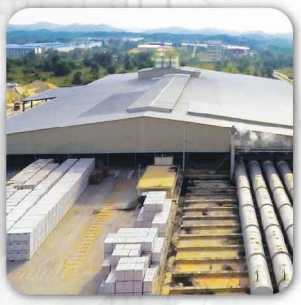
ASTINO®

The Symbol Of Quality



NEW SUNROOF
SUPERIOR RIB
HIGH RIB 30
CLIP LOCK
SUPER POWER FLOOR DECK
COOLDEC
BENDEC
SPANDEC
UROLL BOND
REXY BOND
ROOFING ACCESSORIES

www.astino.com.my

ASTINO®

The Symbol Of Quality

> "You can count on us
> **CONSISTENCY**
> **QUALITY**
> **RELIABILITY**"

CORPORATE VISION

A preferred supplier of roofing & others building material products.

CORPORATE MISSION

To supply our customers with Top Quality and Innovative Products at reasonable cost, in line with the nation's aspiration of zero inflation and satisfying customer requirements through personalized, efficient and reliable service and establishing a mutually rewarding relationship.

OUR QUALITY POLICY

A reliable roofing & other building materials provider, our commitment to strive for continuous improvement on quality products and excellence in services.

OUR QUALITY OBJECTIVES

To Enhance The Quality Improvements Towards Professionalism In Reliable Roofing Solutions

To Recommend Total Quality Management Program For All Employees

To Enchance Delivery Management By Providing On Time Delivery To Customers

To Source For Quality Raw Materials From Reliable And Stable Suppliers In Supporting The Internal And External Demand.

CORPORATE PROFILE

Astino Group of Companies

ASTINO BERHAD was incorporated in the year 2000 as a holding company of Astino Group of Companies which currently comprises:

OOI JOO KEE & BROTHERS SDN. BHD.

ASTINO (MALAYSIA) COLOUR STEEL SHEET SDN. BHD.

ASTINO SOUTHERN SDN. BHD.

ASTINO NETTING SDN. BHD.

ASTINO SCAFFOLDING SDN. BHD.

ASTINO AGRO-HOUSE MULTI SYSTEM SDN. BHD.

ASTINO METAL INDUSTRIES SDN. BHD.

ASTINO PLANTATION AND PROPERTIES SDN. BHD.

ASTINO BERHAD was incorporated on the year 2000 as a holding company of Astino Group of Companies.The listing of ASTINO BERHAD on Bursa Malaysia Securities Berhad in the year 2003 has further strengthened the foundation of the Group and set the path to achieve further corporate growth and expansion. Under the brand name of ASTINO®, the Company has established itself as one of the leading industrial enterprise in the field of building products with five major manufacturing plants located at strategic locations in Peninsular Malaysia. The Group has weathered the economy storm successfully and continues to record impressive profit achievement and capital growth. The average turnover growth of the Group was about 15%. With expansion plans to be gradually implemented in coming years, the Group's turn over and profitability are expected to further enhance.

THE SUCCESSES OF ASTINO BERHAD

The successes of Astino Berhad were built on the company's commitment to strive for continuous improvement on quality product and excellence in services. The Group is innovative and focuses in its drives to be corporation of distinction for the sustained well-being of its customers, shareholders and employees. With consistency of innovative and focuses, the Astino Companies successfully sustain the well being for its customer, shareholders and employees.

Today, the listing of Astino Berhad on the Kuala Lumpur Stock Exchange had further strengthen the foundation of the Group and at the same time it will the path to achieve yet another milestone in its corporate growth and expansion.

NEW SUNROOF

- **NEW SUNROOF LONGRUN / 3 IN 1 / PU FOAM**
- **NEW SUNROOF CRIMP CURVE / CRIMP CURVE 3 IN 1/ CRIMP CURVE PU FOAM**
- **NEW SUNROOF CRIMP CURVE HALF ROUND / CRIMP CURVE HALF ROUND 3 IN 1**

NEW SUNROOF LONGRUN
NEW SUNROOF 3 IN 1
NEW SUNROOF PU FOAM

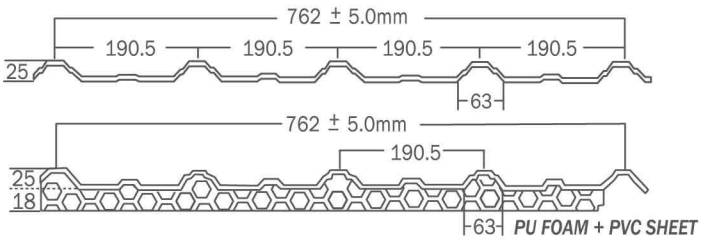
NEW SUNROOF CRIMP CURVE
NEW SUNROOF CRIMP CURVE 3 IN 1
NEW SUNROOF CRIMP CURVE PU FOAM

NEW SUNROOF CRIMP CURVE HALF ROUND
NEW SUNROOF CRIMP CURVE HALF ROUND 3 IN 1

NEW SUNROOF is a quality profile, which has been designed and engineered with highest standard of modern metal roofing technology. It is made from the highest grade steel available in a range of coating either Aluzinc, Galvanized steel or Coloured. Its special anti-capillary features along side lap make it suited for severe weather condition.

NEW SUNROOF excellent strength and ease of assembly allow for long economical spans leading to cost saving in any building projects.

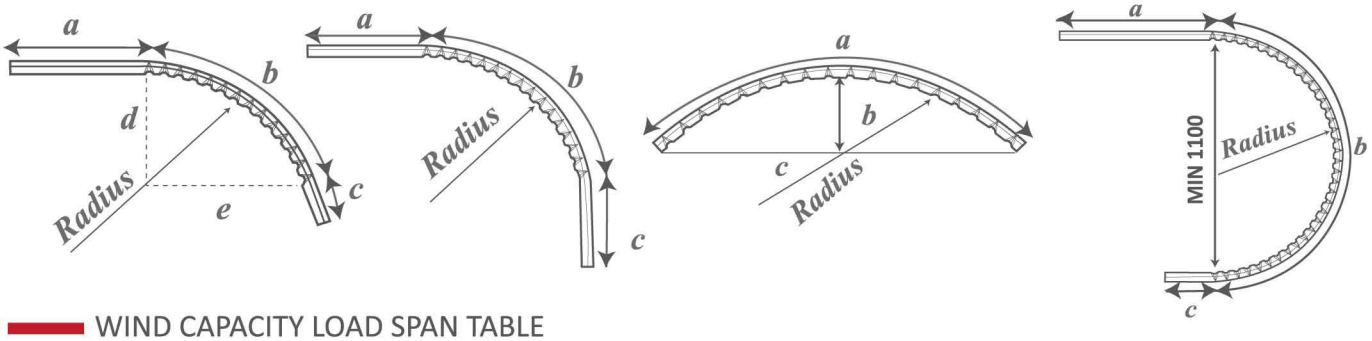
NEW SUNROOF is available crimp curved which enhance the aesthetic appearance of any roof. These crimp curved profiles provide unparalleled scope for creative design of your building. The end result is a great looking roof that is easy to install.



Rib Height	**25mm ± 2.0mm**
Effective Coverage Area	**762mm**
3 IN 1	**XLPE FOAM + ALUMINIUM FOIL**
PU FOAM	**POLYURETHANE FOAM + PVC SHEET**
Recommended Minimum Roof Pitch	**3°**

ASTINO® New Sunroof PU Foam, Semi D, Bandar Seri Coalfields, Ijok

CRIMP CURVED A	CRIMP CURVED B	CRIMP CURVED HALF ROUND A	CRIMP CURVED HALF ROUND B



WIND CAPACITY LOAD SPAN TABLE

THICKNESS TCT (mm)	L	UNIFORMLY DISTRIBUTED LOAD (kN/m²) Span (m)						
	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70
0.35	9.70	2.86	1.19	0.60	0.33	0.20	0.13	0.08
0.40	10.67	3.14	1.31	0.66	0.37	0.22	0.14	0.09
0.42	11.32	3.33	1.39	0.70	0.39	0.23	0.15	0.09
0.47	12.94	3.81	1.59	0.80	0.45	0.27	0.17	0.11
0.53	15.54	4.58	1.91	0.96	0.54	0.33	0.22	0.15
0.55	16.19	4.77	1.99	1.00	0.56	0.34	0.23	0.15

** Thickness Tolerance ± 0.02mm*

MAXIMUM RECOMMENDED SUPPORT SPACING

THICKNESS TCT (mm)	ROOF		WALL		OVERHANG (mm)
	INTERNAL SPAN (mm)	END SPAN (mm)	INTERNAL SPAN (mm)	END SPAN (mm)	
0.40	1600	1400	1850	1700	100
0.47	1700	1500	1950	1800	150
0.53	1850	1600	2150	1900	250

** Thickness Tolerance ± 0.02mm*

SPECIFICATIONS

THICKNESS		WEIGHT		COVER WIDTH	RIB HEIGHT
BMT	TCT	(kg/m)	(kg/m²)	(mm)	(mm)
0.18	0.220	1.523	2.000	762	25
0.20	0.250	1.712	2.250		
0.23	0.275	1.909	2.510		
0.26	0.300	2.136	2.800		
0.28	0.330	2.318	3.040		
0.30	0.350	2.545	3.340		
0.33	0.380	2.697	3.540		
0.35	0.420	2.992	3.930		
0.40	0.450	3.182	4.180		
0.42	0.470	3.409	4.470		
0.48	0.530	3.787	4.970		
0.50	0.550	3.939	5.170		

ROOF PITCH

The minimum recommended roof pitch is 3°

FASTENING

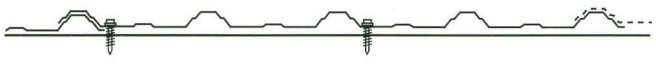
Crest Fastening for Roofing & Wall Cladding

4 Fastener - End Support & End Lap

2 Fastener - Internal

Valley Fastening for Wall Cladding Only

4 + 1 Fastener - End Support & End Lap



2 Fastener - Internal

SUPERIOR RIB

25 PU FOAM

Water and Smoke Resistant

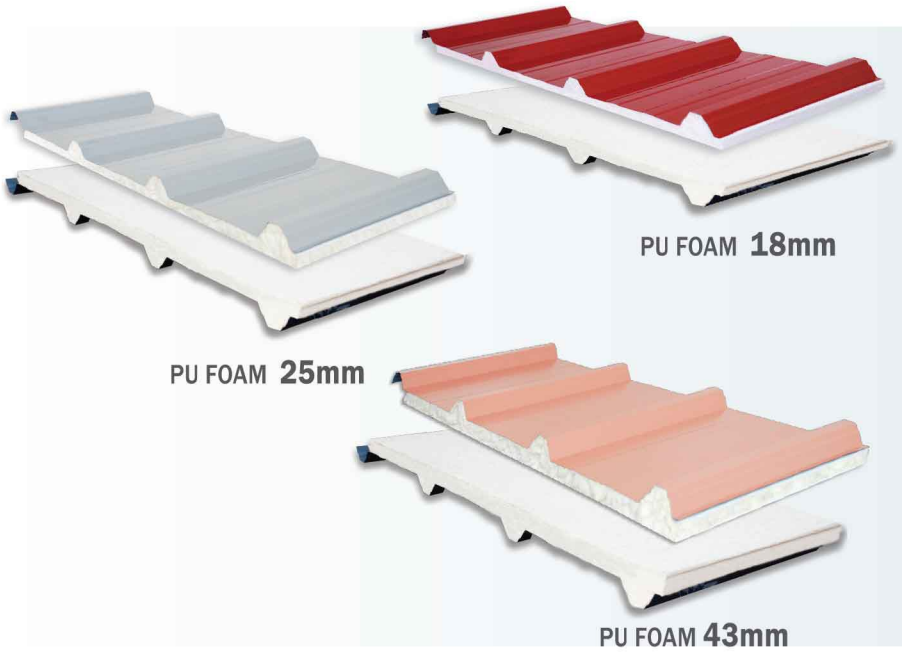
Polyurethane (PU) FOAM

Between exterior profiled metal roofing sheet and interior fire retardant PVC lamination

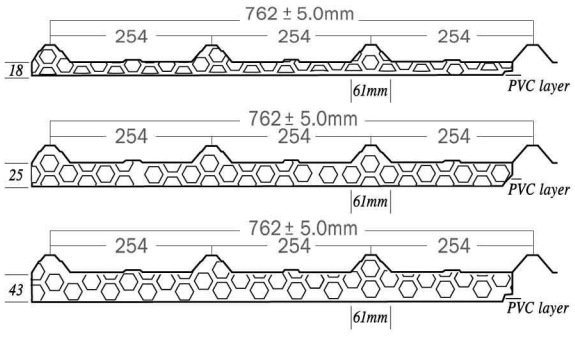
SUPERIOR RIB PU FOAM is complete insulated roofing panels with outstanding thermal efficiency. It is factory manufactured by bonding CFC-free Rigid Polyurethane (PU) foam between exterior profiled metal roofing sheet and PVC lamination. These insulated metal roofing panels are distinguished by a combination of high insulation characteristic and low weight. The interior lamination is glossy and textured create an aesthetically attractive appearance.

SUPERIOR RIB PU FOAM provides excellent heat resistance, good sound absorption, mechanical and dimensional stability of roof assembly. Water resistant materials which will not be spoilt by rain water. PU Foam is smoke resistant as well. The interior lamination colour is white which enhance reflectivity, durability and require low maintenance. The overall result is roofing systems that maintain your buildings cool all day long with great saving on electricity.

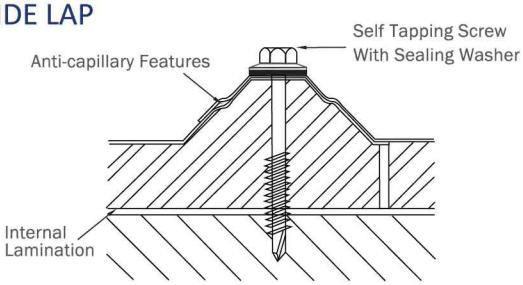
SUPERIOR RIB PU FOAM eliminates unnecessary multiple construction process of laying insulations and roofing sheets into one off fast and easy way of installation course. These result in great reduction of construction expenditure in term of labour usage, transportation, storage and purchasing costs.



PRODUCT DRAWING



SIDE LAP



PRODUCT SPECIFICATION

Profile	**ASTINO SUPERIOR RIB PU FOAM**
Effective Width	**762mm**
Depth of Rib	**25mm**
Finishes (Outer Skin)	**Primero, Thermoshield, Supreme, Aluzinc**
Finishes (Inner Skin)	**Primero**
PU Foam (Polyurethane)	**18mm (Thickness) , 25mm (Thickness) , 43mm (Thickness)**
PU Foam Insulation Density	**38 - 40kg/m³**
Recommended Minimum Roof Pitch	**3°**
Tolerance	**Length ± 5mm / Width ± 5mm / Thickness ± 0.02mm**

18 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1550	1350	1800	1600	100
0.42	1650	1450	1900	1750	100
0.45	1750	1500	2000	1800	150
0.47	1850	1600	2100	1900	150

25 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1700	1500	1950	1750	150
0.42	1900	1650	2150	1900	150
0.45	2000	1750	2250	2000	200
0.47	2050	1800	2300	2100	200

43 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1850	1650	2100	1900	200
0.42	2050	1800	2300	2050	200
0.45	2150	1900	2400	2150	250
0.47	2200	1950	2450	2250	250

SUPERIOR RIB

25 PU METAL

Water and Smoke Resistant

Polyurethane (PU) METAL

Between exterior profiled metal roofing sheet and interior metal roofing sheet

SUPERIOR RIB PU METAL is a revolutionary way of roofing with outstanding thermal efficiency. It is factory manufactured by bonding CFC-free Rigid Polyurethane (PU) foam between exterior and interior skin of profiled metal roofing sheets.

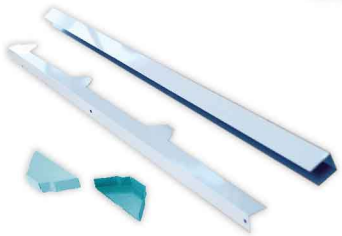
These insulated metal roofing panels provides excellent heat resistance, good sound absorption, mechanical and dimensional stability of roof assembly. The overall result is roofing systems that maintain your buildings cool all day long with great saving on electricity.

SUPERIOR RIB PU METAL eliminates unnecessary multiple construction processes of laying insulations and roofing sheets into one off fast and easy way of installation course. These resulted in great reduction of construction expenditure in term of labour usage, transportation, storage and purchasing costs.

It is water resistant materials which will not be spoilt by rain water. SUPERIOR RIB PU METAL is smoke resistant as well. The interior lamination colour is white which enhance reflectivity, durability and require low maintenance.

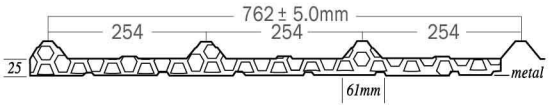
PU METAL **25mm**

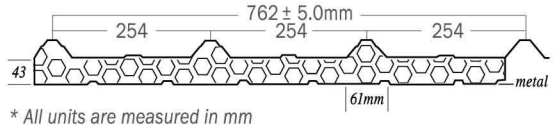
PU METAL **43mm**



END CAPPING

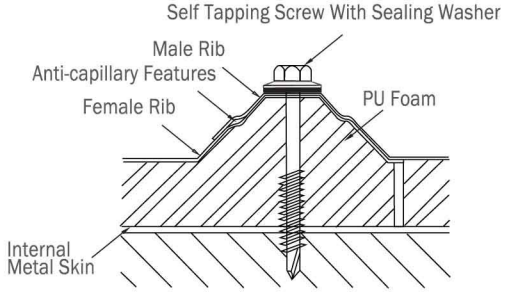
PRODUCT DRAWING





** All units are measured in mm*

SIDE LAP



PRODUCT SPECIFICATION

Profile	**Astino Superior Rib PU METAL**
Effective Width	**762mm**
Depth of Rib	**25mm**
Finishes (Outer Skin)	**Primero, Thermoshield, Supreme, Aluzinc**
Finishes (Inner Skin)	**Primero**
PU Foam (Polyurethane)	**25mm (Thickness) , 43mm (Thickness)**
PU Foam Insulation Density	**38 - 40kg/m3**
Recommended Minimum Roof Pitch	**3°**
Tolerance	**Length ± 5mm / Width ± 5mm / Thickness ± 0.02mm**

25 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1800	1600	2050	1850	180
0.42	2100	1850	2400	2200	180
0.45	2200	1900	2500	2250	200
0.47	2250	1950	2600	2350	200

43 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1900	1800	2250	2050	200
0.42	2200	1950	2500	2300	200
0.45	2300	2000	2600	2350	250
0.47	2350	2050	2700	2450	250

HIGH RIB 30 PU FOAM

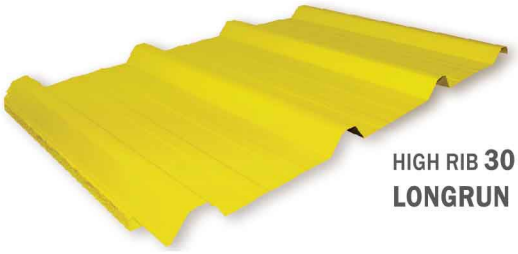
Water and Smoke Resistant

Polyurethane (PU) FOAM

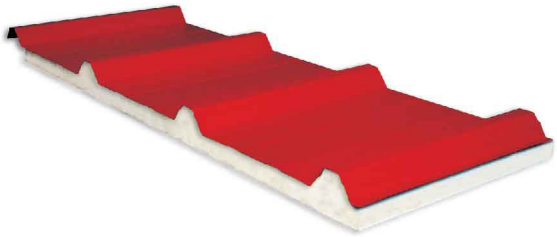
Between exterior profiled metal roofing sheet and interior fire retardant PVC lamination

ASTINO HIGH RIB 30 PU FOAM is complete insulated roofing panels with outstanding thermal efficiency. It is factory manufactured by bonding CFC-free Rigid Polyurethane (PU) foam between exterior profiled metal roofing sheet and interior fire retardant PVC lamination. These insulated metal roofing panels are distinguished by a combination of high insulation characteristic and low weight.

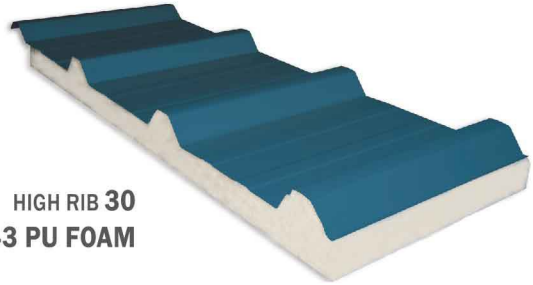
ASTINO HIGH RIB 30 PU FOAM provides excellent heat resistance, good sound absorption, mechanical and dimensional stability of roof assembly. The overall result is roofing systems that maintain your buildings cool all day long with great saving on electricity.



HIGH RIB 30
LONGRUN

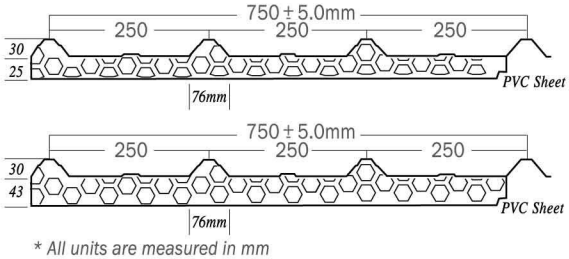


HIGH RIB 30
25 PU FOAM



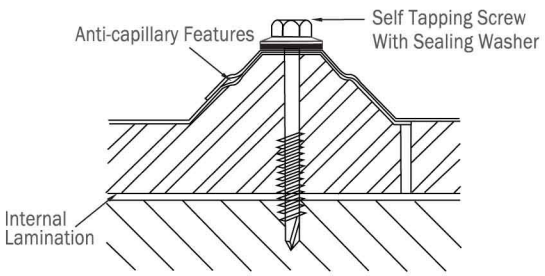
HIGH RIB 30
43 PU FOAM

PRODUCT DRAWING



** All units are measured in mm*

SIDE LAP



PRODUCT SPECIFICATION

Profile	ASTINO HIGH RIB 30 PU FOAM
Effective Width	750mm
Depth of Rib	30mm
Steel Grade	AS 1397 G550 / JIS G3312 CGC 570
Min, Yield Strength (Mpa)	G550
Finishes (Outer Skin)	Primero, Thermoshield, Supreme, Aluzinc
Finishes (Inner Skin)	Primero
Thickness of Insulation	25mm / 43mm
Insulation Density	40kg/m3
Thermal Resistance (R)	1.69 M2 L/w
Recommended Minimum Roof Pitch	2°
Tolerance	Length ± 5mm / Width ± 5mm / Thickness ± 0.02mm

25 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1700	1500	1950	1750	150
0.42	1900	1650	2150	1900	150
0.45	2000	1750	2250	2000	200
0.47	2050	1800	2300	2100	200

43 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1850	1650	2100	1900	200
0.42	2050	1800	2300	2050	200
0.45	2150	1900	2400	2150	250
0.47	2200	1950	2450	2250	250

HIGH RIB 30 PU METAL

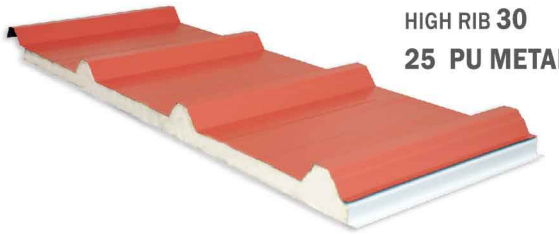
Water and Smoke Resistant

Polyurethane (PU) METAL

Between exterior profiled metal roofing sheet and interior metal roofing sheet

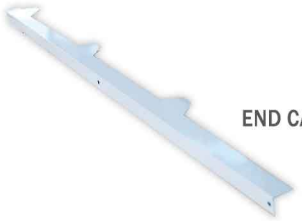
High Rib 30 profiles are designed and engineered with highest performance requirement to meet metal roofing and walling needs on commercial and industrial project. The high rib profile provides high strength and makes greater spans possible. A unique combination of efficient coverage and striking profile bring out the best in any building project. It offer economical as well as attractive solution for roofing and wall cladding needs. Its special anti-capillary features along side lap leading to a leak proof perfomance.

HIGH RIB 30
LONGRUN



HIGH RIB 30
25 PU METAL

HIGH RIB 30
43 PU METAL



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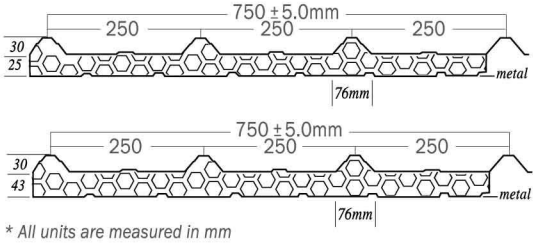
PRODUCT DRAWING

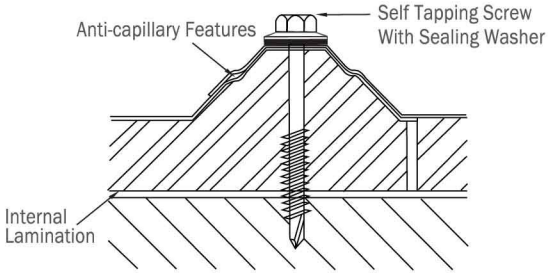


** All units are measured in mm*

PRODUCT SPECIFICATION

Profile	**ASTINO HIGH RIB 30 PU METAL**
Effective Width	**750mm**
Depth of Rib	**30mm**
Steel Grade	**AS 1397 G550 / JIS G3312 CGC 570**
Min, Yield Strength (Mpa)	**G550**
Finishes (Outer Skin)	**Primero, Thermoshield, Supreme, Aluzinc**
Finishes (Inner Skin)	**Primero**
Thickness of Insulation	**25mm / 43mm**
Insulation Density	**40kg/m3**
Thermal Resistance (R)	**1.69 M2 L/w**
Recommended Minimum Roof Pitch	**2°**
Tolerance	**Length ± 5mm / Width ± 5mm / Thickness ± 0.02mm**

SIDE LAP



25 MM

Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1800	1600	2050	1850	180
0.42	2100	1850	2400	2200	180
0.45	2200	1900	2500	2250	200
0.47	2250	1950	2600	2350	200

43 MM

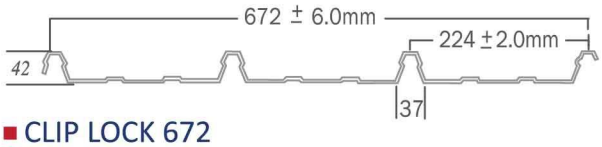
Thickness	Roof		Wall		Free
TCT (mm)	Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	Cantilever
0.35	1900	1800	2250	2050	200
0.42	2200	1950	2500	2300	200
0.45	2300	2000	2600	2350	250
0.47	2350	2050	2700	2450	250

CLIP LOCK 672 / 710

CLIP LOCK is a premier profile that combines concealed fastening feature with structural performance. No exposed fasteners are used thereby eliminating leakage occurrences and provide years of worry free performance.

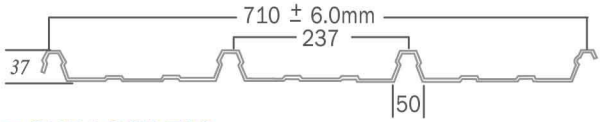
The distinctive appearance make CLIP LOCK ideal for a wide range of applications from low pitched roofs to vertical ribbed cladding and well suited for commercial, industrial or residential roofing applications.

The deep rigid ribs allow safe and wide support spacing. Installation is simple and fast with CLIP LOCK that can be lowered in place and easily aligned thereby providing time and cost savings during installation. The specially designed Astino Clip interlooking the CLIP LOCK delivers a guaranteed and reliable performance.



CLIP LOCK 672

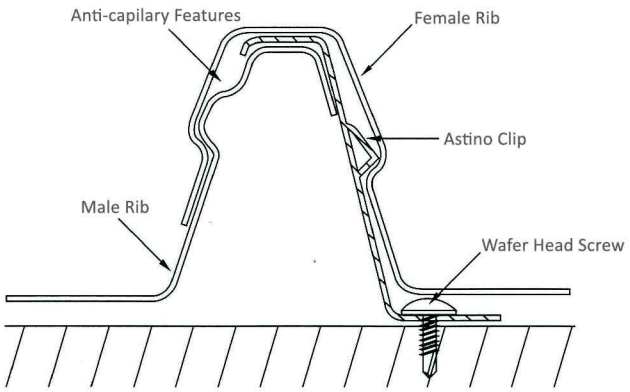
Rib Height	**42mm**
Effective Coverage Area	**672mm**
Recommended Minimum Roof Pitch	**1°**



CLIP LOCK 710

Rib Height	**37mm**
Effective Coverage Area	**710mm**
Recommended Minimum Roof Pitch	**1°**

SIDE LAP



ROOF PITCH

The minimum recommended roof pitch is 1°

Available Length

Custom cut length available according to order. On site roll forming service available for roofing sheet length more than 100ft.

Product Tolerances

Length : ± 10mm
Width : ± 6mm
Thickness : ± 0.02mm

WARRANTIES

Astino provides warranties on individual project basic.

PACKING

CLIP LOCK 672 are stacked sheet to sheet with top and bottom are preotected with timber. Quantities per pack are reduced for exceptionally long roofing sheet.

SPECIFICATIONS

THICKNESS		WEIGHT		COVER WIDTH	RIB HEIGHT
BMT	TCT	(kg/m)	(kg/m²)	(mm)	(mm)
0.40	0.470	3.182	4.735	672	42
0.48	0.530	3.787	5.635		
0.50	0.550	3.939	5.862		

WIND CAPACITY LOAD SPAN TABLE FOR CLIP LOCK 672

THICKNESS TCT (MM)	L — UNIFORMLY DISTRIBUTED LOAD (kN/M²) Span (m)							
	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70
0.47	43.65	12.91	5.43	2.76	1.59	0.99	0.65	0.45
0.53	52.43	15.51	6.52	3.32	1.91	1.19	0.78	0.54
0.55	54.64	16.16	6.80	3.46	1.99	1.24	0.81	0.56

** Thickness Tolerance ± 0.02mm*

WIND CAPACITY LOAD SPAN TABLE FOR CLIP LOCK 710

THICKNESS TCT (MM)	L — UNIFORMLY DISTRIBUTED LOAD (kN/M²) Span (m)							
	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70
0.47	30.83	9.11	3.83	1.94	1.11	0.69	0.45	0.31
0.53	37.00	10.94	4.59	2.33	1.33	0.83	0.54	0.37
0.55	38.55	11.39	4.78	2.43	1.39	0.86	0.56	0.38

** Thickness Tolerance ± 0.02mm*

MAXIMUM RECOMMENDED SUPPORT SPACING FOR CLIP LOCK 672

THICKNESS TCT (MM)	ROOF		WALL		OVERHANG (MM)
	INTERNAL SPAN (MM)	END SPAN (MM)	INTERNAL SPAN (MM)	END SPAN (MM)	
0.47	2350	1950	3050	2550	150
0.53	2400	2000	3100	2600	200

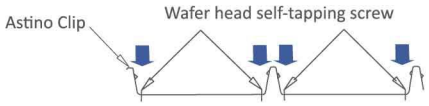
** Thickness Tolerance ± 0.02mm*

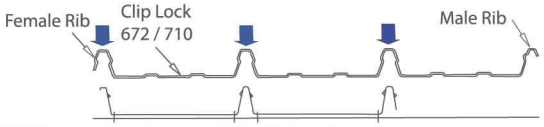
MAXIMUM RECOMMENDED SUPPORT SPACING FOR CLIP LOCK 710

THICKNESS TCT (MM)	ROOF		WALL		OVERHANG (MM)
	INTERNAL SPAN (MM)	END SPAN (MM)	INTERNAL SPAN (MM)	END SPAN (MM)	
0.47	1350	1250	3050	2550	150
0.53	1400	1300	3100	2600	200

** Thickness Tolerance ± 0.02mm*

INSTALLATION PROCEDURE

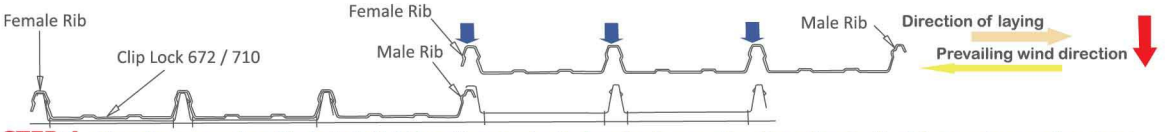




STEP 1 Fasten Astino Clip with wafer head self tapping screw

STEP 2 Install first Clip Lock 672 / 710 roofing sheet at its ribs onto the clip

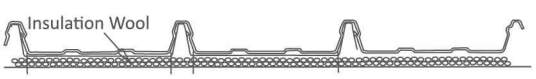
STEP 3 Place the next Astino Clip over the male rib of the frist Clip lock 672 / 710 roofing sheet. Fasten the clip with wafer head self tapping screw

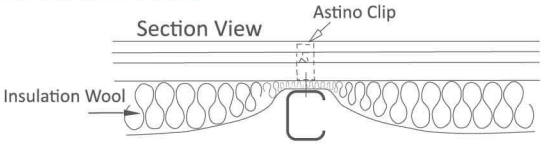


STEP 4 Place the succeeding Clip lock 672/ 710 roofing sheet with female rib cover the clip and male rib of the previous roofing sheet.

STEP 5 Ending -Secure down the end Clip Lock 672 / 710 roofing sheet with cut-off clip.

CLIP LOCK 672 / 710 FASTENING METHOD ON INSULATION WOOL





SUPER POWER FLOOR DECK

OVERVIEW

Super Power Floor Deck is a new generation of steel composite decking that offers minimized concrete volumes, and set new benchmarks for shallow slab construction efficiencies.

Super Power Floor Deck is structurally efficient profile providing an excellent composite union between steel and concrete to maximize the load carrying capacity. The efficient shape of the deck make it an excellent choice for composite slab construction.

QUICKER INSTALLATION

No temporary supports are required under most condition.

PROVEN ECONOMICAL CONSTRUCTION

Super Power Floor Deck is fast to construct, lightweight, and provides a safe working platform so that the building process can continue without delay.

REDUCED SLAB DEPTH AND CONCRETE USAGE

The slab depth required is minimized by the profile design. Concrete usage is further reduced by the profile shape. Reduced slab depth and concrete volumes result in lower concrete weight on the structure and foundations, and saving on the total cost the building structure.

TOLERANCES

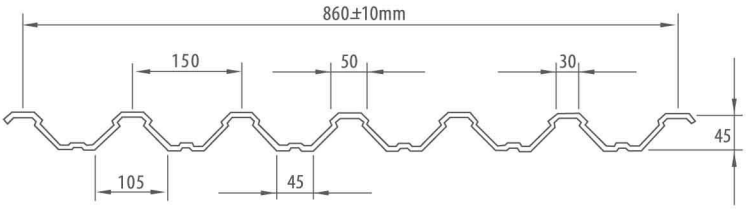
Astino Super Power Floor Deck are produced within the following tolerances:
Length : ± 10mm
Cover : ± 10mm
Thickness : ± 0.02mm

MATERIAL SPECIFICATIONS

High tensile steel, with minimum yield strenght of 550Mpa and a minimum zinc coating mass of 275g/m^2.

EMBOSSMENTS

Raised pigeon tail pattern embossments on each face of the web provides the mechanical connection between the steel and the hardened concrete.



FLOOR DECK CONSTRUCTION ADVANTAGES

- Simplified process
- Increase construction speed
- Time saving on site
- No premature formwork removal and better floor quality
- Do not need formwork support. Consecutive floor level can be carried out immediately
- Reduce wooden materials stacking on job site
- Better job site safety
- Concrete volume saving

PACKING

Floor Deck is packed into bundle of up to 15 sheets may weight up to 2 ton depending on sheet length. The sheets are secured with metalband.

FLOOR OPENING

Opening can be accommodated readily in composite slab by boxing up prior to pouring concrete and cutting out the deck after the concrete has cured.
Small opening less than 300mm^2 do not normally required additional reinforcement. Openings greater than 300mm^2 must be designed with extra reinforcement place around the opening.

SPECIFICATIONS

THICKNESS (mm)	G.I. COATING (g/m^2)	WEIGHT (kg/m)	WEIGHT (kg/m^2)	STEEL AREA (mm^2)	SECOND MOMENT OF AREA (cm^4/m)	HEIGHT TO NEUTRAL AXIS (mm)
0.75	275	7.78	9.05	940.3	27.92	21.90
1.00	275	10.35	11.90	1253.5	37.21	22.00
1.20	275	12.31	14.15	1504.0	44.65	22.10

NORMAL WEIGHT CONCRETE

MAXIMUM SPAN (m)

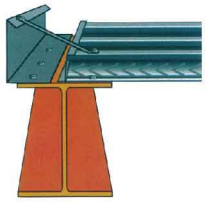
		Slab Depth (mm)	Floor Deck Thickness (TCT)								
			0.75 mm			1.0 mm			1.2 mm		
			Total Applied Load (kN/m^2)								
			3.5 kN/m^2	5 kN/m^2	10 kN/m^2	3.5 kN/m^2	5 kN/m^2	10 kN/m^2	3.5 kN/m^2	5 kN/m^2	10 kN/m^2
No Temporary Props	Single Span	100	2.2	2.2	2.2	2.4	2.4	2.4	2.8	2.7	2.6
		120	2.1	2.1	2.1	2.3	2.3	2.3	2.7	2.6	2.5
		130	2.1	2.1	2.1	2.3	2.3	2.3	2.6	2.5	2.4
		150	2.0	2.0	2.0	2.2	2.2	2.2	2.5	2.5	2.4
		200	1.9	1.9	1.9	2.1	2.1	2.1	2.4	2.2	2.2
		240	1.8	1.8	1.8	2.0	2.0	2.0	2.2	2.1	2.1
	Double Span	100	2.2	2.2	2.2	2.7	2.7	2.7	3.1	3.0	2.8
		120	2.1	2.1	2.1	2.6	2.6	2.6	2.9	2.8	2.7
		130	2.1	2.1	2.1	2.5	2.5	2.5	2.8	2.8	2.7
		150	2.0	2.0	2.0	2.4	2.4	2.4	2.7	2.7	2.6
		200	1.9	1.9	1.9	2.2	2.2	2.2	2.5	2.5	2.4
		240	1.8	1.8	1.8	2.1	2.1	2.1	2.4	2.3	2.3
1 Line Temporary Props	Single Span	100	3.0	2.8	2.3	3.3	3.1	2.6	3.5	3.3	2.7
		120	2.9	2.7	2.3	3.2	3.0	2.5	3.4	3.2	2.7
		130	2.9	2.7	2.3	3.2	3.0	2.5	3.4	3.2	2.7
		150	2.9	2.7	2.3	3.1	2.9	2.5	3.3	3.1	2.6
		200	2.7	2.5	2.2	3.0	2.8	2.4	3.1	3.0	2.6
		240	2.6	2.5	2.2	2.8	2.7	2.4	3.0	2.9	2.5
	Double Span	100	3.4	3.1	2.5	3.8	3.4	2.8	4.1	3.6	3.0
		120	3.3	3.0	2.5	3.6	3.3	2.8	4.0	3.6	2.9
		130	3.3	3.0	2.5	3.6	3.2	2.7	3.9	3.5	2.9
		150	3.2	2.9	2.5	3.5	3.2	2.7	3.8	3.5	2.9
		200	3.0	2.8	2.4	3.3	3.0	2.6	3.6	3.3	2.8
		240	2.9	2.7	2.3	3.2	2.9	2.6	3.4	3.2	2.7

LIGHT WEIGHT CONCRETE

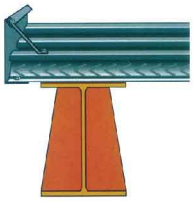
MAXIMUM SPAN (m)

		Slab Depth (mm)	Floor Deck Thickness (TCT)								
			0.75 mm			1.0 mm			1.2 mm		
			Total Applied Load (kN/m^2)								
			3.5 kN/m^2	5 kN/m^2	10 kN/m^2	3.5 kN/m^2	5 kN/m^2	10 kN/m^2	3.5 kN/m^2	5 kN/m^2	10 kN/m^2
No Temporary Props	Single Span	100	2.3	2.3	2.3	2.5	2.5	2.5	3.0	2.9	2.7
		120	2.2	2.2	2.2	2.4	2.4	2.4	2.8	2.7	2.6
		130	2.2	2.2	2.2	2.4	2.4	2.4	2.7	2.7	2.5
		150	2.1	2.1	2.1	2.3	2.3	2.3	2.6	2.6	2.5
		200	2.0	2.0	2.0	2.2	2.2	2.2	2.6	2.4	2.3
		240	1.9	1.9	1.9	2.1	2.1	2.1	2.3	2.3	2.2
	Double Span	100	2.3	2.3	2.3	2.8	2.8	2.8	3.2	3.1	2.9
		120	2.2	2.2	2.2	2.7	2.7	2.7	3.1	3.0	2.8
		130	2.2	2.2	2.2	2.6	2.6	2.6	3.0	2.9	2.8
		150	2.1	2.1	2.1	2.5	2.5	2.5	2.9	2.8	2.7
		200	2.0	2.0	2.0	2.4	2.4	2.4	2.7	2.6	2.5
		240	1.9	1.9	1.9	2.3	2.3	2.3	2.5	2.5	2.4
1 Line Temporary Props	Single Span	100	3.1	2.8	2.4	3.4	3.1	2.6	3.6	3.3	2.8
		120	3.0	2.8	2.3	3.3	3.1	2.6	3.5	3.3	2.7
		130	3.0	2.8	2.3	3.3	3.0	2.6	3.5	3.2	2.7
		150	2.9	2.7	2.3	3.2	3.0	2.5	3.4	3.2	2.7
		200	2.8	2.6	2.2	3.1	2.9	2.5	3.3	3.1	2.6
		240	2.7	2.5	2.2	3.0	2.8	2.4	3.2	3.0	2.6
	Double Span	100	3.5	3.1	2.6	3.9	3.4	2.8	4.3	3.7	3.0
		120	3.4	3.1	2.5	3.8	3.4	2.8	4.1	3.7	3.0
		130	3.4	3.0	2.5	3.7	3.3	2.8	4.1	3.6	3.0
		150	3.3	3.0	2.5	3.6	3.3	2.8	4.0	3.6	2.9
		200	3.1	2.9	2.4	3.4	3.1	2.7	3.8	3.4	2.9
		240	3.0	2.8	2.4	3.3	3.1	2.6	3.6	3.3	2.8

- TYPICAL END DETAIL

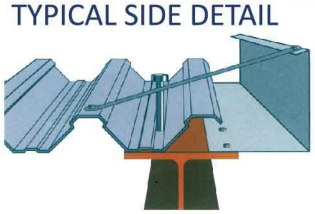


- TYPICAL END CANTILEVER



- BUTT JOINT

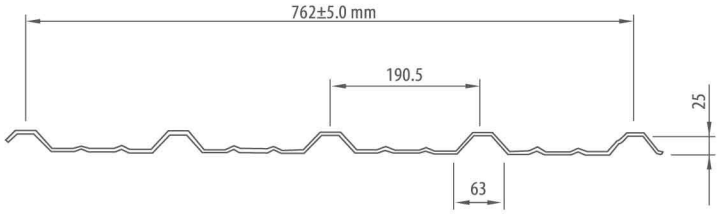
- SUPER POWER FLOOR CONSTRUCTION DETAILS TYPICAL SIDE DETAIL



COOLDEC 260

ASTINO COOLDEC 260 is the most popular primer quality profiled metal roofing and cladding sheets in Malaysia to date. A unique combination of efficient coverage and striking profile bring out the best in any building project. It offer economical as well as attractive solution for roofing and well cladding needs of commecial, industrial and residential applications.

Its excellent strength and case of assembly allow for long economical spans leading to cost saving in any building projects. Its special anti-capillary features along side lap leading to a leak-proof performance.



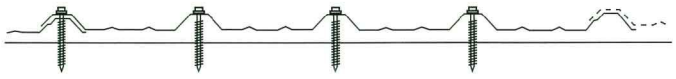
Rib Height	**25mm**
Effective Coverage Area	**762mm**
Recommended Minimum Roof Pitch	**3°**

ROOF PITCH

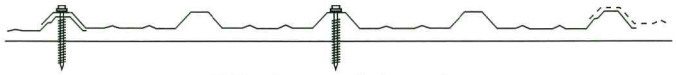
The minimum recommended roof pitch is 3°

FASTENING

Crest Fastening for Roofing & Wall Cladding

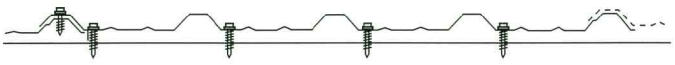


4 Fastener - End Support & End Lap

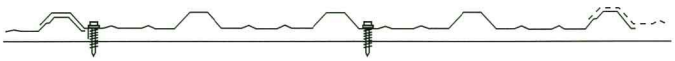


2 Fastener - Internal

Valley Fastening for Wall Cladding Only



4 + 1 Fastener - End Support & End Lap



2 Fastener - Internal

SPECIFICATIONS

THICKNESS		WEIGHT		COVER WIDTH	RIB HEIGHT
BMT	TCT	(kg/m)	(kg/m²)	(mm)	(mm)
0.18	0.220	1.523	2.000	762	25
0.20	0.250	1.712	2.250		
0.23	0.275	1.909	2.510		
0.26	0.300	2.136	2.800		
0.28	0.330	2.318	3.040		
0.30	0.350	2.545	3.340		
0.33	0.380	2.697	3.540		
0.35	0.420	2.992	3.930		
0.40	0.450	3.182	4.180		
0.42	0.470	3.409	4.470		
0.48	0.530	3.787	4.970		
0.50	0.550	3.939	5.170		

WIND CAPACITY LOAD SPAN TABLE

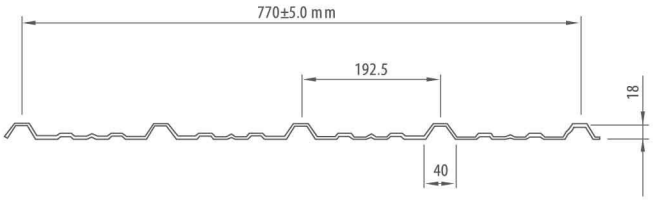
THICKNESS TCT (mm)	UNIFORMLY DISTRIBUTED LOAD (kN/m²) Span L (m)							
	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7
0.35	13.81	4.09	2.30	1.18	0.68	0.43	0.29	-
0.38	14.73	4.36	2.45	1.26	0.73	0.46	0.31	-
0.40	15.65	4.64	2.61	1.34	0.77	0.49	0.33	-
0.42	16.57	4.91	2.76	1.41	0.82	0.52	0.35	-
0.45	17.94	5.32	2.99	1.53	0.89	0.56	0.37	0.26
0.47	19.32	5.72	3.22	1.65	0.95	0.60	0.40	0.28
0.53	21.62	6.40	3.60	1.84	1.07	0.67	0.45	0.32

MAXIMUM RECOMMENDED SUPPORT SPACING

THICKNESS TCT (mm)	ROOF		WALL		OVERHANG (mm)
	INTERNAL SPAN (mm)	END SPAN (mm)	INTERNAL SPAN (mm)	END SPAN (mm)	
0.35	1550	1350	1800	1600	100
0.38	1600	1400	1850	1700	100
0.40	1650	1450	1900	1750	100
0.42	1650	1450	1900	1750	150
0.45	1750	1500	2000	1800	150
0.47	1850	1600	2150	1900	150
0.53	1950	1700	2250	2050	250

BENDEC is the most popular profile, which offers economical as well as attractive solution for wall cladding. Its attractive profile and wide coverage made it equally well suited for commercial, industrial and residential applications.

BENDEC excellent strength and ease of assembly allow for long economical spans leading to cost saving in any building projects. Its special anti-capilary feature along side lap leading to a leak-proof performance.



Rib Height	**18mm**
Effective Coverage Area	**770mm**
Recommended Minimum Roof Pitch	**5°**

ROOF PITCH

The minimum recommended roof pitch is 5°

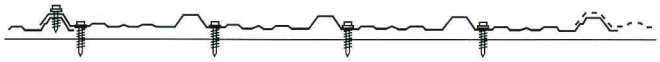
FASTENING

Crest Fastening for Roofing & Wall Cladding

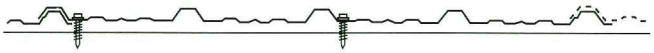
4 Fastener - End Support & End Lap

2 Fastener - Internal

Valley Fastening for Wall Cladding Only



4 + 1 Fastener - End Support & End Lap



2 Fastener - Internal

SPECIFICATIONS

THICKNESS		WEIGHT		COVER WIDTH	RIB HEIGHT
BMT	TCT	(kg/m)	(kg/m²)	(mm)	(mm)
0.18	0.220	1.523	2.000	770	18
0.20	0.250	1.712	2.250		
0.23	0.275	1.909	2.510		
0.26	0.300	2.136	2.800		
0.28	0.330	2.318	3.040		
0.30	0.350	2.545	3.340		

WIND CAPACITY LOAD SPAN TABLE

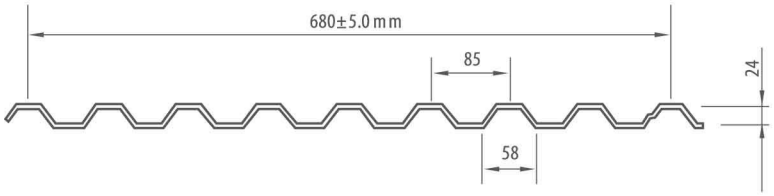
THICKNESS TCT (mm)	UNIFORMLY DISTRIBUTED LOAD (kN/m²) Span L (m)					
	0.6	0.9	1.2	1.5	1.8	2.1
0.35	6.94	2.06	1.16	0.59	0.34	-
0.38	7.41	2.19	1.23	0.63	0.37	-
0.40	7.87	2.33	1.31	0.67	0.38	-
0.42	8.33	2.47	1.39	0.71	0.41	0.26
0.45	9.02	2.67	1.50	0.77	0.45	0.28
0.47	9.71	2.88	1.62	0.83	0.48	0.30

MAXIMUM RECOMMENDED SUPPORT SPACING

THICKNESS TCT (mm)	ROOF		WALL		OVERHANG (mm)
	INTERNAL SPAN (mm)	END SPAN (mm)	INTERNAL SPAN (mm)	END SPAN (mm)	
0.35	1100	950	1250	1150	50
0.38	1150	1000	1300	1200	50
0.40	1200	1050	1400	1250	50
0.42	1200	1050	1400	1250	100
0.45	1250	1100	1450	1300	100
0.47	1300	1150	1500	1400	100

SPANDEC is one of the most popular stylish roofing and wall profile available. With its strong visual appearance and bold shaped profile, SPANDEC finds it immediate acceptance in the present market which offers attractive solution for commercial, industrial and residential applications. This nine ribs trapezoidal profile is available in a range of coatings either Aluzinc, Galvanized steel or coloured.

SPANDEC is warranty for coating performance, corrosion resistance and substrate integrity that will withstand the rigours of weather and time.



Rib Height	**24mm**
Effective Coverage Area	**680mm**
Recommended Minimum Roof Pitch	**3°**

ROOF PITCH

The minimum recommended roof pitch is 3°

FASTENING

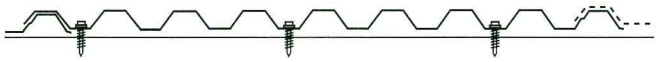
Crest Fastening for Roofing & Wall Cladding

4 Fastener - End Support & End Lap

2 Fastener - Internal

Valley Fastening for Wall Cladding Only

4 + 1 Fastener - End Support & End Lap



2 Fastener - Internal

SPECIFICATIONS

THICKNESS		WEIGHT		COVER WIDTH	RIB HEIGHT
BMT	TCT	(kg/m)	(kg/m²)	(mm)	(mm)
0.28	0.330	2.318	3.409	680	24
0.30	0.350	2.545	3.743		
0.33	0.380	2.697	3.966		
0.35	0.420	2.997	4.400		
0.40	0.450	3.182	4.679		
0.42	0.470	3.409	5.013		
0.48	0.530	3.787	5.569		
0.50	0.550	3.939	5.793		

WIND CAPACITY LOAD SPAN TABLE

THICKNESS TCT (mm)	UNIFORMLY DISTRIBUTED LOAD (kN/m²) Span L (m)								
	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0
0.35	14.89	4.41	2.48	1.27	0.74	0.46	0.31	-	-
0.38	15.88	4.71	2.65	1.36	0.78	0.49	0.33	-	-
0.40	16.87	5.00	2.81	1.44	0.83	0.52	0.35	-	-
0.42	17.87	5.29	2.98	1.52	0.88	0.56	0.37	0.26	-
0.45	19.36	5.74	3.23	1.65	0.96	0.60	0.40	0.28	-
0.47	20.85	6.18	3.47	1.78	1.03	0.65	0.43	0.31	-
0.53	23.33	6.91	3.89	1.99	1.15	0.73	0.49	0.34	-
0.55	24.32	7.21	4.05	2.08	1.20	0.76	0.51	0.36	0.26

MAXIMUM RECOMMENDED SUPPORT SPACING

THICKNESS TCT (mm)	ROOF		WALL		OVERHANG (mm)
	INTERNAL SPAN (mm)	END SPAN (mm)	INTERNAL SPAN (mm)	END SPAN (mm)	
0.35	1600	1400	1850	1700	100
0.38	1650	1450	1900	1750	100
0.40	1700	1500	1950	1800	100
0.42	1750	1500	2000	1800	150
0.45	1850	1600	2150	1900	150
0.47	1900	1650	2200	2000	150
0.53	2000	1750	2300	2100	250
0.55	2050	1800	2350	2150	250

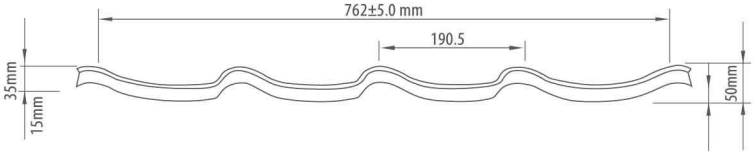
UROLL BOND

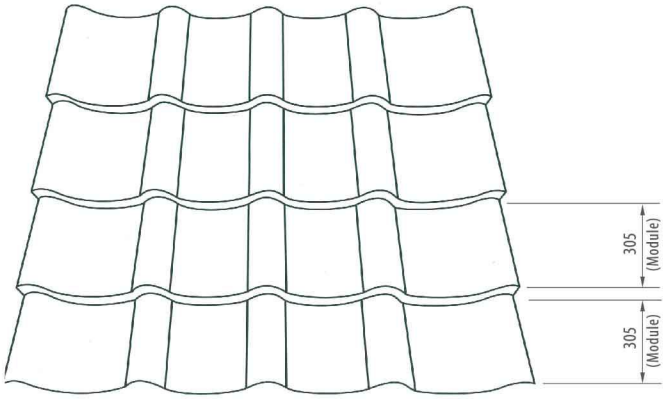
UROLL-BOND made it debut in the mid of 2000's as one of the most stylish steel-tiled roofing profile available which find it immediate acceptance in the market. Architects and designers recognize steel-tiled roofing as a way to enhance the aesthetic appearance of any commercial or residential projects. It is ideally suited as the best replacement for traditional clay tiles.

UROLL-BOND is protected with corrosion inhibitive treatments and coating designed to provide broad spectrum of performance which minimized maintenance and extend durability.

UROLL-BOND is easy to carry, maneuver and install which does not require special practice. Correct length can be put together quickly to form an attractive new look. UROLL-BOND is strong and very much lighter than traditional concrete tiles. Roof structure became lighter lead to saving in roof system construction cost.

UROLL-BOND can be manufactured according to desired lengths spans continuous from ridge to eave. Multiple end laps are eliminated thus no potential leakage and reduce materials wastage at end laps.





Rib Height	**35mm**
Effective Coverage Area	**762mm**
Recommended Minimum Roof Pitch	**5°**

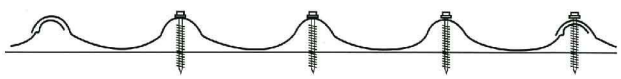
SPECIFICATIONS

THICKNESS BMT (mm)	THICKNESS TCT (mm)	COATING	WEIGHT (kg/m)	WEIGHT (kg/m²)	COVER WIDTH (mm)	RIB HEIGHT (mm)	STANDARD MODULE LENGHT* (mm)	STEP HEIGHT (mm)
0.26	0.30	Colour	2.195	2.88	762	35	305	15
0.30	0.35	Colour	0.578	3.38				
0.35	0.42	Colour	3.125	4.09				
0.42	0.47	Colour	3.429	4.50				
0.48	0.53	Colour	3.877	5.09				
0.50	0.55	Colour	3.992	5.24				

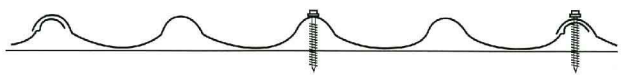
RECOMMENDATIONS

The minimum recommended roof pitch is 5°
Batten Spacing : Internal Support - 610mm Max
End Support - 305 Max

FASTENING



4 Fastener - End Support & End Lap



2 Fastener - Internal

Available Length

Custom cut length available according to order.

Product Tolerances

Length : ± 10mm
Width : ± 5mm
Thickness : ± 0.02mm

WARRANTIES

Astino provides warranties on individual project basic.

PACKING

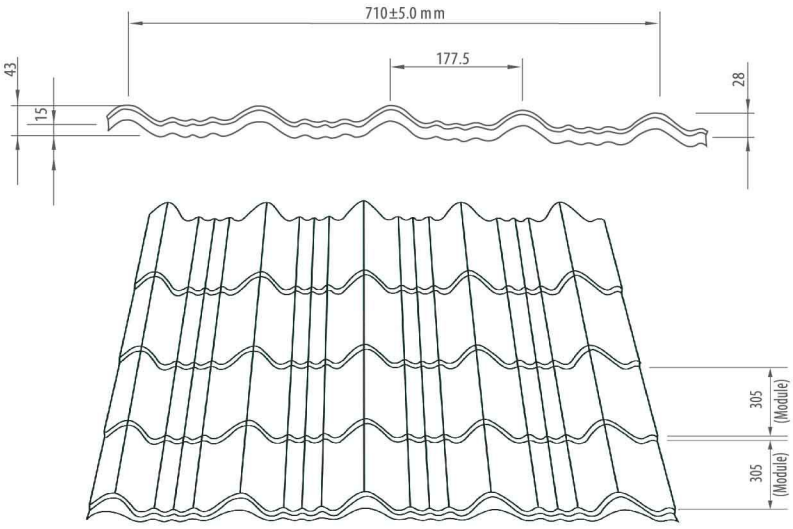
Astino step roofing sheets are stacked sheet to sheet. The top and bottom are protected with timber. The number of sheets in each pack depends on roofing thickness and length.Quantities are reduced for longer roofing sheets.

REXY BOND

REXY BOND is steel tile-shaped roofing profile that are elegant beautifully designed which offer unsurpassed good looking to your building. It is extremely popular option in the market and ideally suited as the best replacement for traditional clay tiles. REXY BOND provides economical and attractive solution to your roofing needs that will transform the appearance of your buildings.

REXY BOND is protected with corrosion inhibitive treatments and coating designed to provide broad spectrum of performance which minimized maintenance and extend durability.

REXY BOND can be manufactured according to the desired lengths, spans continuous from ridge to eave. Multiple end laps are eliminated thus no potential leakage and reduce materials wastage at end laps.



Rib Height	**28mm**
Effective Coverage Area	**710mm**
Recommended Minimum Roof Pitch	**5°**

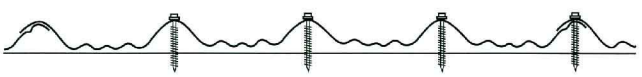
SPECIFICATIONS

THICKNESS BMT (mm)	THICKNESS TCT (mm)	COATING	WEIGHT (kg/m)	WEIGHT (kg/m²)	COVER WIDTH (mm)	RIB HEIGHT (mm)	STANDARD MODULE LENGHT* (mm)	STEP HEIGHT (mm)
0.26	0.30	Colour	2.195	3.09	710	28	305	15
0.30	0.35	Colour	0.578	3.63				
0.35	0.42	Colour	3.125	4.40				
0.42	0.47	Colour	3.429	4.83				
0.48	0.53	Colour	3.877	5.46				
0.50	0.55	Colour	3.992	5.62				

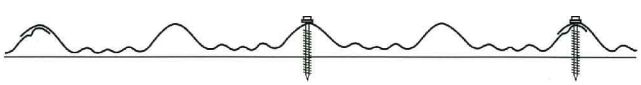
RECOMMENDATIONS

The minimum recommended roof pitch is 5°
Batten Spacing : Internal Support - 610mm Max
End Support - 305 Max

FASTENING



4 Fastener - End Support & End Lap



2 Fastener - Internal

Available Length

Custom cut length available according to order.

Product Tolerances

Length : ± 10mm
Width : ± 5mm
Thickness : ± 0.02mm

WARRANTIES

Astino provides warranties on individual project basic.

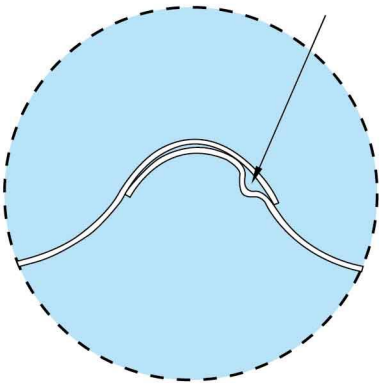
PACKING

Astino step roofing sheets are stacked sheet to sheet. The top and bottom are protected with timbers. The number of sheets in each pack depends on roofing thickness and length. Quantities per pack are reduced for exceptional long roofing sheets. Maximum pack weight is 1500kg or to the maximum of 150 sheets per pack.

INSTALLATION SEQUENCE

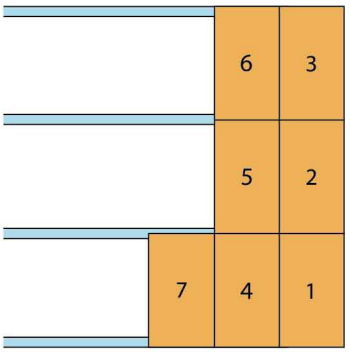
NOTE: ALWAYS START FROM BOTTOM LEFT
Lay Uroll Bond roofing sheets from eave to ridge.
Repeat the sequence from left to right.

Anti-Capillary Features



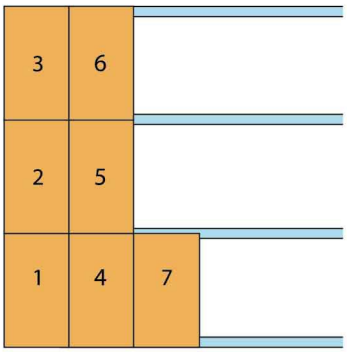
NOTE: ALWAYS START FROM BOTTOM LEFT
Lay Rexy Bond roofing sheets from eave to ridge.
Repeat the sequence from right to left .

UROLL BOND
Ridge



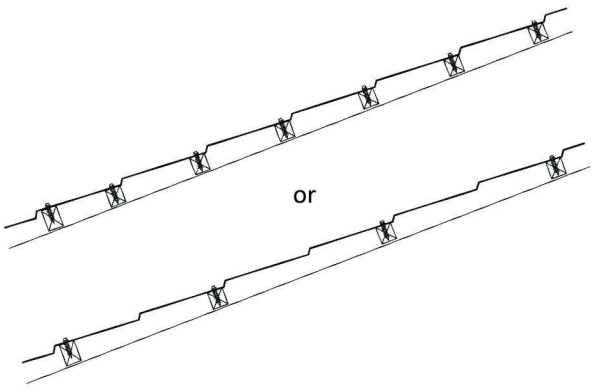
Eave

REXY BOND
Ridge



Eave

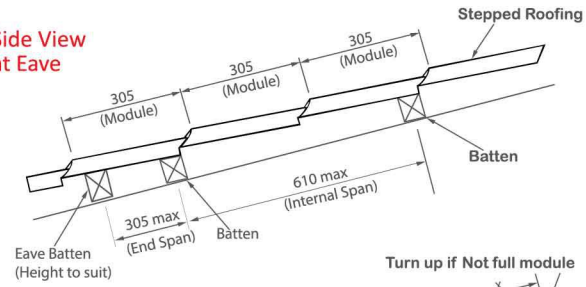
FASTENING - SIDE VIEW



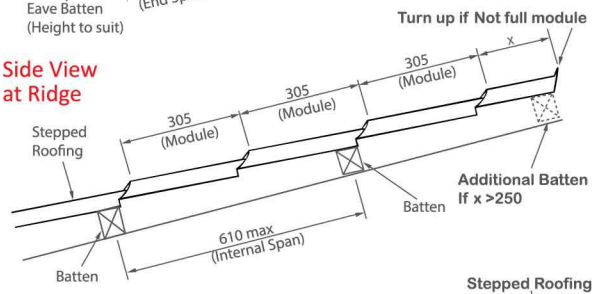
They should be at least three threads protruding pass the support.
Use self tapping screw with sealing washer .

SECTIONAL DRAWINGS

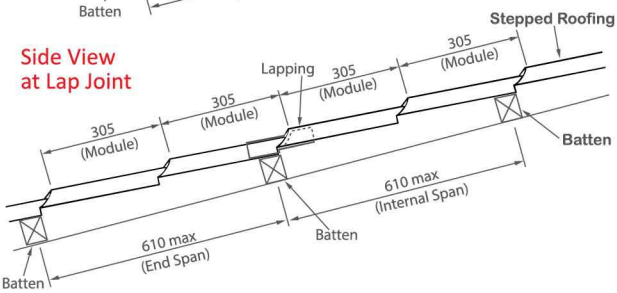
Side View at Eave



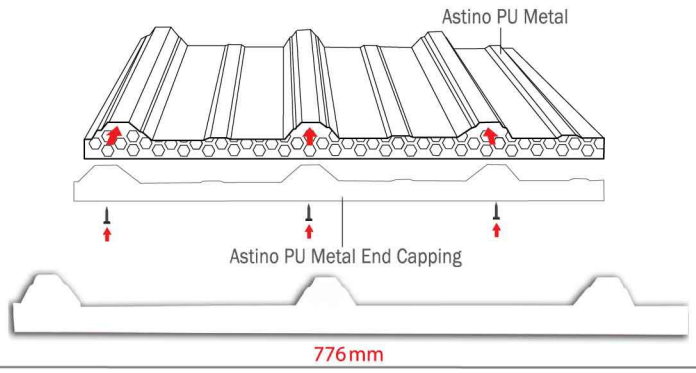
Side View at Ridge

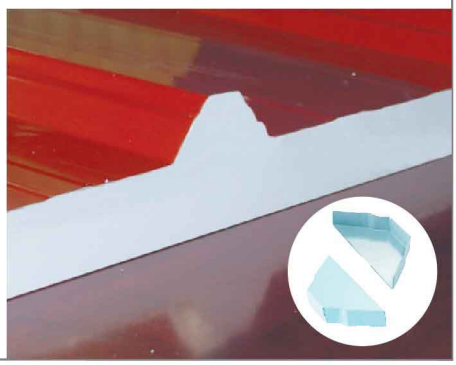


Side View at Lap Joint



ASTINO PU METAL END CAPPING INSTALLATION

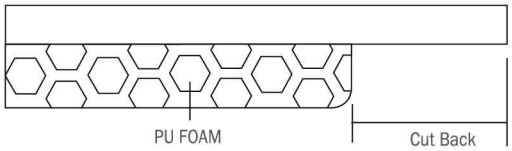




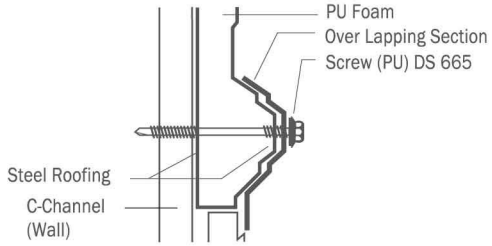
PANEL END CUT BACK

For installation of insulated metal roof, the following measures are recommended

Cut back at end laps - 150mm

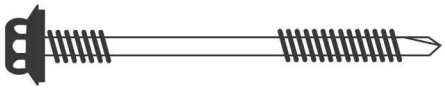


INSTALLATION DETAILS

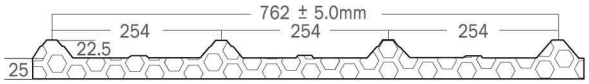


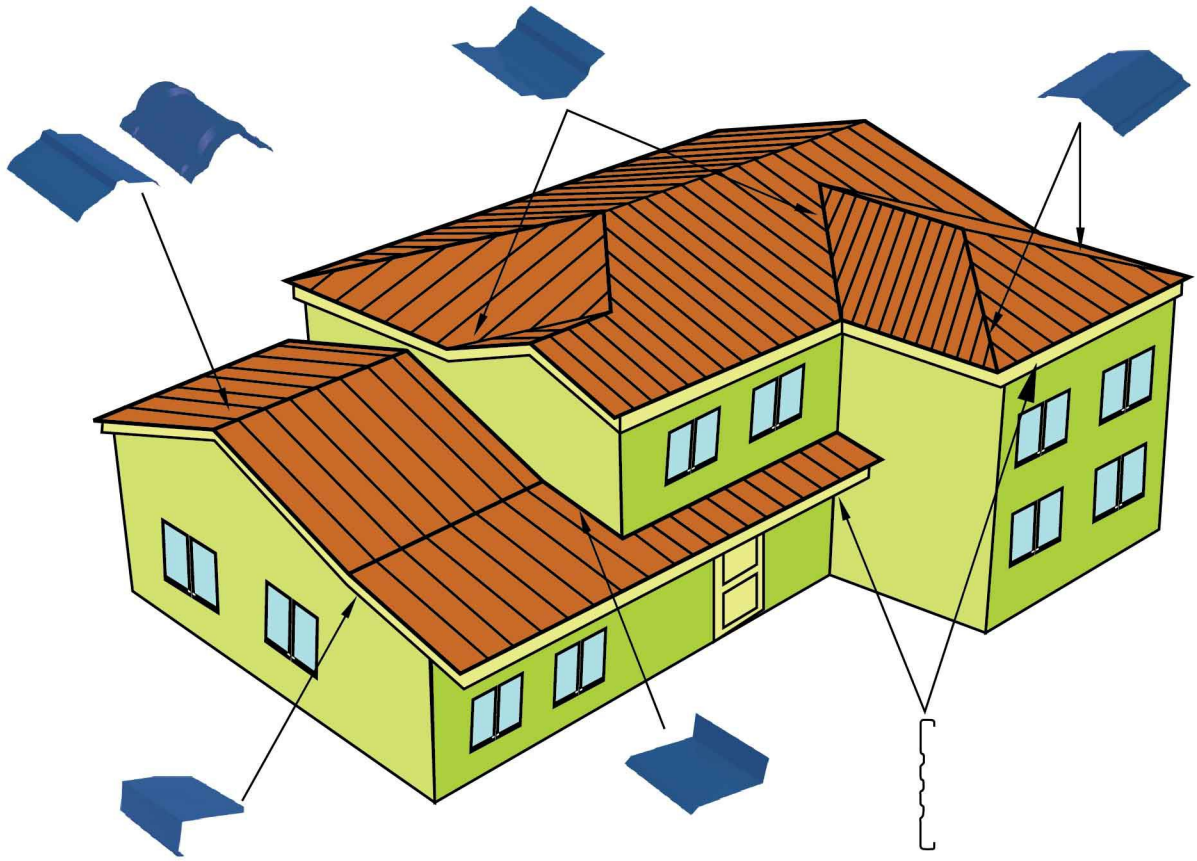
RECOMMENDED SCREW

PU Foam Thickness	PU Screw	
PU Foam 18mm	DS 665	(2 1/2")
PU Foam 25mm	DS 690	(3 1/2")
PU Foam 43mm	DS 6100	(4")

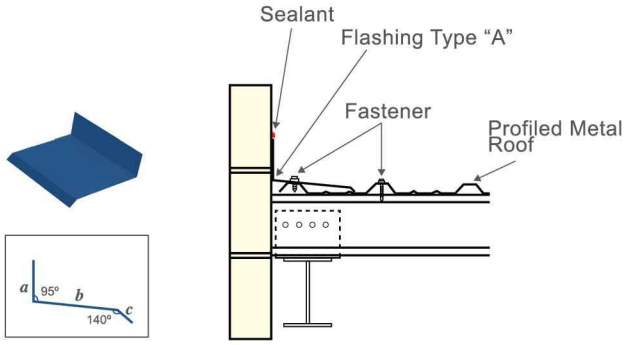


ROOF PITCH



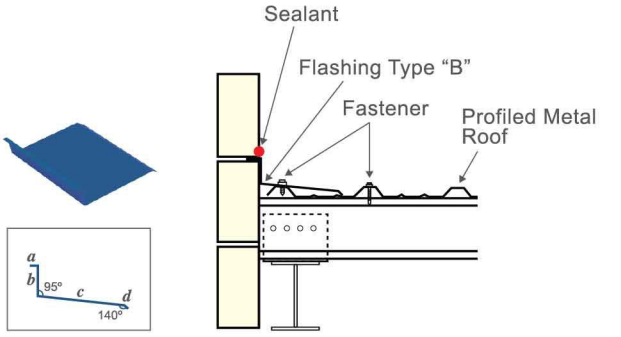


FLASHING TYPE "A"



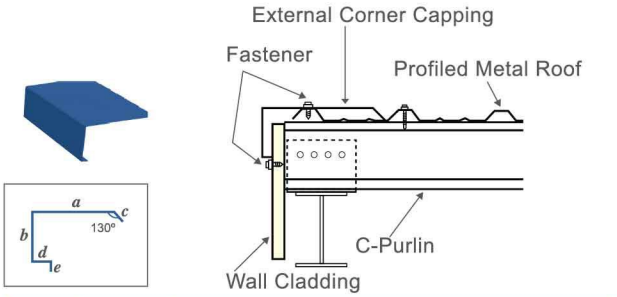
Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
9a	130	0.30, 0.33, 0.35, 0.42, 0.47	0.30, 0.35	0.30, 0.42, 0.47
12a	207			
18a	360			

FLASHING TYPE "B"



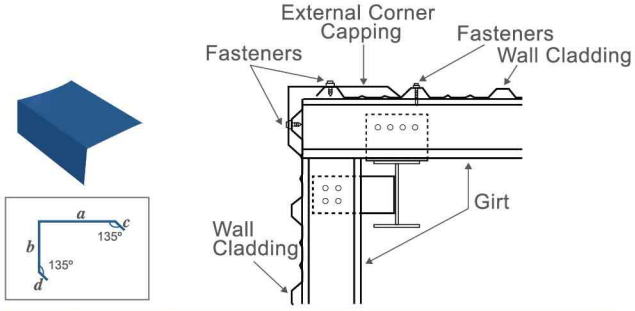
Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
9a	121	0.30, 0.33, 0.35, 0.42, 0.47	0.30, 0.35	0.30, 0.42, 0.47
12a	198			
18a	350			

BARGE CAPPING



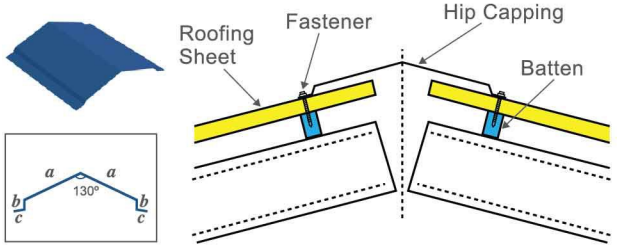
Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
9	99	0.30, 0.33, 0.35, 0.42, 0.47	0.30, 0.35	0.30, 0.42, 0.47
12	175			
18	327			

EXTERNAL CORNER CAPPING



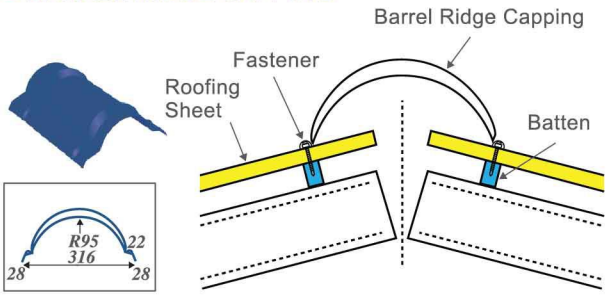
Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
9E	100	0.30, 0.33, 0.35, 0.42, 0.47	0.30, 0.35	0.30, 0.42, 0.47
12E	175			
18E	328			

HIP CAPPING



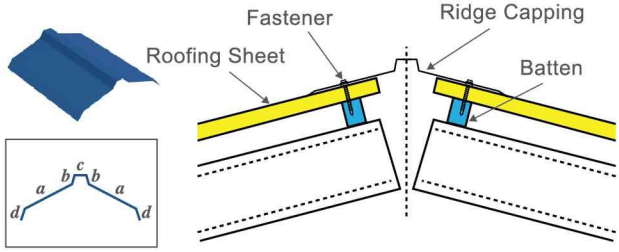
Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
12	86	0.22, 0.25, 0.275	0.18, 0.22	0.25, 0.30
18	162	0.30, 0.33, 0.35	0.30, 0.35	0.35, 0.42, 0.47
24	238	0.42, 0.47		

BARREL RIDGE CAPPING



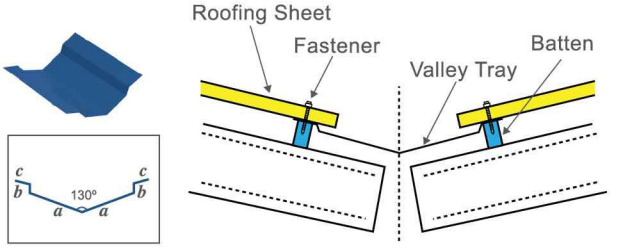
Type R (mm)	Available Thickness (mm)		
	Colour	G.I	Aluzinc
12	0.35, 0.42	—	—

RIDGE CAPPING



Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
12	112	0.22, 0.25, 0.275	0.18, 0.22	0.25, 0.30
18	187	0.30, 0.33, 0.35	0.30, 0.35	0.42, 0.47
		0.42, 0.47		

VALLEY TRAY



Type	Size ℓ (mm)	Available Thickness (mm)		
		Colour	G.I	Aluzinc
12	74	0.30, 0.33	0.30, 0.35	0.30, 0.35, 0.42, 0.47
18	150	0.35, 0.42, 0.47		
24	227			

FIRE RATING

BS 476:Part 6:1989 “Method of Test for Fire Propagation For Products.”

BS 476:Part 7:1997” Fire Tests on Building Materials and Structures. Method of test to determine the classification of the surface spread of flame of procucts.

FEATURE & BENEFITS

- Services promise-quality, competitively priced, on time delivery.
- Quality products and proven manufacturing and supply records.
- High degree of accuracy and consistency in dimensions.
- Thickness options for economical design.
- High tensile steel - high strength and low weight.
- Lightweight and easily handles on-site.
- Layout, detailed design, and fabrication drawings accomplished with state-of-the-art software.

TECHNICAL SUPPORT

Using the latest technology, Astino offers an unrivalled design and support package. Each project is individually designed and tailored to provide a cost effective solutions that meet performance requirements of the clients. Detailed layout design and roof truss assembly drawings plus build quantity calculations allow installations quickly and easily.

Each truss frame designs are evaluated with load test analysis according to BS 5950:Part 5.

DELIVERY, STORAGE, AND HANDLING

Upon delivery, exercise care in unloading, stacking, moving, storing, and erecting to prevent twisting, bending, scratching or denting.”

Store it in a safe, dry environment under a waterproof covering. Allow adequate ventilation to prevent condensation.

Trusses should be stored off the ground on a slightly sloped position.

ADVANTAGES

ECONOMICAL AND HIGH INVESTMENT RETURN
... Saving on overall long term investment cost.

LIGHT WEIGHT & DURABLE
... Saving on transportation and replacement cost.

EASY & FAST INSTALLATION
... Saving on installation and time costs.

QUIET
... Saving on sound insulation cost.

LOW MAINTENANCE, HYGIENIC AND GOOD SANITARY CONDITION
... Saving on maintenance cost.

PEST & TERMITE PROOF
... Saving on repair cost.

GOOD INSULATION
... Saving on heat insulation cost.

AESTHETIC ASSET
... Saving on up keep and maintenance costs.

SAFE ENVIRONMENT
... Saving on lumbering activity expenses.

To ensure Astino roofing product last it's lifetime. Astino encourage debris free while & after installation such as:

- Welding particles.
- Extra unused or used fasteners that exposed on metal roofing.
- Cutting particles, hole opening for air ventilator or drain pipe.
- Metal sheets stack on top of roofing.
- Any others metal objects.

Should be clear from the roofing immediately, touch up & clean up if there are scratches or debris occur.

Cleaning the area with mineral spirits, rinse completely with water and allow to dry. Using paint supplies from the manufacturer, apply a minimum amount of paint to cover the effected area.

Failing to do so will corrode the metal roofing and void the warranty.

MATERIAL INFORMATION PROTECTIVE COATING

GALVANIZED STEEL (G.I)

Galvanized steel offers a very economical and effective protection against corrosion. Application of zinc shielding offer an excellent corrosion resistance, high temperature oxidation resistance, durability and heat reflectivity is remarkable for an exclusively metalic coating. It is an outstanding materials widely used in the roofing industry.

Astino G.I profiled metal sheet are produced in accordance to JIS G 3302 - 1998.

ALUZINC

Aluzinc stands for aluminium and zinc, offer relatively low cost protection in relation to the useful life of products. Aluzinc has demonstrated its outstanding resistance to atmospheric corrosion. This id the result of combined action of aluminium and zinc, fused to the steel sheet which composed of aluminium (55%) zinc (43%) and a touch of silicon (2%). A combination of strength of steel, the protection of zinc and the stability of aluminium form a remarkable protection against corrosion.

The aluminium create a shield between the steel surface and the atmosphere is very stable as the aluminium oxide coating that forms on the surface is insoluble thus ensure long-lasting resistance to corrosion.

The zinc provides the cathodic protection whenever the steel substrate is exposed. The combination of these two protective mechanisms gives Aluzinc an excellent protection against corrosion.

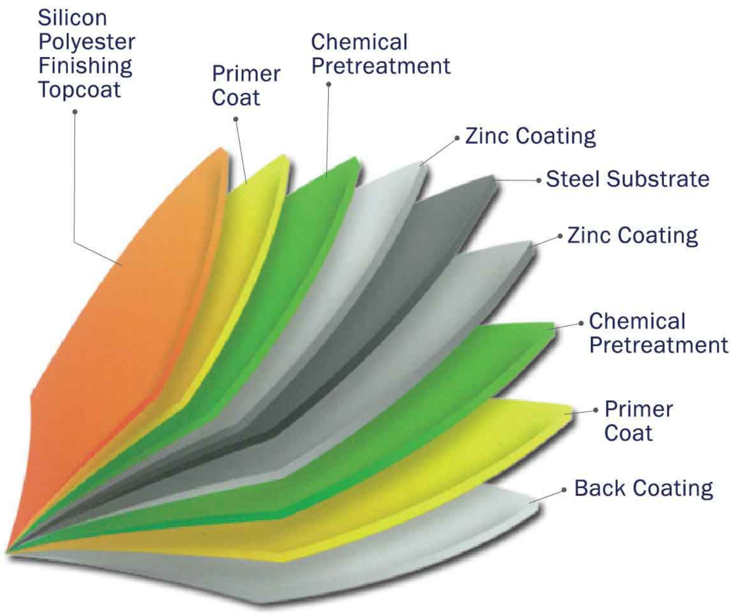
Astino Aluzinc profiled metal sheet product are procuced in accordance to ASTM A792M.

PRE-PAINTED GALVANIZED STEEL (COLOUR)

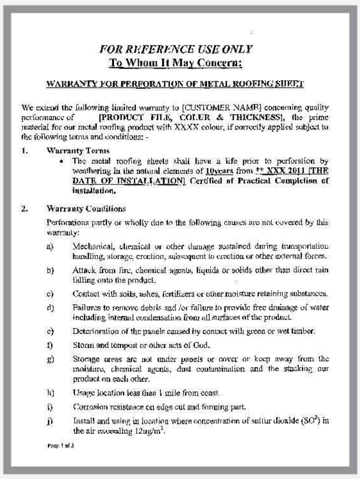
Astino pre-painted galvanized steel using a two-coat system, in which a primer is applied before the finish coat. Two-coat system improves paint adherence, increased corrosion resistace, uniform film coverage and allows more precise colour match.

Pre-painted galvanized steel is chemical pretreated before painting to enhance corrosion resistance as well as adhesion characteristic. Polyester paint is then cured on its surface with desirable gloss and hardness which displays superior weather resistance, workability and durability.

Astino Pre-Painted Galvanized Steel paint system are baked to meet JIS G 3312 - 1994 with coating class Z18 for thickness more than 0.35mm BMT and above.



WARRANTY LETTER



FOR REFERENCE USE ONLY

To Whom It May Concern:

WARRANTY FOR PERFORATION OF METAL ROOFING SHEET

We extend the following limited warranty to [CUSTOMER NAME] concerning quality performance of [PRODUCT FILE, COLUR & THICKNESS], the prime material for our metal roofing product with XXXX colour, if correctly applied subject to the following terms and conditions: -

1. **Warranty Terms**
   - The metal roofing sheets shall have a life prior to perforation by weathering in the natural elements of **10years** from **** XXX 2011 [THE DATE OF INSTALLATION] Certified of Practical Completion of installation.**

2. **Warranty Conditions**

   Perforations partly or wholly due to the following causes are not covered by this warranty:

   a) Mechanical, chemical or other damage sustained during transportation handling, storage, erection, subsequent to erection or other external forces.
   b) Attack from fire, chemical agents, liquids or solids other than direct rain falling onto the product.
   c) Contact with soils, ashes, fertilizers or other moisture retaining substances.
   d) Failures to remove debris and /or failure to provide free drainage of water including internal condensation from all surfaces of the product.
   e) Deterioration of the panels caused by contact with green or wet timber.
   f) Storm and tempest or other acts of God.
   g) Storage areas are not under panels or cover or keep away from the moisture, chemical agents, dust contamination and the stacking our product on each other.
   h) Usage location less than 1 mile from coast.
   i) Corrosion resistance on edge cut and forming part.
   j) Install and using in location where concentration of sulfur dioxide (SO^2) in the air exceeding 12ug/m^3.

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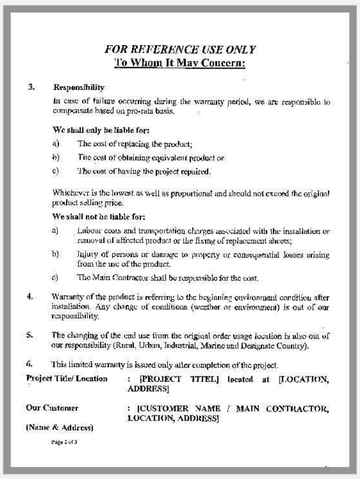

FOR REFERENCE USE ONLY

To Whom It May Concern:

3. **Responsibility**

   In case of failure occurring during the warranty period, we are responsible to compensate based on pro-rata basis.

   We shall only be liable for:

   a) The cost of replacing the product;
   b) The cost of obtaining equivalent product or
   c) The cost of having the project repaired.

   Whichever is the lowest as well as proportional and should not exceed the original product selling price.

   We shall not be liable for:

   a) Labour costs and transportation charges associated with the installation or removal of affected product or the fixing of replacement sheets;
   b) Injury of persons or damage to property or consequential losses arising from the use of the product.
   c) The Main Contractor shall be responsible for the cost.

4. Warranty of the product is referring to the beginning environment condition after installation. Any change of conditions (weather or environment) is out of our responsibility.
5. The changing of the end use from the original order usage location is also out of our responsibility (Rural, Urban, Industrial, Marine and Designate Country).
6. This limited warranty is issued only after completion of the project.

Project Title/ Location : [PROJECT TITEL] located at [LOCATION, ADDRESS]

Our Customer (Name & Address) : [CUSTOMER NAME / MAIN CONTRACTOR, LOCATION, ADDRESS]

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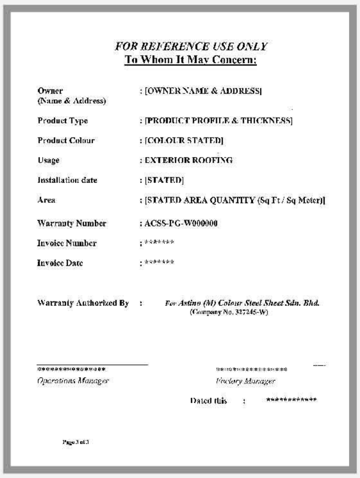

FOR REFERENCE USE ONLY

To Whom It May Concern:

Owner (Name & Address)	: [OWNER NAME & ADDRESS]
Product Type	: [PRODUCT PROFILE & THICKNESS]
Product Colour	: [COLOUR STATED]
Usage	: EXTERIOR ROOFING
Installation date	: [STATED]
Area	: [STATED AREA QUANTITY (Sq Ft / Sq Meter)]
Warranty Number	: ACSS-PG-W000000
Invoice Number	: *******
Invoice Date	: *******

Warranty Authorized By : *For Astino (M) Colour Steel Sheet Sdn. Bhd.* (Company No. 327245-W)

*************** *Operations Manager*

****************** *Factory Manager*

Dated this : ***********

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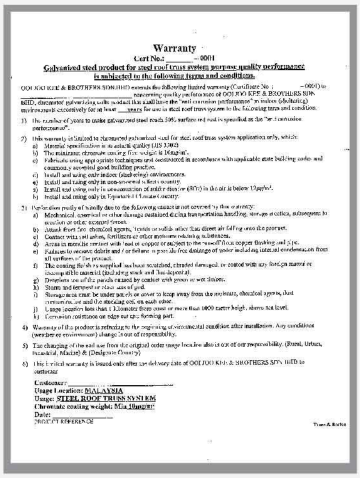

Warranty

Cert No.: _______ - 0001

Galvanized steel product for steel roof truss system purpose quality performance is subjected to the following terms and conditions.

OOI JOO KEE & BROTHERS SDN.BHD extends the following limited warranty (Certificate No : - 0001) to ______ concerning quality performance of OOI JOO KEE & BROTHERS SDN BHD, chromated galvanizing coils product that shall have the "anti corrosion performance" in indoor (sheltering) environments excessively for at least ___ years for use in steel roof truss system to the following term and condition.

1) The number of years to make galvanized steel reach 50% surface red rust is specified as the "anti corrosion performance".
2) This warranty is limited to chromated galvanized steel for steel roof truss system application only, which:
   a) Material specification is structural quality (JIS 3302)
   b) The minimum chromate coating film weight is 10mg/m².
   c) Fabricate using appropriate techniques and constructed in accordance with applicable state building codes and commonly accepted good building practice.
   d) Install and using only indoor (sheltering) environments.
   e) Install and using only in non-seasonal affects country.
   f) Install and using only in concentration of sulfur dioxide (SO2) in the air is below 12µg/m³.
   h) Install and using only in Equatorial Climate Country.
3) Perforation partly of wholly due to the following causes is not covered by this warranty:
   a) Mechanical, chemical or other damage sustained during transportation handling, storage erection, subsequent to erection or other external forces.
   b) Attack from fire, chemical agents, liquids or solids other than direct air falling onto the product.
   c) Contact with soil ashes, fertilizers or other moisture retaining substances.
   d) Areas in metallic contact with lead or copper or subject to the run-off from copper flashing and pipe.
   e) Failures to remove debris and / or failure to provide free drainage of water including internal condensation from all surfaces of the product.
   f) The coating finish as supplied has been scratched, abraded damaged, or coated with any foreign matter or incompatible material (including stack and flue deposits).
   g) Deterioration of the panels caused by contact with green or wet timber.
   h) Storm and tempest or other acts of god.
   i) Storage area must be under panels or cover to keep away from the moisture, chemical agents, dust contamination and the stacking coil on each other.
   j) Usage location less than 1 Kilometer from coast or more than 1000 meter height, above sea level.
   k) Corrosion resistance on edge cut and forming part.
4) Warranty of the product is referring to the beginning environmental condition after installation. Any conditions (weather or environment) change is out of responsibility.
5) The changing of the end use from the original order usage location also is out of our responsibility. (Rural, Urban, Industrial, Marine) & (Designate Country)
6) This limited warranty is issued only after the delivery date of OOI JOO KEE & BROTHERS SDN BHD to customer.

Customer: ______________

Usage Location: **MALAYSIA**

Usage: **STEEL ROOF TRUSS SYSTEM**

Chromate coating weight: **Min 10mg/m²**

Date: ______________

PROJECT REFERENCE

Truss & Batten

COLOUR CHART

Off White **N11000**	Pearl Grey **N10000**	Melon Orange **N12000**	Royal Yellow **N13000**	Horizon Blue **N7000**
Fina Blue **N9000**	Brick Red **N6000**	Tol Green **N2000**	Tropical Green **N8000**	Aluzinc **N4000**
Safari Beige **N5000**	* Charcoal Brown **N16000**	* Volcanic Grey **N17000**	* Cultural Red **N15000**	* Lily White **N14000**

**** Non-Standard***

Astino Group of Companies

ASTINO®
The Symbol Of Quality

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