alcom

INFINITE
POSSIBILITIES.

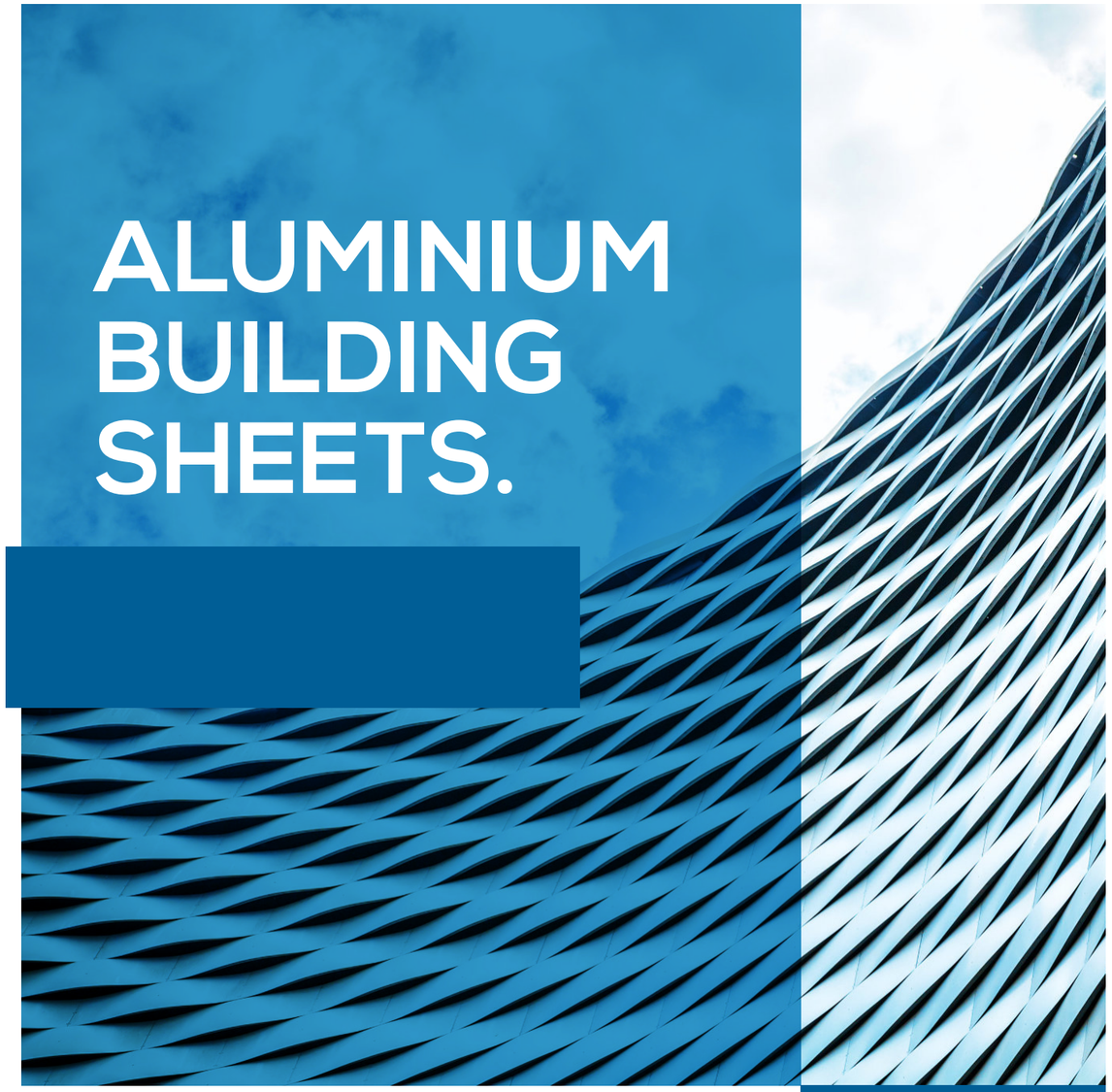
Company : Aluminium Company of Malaysia Bhd.
Address : No. 3 Persiaran Waja
Bukit Raja Industrial Estate, Klang
41050 Selangor, Malaysia

Phone : +603 3346 6262
Fax : +603 3341 2793
Email : info@alcom.com.my
Web : www.alcom.com.my

ALUMINIUM. // METAL OF THE FUTURE.

alcom

ALUMINIUM BUILDING SHEETS.



PRODUCT FEATURES // INSTALLATION MANUAL

ALUMINIUM.

INFINITE POSSIBILITIES.

Our vision and company values reflect our capabilities and aspirations, and the unique properties of the products that we make. Our future lies in continually reinforcing the value proposition we offer to our customers and the commitments we've made to all our stakeholders including the environment and the communities in which we operate. We will build on our legacy and continue to create high-value products to make the world lighter, brighter and better.

alcom

TABLE OF CONTENTS.

04 INTRODUCTION - ALCOM BUILDING SHEETS

05 PRODUCT FEATURES - 7P/COMSPAN/ALRIB

07 PRODUCT INFORMATION - 7P

09 PRODUCT INFORMATION - COMSPAN

11 PRODUCT INFORMATION - ALRIB

13 DESIGN INFORMATION & INSTALLATION PROCEDURE

15 INSTALLATION

17 ROOF FLASHINGS

19 SITE NOTES

20 SPECIFICATIONS FOR TENDERING PURPOSES

alcom

AN INTRODUCTION TO ALCOM'S BUILDING SHEETS.

ALCOM Building Sheets has been in the market since the 1970s, under its own brands such as ALCOM 7P, Comspan and Alrib in coastal, heavy industrial environments and agricultural sectors.

ALCOM's Stucco Embossed and Polyester Colorbaked Building Sheets offer you a wide range to choose from. With a weight that is 2.9 times lighter than steel, it does not tax your load design factor for your roofing projects. No other Building Sheet can offer you the coolness and life-long durability that aluminium provides.

Laid out in this catalogue are details of our various building sheets, their features, technical details as well as installation procedures. For further details, our Building Sheets Department will be more than happy to discuss your needs with you.

PRODUCT FEATURES.

ALUMINIUM - METAL OF THE FUTURE

ALUMINIUM IN BUILDING

Aluminium with its inherent characteristics of corrosion-resistance, maintenance free recyclability, light weight, durability and high specific strength by alloying with other elements making it one of the most versatile material widely used in every industry. Its added characteristics of high heat reflectivity and low thermal emissivity in particular, make it the most suitable material for roofing sheets.

WEIGHT

Aluminium's best known characteristics is its light weight. With a density about one-third that of steel and one-fifth that of asbestos cement, it is the lightest metal commonly used in building. Compared to steel and asbestos, lighter aluminium enables significant savings in the cost of structural supports, erection time and manpower.

STRENGTH

Alcom Building Sheets are produced from an alloy containing a small percentage of magnesium and manganese of H8 temper and having a minimum ultimate tensile strength of 185 Mpa.

THERMAL EXPANSION

Although aluminium has twice the coefficient of expansion of steel (24 x 10^{-6} vs 12 x 10^{-6}), the effect of this is often over estimated. Usually aluminium roofing sheet is fixed to a steel structure where under the same thermal influence expands and contracts. The combination of these factors results in low relative expansion between the aluminium roofing sheet and the steel structure. In practice the theoretical expansion of an aluminium roof relative to the steel structure on which it is fixed is reduced by up to 50%.

CONDENSATION

Condensation occurs on the underside of all metal roof when the roof metal temperature falls below the dew point of humid air held against the underside of the roof. Control of under condensation can be effected through the reduction of the moisture content of the air under the roof by one of the following procedures: (1) providing ample ventilation of the building or of the ceiling space, if any; (2) laying an insulation blanket with aluminium foil laminated to the underside, over the purling before laying the roof.

FIRE RESISTANCE

Classified as a non-combustible material for both coated and bare. Certified compliance with BS476 Part 6 (Fire Propagation) and BS476 Part 7 (Surface Spread of flame) Class I by SIRIM and certified as Class O material by Fire and Rescue Department of Malaysia.

ACCOUSTIC

Rain can cause noise problems on all sheet metal roofs. Noise levels can be considerably reduced by the application to the under side of the roofing sheet.

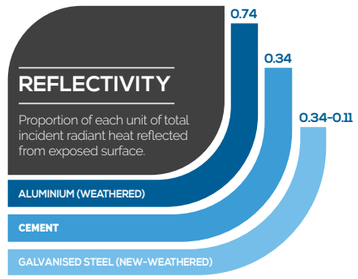
SHEET LENGTHS

Lengths of up 20.0m are produced and transported to site by trailers according to customer's requirements. For lengths produced over 20m, this will be subject to transport regulations of the country.

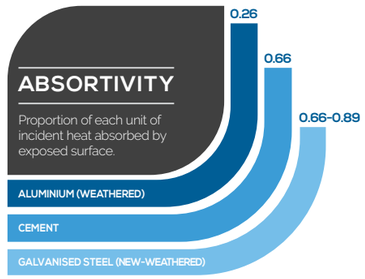
HEAT TRANSFER

Heat is transferred by conduction, convention and radiation. Up to 95% of heat transfer through a roof in a hot day is by radiation. Aluminium has a very high reflectivity of approximately 70% to 90%, depending on degree of oxidation of surface. Installations have demonstrated that thermal radiation in a hot day under an uninsulated aluminium roof is markedly less than other roof decks, resulting in greater personal comfort.

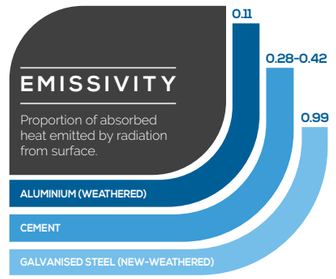
THE COOL FACTOR.



The natural finish on an aluminium surface reflects at least 80% of radiant Heat that falls upon it, even when lightly covered with dust or slightly soiled.

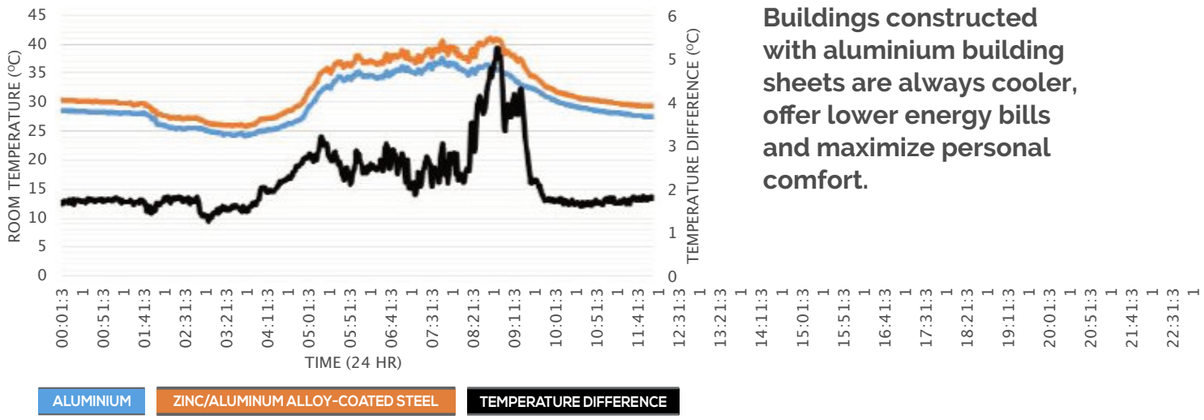


This high reflectivity ensures that maximum heat is reflected and consequently aluminium-clad buildings tend to remain cool under tropical sunlight.



This is of major importance in tropical environments where in high temperatures a single sheet of aluminium roofing gives an internal building temperature of approximately 10% lower than galvanised steel.

TEMPERATURE CHART IN 24 HOURS



Buildings constructed with aluminium building sheets are always cooler, offer lower energy bills and maximize personal comfort.

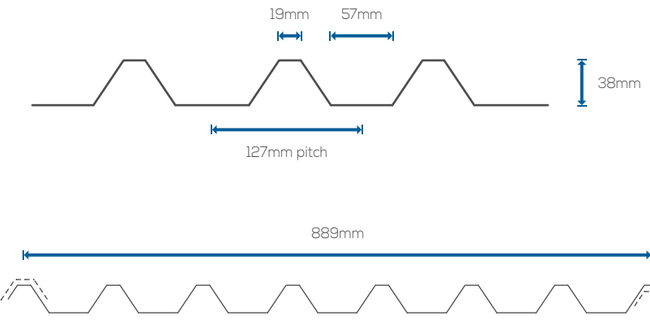
PROFILE 7P.

7P is a trapezoidal profile suitable for use in factories and warehouses and in rubber, oil palm, cocoa and rice mills. This sheet is available in an attractive range of colours and can be supplied in continuous long lengths specified by customers for projects where joints are minimised. The versatility of this profile is due to its strength, water carrying capacity, fixing economy and cave closures features. It is widely used for roofing and can be reversed to provide a bold wall effect.

OVERALL SHEET WIDTH
952mm

EFFECTIVE COVER WIDTH
889mm

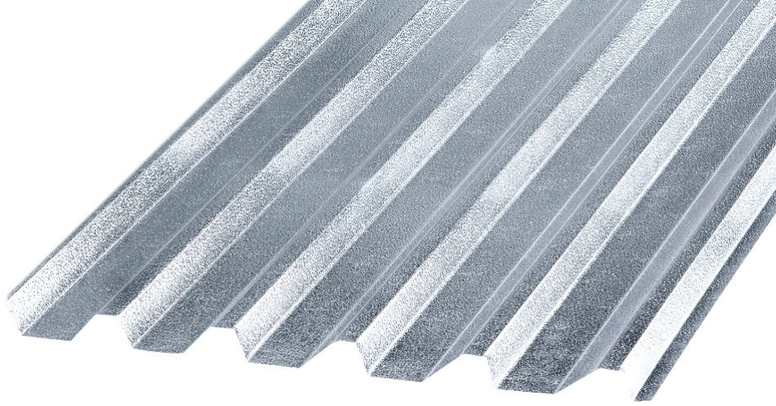
DEPTH OF TROUGH
38mm



Thickness (mm)	Effective Weight (kg/m²)	Effective Cover (m²/MT)	Minimum Recommended Pitch	Recommended Purlin Spacing (m)*	Wall Girt Spacing (m)**
0.50	1.912	517.6	3° (1 in 20)	1.37	1.50
0.55	2.103	470.4		1.50	2.00
0.70	2.677	369.5		2.00	2.50
0.90	3.442	287.4		2.50	3.00

Notes:
* The spacing is determined based on a point load of 130kg applied at mid span with maximum allowable bending stress of 76N/mm².
** The spacing is determined by practical consideration of ensuring that the side lapping is adequately held down.

alcom



GEOMETRIC PROPERTIES.

Section Properties Per Metre Width			
Thickness (mm)	Area (mm²)	Modulus (mm²)	Moment of Inertia (mm²)
0.50	0.660 x 10^3	5.90 x 10^3	139.1 x 10^3
0.55	0.726 x 10^3	6.49 x 10^3	153.0 x 10^3
0.70	0.924 x 10^3	8.23 x 10^3	194.8 x 10^3
0.90	1.188 x 10^3	10.54 x 10^3	250.4 x 10^3

Max Eaves Overhang Unsupported	
Thickness	mm
0.50	150
0.55	150
0.70	200
0.90	300

End Laps	
Roof Pitch	End Laps Length (mm)
5° - 10°	300
10° - 15°	250
Above 15°	200

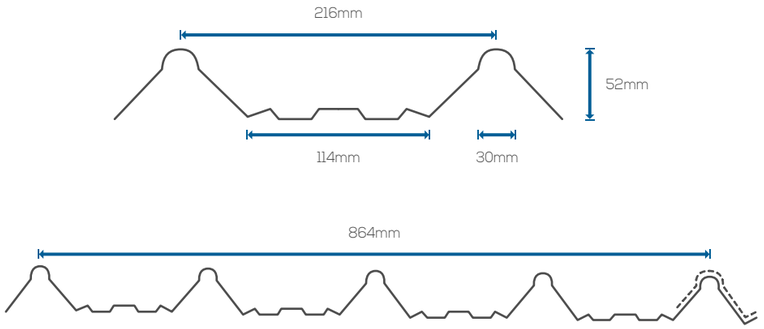
LOAD TABLE - 7P.

Maximum Allowable Distributed Load/Deflection							
Thickness	Multi-Span	Purlin Spacing (m)					
		1.37	1.50	1.75	2.00	2.25	2.50
0.50	Load (KN/m²)	2.40	2.00	1.50	1.10	0.90	0.70
	Deflection Under Above Load (mm)	6.8	8.1	11.3	14.2	18.5	21.9
0.55	Load (KN/m²)	2.60	2.19	1.61	1.23	0.97	0.79
	Deflection Under Above Load (mm)	6.7	8.2	11.2	14.6	18.4	22.8
0.70	Load (KN/m²)	3.33	2.78	2.04	1.56	1.24	1.00
	Deflection Under Above Load (mm)	6.7	8.2	11.7	14.5	18.5	22.7
0.90	Load (KN/m²)	4.20	3.56	2.62	2.00	1.58	1.28
	Deflection Under Above Load (mm)	6.8	8.0	11.1	14.5	18.3	22.6
Thickness	Single-Span	Purlin Spacing (m)					
		1.37	1.50	1.75	2.00	2.25	2.50
0.50	Load (KN/m²)	1.92	1.60	1.20	0.88	0.72	0.52
	Deflection Under Above Load (mm)	9.2	11.0	15.3	19.1	25.0	27.8
0.55	Load (KN/m²)	2.08	1.75	1.29	0.98	0.78	0.58
	Deflection Under Above Load (mm)	9.0	10.9	14.9	19.3	24.7	27.8
0.70	Load (KN/m²)	2.66	2.22	1.63	1.25	0.99	0.73
	Deflection Under Above Load (mm)	9.1	10.9	14.8	19.4	24.6	27.8
0.90	Load (KN/m²)	3.36	2.85	2.10	1.60	1.26	0.94
	Deflection Under Above Load (mm)	8.9	10.9	14.8	19.3	24.3	27.8

Note:
The maximum allowable distributed load is determined based on a maximum allowable bending stress of 76 N/mm² except values in grey boxes where the limiting criteria is deflection (span/90)

COMSPAN.

This profile was designed specifically to provide a wide spanning capability and a distinctive appearance to provide frequent roof traffic. The large robust ribs and exceptional water carrying capacity of this profile make it ideal for large high performance roofs such as power-stations, industrial or commercial buildings and used on walls where a strong visual effect is required. This profile has been chosen for Sydney's Aquatic Stadium, a venue for the 2000 Olympic Games.



OVERALL SHEET WIDTH
950mm

EFFECTIVE COVER WIDTH
864mm

DEPTH OF TROUGH
52mm

Thickness (mm)	Effective Weight (kg/m²)	Effective Cover (m²/MT)	Minimum[1] Recommended Pitch	Recommended[2] Purlin Spacing (m)*	Wall Girt[3] Spacing (m)**
0.70	2.614	384.56	2°	2.0	2.5
0.90	3.343	299.10	(1 in 29)	2.5	3.0

Notes:
1. On minimum slope, care must be taken to ensure that purlin sag or misalignment does not result in water ponding on the roof, particularly if end laps are used.
2. The spacing is determined basing on a point lead of 130kg applied at mid-span with maximum allowable bending stress of 76N/mm².
3. The spacing is determined by practical consideration of ensuring that the side lapping is adequately held down.

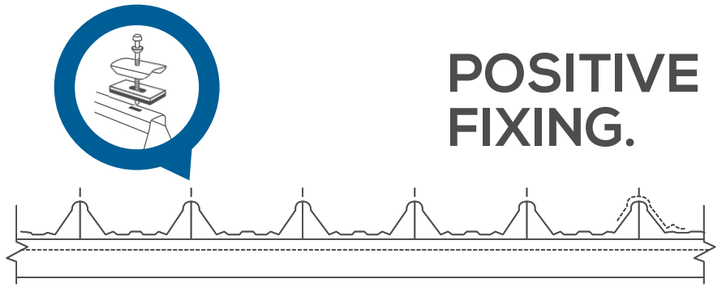
alcom

GEOMETRIC PROPERTIES.

Section Properties Per Metre Width		
Thickness (mm)	Thickness (x 1000 mm²)	Moment of Inertia (x 1000 mm²)
0.70	8.9	306
0.90	11.4	393

Max Eaves Overhang Unsupported	
Thickness	mm
0.70	200
0.90	300

End Laps	
Roof Pitch	End Laps Length (mm)
2° - 10°	300
10° - 15°	250
Above 15°	200



POSITIVE FIXING.

LOAD TABLE - COMSPAN.

Maximum Allowable Distributed Load/Deflection							
Thickness	Multi-Span	Purlin Spacing (m)					
		1.25	1.50	1.75	2.00	2.25	2.50
0.70	Load (KN/m²)	4.33	3.01	2.21	1.69	1.34	1.08
	Deflection Under Above Load (mm)	3.91	5.63	7.66	10.01	12.67	15.64
0.90	Load (KN/m²)	5.54	3.85	2.83	2.17	1.71	1.39
	Deflection Under Above Load (mm)	3.90	5.62	7.64	9.98	12.64	15.60
Thickness	Single-Span	Purlin Spacing (m)					
		1.25	1.50	1.75	2.00	2.25	2.50
0.70	Load (KN/m²)	3.46	2.40	1.77	1.35	1.07	0.87
	Deflection Under Above Load (mm)	5.21	7.51	10.22	13.35	16.89	20.86
0.90	Load (KN/m²)	4.44	3.08	2.26	1.73	1.37	1.11
	Deflection Under Above Load (mm)	5.20	7.49	10.19	13.31	16.85	20.80

Note:
The maximum allowable distributed load is determined based on a maximum allowable bending stress of 76 N/mm².

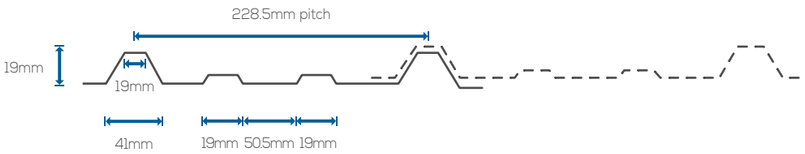
ALRIB.

The wide (914mm) cover width of Alrib, in conjunction with its symmetrical profile, provides a roofing sheet which can be used effectively on walls as well. A double capillary drain in the rib overlap ensures weather security. On top of providing a neat, balanced appearance on buildings, this profile is also effectively used as insulation jacketing in power stations and chemical processing plants.

OVERALL SHEET WIDTH
960mm

EFFECTIVE COVER WIDTH
914mm

DEPTH OF TROUGH
19mm



Thickness (mm)	Effective Weight (kg/m²)	Effective Cover (m²/MT)	Minimum Recommended Pitch	Recommended Purlin Spacing (m)*	Wall Girt Spacing (m)**
0.55	1.751	580.8	Above 5°	0.8	1.6
0.70	2.228	456.3		1.00	1.8
0.90	2.866	354.9		1.30	2.0

Notes:
Alrib, if used for roofing, should be limited to narrow purlin spacing and "light" duty purposes.
* The spacing is determined based on a point load of 68kg applied at mid span with maximum allowable bending stress of 76N/mm².
** The spacing is determined by practical consideration of ensuring that the side lapping is adequately held down.

alcom

GEOMETRIC PROPERTIES.

Section Properties Per Metre Width			
Thickness (mm)	Area (mm²)	Modulus (mm²)	Moment of Inertia (mm²)
0.55	0.605 x 10^3	1.42 x 10^3	22.6 x 10^3
0.70	0.770 x 10^3	1.80 x 10^3	28.8 x 10^3
0.90	0.990 x 10^3	2.30 x 10^3	37.0 x 10^3

Max Eaves Overhang Unsupported	
Thickness	mm
0.55	150
0.70	200
0.90	300

End Laps	
Roof Pitch	End Laps Length (mm)
7.5° - 15°	300
Above 15°	250

LOAD TABLE - ALRIB.

Maximum Allowable Distributed Load/Deflection

Thickness	Multi-Span	Purlin Spacing (m)		
		1.00	1.25	1.50
0.55	Load (KN/m²)	1.08	0.69	0.48
	Deflection Under Above Load (mm)	5.30	8.30	12.0
0.70	Load (KN/m²)	1.37	0.88	0.61
	Deflection Under Above Load (mm)	5.30	8.30	12.0
0.90	Load (KN/m²)	1.75	1.12	0.78
	Deflection Under Above Load (mm)	5.30	8.20	11.9

Thickness	Single-Span	Purlin Spacing (m)		
		1.00	1.25	1.50
0.55	Load (KN/m²)	0.86	0.55	0.38
	Deflection Under Above Load (mm)	7.2	11.2	16.1
0.70	Load (KN/m²)	1.10	0.70	0.49
	Deflection Under Above Load (mm)	7.2	11.2	16.3
0.90	Load (KN/m²)	1.40	0.90	0.62
	Deflection Under Above Load (mm)	7.1	11.2	16.0

Note:
The maximum allowable distributed load is determined based on a maximum allowable bending stress of 76 N/mm²

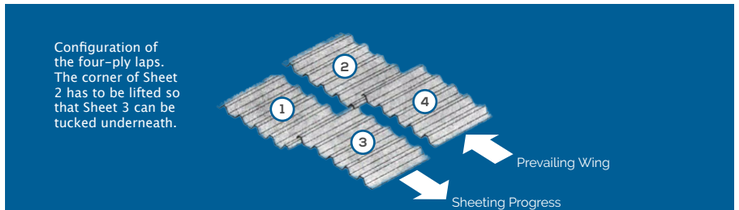
DESIGN INFORMATION AND INSTALLATION PROCEDURE.

ORDERING SHEETS.

The quantity and length of sheets should not be determined from drawings, but from actual measurements of the structure making due allowance for the squareness of the structure. Where sheets are to be end-lapped, allow the extra length which varies. (refer pages 7, 9 & 11) according to the roof pitch. An additional 50mm is to be allowed for gutter overhang. To determine the thickness of the sheet and the respective recommended purlin spacing, please refer to pages 8, 10 & 12.

alcom

INSTALLATION INFORMATION.



PREPARATION.

Before commencing to lay the sheet, consideration should be given to the installation of gutter and eave flashing, insulation and the location of roof penetrations such as vents, skylights, etc. If insulation is to be laid on wire mesh, the mesh should be laid first with the gutter and eave flashing following to secure the wire at the eave. Insulation should be laid with the roofing to avoid the possibility of rain wetting insulation.

PURLIN ISOLATION.

In marine, moist aggresive environments, the face of steel, copper impregnated timber, purlins or girts, against that which the sheeting is fastened, is to be painted with chromate based primers, bituminous paint or similar.

SHEET CUTTING DRILLING.

Aluminium is best cut with lubricated fine tooth circular saw. All holes must be drilled and not puncture. Care nuts be taken to avoid distortion of the short profile.

SHEET INSTALLATION.

Customary practice is to lay out an area of sheet and secure each sheet with a crest fastener at the centre of the ends of the middle, at the same time checking the profile with a scalloped ridge flashing to avoid profile spread. The area of sheet laid out should be no more than that which can be fully fixed within the day of laying. When the area of sheet has been laid, install side lap fasteners and then the balance of crest fasteners.

Wherever possible commence laying the sheet, farthest from the expected direction of the heaviest rain or wind and from the eaves toward the ridge. The top end of the sheet should be not more than 100m from the ridge or fascia line and the bottom end should extend 50mm into the gutter. The ridge and eave ends are to have the pans upturned and downturned respectively. End forming tools are available for this purpose.

Roof slopes greater than 25° require side lap sealing, with a continuous run of silicone sealant.

DISSIMILAR MATERIALS.

Under no circumstances should copper, brass, or copper alloys be placed in contact with aluminium or water run off from these metals discharge on to aluminium sheet.

Silicone sealants used with aluminium sheeting must be neutral cure. Care must be taken to avoid contact with building materials such as unseasoned or chemically treated timber, lime cement, concrete, mortar or plaster during construction and to provide impermeable barriers against long term contact.

In marine, moist or aggressive environments the face of steel or chemically impregnated timber purlins, against which the sheeting is fastened, is to be painted with chromate based primers, bituminous paint or coated with Norton 550 adhesive P.V.C. tape.

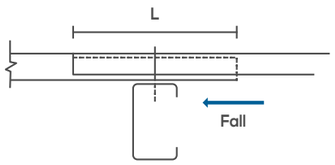
Under severe marine and/or aggressive industrial environments Denso tape or closed cell polyrthylene tape should be used to completely fill the sheet/structure interface to avoid moisture retention by capillary action. Alcorn will provide application advice in such situations

INSTALLATION.

The general practice is to lay out an area of sheet and secure each sheet with a crest fastener at the central of the ends and middle at the same time checking the profile with a scalloped ridge flashing to avoid profile spread. The area of sheet laid out should be no more than that which can be fully fixed within tha day of laying. When the area of sheet has been laid, install crest fasteners and then the side lap fasteners.

END LAPS.

When end laps are used the lower sheets are laid first, without being fastened to the purlin at the top of the sheet slope. The next sheet up the roof slope is then laid and is first temporarily secured and then fixed from the upper end towards the lower. The detail of overlapping is as per diagram.



WALL CLADDING.

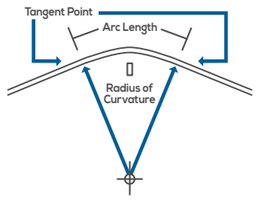
Wherever possible commence fixing farthest from the expected direction of the heaviest wind or rain. Where more than one length is used for the wall height, an overlap of 100m should be allowed at a girt with the upper sheet overlapping the lower sheet.

SIDE LAPS.

Sheet edges must be fixed together at side laps wherever necessary. The side lap fastener is fixed through the centre of the rib crest over each purlin first and then between the purlins. During the fixing, ensure that the overlapping rib is pressed firmly against the underlap rib.

CURVED RIDGING - LOW PITCHED ROOFS.

Alcom 7P Aluminium Roofing Sheet may be curved over the ridge of a low pitched roof provided that the radius of curvature is not less than 18m. This method of installation will avoid the use of standard ridge flashings and simplify roof installation procedures.



Roof Pitch	1	2	3	4	5	6	8	9	10
Roof Gradient	1:57	1:29	1:19	1:14	1:11	1:10	1:7	1:6	1:5.7
Arc Length (m) at 18m radius	0.63	1.26	1.88	2.51	3.14	3.77	5.03	5.65	6.28

A central ridge plate should not be used in this type of application but if it is considered necessary, from a construction point of view, the ridge plate should be positioned 50mm below the underside of the curved roof sheeting.

Purlins should be placed symmetrically about the ridge centre-line and at each tangent point.

The module of the sheet and the fixing positions should be marked along the purlins before laying commences. This practice will provide a check against spreading of the profiles during fixing and will make sheet laying faster. Sheeting must commence square to the purlins.

FASTENING OF PURLINS TO MAIN STRUCTURE.

Aluminium has less weight of its own to resist wind suction than some other roofing materials. Therefore, in exposed positions and areas of the country where high winds are experienced, it is essential that extra care is taken to ensure that all purlins are securely fixed to the building. In particular the anchorage of the eaves purlin must be able to withstand any anticipated wind velocity.

alcom

FIXING - PURLIN FASTENER FOR ROOFINGS.

A. Crest Fixing Pattern (Recommended for All Roofing)

Steel Purlins - Hex head fastener no.12 x 57mm screw with pre-assembled 22mm O.D. neoprene bonded washer for crest fixing through the roofing sheets onto steel purlins.

Timber Purlins - Hex head no.12 x 65mm self-drilling woodscrew with pre-assembled 22mm O.D. neoprene bonded washer for crest fixing through the roofing sheets onto steel purlins.

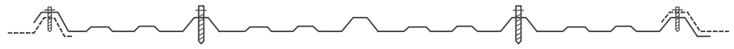
B. Valley fixing Pattern (Recommended for Wall Cladding)

Steel Purlins - Hex head fastener no.12 x 25mm screw with pre-assembled 16mm O.D. neoprene bonded washer for valley fixing through the roofing sheets onto steel girt.

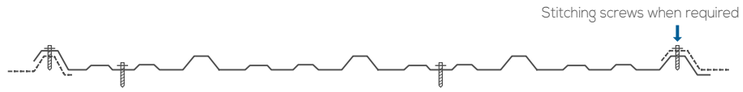
Timber Purlins - Hex head no.12 x 65mm woodscrew with pre-assembled 16mm O.D. neoprene bonded washer for valley fixing through the roofing sheets onto timber girt.

FIXING - ALRIB.

A. Crest Fixing Pattern (Recommended for Roofing with low load requirements)

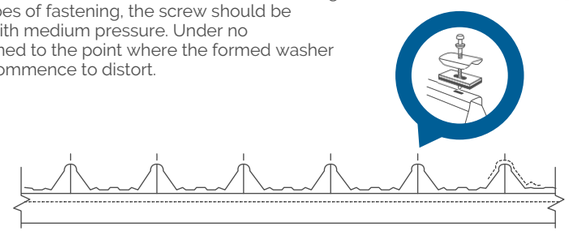


B. Valley Fixing Pattern (Recommended for Wall Cladding)



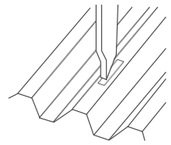
Squareness - Check the roof or wall structure for squareness before commencing to lay sheet. Sheet must be laid square to the ridge wherever practical. Out-of-square which exceeds 100mm over the sheet length should be corrected by trimming the edge of the sheet laid against the out-of-square edge. Any sag of purlins should be corrected before commencement particularly on low pitch roofs to avoid water "ponding".

Fastening - The Alcom Positive Fix System consists of 3 components assembled as shown. The self-tapping screw may be driven with an electric screw gun at a maximum speed of 300 R.P.M. Note that for expansion, fixing a rubber washer with an elongated hole and a teflon facing on one side is used. This washer must be installed with the teflon side facing UP towards the head of the screw. For both types of fastening, the screw should be screwed down until it presses on the washer with medium pressure. Under no circumstances should the screw be overtightened to the point where the formed washer or the bonded washer under the screw head commence to distort.

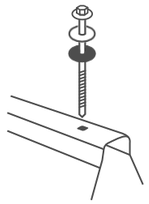


POSITIVE FIX SYSTEM.

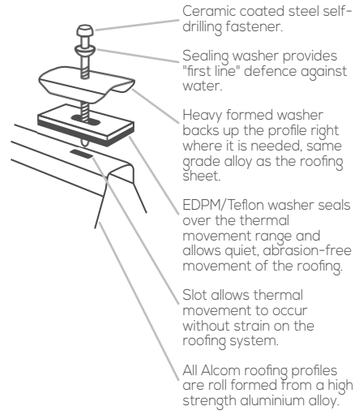
ROOF FIXING The ALCOM Positive Fix System provides for thermal expansion on the roofing sheet by "hard" fixing at the top of the sheet slope with " expansion" fixing being used to accommodate expansion towards the lower end of the sheet slope.



HARD FIX "Hard" fixing is used for the first 6 metres from the ridge or skillion head and consists of drilling the self–tapping screw through the rib and purlin, opening the rib crest hole to 6mm diameter.



EXPANSION FIX "Expansion" fixing is used for the remainder of the sheet length where by the hole in the rib crest is slotted using a custom tool. The heavy formed aluminium washer then provides protection while allowing for thermal expansion.

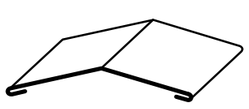


ROOF FLASHINGS.

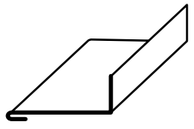
The correct installation of flashings to seal the roof perimeters or penetration is essential to the security weather tightness of the roof. Consideration has to be given to movement between the roof and building walls and the length expansion of flashings.

Alcom supplies a range of custom-made flashings which are provided to the same metal specifications as the roofing sheet made flashings are required the metal should be to the following specifications.

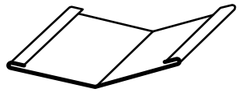
Finish: Stucco Embossed / Coated



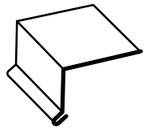
RIDGE CAPPING



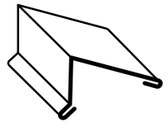
APRON FLASHING



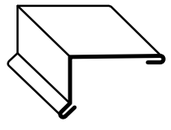
VALLEY GUTTER



EAVES FLASHING



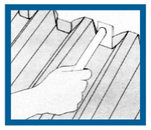
HIGH END FLASHING



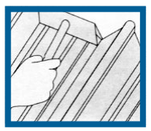
GABLE END FLASHING

Alcom

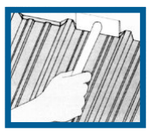
SHEETS TURN-UP.



Valley of 7p sheets must be turned up at the high end of the roof sheets to ensure water that is wind-driven beneath the flashings do not drain into the building.



Turn up operation of Comspan sheets at the valley ensure water is not drained into the building.

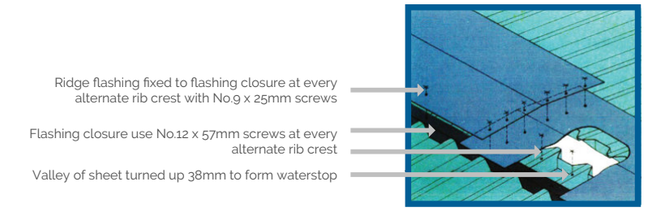


Turn up operation of Alrib sheets at the valley ensure water is not drained into the building.

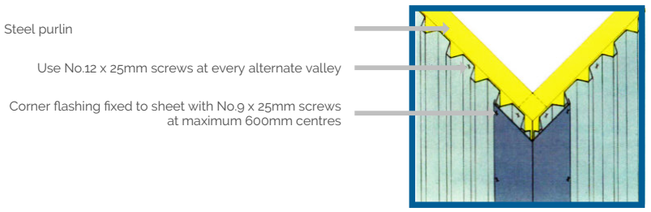
SKYLIGHTS.

Clear acrylic translucent plastic sheets or fibre glass sheets which are made to profile and width of the roofing sheet are commonly installed at selected positions serving as skylights. These translucent sheets are installed such that the top end is overlapped by the roofing sheet and the bottom end overlap the roofing sheet at the lower end of the fall.

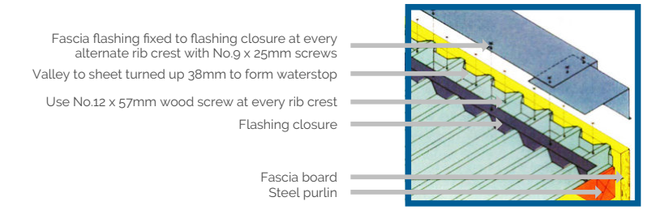
RIDGE FLASHING. 0.70mm x 2.44mm long



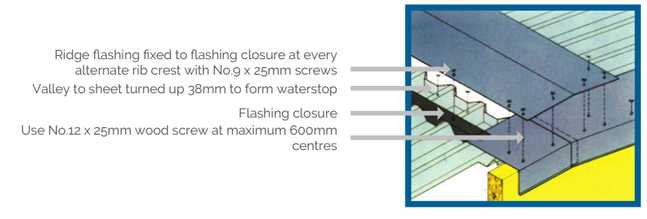
CORNER FLASHING. 0.70mm x 2.44m long



FASCIA FLASHING. 0.70mm x 2.44m long



BARGE FLASHING. 0.70mm x 2.44m long



SITE NOTES.

HANDLING & STORAGE.

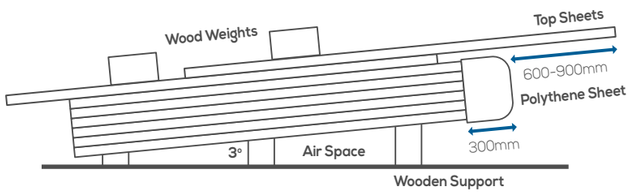
Alcom Aluminium Roofing Sheets are quality products and consequently, care should be taken in storage and handling.

When received at the site, the sheets should be kept dry and stored under cover until they are required. Precaution should be taken to prevent moisture and water being drawn between the sheets. This may lead to staining which is unsightly although it is not detrimental to the material. Sheets that have become wet during transport is to be unpacked immediately and each sheet dried thoroughly on both sides before restacking.

Should the Building Sheets be kept in the open, it should be stored in its original packing and to be stacked in an inclined position of minimum 3˚ with an air space below the stack.

If the original packing has been opened, store the sheets as follows:

Stack the sheet with the bent edges facing downwards in an inclined position of minimum 3˚, with an air space below the sheets and the higher end covered with polythene sheet. Extend the top sheet 600mm to 900mm towards the higher end and the second sheet almost to the floor. The higher end of the pack comprising the third and subsequent sheet should be well wrapped in polythene sheets across the complete width and extending 300mm down the length of the pack. (Refer to diagram below)



WALKWAY & NOTICES.

Experience in Malaysia has shown that workmen tend to take less precaution with aluminium rather than with asbestos and other roofing materials. Care should be taken therefore, to ensure that access to roofs should be restricted to authorised persons carrying out inspection and maintenance.

Irrespective of the thickness of the sheeting - crawl boards, walkways or roofing ladders should be provided so as to prevent damage to the roof.

WALKING THE ROOF.

Evenly distribute body weight over the soles of the feet trying not to concentrate weight on heel or toes. Soft soled shoes should be worn. Walk on the centre of the sheet when walking along the run of the sheet and along supports when walking across the sheet.

CLEANING UP.

On completion of installation, sweep the roof clean with a soft broom, taking care to remove all steel nails, scraps or copper or lead, fillings, pop rivet stems, muddy footprints, etc., which are likely to promote staining or corrosion of the roof surface.

SPECIFICATIONS FOR TENDERING PURPOSES.

ROOFING.

The following information is provided as a general guide to be used for Bills of Quantities. These statements should be expanded further where specific site conditions create exceptional circumstances.

The roofing materials used shall be ALCOM 7P/ Comspan / Alrib Industrial Building Sheets of specified thickness of Stucco Embossed/Polyester Colour-baked finish. Fastening of the roofing sheets shall be according to the Manufacturer's Specifications unless otherwise stated. The length of manufacturer's recommendations. 7P Roofing Sheets must be fastened on the steel purlins with the crest fixing using "Ruspert" ceramic plated fasteners complete with 22mm aluminium master seal bonded washers. Stitching screws for side laps shall be used at all times regardless of roof profiles. Side lap screws shall be according to manufacturer's specifications.

Flashing shall be fabricated from the same metal and be fitted, lapped, sealed, and secured according to the manufacturer's recommendations. Proper tools shall be used for turn-up and turn-down of the roofing sheets. Notching of transverse cappings and flashings shall be carried out in accordance with Manufacturer's Specifications.

SHEETING ACCESSORIES.

These shall be of the same quality and finish as the roofing and wall cladding sheets. They include all fasteners, flashing, sealant, ridge flashing, fascia, corner flashing, barge flashing and any other item required to complete and ensure water tightness of the roof and wall cladding.

FIXING ACCESSORIES.

The fixing accessories for the roofing and cladding sheets shall be of material as recommended by Manufacturer. These include clips, ceramic plated screws, self-tapping fasteners, rivets, studs, washers, bitumen felt washers, neoprene gaskets and other accessories to ensure proper fixing roof/cladding.

WATER TIGHTNESS.

The Alcom Approved Roofing Contractor shall be responsible for the water tightness of the roof and shall make good any defects arising from incorrect fixing procedures. Site inspection with the Manufacturer will be carried upon completion of works.

STORAGE OF ROOFING SHEETS.

When the roofing/cladding sheets are not in use immediately after delivery to the site, protection procedures must be undertaken to ensure proper storage. Sheets must be stacked clear of ground level and protected by tarpaulins according to the manufacturer's recommendation. Materials damaged before and/or during installation shall be deemed to be replaced at the contractor's own expense if defects are found to be due to the negligence of the contractor.

RAINWATER ITEMS.

Gutters and downpipes shall be in accordance to the specifications drawn up by the owner.

Note:

The above information are the Manufacturer's Recommendations on the application of aluminium building sheets. It is the Owner's responsibility to ensure all Structure and Roof Designs conform to the Building By-Laws of Malaysia. Alcom shall not be held responsible should any claim arises.

ALUMINIUM COMPANY OF MALAYSIA BERHAD.

Aluminium Company of Malaysia Bhd. is the largest manufacturer of rolled aluminium products in Malaysia and a leading supplier in the Asia Pacific region with a strong global presence.

With over four decades of rich history, ALCOM's achievements are impressive, from high-profile projects for Malaysia's MRT Stations, Carlsberg Brewery Malaysia and KLIA 2, to receiving prestigious Prime Minister awards in recognition of ALCOM's excellent contributions.

Excelling in fin stock used in heating and cooling systems, ALCOM is a pioneer in the field, with its unparalleled manufacturing capacity, forward-thinking technological prowess and cutting-edge research and development operations. It's no wonder why ALCOM is the leading supplier to some of the world's most trusted brands, winning over global industry leaders including Daikin, Carrier and York.

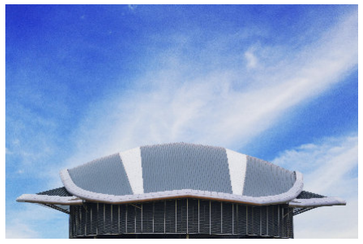
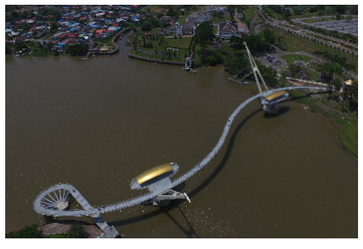
ALCOM is the total solution-provider for all your aluminium material needs. We offer highly custom-tailored services to meet specific customer requirements, covering industries such as general engineering, architectural, construction and manufacturing. With our state-of-the-art technology and manufacturing leadership, our high-quality products are shaping the future of design in aluminium.

alcom

SOME OF OUR FEATURED PROJECTS.

OUR EXTENSIVE PROJECTS LIST BOASTS SOME OF THE MOST ICONIC BUILDINGS AND LANDMARKS IN SOUTH EAST ASIA.





WWW.ALCOM.COM.MY