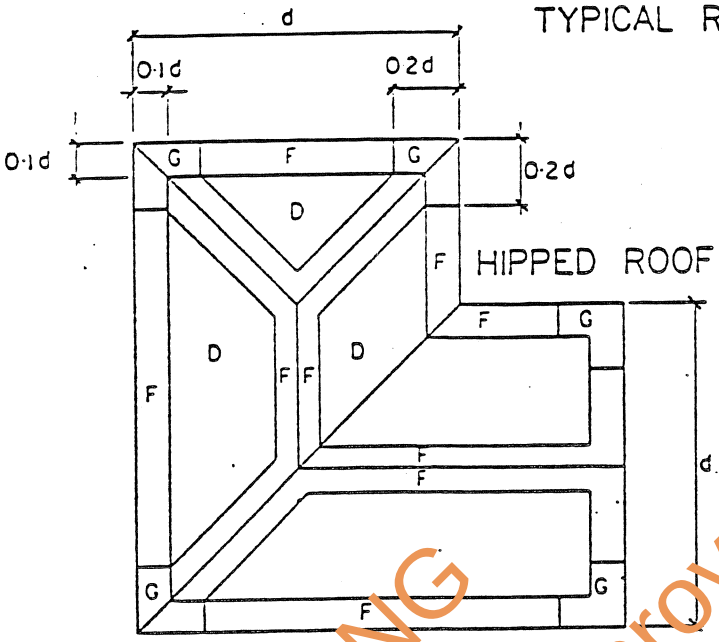
TYPICAL ROOF PLANS



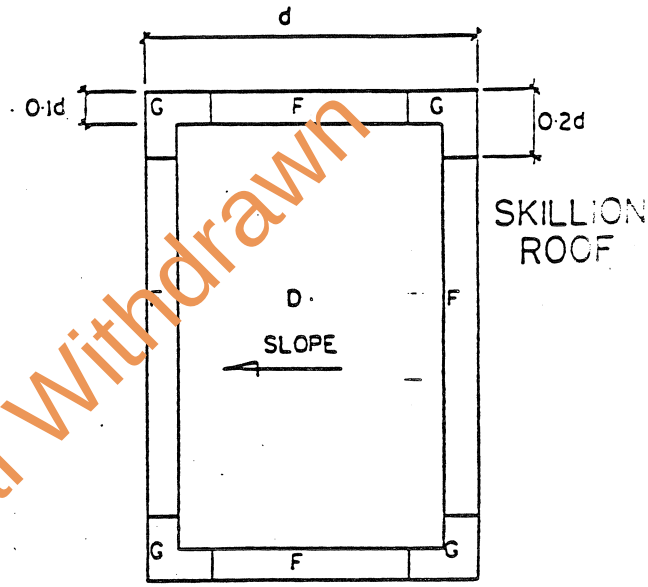


Table 1 - Max. Allowable Roof Spans for Buildings of Height up to 5m.

Terrain Category & Multiplier	Roof Area and Design Pressure kPa		Fastener Frequency	Max. Purlin Spacing (m)			
				VS700	VS800	VS900	VS1200
Cat.1	D	4.24	Alternate Crests	1.28	1.40	1.60	1.83
			Every Crest	1.42	1.68	1.89	2.22
Mult.1.02	F	5.37	Alternate Crests	1.06	1.20	1.37	1.56
			Every Crest	1.22	1.50	1.66	1.87
	G	6.49	Alternate Crests	0.88	1.03	1.19	1.35
			Every Crest	1.03	1.33	1.48	1.63
Cat. 2	D	3.53	Alternate Crests	1.47	1.58	1.82	2.09
			Every Crest	1.50	1.84	2.08	2.49
Mult.0.93	F	4.46	Alternate Crests	1.22	1.35	1.55	1.78
			Every Crest	1.39	1.64	1.85	2.13
	G	5.40	Alternate Crests	1.04	1.18	1.35	1.54
			Every Crest	1.22	1.48	1.65	1.85
Cat.2½	D	2.55	Alternate Crests	1.50	2.00	2.24	2.66
			Every Crest	1.50	2.08	2.40	2.90
Mult.0.79	F	3.22	Alternate Crests	1.50	1.66	1.93	2.20
			Every Crest	1.50	1.90	2.17	2.60
	G	3.89	Alternate Crests	1.37	1.48	1.70	1.95
			Every Crest	1.50	1.76	1.99	2.34

Manuf's Name COMALCO ALUMINIUM LIMITED
Address NELSON RD. YENNORA
N.S.W. 2161 Phone 681-9333

Fixing of COMALCO V-RIB Roofing on Buildings of Height up to 5 M. in the Darwin Area

DESIGN DATA SHEET SH.1 OF 6

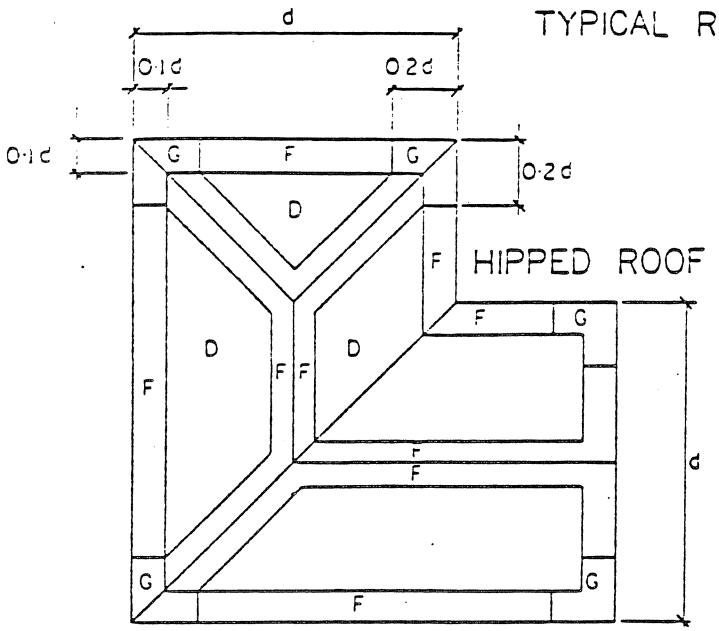
NORTHERN TERRITORY CYCLONIC AREAS

Drawing No. M/107/3

Certified P.E. Harrison M.I.E.Aust
P.E. HARRISON
Date 14TH MARCH 1984

Acc'd MIE Aust Date 8/85

TYPICAL ROOF PLANS



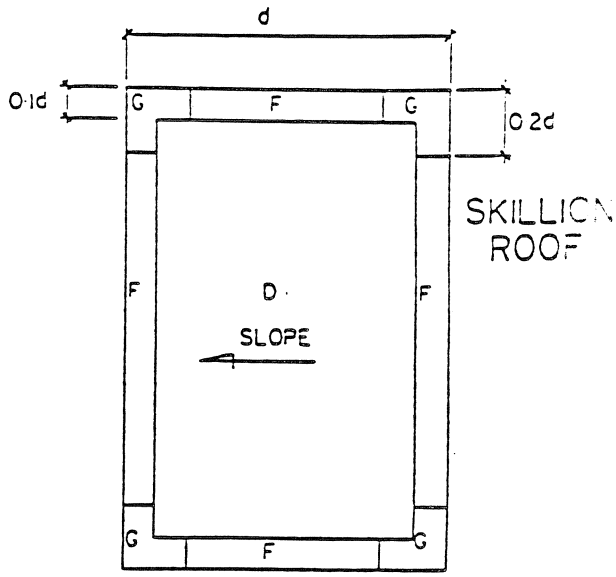


Table 2 - Max. Allowable Roof Spans for Bldgs. of Heights over 5m to 10m.

Terrain Category & Multiplier	Roof Area and Design Pressure kPa		Fastener Frequency	Max. Purlin Spacing (m)			
				VS700	VS800	VS900	VS1200
Cat.1	D	4.85	Alternate Crests	1.15	1.28	1.46	1.66
			Every Crest	1.32	1.57	1.75	1.99
Mult.1.09	F	6.13	Alternate Crests	0.94	1.08	1.24	1.42
			Every Crest	1.09	1.38	1.53	1.69
	G	7.41	Alternate Crests	0.75	0.92	1.06	1.21
			Every Crest	0.90	1.20	1.34	1.48
Cat.2	D	4.08	Alternate Crests	1.32	1.43	1.64	1.88
			Every Crest	1.47	1.72	1.92	2.27
Mult. 1.00	F	5.16	Alternate Crests	1.10	1.23	1.41	1.61
			Every Crest	1.26	1.52	1.70	1.92
	G	6.24	Alternate Crests	0.92	1.06	1.22	1.38
			Every Crest	1.07	1.36	1.50	1.67
Cat. 2½	D	2.95	Alternate Crests	1.50	1.78	2.04	2.37
			Every Crest	1.50	1.97	2.26	2.72
Mult.0.85	F	3.75	Alternate Crests	1.40	1.52	1.76	2.00
			Every Crest	1.50	1.79	2.02	2.40
	G	4.51	Alternate Crest	1.20	1.35	1.54	1.75
			Every Crest	1.38	1.63	1.83	2.11

Manuf's Name COMALCO ALUMINIUM LIMITED
Address NELSON RD. YENNORA
N.S.W. 2161 Phone 681-9333

Certified P.E. Harrison M.I.E.Aust
P.E. HARRISON
Date 14TH MARCH 1984

Fixing of COMALCO V-RIB Roofing on Buildings of Height over 5M→10 M. in the Darwin Area

DESIGN DATA SHEET SH.2 OF 6

NORTHERN TERRITORY CYCLONIC AREAS

Acc'd M I E Aust Date 24/4/84

Drawing No. M/107/3

SETTING OUT

The framing for roof sheeting and its supporting structure must be designed to withstand the anticipated cyclonic wind forces. All framing must be well anchored by using tie rods, straps, bolts or spikes to prevent dislodgement in extreme cyclonic conditions.

The direction of sheet laying is not critical as cyclonic winds may reverse their direction during the course of the storm, however the usual practice is to lay the sheeting with the overlapping rib facing away from the direction of the prevailing wind.

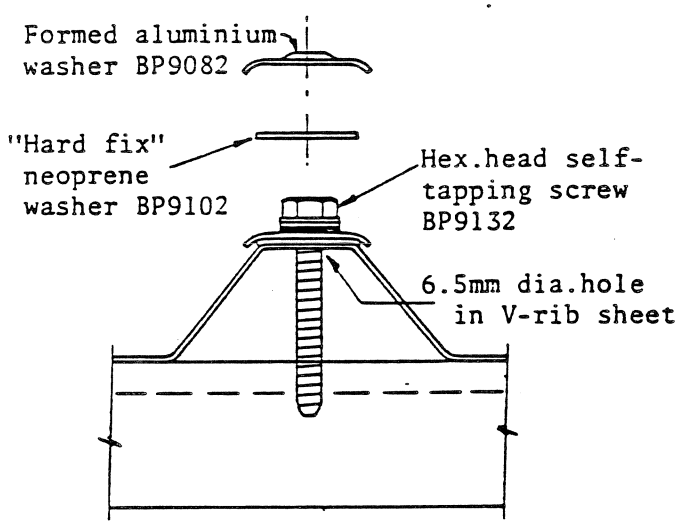
Begin fixing at the barge line at the end of the roof away from the prevailing wind, laying the first sheet exactly at right angles to the eaves line. The pans between the ribs should be turned up level with tops of ribs. The ends of sheets at the eaves should be lipped down slightly to provide a drip edge.

FIXING METHOD

Sheets under 6 metres. Use washer set BP9082 and BP9102 with crest fixed self-tapping stainless steel screw BP9132 14 gauge x 60mm B thread Hex head for fixing to steel purlins or woodscrew BP9080 14 gauge x 75mm type 17 stainless steel hex washer face neowasher for fixing to timber purlins.

Drill Size: Under 5mm steel - 5.2mm diameter
Over 5mm up to 10mm steel - 5.8mm diameter

When used to hold accessoreis i.e. barge flashing, BP9082 is replaced by a flat aluminium washer BP9071



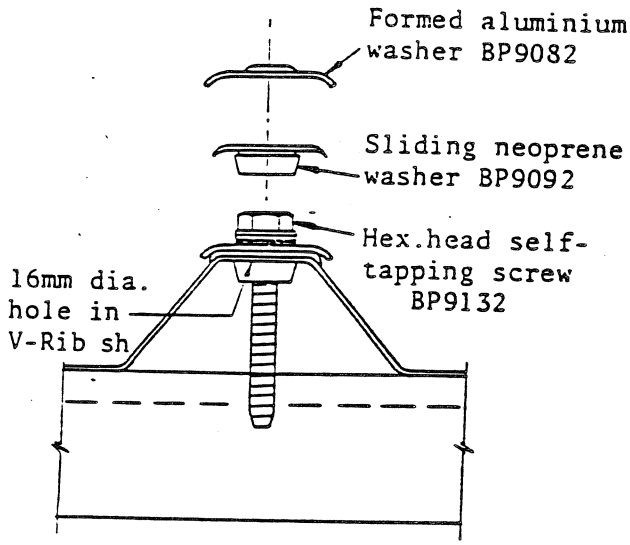
Hard Fix

Manuf's Name COMALCO ALUMINIUM LIMITED Address NELSON RD. YENNORA N.S.W. 2161 Phone 681-9333	Fixing of COMALCO V-RIB Roofing on Buildings of Height up to 10M in the Darwin Area
	DESIGN DATA SHEET SH.3 OF 6
Certified P.E. Harrison M.I.E.Aust P.E. HARRISON Date 14TH MARCH 1984	NORTHERN TERRITORY CYCLONIC AREAS Accd M.I.E. Aust Date 25/4/84
	Drawing No. M/107/3

FIXING METHOD (cont'd.)

Sheets over 6 metres. Use washer sets BP9082 and BP9102 (hard fix) and BP9082 and BP9092 (expansion fix) with either BP9132 for steel purlins or BP9080 for timber purlins. A hole saw is used for the expansion fix washer system to produce a hole 16mm diameter to provide a neat fit between sheet and the groove in the grommet washer BP9092.

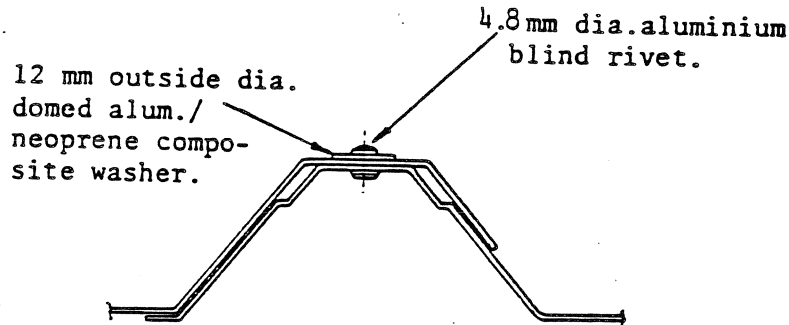
For details on the location of hard fix and expansion fix washers, the lengths of sheet affected and sheet end laps refer to Comalco Manual "Roof and Cladding Systems".



Expansion Fix

Side Laps. Unless otherwise specified all side laps shall be minimum of one rib with side lap self sealing type stitching rivets with 12mm OD washers installed through the top of the overlapping ribs and positioned down the centre line of that rib at a maximum centre spacing of 500mm. This may be reduced to cater for the higher cyclonic wind forces in the F and G zones.

Stitching rivet size: 4.8mm diameter
hole size : 4.9mm diameter



Side Lap

Manuf's Name COMALCO ALUMINIUM LIMITED Address NELSON RD. YENNORA N.S.W. 2161 Phone 681-9333	Fixing of COMALCO V-RIB Roofing on Buildings of Height up to 10M in the Darwin Area
Certified P.E. Harrison M.I.E.Aust P.E. HARRISON Date 14TH MARCH 1984	DESIGN DATA SHEET SH.4 OF6 NORTHERN TERRITORY CYCLONIC AREAS Accd MIE AUST. Date 26/4/84 Drawing No. M/107/3

ODD SHAPED ROOFS

The location of sheeting and its fixings on roofs which are not basically rectangular or square cause problems with fasteners and flashings. Advice should be sought from Comalco for these types of applications.

FLASHING METHODS

Comalco provides a range of standard flashings and accessories which should be securely fixed to the sheeting. For details of flashings and their installation refer to Comalco Manual "Roof and Cladding Systems".

CUTTING AND BENDING

When necessary cutting of the sheet lengthwise can be achieved by scoring with a sharp pointed tool (laminate knife) and then bending the score mark over a straight edge to cause fracture along the score mark. To cut across the sheet a fine tooth hacksaw should be used or a power saw fitted with a metal cutting saw blade.

Any bending of the sheet parallel to the ribs should be done over a large radius to avoid cracking of the sheet.

ACCESSORIES

Sheet metal accessories may, where possible, be secured to the main supporting structure by the same fasteners as used for the sheeting. Otherwise use 4.8mm diameter sealed blind rivets with 12mm OD washers.

CURVING OVER RIDGE

V-rib may be cambered to a maximum slope of 3° without any special ridge treatment. The hard fix washer system BP9082 and BP9102 is to be used on the centre purlins either side of the apex. The expansion fix washer system BP9082 and BP9092 are to be used on all other purlins.

Manuf's Name COMALCO ALUMINIUM LIMITED Address NELSON RD. YENNORA N.S.W. 2161 Phone 681-9333	Fixing of COMALCO V-RIB Roofing on Buildings of Height up to 10M. in the Darwin Area
	DESIGN DATA SHEET SH.5 OF 6
Certified P.E. Harrison M.I.E.Aust P E. HARRISON Date 4TH MARCH 1984	NORTHERN TERRITORY CYCLONIC AREAS Acc'd MIE Aust Date 28/3/84
	Drawing No. M/107/3

DIMENSIONS

Effective cover width 915mm. Reduced cover width available subject to enquiry to Comalco. Lengths up to 21.3 metres maximum. (Subject to transport arrangements).

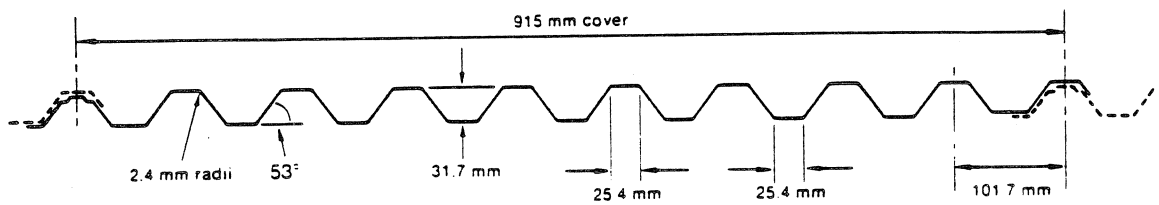
FINISHES

Stucco embossed is standard.

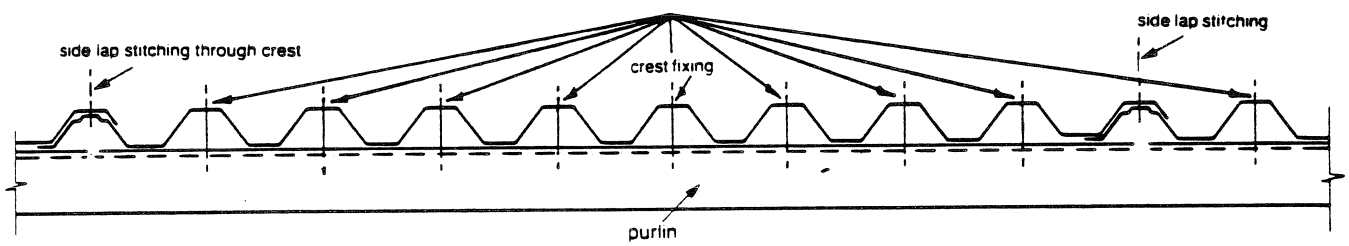
Painted - colours subject to enquiry.

PROPERTIES

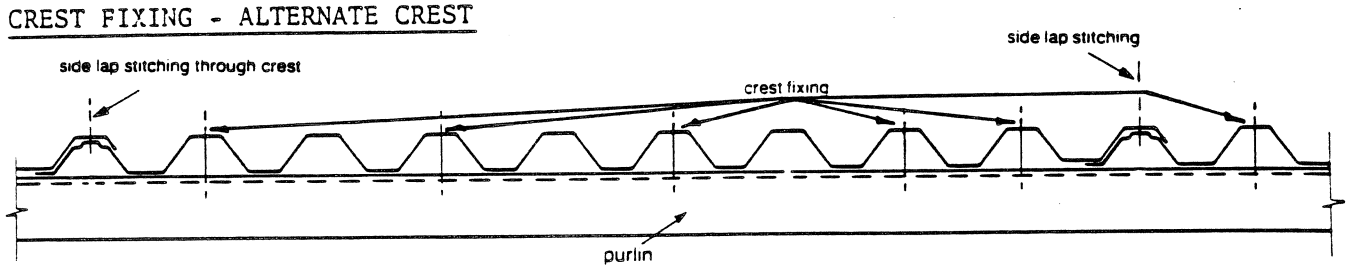
Class	Nominal Gauge mm	Mass per sq.m. of cover kg	Mass/lin m. kg	Properties per 100mm width	
				Modulus mm^3	Moment of inertia mm^4
VS 700	0.7	2.59	2.37	788	12490
VS 800	0.8	2.96	2.70	891	14120
VS 900	0.9	3.33	3.05	991	15713
VS1200	1.2	2.44	4.06	1274	20197



CREST FIXING - EVERY CREST



CREST FIXING - ALTERNATE CREST



Manuf's Name COMALCO ALUMINIUM LIMITED
Address NELSON RD. YENNORA
N.S.W. 2161 Phone 681-9333

Certified P.E. Harrison M.I.E.Aust
P.E. HARRISON
Date 14TH MARCH 1984

Fixing of COMALCO V-RIB Roofing on Buildings of Height up to 10 M. in the Darwin Area

DESIGN DATA SHEET SH.6 OF6

NORTHERN TERRITORY CYCLONIC AREAS

Drawing No. M/107/3

Acc'd [signature] M.I.E.AUST Date 21/4/84