3.74	5.12	3.28	8.83
5500	2.38	2.03	1.34	2.38	2.38	3.23	3.91	3.34	2.80	4.07	2.71	6.59
6000	2.00	1.60	1.04	2.00	2.00	2.49	3.27	2.95	2.14	3.28	2.62	5.00
6500	1.70	1.26	0.81	1.70	1.70	1.96	2.78	2.61	1.68	2.71	2.27	3.92
7000	1.47	0.99	0.65	1.47	1.47	1.57	2.42	1.63	1.37	2.62	1.87	3.23
7500	1.28	0.78	0.53	1.28	1.28	1.28	2.10	1.28	1.11	2.27	1.48	2.62
8000	1.13	0.61	0.44	1.13	1.09	1.05	1.85	0.91	0.91	1.95	1.18	2.14
8500	1.00	0.49	0.36	1.00	0.87	0.88	1.63	0.89	0.76	1.68	0.96	1.78
9000	0.89	0.39	0.31	0.89	0.70	0.74	1.45	0.64	0.64	1.47	0.78	1.48
9500	0.80	0.32	0.26	0.80	0.57	0.63	1.30	0.52	0.54	1.29	0.65	1.26
10000	0.72	0.26	0.23	0.72	0.47	0.54	1.17	0.43	0.46	1.14	0.45	1.07
10500	0.65	0.22	0.19	0.65	0.39	0.46	1.06	0.35	0.40	1.01	0.40	0.93

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 2020 AND YCP 2020											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	7.14	7.14	6.19	7.14	7.14	14.87	11.77	11.77	12.96	12.76	12.76	30.64
4000	5.47	5.47	4.15	5.47	5.47	9.96	9.01	9.01	8.68	9.77	9.77	20.53
4500	4.32	4.31	2.91	4.32	4.32	6.99	7.12	7.10	6.09	7.72	7.72	14.42
5000	3.50	3.29	2.18	3.50	3.50	5.10	5.75	5.41	4.43	6.22	6.22	10.47
5500	2.89	2.67	1.59	2.89	2.89	3.83	4.75	4.39	3.32	4.94	4.94	7.81
6000	2.43	2.07	1.23	2.43	2.43	2.95	3.97	3.38	2.64	3.99	3.99	5.93
6500	2.07	1.58	0.97	2.07	2.07	2.32	3.38	2.58	1.99	3.29	3.29	4.64
7000	1.79	1.21	0.78	1.79	1.79	1.86	2.94	1.99	1.62	3.19	3.19	3.83
7500	1.56	0.94	0.63	1.56	1.56	1.51	2.56	1.54	1.31	2.76	2.76	3.10
8000	1.37	0.74	0.52	1.37	1.31	1.24	2.24	1.21	1.08	2.37	2.24	2.54
8500	1.21	0.59	0.43	1.21	1.04	1.04	1.98	0.96	0.89	2.05	1.77	2.11
9000	1.08	0.47	0.36	1.08	0.84	0.88	1.77	0.77	0.75	1.78	1.42	1.76
9500	0.97	0.38	0.32	0.97	0.68	0.74	1.58	0.63	0.64	1.56	1.15	1.49
10000	0.88	0.32	0.26	0.88	0.56	0.64	1.42	0.51	0.54	1.38	0.94	1.27
10500	0.79	0.26	0.23	0.79	0.46	0.55	1.29	0.42	0.47	1.22	0.78	1.09

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

LINEAR LOADS TABLE

PURLIN SPAN IN mm	YZP 2025 AND YCP 2025											
	SIMPLE SPAN			DOUBLE SPAN			LAPPED END			LAPPED INTERIOR		
	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D	W_{IO}	W_{O1}	W_D
	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION	INWARD	1 BRIDGING	DEFLECTION
3500	10.40	10.40	8.12	10.40	10.40	19.50	17.14	17.14	16.99	18.58	18.58	40.18
4000	7.97	7.97	5.44	7.97	7.97	13.06	13.12	13.12	11.38	14.22	14.22	26.92
4500	6.29	6.19	3.82	6.29	6 29	9.18	10.37	10.19	7.99	11.24	11.24	18.91
5000	5.10	4.67	2.78	5.10	5.10	6.69	8.37	7.68	5.81	9.05	9.05	13.73
5500	4.21	3.58	2.09	4.21	4.21	5.03	6.91	5.87	4.35	7.19	7.19	10.24
6000	3.54	2.77	1.61	3.54	3.54	3.87	5.78	4.53	3.33	5.81	5.81	7.77
6500	3.02	2.13	1.27	3.02	3.02	3.04	4.92	3.47	2.61	4.80	4.80	6.09
7000	2.60	1.62	1.01	2.60	2.60	2.44	4.28	2.68	2.13	4.64	4.64	5.03
7500	2.27	1.26	0.83	2.27	2.27	1.98	3.72	2.07	1.72	4.02	3.85	4.07
8000	1.99	0.99	0.68	1.99	1.99	1.63	3.27	1.62	1.41	3.45	3.01	3.33
8500	1.76	0.79	0.57	1.76	1.76	1.36	2.89	1.29	1.18	2.98	2.38	2.76
9000	1..57	0.63	0.48	1..57	1..57	1.14	2.57	1.04	0.99	2.59	1.91	2.30
9500	1.41	0.52	0.41	1.41	1.41	0.98	2.30	0.84	0.89	2.27	1.55	1.95
10000	1.27	0.42	0.35	1.27	1.27	0.84	2.07	0.69	0.72	2.01	1.26	1.67
10500	1.16	0.35	0.30	1.16	1.16	0.73	1.88	0.57	0.62	1.78	1.04	1.43

*ALL LOADS ASSUME THAT CLADDING IS ATTACHED

W_{IO} = Inward Load Without Bridging
W_{O1} = Outward Load With One Bridging
W_D = Load Which Produces Deflection of $\frac{SPAN}{240}$

LAPPING = 10% of Purlin Span.
ALL LOADS IN KN/M

SELECTION TABLE FOR SIMPLE SPAN PURLINS

Basic design with speed	= 25.0 m/s
Imposed load	= 0.25 kN/m²
Dead load - Metal Roofing	= 0.04 kN/m²
Purlin	= 0.04 kN/m²
Building	= Class B
Ground roughness	= 2
Span	= c/c of Trusses
Spacing	= c/c of Purlins
Critical pressure coefficient for pitch roof	= 1.4 (uplift)
Max Roof pitch	=30⁰

Span (mm)	Spacing (mm)	Height (m)		
		3	6	10
		YZP/YCP	YZP/YCP	YZP/YCP
3500	1200	1016	1016	1016
	1800	1016	1016	1016
	2400	1016	1016	1016
4000	1200	1016	1016	1016
	1800	1016	1016	1016
	2400	1020	1020	1020
5000	1200	1020	1020	1020
	1800	1516	1516	1516
	2400	1516	1516	1516
6000	1200	1516	1516	1516
	1800	1516	1516	1520
	2400	1520	1520	1525
7000	1200	1525	1525	1525
	1800	2016	2016	2016
	2400	2020	2020	2020
8000	1200	2020	2020	2020
	1800	2020	2020	2025
	2400	2025	2025	2025

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

SELECTION TABLE FOR TWO-SPAN LAPPED PURLINS

Span (mm)	Spacing (m/m)	Height (m)		
		3	6	10
		YZP/YCP	YZP/YCP	YZP/YCP
9000	1200	1520	1520	1520
	1800	2020	2020	2020
	2400	2020	2020	2020
10000	1200	2020	2020	2020
	1800	2020	2020	2020
	2400	2020	2020	2020
11000	1200	2025	2025	2025
	1800	2025	2025	2025
	2400	2025	2025	2025
12000	1200	2025	2025	2025
	1800	2025	2025	2025

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

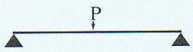
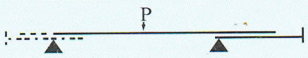
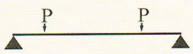
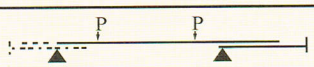
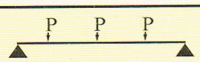
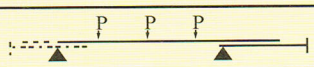
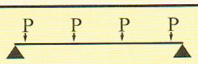
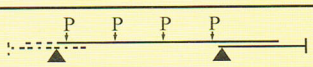
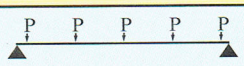
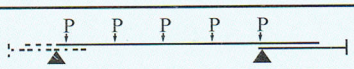
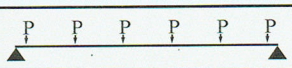
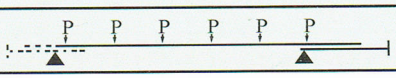
POINT LOADS

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

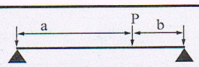
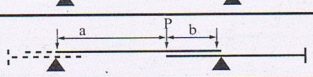
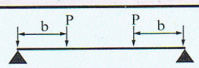
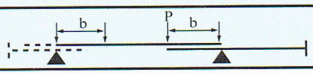
Loading conditions and Formula shown give accurate conversion of Point Loads into Uniform Loads for determination of load carrying capacity of Simple spans only.
For lapped spans, the conversion depends upon the number of spans, the position of span in the continuity, and the lapping ratio. The lapped span formula shown have been devised for the worst loading condition and can be safely used for end spans, interior spans, and any lapping ratio (greater than 0.10)
A separate set of conversion formulae would be required for deflection determination.
The formulae shown will give conservative (safe) conversion with a margin of error between 3.7% and 25%.

Conversion of point loads into equivalent uniform loads

Symmetrical equidistant point loads

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

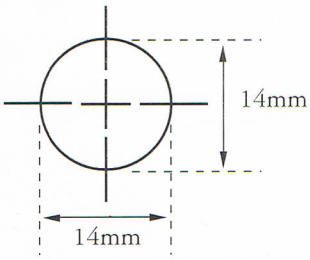
Single eccentric and two symmetrical point loads.

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

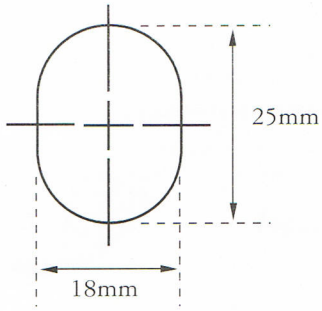
HOLING AND CLEATS DETAIL

HOLE DETAILS AND GAUGE LINES FOR C & Z SECTION

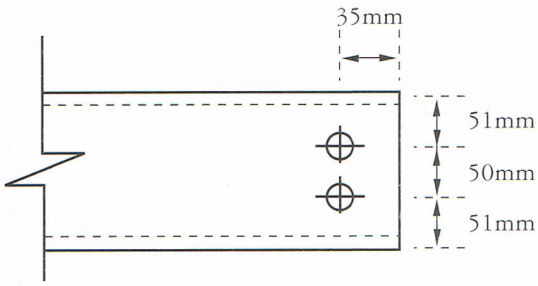
(NOT TO SCALE)



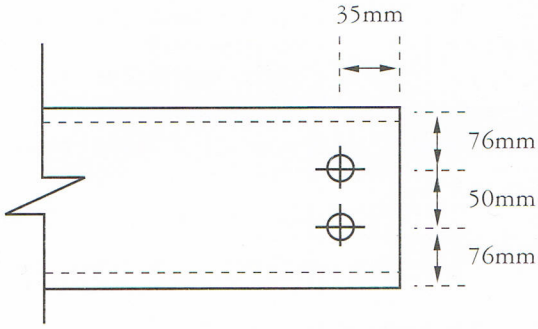
YODOFORM STANDARD
ROUND PUNCHED HOLE



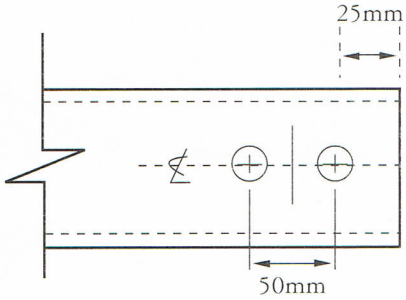
YODOFORM STANDARD
ELONGATED PUNCHED HOLE



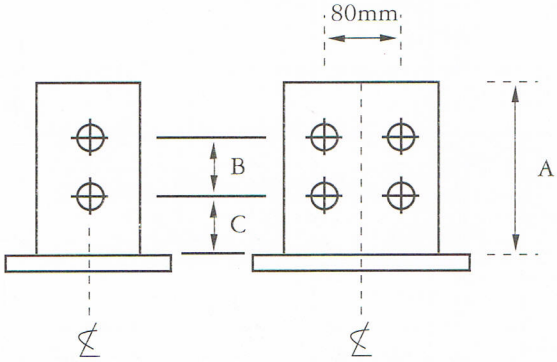
C & Z 150 SERIES



C & Z 200 SERIES



C & Z 100 SERIES HOLE
SIZE 14MM DIA.

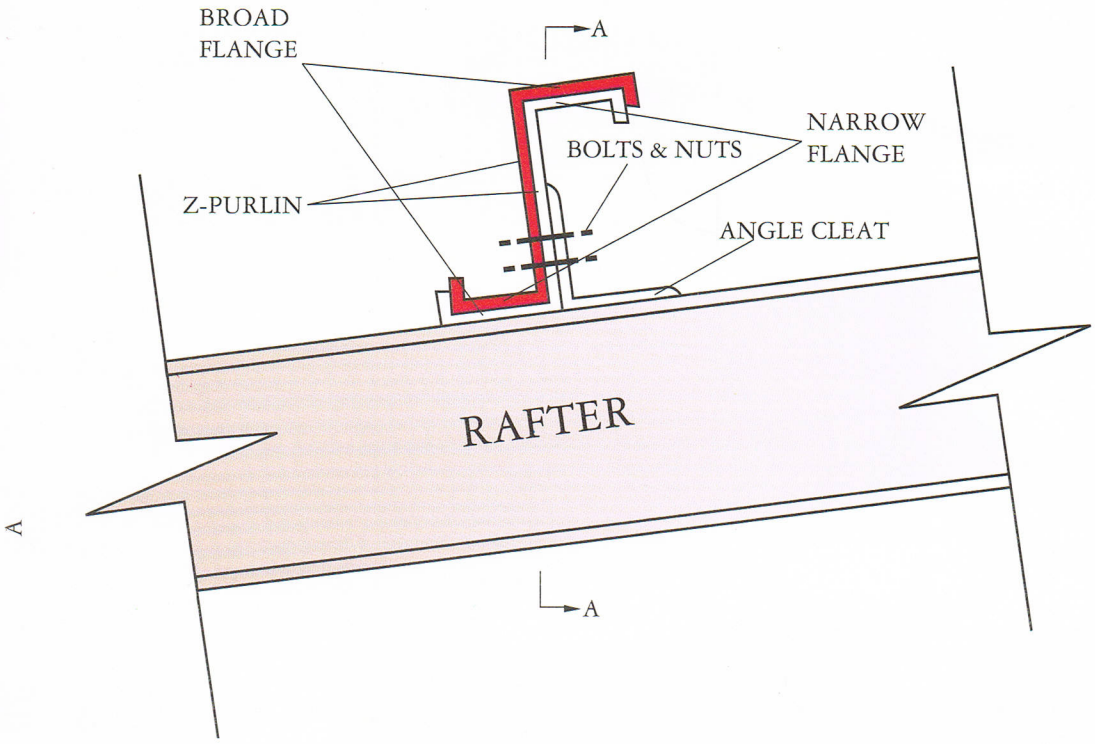


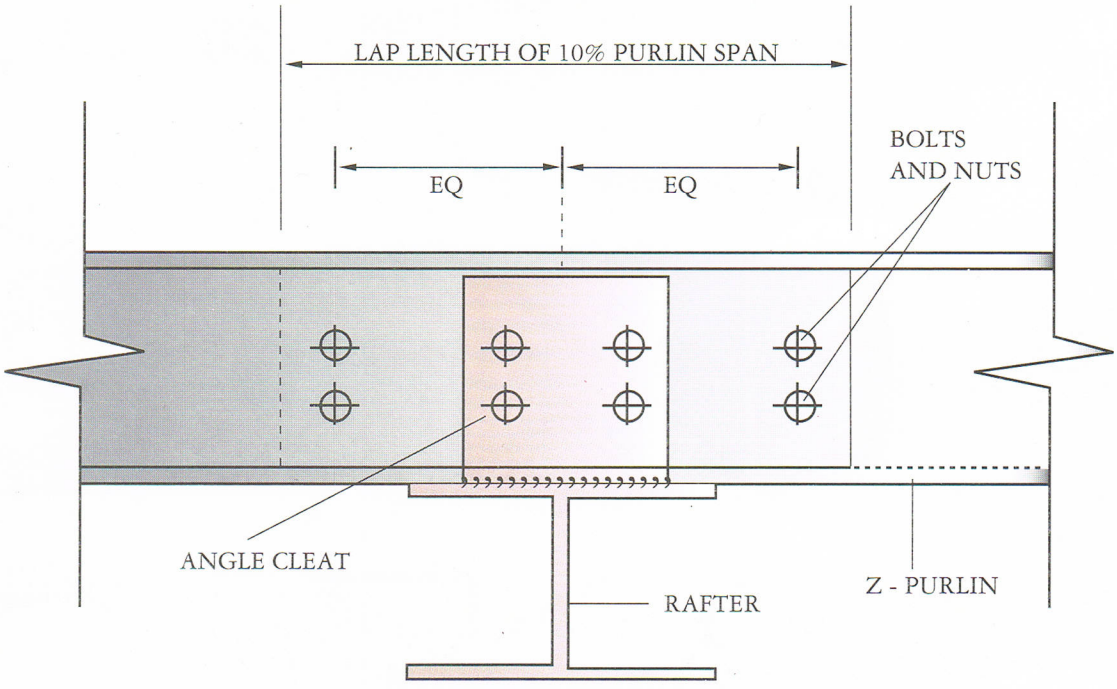
C & Z PURLIN SIZE	RECOMMEDED ANGLE CLEAT SIZE in mm		
	A	B	C
150 SERIES	127	50	50
200 SERIES	153	50	76

NOTES:
1. Min. 8mm thickness is recommmended for angle is cleats.
2. All dimensions are not to scale.

YODO Z-PURLIN STRUCTURAL LAPPING DETAILS

(NOT TO SCALE)



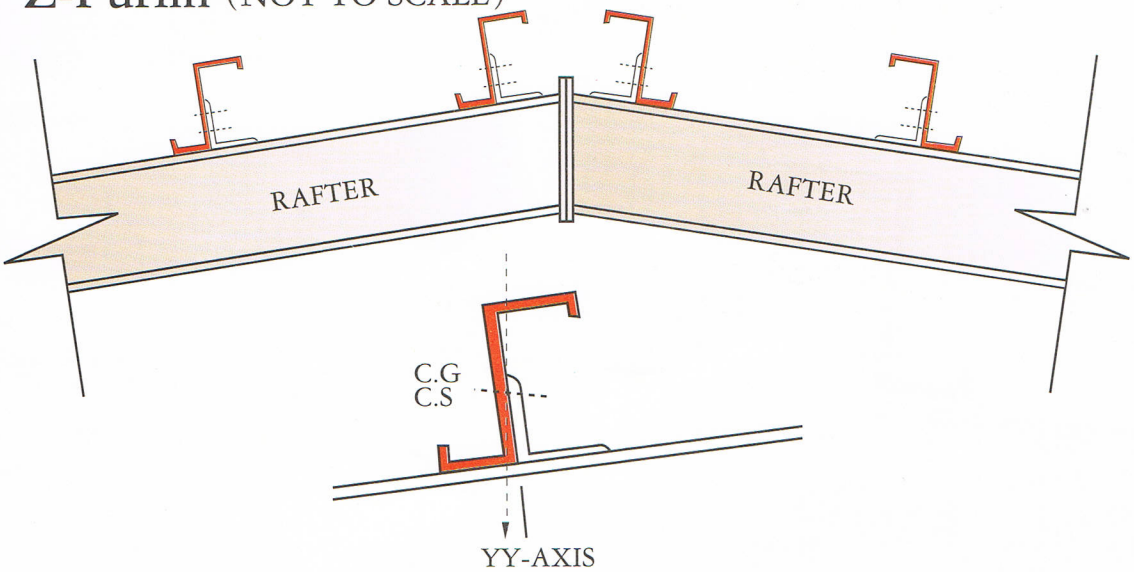


SECTION A-A

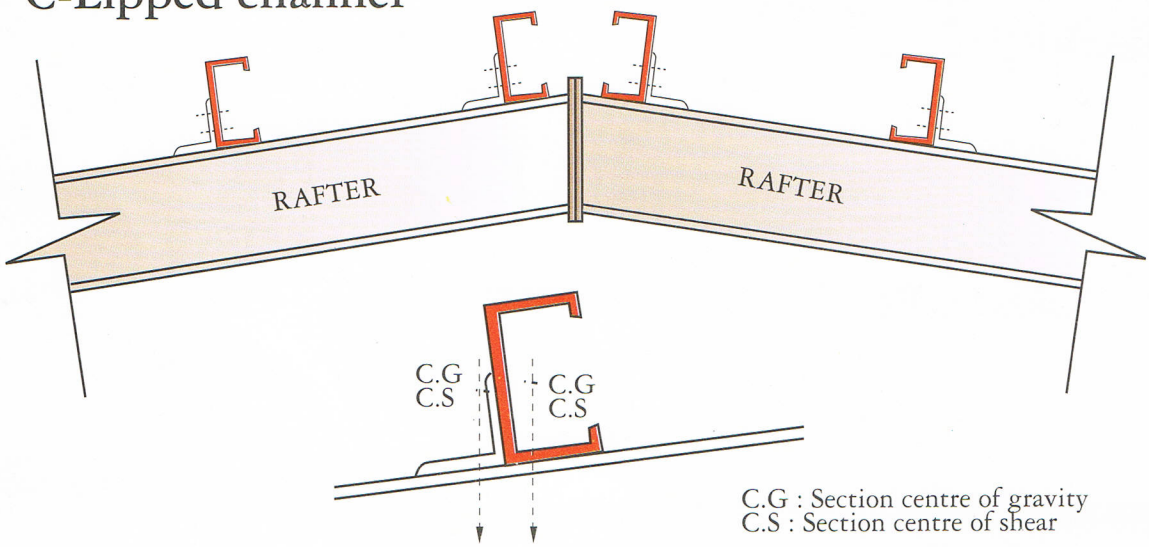
All Z sections are Roll formed with one broad and one narrow flange. Structural and non structural laps are readily formed by inverting alternate sections enabling the broad and narrow flanges to nest together.
As all slots are symmetrically punched about the centre line the designer does not have to consider broad or narrow flange positions when designing connections.The load capacity of the purlin and girt system is achieved when lapped sections are bolted together using six (6) bolts. Two bolts are used to connect the sections to the cleats while the remaining four form the structural lap.The length of the over lap determines whether the lap will be qualified as structural or non structural.Non structural laps require only end holes to be overlapped.
Equivalent non - Structural Lap reguire 4 Bolts.
Z sections of common web depth but varying in gauge are compatible when lapped in any combination.

PURLIN RAFTER CONNECTION DETAIL

Z-Purlin (NOT TO SCALE)

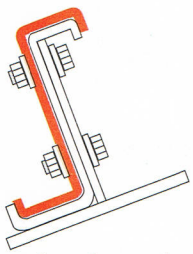


C-Lipped channel

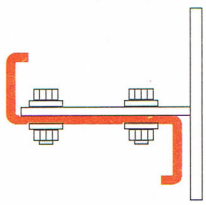


C.G : Section centre of gravity
C.S : Section centre of shear

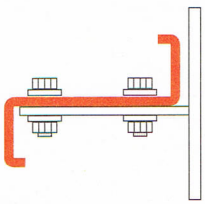
Fastening to cleats



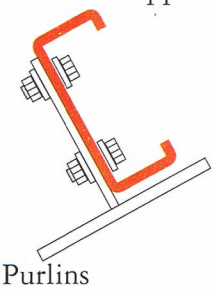
Zed Purlins lapped



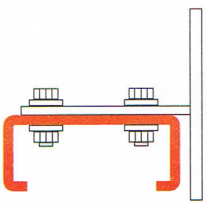
Zed Girts standard mode



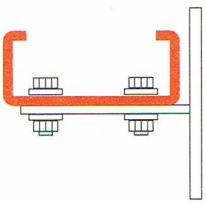
Zed Girts optional mode



C Purlins



C Girts standard mode



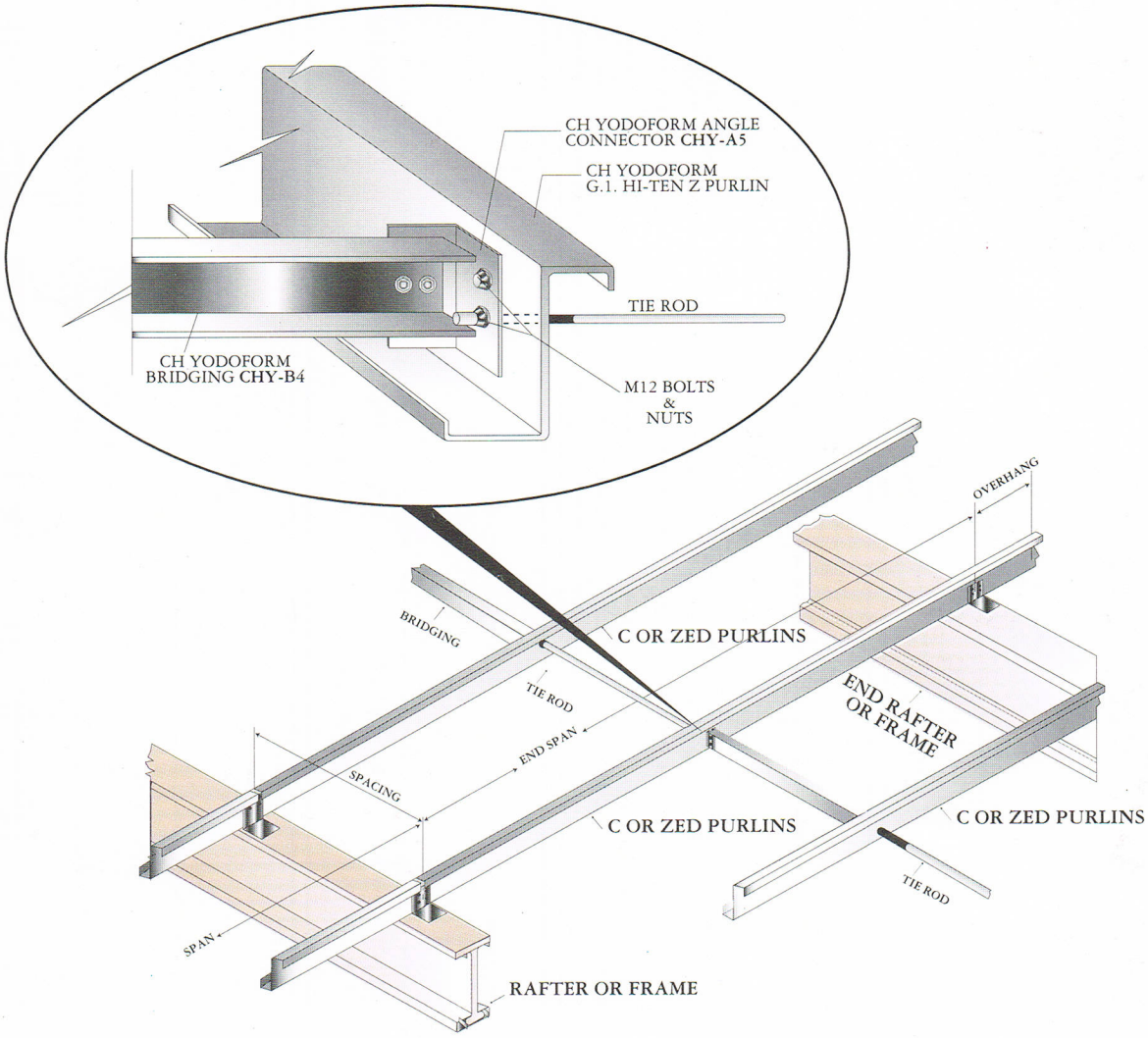
C Girts optional mode

CH YODOFORM BRIDGING CONNECTION DETAILS

COMPONENTS

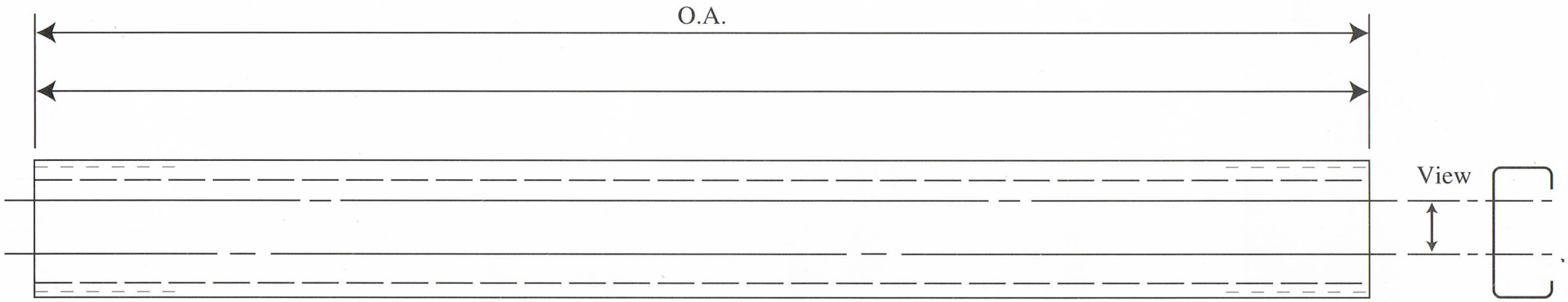
DESCRIPTION	CODE	DIMENSION	GAUGE
Bridging Channel	CHY-B4	100X50	1.6mm
Connection Angle	CHY-A5	45X45X65	1.6mm

ALTERNATE BRIDGING AND TIE RODS



CH YODOFORM C PURLIN DETAILING SHEET

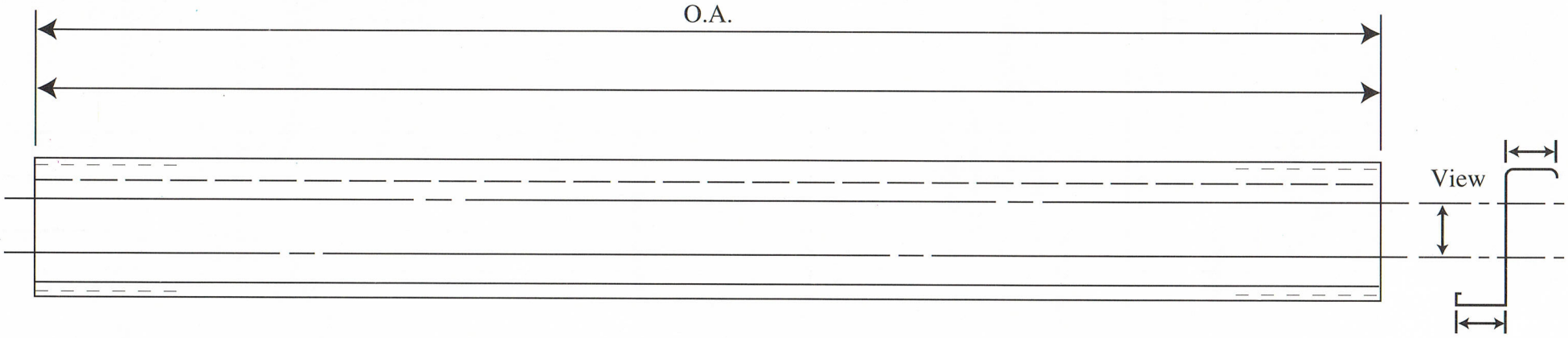
PROJECT	CUSTOMER	PAGE NO:
		CUSTOMER'S ORDER NO:
	DELIVERY INSTRUCTIONS	DATE OF ORDER:
		DATE REQUIRED:



QUANTITY	ACTUAL LENGTH	PURLIN TYPE	CUSTOMERS AUTHORISE SIGNATURE:
			COMFIRMED BY:

CH YODOFORM ZED PURLIN DETAILING SHEET

PROJECT	CUSTOMER	PAGE NO:
		CUSTOMER'S ORDER NO:
	DELIVERY INSTRUCTIONS	DATE OF ORDER:
		DATE REQUIRED:



QUANTITY	ACTUAL LENGTH	PURLIN TYPE	CUSTOMERS AUTHORISE SIGNATURE:
			COMFIRMED BY:

INSTITUT STANDARD DAN PENYELIDIKAN PERINDUSTRIAN MALAYSIA
Persiaran Dato' Menteri, Seksyen 2, Peti Surat 7035, 40911 Shah Alam, Selangor Darul Ehsan, Malaysia

SIRIM

Rujukan kami: SIRIM 526/2/1-2

Rujukan tuan: PPI (16/8/96)

Tarikh: 12 SEP 1996

LAPORAN UJIAN

NOMBOR LAPORAN : SM961237	MUKA SURAT : 1 DARI 5

Laporan Ujian ini BUKAN Sijil Penentuan Kualiti dan BUKAN juga Sijil Kelulusan. Laporan ini HANYA meliputi sampel-sampel yang dikemukakan kepada SIRIM dan diuji oleh SIRIM. Laporan ini tidak boleh diterbitkan dengan apajua cara, kecuali sepenuhnya. Ianya tidak boleh digunakan untuk tujuan-tujuan pengiklanan dalam apajua cara atau bentuk tanpa kelulusan bertulis daripada Ketua Pengarah SIRIM.

Mengenai: Testing on High Tensile Steel Purlin.

Kaedah ujian:
i) BS EN 10002 : Part 1 : 1990 Tensile of Metalic Materials.
Part 1 : Method of Test At Ambient Temperature.
ii) Using MITUTOYO DIGIDERM 746 Thickness Gauge.

Dikemukakan oleh:
SIME UEP HOMES SDN. BHD.
3rd Floor, Wisma Trator
Subang Jaya
Selangor Darul Ehsan
(Attn: Mr. Hisham Haron)

Keterangan sampel: 6 samples of High Tensile Steel Purlin were received on 16/8/96 for testing.

Brand/Model : CH YODOFORM SDN. BHD.
Sample Marking: A, B, C

Disahkan oleh:

Institut Standard Dan Penyelidikan Perindustrian Malaysia
Unit Pengujian Kejuruteraan Sivil & Mekanikal

Seri Banun Sujangi
Pegawai Penyelidik

Mohd. Fauzi Ismail
Pengurus
Unit Pengujian Kejuruteraan Sivil & Mekanikal
b.p. Ketua Pengarah
Institut Standard dan Penyelidikan
Perindustrian Malaysia

LAPORAN UJIAN

NOMBOR LAPORAN: SM961237	MUKA SURAT: 2 DARI 5

Laporan Ujian ini BUKAN Sijil Penentuan Kualiti dan BUKAN juga Sijil Kelulusan. Laporan ini HANYA meliputi sampel-sampel yang dikemukakan kepada SIRIM dan diuji oleh SIRIM. Laporan ini bukan tidak boleh diterbitkan dengan apajua cara, kecuali sepenuhnya. Ianya tidak boleh digunakan untuk tujuan-tujuan pengiklanan dalam apajua cara atau bentuk tanpa kelulusan bertulis daripada Ketua Pengarah SIRIM.

TEST RESULT : TENSILE TEST

SAMPLE REFERENCE	A/1	A/2
THICKNESS (mm)	2.51	2.52
WIDTH (mm)	24.70	24.79
AREA(mm^2)	62.00	62.47
YEILD LOAD(kN)	22.13	22.43
YEILD STRESS (N/mm^2)	357	359
ULTIMATE LOAD (kN)	28.76	29.55
ULTIMATE STRESS (N/mm^2)	464	473
ELONGATION(%)	26.0	24.5

Institut Standard Dan Penyelidikan Perindustrian Malaysia
Unit Pengujian Kejuruteraan Sivil & Mekanikal

12 SEP 1996

LAPORAN UJIAN

NOMBOR LAPORAN: SM961237	MUKA SURAT: 3 DARI 5

TEST RESULT : TENSILE TEST

SAMPLE REFERENCE	B/1	B/2
THICKNESS (mm)	2.51	2.52
WIDTH (mm)	24.90	24.88
AREA(mm^2)	62.50	62.70
YEILD LOAD(kN)	22.13	22.51
YEILD STRESS (N/mm^2)	354	359
ULTIMATE LOAD (kN)	29.06	28.53
ULTIMATE STRESS (N/mm^2)	465	455
ELONGATION(%)	25.0	27.0

Institut Standard Dan Penyelidikan Perindustrian Malaysia
Unit Pengujian Kejuruteraan Sivil & Mekanikal

12 SEP 1996

LAPORAN UJIAN

NOMBOR LAPORAN: SM961237	MUKA SURAT: 4 DARI 5

TEST RESULT : TENSILE TEST

SAMPLE REFERENCE	C/1	C/2
THICKNESS (mm)	2.51	2.52
WIDTH (mm)	24.76	24.64
AREA(mm^2)	62.15	62.10
YEILD LOAD(kN)	22.25	22.04
YEILD STRESS (N/mm^2)	358	355
ULTIMATE LOAD (kN)	28.34	28.01
ULTIMATE STRESS (N/mm^2)	456	451
ELONGATION(%)	26.0	26.5

Institut Standard Dan Penyelidikan Perindustrian Malaysia
Unit Pengujian Kejuruteraan Sivil & Mekanikal

12 SEP 1996

NOTES

CH YODOFORM SDN. BHD.

LOT 3846, 8TH MILE, JALAN KAPAR, KLANG. SELANGOR.

Tel: 03 - 3910001 (Hunting Line)
Fax: 603 - 391 8098