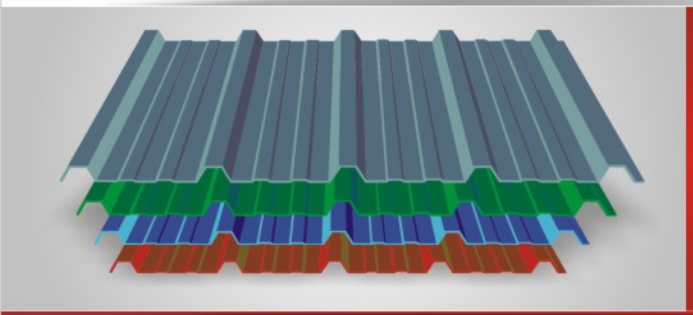
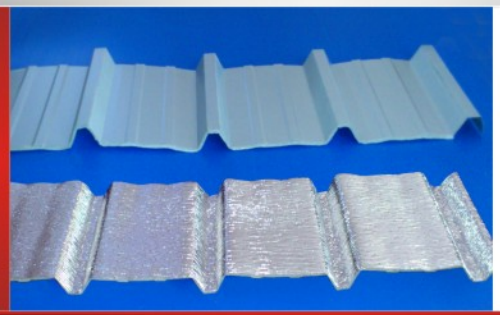
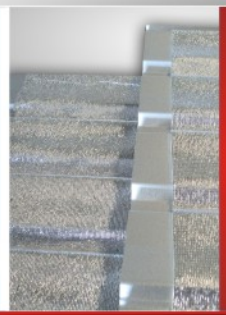
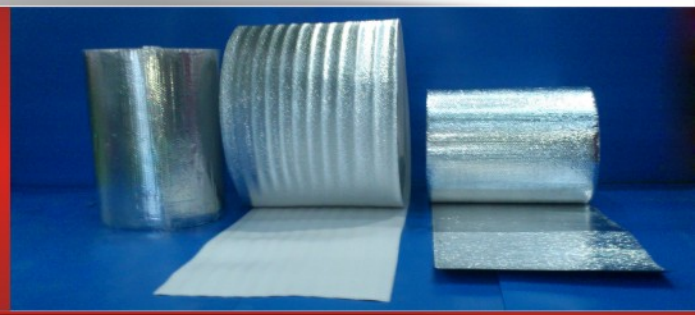
THERMALON METAL ROOF PVT. LTD.

ARJUN

A Gentle Roof For Capital Projects

I Insulated Metal Roofing Solution I Metal Accessories & Screws

I Sun Light Solution I Air Ventilators for Industries

Thermalon Metal Roof Pvt. Ltd. is one of the pioneer in the manufacture of insulated pre-coated color roofing in galvanised and galvalume sheet under the brand name ARJUN.

Established in 2011, ARJUN insulated pre-coated steel roofing system is a time and eco-frienly tested brand with production facilities in district RAJKOT - Gujarat.

ARJUN Insulated pre-coated steel roofing solution is a premium brand which truly presents quality in steel buildings.

» Technical Specification of Coated Material

Pre-Painted Galvanised Steel Sheets

Zinc Coating:
Z120

Primer Service Coat:
5 micron epoxy / PU on both sides

Paint Coating:
Regular Modified paints (RMP)
(Option Silicon Modified Polyester & PVF_2)

Painting Thickness:
Top - 18-20 microns
Bottom - 5-7 microns

Surface paint reflection:
Glossy Finish (Optional-Matt Finish)

Confirms To:
ASTM, A653, A755, 513, 14246, AS 1397

Non Color Alu-Zink Steel Sheets (Base Galvalume) (55% Aluminium 45% Zinc Alloy)

Alu-Zinc Coating:
AZ 150

Confirm To:
ASTM A792, JIS 93321, AS 1397

Pre-Painted Alu-Zinc Steel Sheets (Base Galvalume) (55% Aluminium 45% Zinc Alloy)

Alu-Zinc Coating:
AZ 150 (Optimal AZ 70)

Primer Service Coat:
5 micron epoxy / PU on both sides

Paint Coating:
Regular Modified paints (RMP)
(Option Silicon Modified Polyester & PVF_2)

Painting Thickness:
Top - 18-20 microns Bottom - 5-7 microns

Surface paint reflection:
Glossy Finish (Optional-Matt Finish)

Confirms To:
ASTM, A792, 755, JIS 93321, 93322, AS 1397

Yield Strength:
ASTM, A792, 755, JIS 93321, 93322, AS 1397

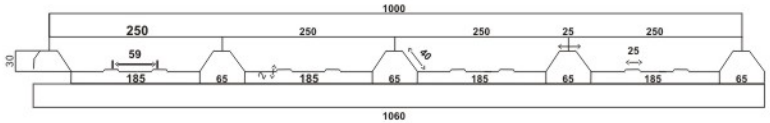
» Technical Specification of Insufoam Insulation

NO.	CHARACTERISTIC	TEST RESULT	METHOD
1	Density	30 - 40 Kg/m^3	ISO 845 1988 (E)
2	Reflectivity	0.97	ASTM E408
3	Emissivity Aluminium Foil	0.03	ASTM C1371
4	UV Resistance	Excellent	-
5	Chemical Resistance	Excellent with Al Foil	ASTM D-543/BS 4618
6	Temperature Range	-80 °C to + 90 °C	-
7	Flexibility	Excellent	BS 4433
8	Heat Resistance (R-Value)	3.0 m^2 C/W	ASTM C236
9	Thermal Conductivity	0.030 Kcal/m^2	ASTM C-177
10	Flammability	HF-1	UL-94

Technical Specification of Insububble Insulation

NO.	CHARACTERISTIC	TEST RESULT	METHOD
1	Density	100 GSM	ISO 845 1988 (E)
2	Reflectivity	0.97	ASTM E408
3	Emissivity	0.03	ASTM C1371
4	UV Resistance	Excellent	-
5	Chemical Resistance	Excellent with Al Foil	ASTM D-543/BS 4618
6	Temperature Range	-80 °C to 90 °C	-
7	Flexibility	Excellent	BS 4433
8	Thermal Conductivity	0.020 Kcal/m^3 hr °C	ASTM C-177
9	Tensile Strength	25 - 2.7 Kg/mtr	ASTM C-3575
10	Compression Strength	0.35 0.45 Kg/mtr	ASTM D-3575
11	Water Absortion (mg/cm3)	< 1.8% after 28 Days	ASTM D-1677

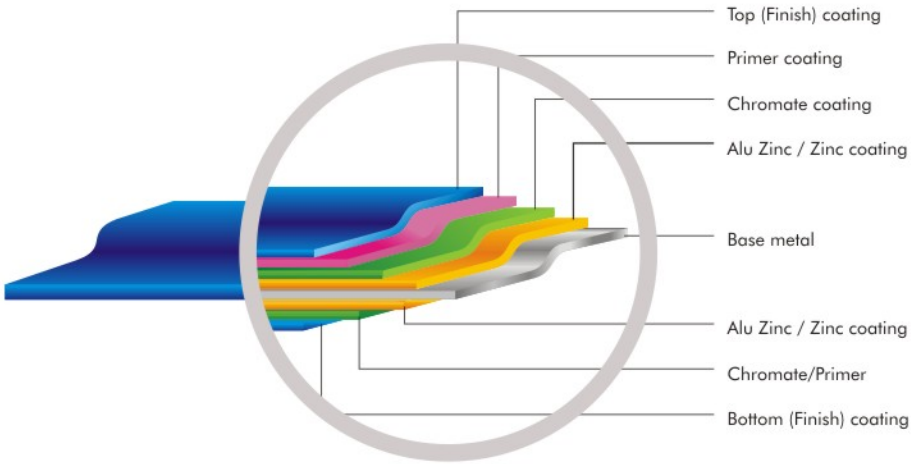
» Trapezoidal Profile Drawing



» Technical Specification of Material Dimension

Total Coating Thickness (TCT) 0.30mm, 0.35mm, 0.40mm, 0.45mm, 0.47mm, 0.50mm, 0.60				
Profile	Sheet Width	Effective Width	Pitch	Depth of Crest
Trapezoidal	1060 mm	1000 mm	250 mm	32 mm

» Structure of Pre-Painted Steel Sheets



» Sectional Properties (Zinc / Zinc-Aluminium Coated)

Thickness	Area	Moment of Inertia LXX	Section Modulus Type Top	Section Modulus Type Bottom	Span for Deflection w/m²=70kg		UDL (kg/m2) For Span		
mm	mm²	mm⁴	mm³	mm³	L/100 (cm)	L/200 (cm)	1 meter	1.4 meter	2 meter
0.30	336.82	42115	1740.09	5404.51	210.53	166.99	314.36	114.24	38.85
0.40	449.25	56155.6	2320.38	7206.45	231.77	183.85	372.58	135.46	46.13
0.45	505.47	63176.6	2610.55	8107.51	241.07	191.23	419.24	152.46	51.96
0.50	561.69	70198.1	2900.74	9008.63	249.71	198.09	465.88	169.46	57.79
0.50	617.91	77220.2	3190.96	9909.83	257.79	204.50	512.52	186.46	63.62
0.60	674.13	84242.9	3481.20	10811.10	265.39	210.54	599.16	203.45	69.45
0.70	786.57	98290.4	4061.77	12613.90	279.42	221.67	652.44	237.45	81.11
0.80	899.01	112341	4642.47	14417.20	292.16	231.79	745.74	271.45	92.78
0.90	1011.45	126395	5223.32	16220.90	303.89	241.10	839.01	305.44	104.43
1.00	1123.89	140454	5804.35	18025.10	314.78	249.74	932.27	339.43	116.09
1.20	1348.76	168585	6966.98	21635.40	334.57	265.44	1118.80	407.40	139.41

» Allowable Uniform Load Kg/M²

DLLL: Dead Load + Line Load (Deflection Limitation : Span/180)
UDL-Wind: Uniform distributed load - wind (Deflection Limitation : Span/180)
Material Confirming to ASTM A792/M Grade 80 (Yield strength 550 Mpa) or equipment.

Sheet TK mm	Load Case	Purlin Spacing Meter										
		1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0.35	Udi - DLLL	306.4	230.2	177.3	139.5	111.7	90.8	74.8	62.4	52.5	44.7	38.3
	udi - wind	574.6	431.7	332.5	261.5	209.4	170.2	140.3	116.9	98.5	83.8	71.8
0.4	Udi - DLLL	395.7	297.3	229	180.1	144.2	117.2	96.6	80.5	67.8	57.7	49.5
	udi - wind	741.8	557.4	429.3	337.7	270.4	219.8	181.1	151	127.2	108.2	92.7
0.47	Udi - DLLL	521.6	391.9	301.9	237.4	190.1	154.6	127.4	106.2	89.4	76.1	65.2
	udi - wind	978.1	734.8	566	445.2	356.4	289.8	238.8	199.1	167.7	142.6	122.3
0.5	Udi - DLLL	574.4	432.3	333	261.9	209.7	170.5	140.5	117.1	98.7	83.9	71.9
	udi - wind	1078.9	810.6	624.4	491.1	393.2	319.7	263.4	219.4	185	157.3	134.9
0.6	Udi - DLLL	736.8	553.6	426.4	335.4	268.5	218.3	179.9	150	126.3	107.4	92.1
	udi - wind	1381.6	1038	799.5	628.8	503.5	409.4	337.3	281.2	236.9	201.4	172.7

Disclaimer:
The sectional properties above are for general information only.
Kindly consult your structural engineer for your decisions.

» Utility: Segment/Industries

» Architects . Contractors
» Building contractors & Structural contractors

Fabricators
» Structural Fabricators • Structural Engineers • PEB manufacturers
» PEB suppliers
» Project Consultants
• Structural Consultants • Proj consultants.

» SEZs
» Apparels
» Iron & Steel Merchants
» Textile Industries
» Chemical Industries
» Food Processing Industries
» Steel Industries
» Cement Industries
» Mining Industries
» Petroleum Industries
» Software Industries
» Automobile Industries
» Aviation Industries
» Pharmaceutical Industries
» Telecom industries
» Power Plants
» OEMs (Original Equipment Manufacturers)
» Amusement parks
» Aquaculture Industry
» Airports
» Auditoriums
» Commercial Complex
» Cargo & Freight Stations
» Civil Engineers
» Dairy Farms
» Defense & Establishment
» Fuel Storage Depots
» Hotels
» Holiday Inns
» Hardware Dealers
» Industrial Parks
» Libraries
» LPG Bottling Plants
» Manufacturing Units
» Minor/Major Ports
» Museums
» Poultry Farms
» Projects
» Petrol Bunks
» Publishing Houses
» Petro Chemical Complexes
» Public Work Departments
» Resorts
» Railways
» Schools & Colleges
» Transport Corporation
» Warehouses & Depots
» Worship Places
» Wood & Timber

» Benefits / Key Feathers:

- Replaces fiber bats and building blanket in most applications and helps achieve MINIMUM 5 to 7 Degree cooler inside.
- To resist moisture and reduce condensation and it prevents the conflict of temperature level differences.
- Thermalon insulated Metal Sheet prevents rain impact and other sound at 50 decible.
- The stable heat performance even in high humidity environments.
- Enhanced corrosion protection.
- It is no toxic and environment friendly.
- Reduce the electricity consumption especially in cold storage and many more storage area.
- It gives aesthetic look to quality industrial and commercial buildings.
- Very low maintenance and excellent durability.

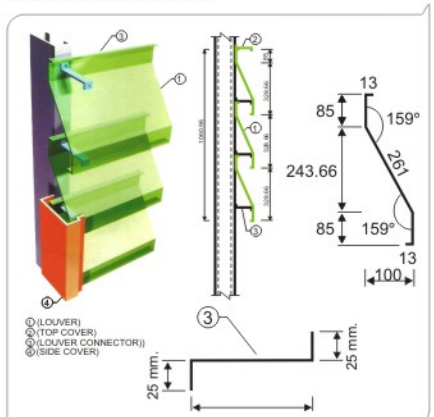
» Regular Color

TB	Torres Blue	OW	Off White	CG	Caulfield Green	OW	Galvalume	OW	Beige	AR	Authmn Red
SB	Sky Blue	BL	Blue	MG	Mist Green	G	Grey	LGR	Light Grey		

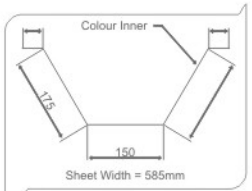
» Customized Color

NR	Neon Red	WB	Water Blue	MG	Moon Green	CB	Chocolate Brown	LO	Light Orange	ME	Metallic Grey	W	White	BY	Butter Yellow
JG	Jungle Green	BP	Blue Purple	GG	Grass Geen	LM	Light Magenta								

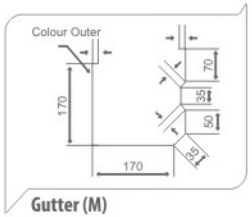
» Accessories



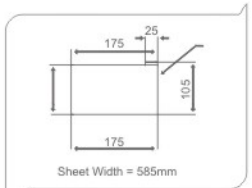
Louver Window



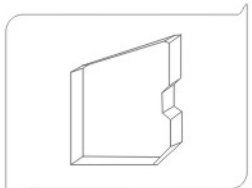
Valley Gutter (M)

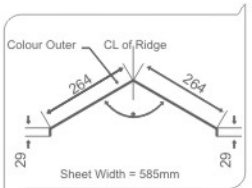


Gutter (M)

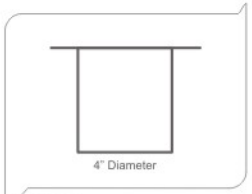


Down Pipe (M)

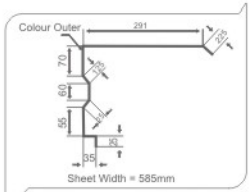

End Caps



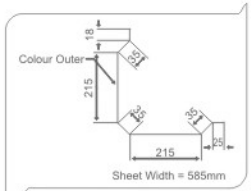
Ridge (M)



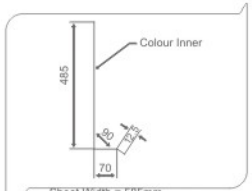
Nozzle



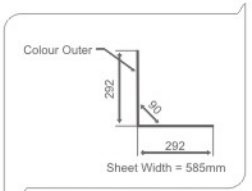
Barge Cap (M)



Corner Trim (M)



Drip Trim (M)



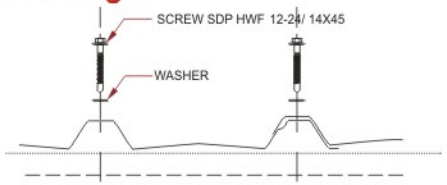
L Flashing (M)

* All dimensions are in Millimeters

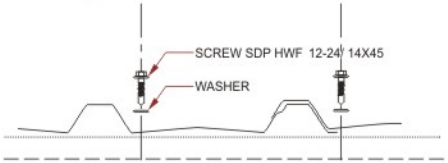
» Installation

Fixing to Steel Support					
Location	**Type of Fixing**	**Detail**	**Type of Fastener**	**Drilling Capacity**	**Thickness = T(mm.)**
Roof	Crest Fixing		CTEKS 12-14 X 55 HGS CTEKS 12-14 X 68 HGS	6.5 mm. 6.5 mm.	maximum 40 mm. maximum 53 mm.
Wall	Valley Fixing		CTEKD 10-16 X 16 HGS CTEKD 12-14 X 20 HGS	6.5 mm. 6.5 mm.	< 5 mm. <6 mm.
	Side Lap Fixing		CTEKS 10-12 X 19 HGS CTEKS 14-14 X 22 HGS	4.5 mm. 4.5 mm.	12 - 4.5 mm. 12 - 4.5 mm.

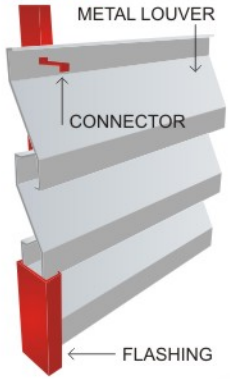
Roofing



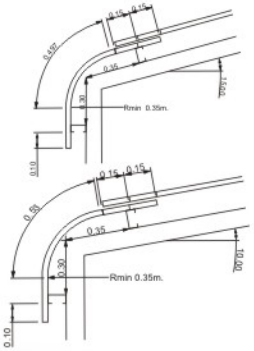
Siding



Louver



Crimp Curve



» Handling

- Use recommended personal protective equipment (helmet, goggles, shoes, hand gloves & high visibility vests) while handling and installing the sheets.
- Always wear smooth, soft-soles shoes.
- Cut materials on the ground and not on other materials where hot particles can fall and cause damage to the finish of the sheet.
- Remove all metal scrap, drill particles, pop rivet Mandrels and excess fasteners from the roof to avoid rust stains.
- Fixing of SDS screws recommended with Torque adjustable guns, for roof work, fix screws on the crest. For wall cladding, fix on the crest or on the valley. Fasteners to confirm to AS 3566 Class 3-4 for external application.
- Don't keep color coated sheets in contact with cement, dirt and chemicals like paint thinner.
- Don't leave metal articles on the roof.

» Storage

- Store indoor and away from access to open areas. If left in the open, protect them with water proof covers.
- If material is not required for immediate use, stack them neatly and clear off the ground. Maintain a clear gap of 30cm between sheet package and ground.
- Store off the ground and with a minimum 60° slope (1:10) so than if rain penetrates the covering, water will drain away and not penetrated the stock.
- Inspect the storage site regularly to ensure that moisture has not penetrated the stock.
- If stacked or bundled products becomes wet, separate it without delay, wipe it with a clean cloth and stack it to dry thoroughly.
- The sheet should be kept gently to ensure that it is not damaged.
- Don't place sheets vertically without proper support.
- Don't keep sheets in direct contact with soil.
- Don't let the surface get wet.
- Don't use metal chain for lifting sheets.

ARJUN

A Gentle Roof For Capital Projects

THERMALON METAL ROOF PVT. LTD.

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Radhe Industrial Zone, Sr. No. - 99, Plot No.1/9, Near Muscat Polymer,
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