

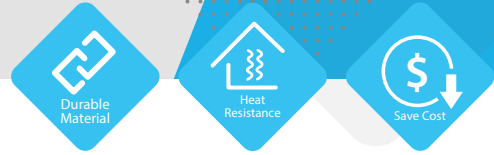


Ledex<sup>®</sup>  
Shielding The Living World

# Flex Roofing



# Flex Roofing Introduction

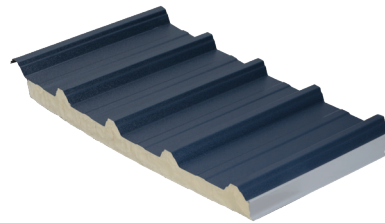
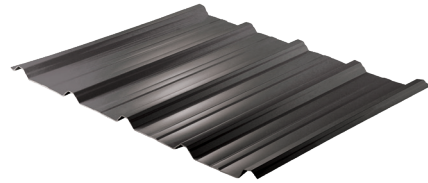


**Ledex Flex Roofing** is one of the most popular metal roofing sheet in the market. It offers economical and attractive solution for the needs of commercial, industrial or any building project roofing and wall cladding. Ledex Flex Roofing is made from steel of the highest quality. It is available in the range of Zinc and Aluminum Alloy coated steel, allowing the product to be corrosion-resistant and durable.

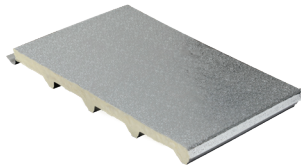
User-friendly Ledex Flex Roofing can be customized cut to any specific length provided from site measurement.

**Ledex Flex PU Foam Roofing and Ledex Flex PU Metal Roofing** has thickness variants of **20mm, 25mm, 30mm and 40mm**. Its water-resistant material is immuned to rain water, as it is produced using high density Close Cell Polyurethane. Ledex Flex PU Foam Roofing and Ledex Flex PU Metal Roofing always run in full PU Foam as a sheeting unless it is for overlapping.

Ledex Flex PU Foam Roofing and Ledex Flex PU Metal Roofing provides effective and excellent heat resistance and sound absorption. Ledex Flex PU Foam Roofing and Ledex Flex PU Metal Roofing is more durable compared to other products as it uses PU Foam of different thickness. It is also made from steel of the highest quality available in a range of Aluminium Zinc Alloy coated steel, allowing the product to be corrosion-resistant and durable. It is also available in attractive crimp curve options.



**Benefits** • High heat insulation • Variety option of PU Foam Thickness • Good sound absorption



Inner Layer

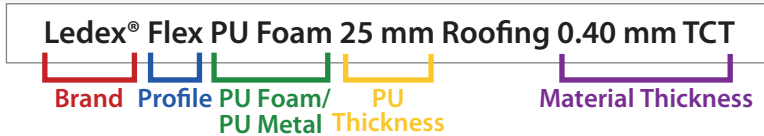
**PU Foam** Insulation system made up of 3 layers which consists of pre-painted metal sheet, rigid Polyurethane (PU) foam with inner layer fire-retardant aluminium foil 0.22 mm lamination



**PU Metal** Insulation system made up of 3 layers which consists of a layer of rigid Polyurethane (PU) foam in between two pre-painted metal sheets

**Tolerance:** LENGTH  $\pm 3$  mm WIDTH  $\pm 3$  mm METAL THICKNESS  $\pm 0.03$  mm PU THICKNESS  $\pm 2$  mm

## DETAILS TO SPEC IN BQ



**Material warranty on perforated by corrosion:**

- Up to 10 years – Bluescope Zacs Cool AZ90; Bluescope Zacs Natural AZ90
- Up to 15 years – Bluescope Prima Maju AZ100
- Up to 25 years – Bluescope Zinalume AZ150; Bluescope Clean Colorbond AZ150
- Up to 30 years – Bluescope Zinalume AZ200; Bluescope Clean Colorbond Ultra AZ200

\* Term & condition apply

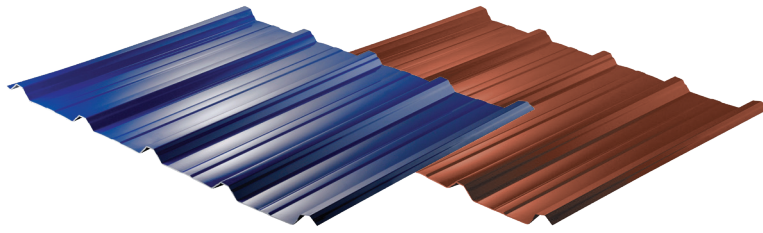
**Example**

Design, fabricate and install "Ledex® Flex Pu Foam 25 mm Roofing" 0.40 mm TCT In Bluescope Prima Maju AZ100 with approved color ; laid to fall at minimum 3° and fixed to Ledex C Purlin (measured separately) including fixing accessories, capping, flashing and all necessary works; all in accordance with Architect's drawing, manufacturer's instruction and specification. (Up to 15 years warranty on perforated by corrosion)

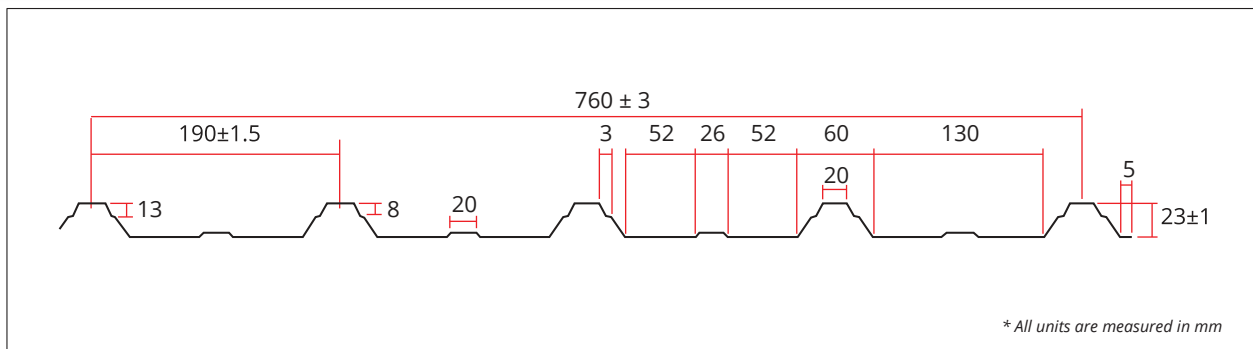
**Details to be mentioned in BQ specification:**

1. Brand
2. Profile
3. Thickness
4. Material
5. Coating
6. Colour
7. Roof Pitch
8. Warranty

# Ledex Flex Roofing



## SPECIFICATION DRAWING



## PRODUCT SPECIFICATIONS

Profile	Ledex Flex Roofing
Effective Width	760 mm
Depth of Rib	23 mm
Steel Grade	Zincalume G300 Steel, Zincalume G550 Steel
Finishing	Zacs, Zacs Cool, Zacs Natural, Prima Maju, Vermoe, Zincalume, Colorbond
Minimum Roof Pitch	5° Sheet without end lap
Tolerance	Length ± 3 mm, Width ± 3 mm, Thickness ± 0.03 mm

## THICKNESS AVAILABLE

Thickness BMT (mm)	Thickness TCT (mm)	Weight (kg/meter)
0.20	0.25	1.50
0.25	0.30	1.90
0.30	0.36	2.30
0.35	0.40	2.70
0.40	0.45	3.00
0.42	0.47	3.10
0.48	0.53	3.60

**WIND CAPACITY LOAD SPAN**

Thickness BMT (mm)	Thickness TCT (mm)	Distributed Load (kN/m <sup>2</sup> ) Span (Length)					
		0.6	0.9	1.2	1.5	1.8	2.1
0.35	0.40	14.34	6.36	3.56	2.27	1.56	1.14
0.40	0.45	17.37	7.72	4.31	2.74	1.89	1.38
0.42	0.47	17.84	7.95	4.43	2.82	1.95	1.42
0.48	0.53	20.81	9.22	5.17	3.29	2.27	1.65

**RECOMMENDED MAXIMUM ROOF LENGTH (M)**

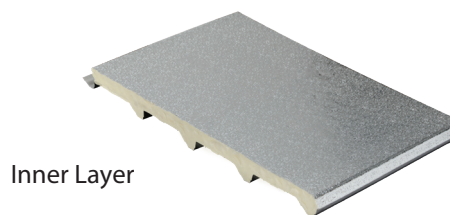
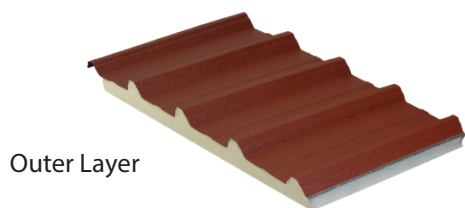
Rainfall (mm/h)	Slope in Degree			
	3°	5°	7°	10°
150	50	60	80	101
200	39	50	60	76
250	31	40	48	61
300	26	30	40	49
400	8	10	11	13

**MAXIMUM RECOMMENDED SPACING OF SUPPORTS**

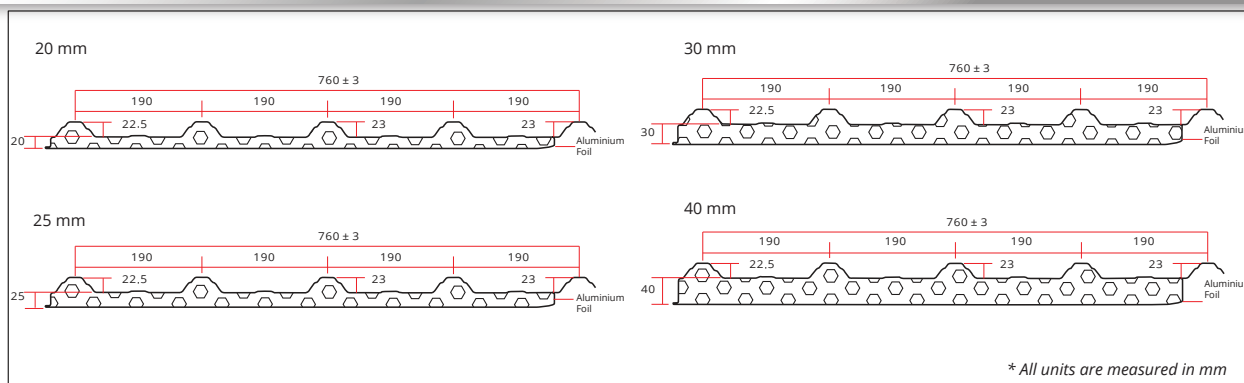
Thickness BMT (mm)	Thickness TCT (mm)	Roofing		Wall		Free Cantilever (mm)
		Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	
0.35	0.40	1200	900	1500	1200	100
0.40	0.45	1500	1200	1800	1500	100
0.42	0.47	1550	1350	1850	1550	150
0.48	0.53	1800	1600	2050	1800	200



# Ledex® Flex PU Foam Roofing



## SPECIFICATION DRAWING



## PRODUCT SPECIFICATIONS

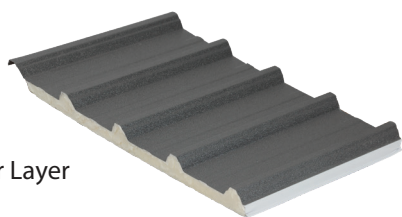
Profile	Ledex Flex PU Foam Roofing
Effective Width	760 mm
Depth of Rib	23 mm
Steel Grade	Zincalume G300 Steel, Zincalume G550 Steel
Outer Layer Finishing	Zacs, Zacs Cool, Zacs Natural, Prima Maju, Vermoe, Zincalume, Colorbond
Inner Layer Finishing	Aluminium Foil 0.22 mm
PU Foam Thickness	20 mm, 25 mm, 30 mm, 40 mm
PU Foam Insulation Density	35 kg/m <sup>3</sup> - 40 kg/m <sup>3</sup>
Minimum Roof Pitch	3° Sheet without end lap
Tolerance	Length ± 3 mm, Width ± 3 mm, Metal Thickness ± 0.03 mm, PU Thickness ± 2 mm

## THICKNESS AVAILABLE

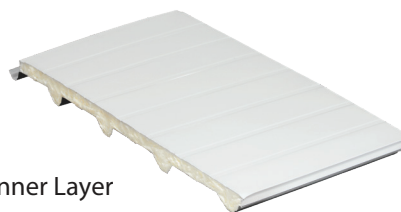
Thickness BMT (mm)	Thickness TCT (mm)	PU Foam 20 mm (kg/m)	PU Foam 25 mm (kg/m)	PU Foam 30 mm (kg/m)	PU Foam 40 mm (kg/m)
0.25	0.30	2.65	2.82	3.02	3.21
0.30	0.36	3.05	3.22	3.42	3.61
0.35	0.40	3.45	3.62	3.82	4.01
0.40	0.45	3.75	3.92	4.12	4.31
0.42	0.47	3.85	4.02	4.22	4.41
0.48	0.53	4.35	4.52	4.72	4.91

# Ledex® Flex PU Metal Roofing

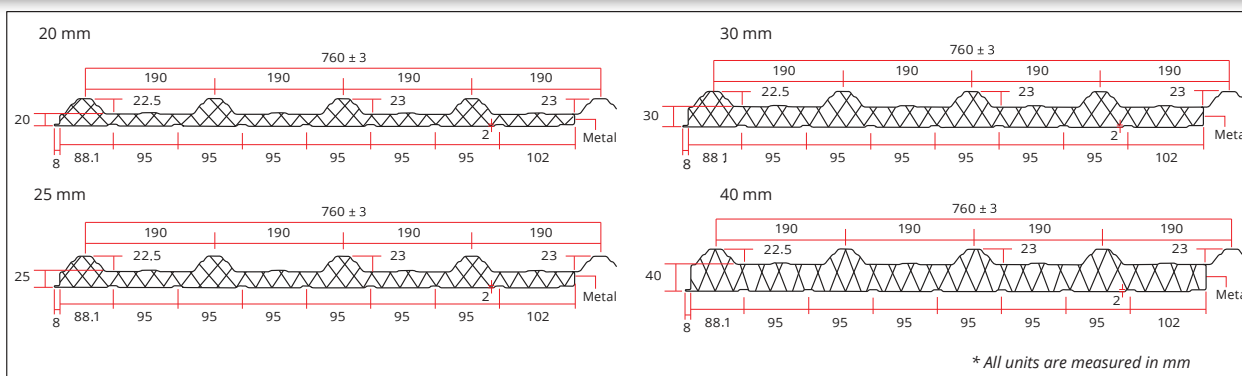
Outer Layer



Inner Layer



## SPECIFICATION DRAWING



## PRODUCT SPECIFICATIONS

Profile	Ledex Flex PU Metal Roofing
Effective Width	760 mm
Depth of Rib	23 mm
Steel Grade	Zincalume G300 Steel, Zincalume G550 Steel
Outer Layer Finishing	Zacs, Zacs Cool, Zacs Natural, Prima Maju, Vermoe, Zincalume, Colorbond
Inner Layer Finishing TCT	Metal 0.25 mm, Metal 0.30 mm
PU Foam Thickness	20 mm, 25 mm, 30 mm, 40 mm
PU Foam Insulation Density	35 kg/m <sup>3</sup> - 40 kg/m <sup>3</sup>
Minimum Roof Pitch	3° Sheet without end lap
Tolerance	Length ± 3 mm, Width ± 3 mm, Metal Thickness ± 0.03 mm, PU Thickness ± 2 mm

## THICKNESS AVAILABLE

Thickness BMT (mm)	Thickness TCT (mm)	PU Metal 20 mm (kg/m)	PU Metal 25 mm (kg/m)	PU Metal 30 mm (kg/m)	PU Metal 40 mm (kg/m)
0.25	0.30	4.15	4.32	4.92	5.11
0.30	0.36	4.55	4.72	5.32	5.51
0.35	0.40	4.95	5.12	5.72	5.91
0.40	0.45	5.25	5.42	6.02	6.21
0.42	0.47	5.35	5.52	6.12	6.31
0.48	0.53	5.85	6.02	6.62	6.81
			Inner layer metal 0.25 mm TCT		Inner layer metal 0.30 mm TCT

**WIND CAPACITY LOAD SPAN**

Thickness BMT (mm)	Thickness TCT (mm)	Distributed Load (kN/m <sup>2</sup> ) Span (Length)					
		0.6	0.9	1.2	1.5	1.8	2.1
0.35	0.40	14.34	6.36	3.56	2.27	1.56	1.14
0.40	0.45	17.37	7.72	4.31	2.74	1.89	1.38
0.42	0.47	17.84	7.95	4.43	2.82	1.95	1.42
0.48	0.53	20.81	9.22	5.17	3.29	2.27	1.65

**MAXIMUM RECOMMENDED SPACING OF SUPPORTS**

Ledex Flex PU Foam and PU Metal 20 mm						
Thickness BMT (mm)	Thickness TCT (mm)	Roofing		Wall		Free Cantilever (mm)
		Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	
0.35	0.40	1650	1450	1900	1750	150
0.40	0.45	1700	1500	1950	1800	150
0.42	0.47	1750	1550	2000	1850	180
0.48	0.53	1900	1700	2200	1950	250

Ledex Flex PU Foam and PU Metal 25mm						
Thickness BMT (mm)	Thickness TCT (mm)	Roofing		Wall		Free Cantilever (mm)
		Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	
0.35	0.40	1650	1450	1900	1750	150
0.40	0.45	1700	1500	1950	1800	150
0.42	0.47	1750	1550	2000	1850	180
0.48	0.53	1900	1700	2200	1950	250

Ledex Flex PU Foam and PU Metal 30 mm						
Thickness BMT (mm)	Thickness TCT (mm)	Roofing		Wall		Free Cantilever (mm)
		Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	
0.35	0.40	1700	1500	1950	1800	180
0.40	0.45	1800	1600	2000	1850	200
0.42	0.47	1850	1650	2050	1900	200
0.48	0.53	2000	1800	2250	2100	250

Ledex Flex PU Foam and PU Metal 40 mm						
Thickness BMT (mm)	Thickness TCT (mm)	Roofing		Wall		Free Cantilever (mm)
		Internal Span (mm)	End Span (mm)	Internal Span (mm)	End Span (mm)	
0.35	0.40	1750	1550	2000	1850	200
0.40	0.45	1850	1650	2100	1950	250
0.42	0.47	1900	1700	2150	2000	250
0.48	0.53	2100	1900	2250	2200	300

## RECOMMENDED MAXIMUM ROOF LENGTH (M)

Rainfall (mm/h)	Slope in Degree			
	3°	5°	7°	10°
150	50	60	80	101
200	39	50	60	76
250	31	40	48	61
300	26	30	40	49
400	8	10	11	13

## INSULATION PROPERTIES

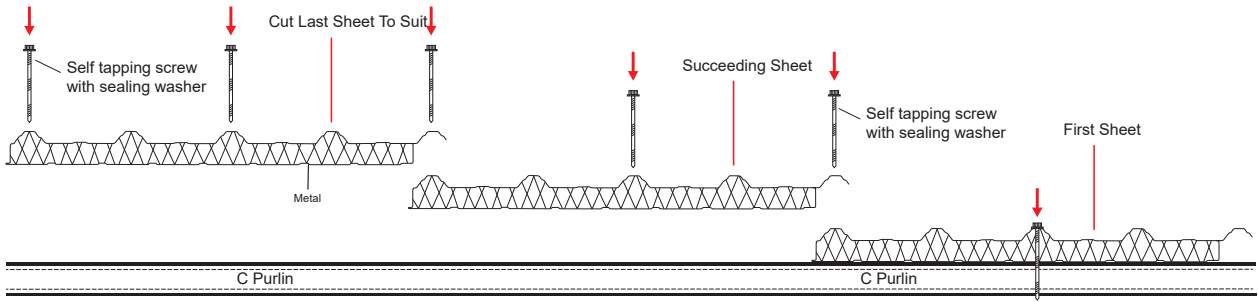
Item	Specifications			
Type of Insulation	Rigid Polyurethane Foam			
Foam Density	35 kg/m <sup>3</sup> - 40 kg/m <sup>3</sup>			
Insulation Grade	Non CFC, Non HCFC			
K Value (Thermal Conductivity)	0.024 w/mk - 0.026 w/mk			
Thickness of Insulation	20 mm	25 mm	30 mm	40 mm
U Value (Thermal Transmittance)	1.30 w/m <sup>2</sup> k	1.04 w/m <sup>2</sup> k	0.867 w/m <sup>2</sup> k	0.65 w/m <sup>2</sup> k
R Value (Thermal Resistance)	0.7692 w/mk	0.962 w/mk	1.154 w/mk	1.539 w/mk

## COMPARISONS OF PRODUCTS

Description	Products					
	PU Metal	Polymer	Mineral Wool Board	Moulding PS	Polystyrene	PE Board
Intensity (g/cm <sup>2</sup> )	0.032	0.030	0.5	0.030	0.02	0.04
Strength (kg/cm <sup>2</sup> )	1.75 - 3.5	2.5 - 3.0	15	2.5 - 3.0	-	0.97
Absorption (Vol%)	> 0.5	> 0.5	High	> 0.5	High	-
Shear Stress (Koal/m.hr°C)	0.020	0.035	0.13	0.032	0.032	0.031
Transmission (gcm/m <sup>2</sup> hmmhg)	0.035	0.050	High	0.097	6.60	0.02



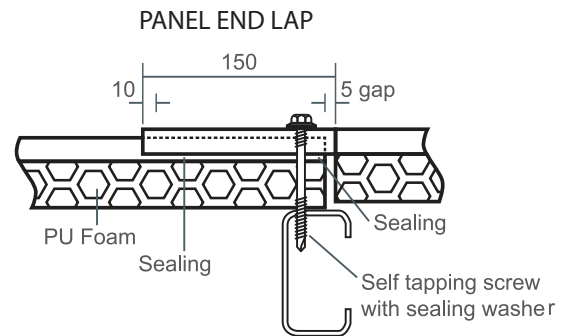
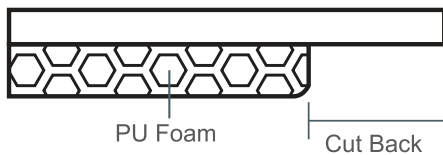
## INSTALLATION



### PANEL END CUT BACK

For Installation of insulated metal roof, the following measures are recommended :

- Minimum setback 6 inch (150 mm)
- Cut Back at end laps - 4 inch (100 mm)  
- 6 inch (150 mm)



## FIXING

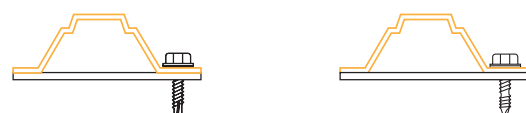
### Roofing



Crest fixing to steel no. 12 x 45 mm self drilling and tapping Hexagon Head Screw with pre-assembled neoprene bonded steel washer.

Crest fixing to timber no. 10 x 59 mm self drilling and tapping Hexagon Head Screw with pre-assembled neoprene bonded steel washer.

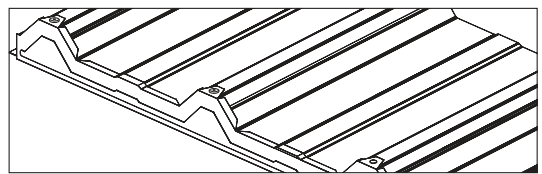
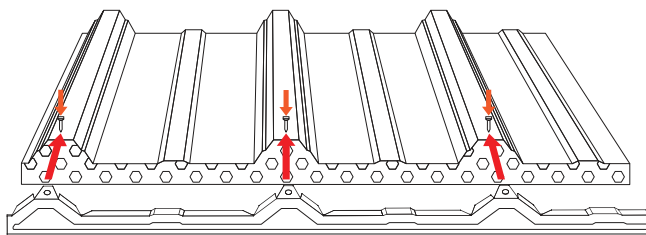
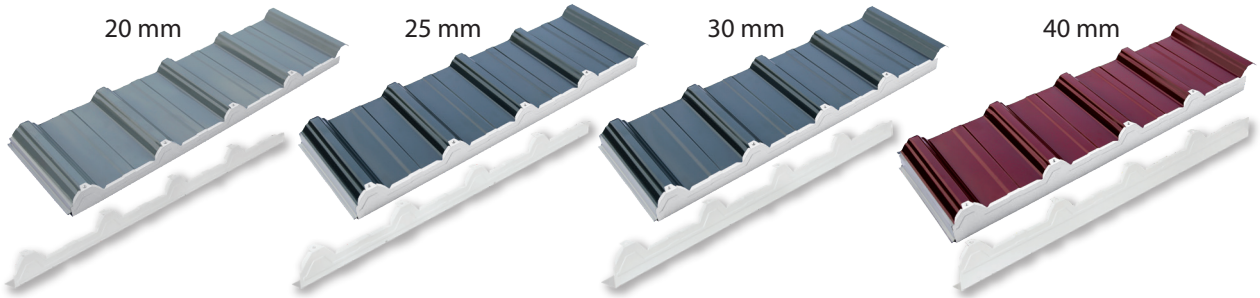
### Wall



Valley fixing to steel no. 10 x 20 mm self drilling and tapping Hexagon Head Screw with pre-assembled neoprene bonded steel washer.

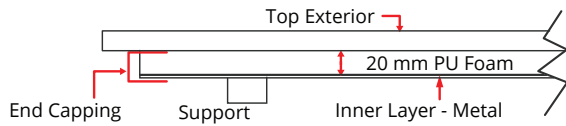
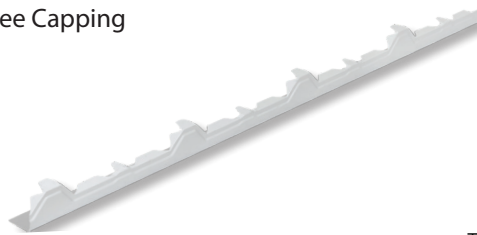
Valley fixing to steel no. 10 x 25 mm self drilling and tapping Hexagon Head Screw with pre-assembled neoprene bonded steel washer.

LEDEX PU FOAM AND PU METAL END CAPPING

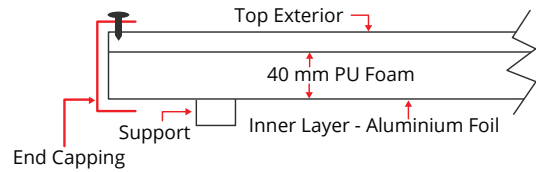


After Installation

Free Capping



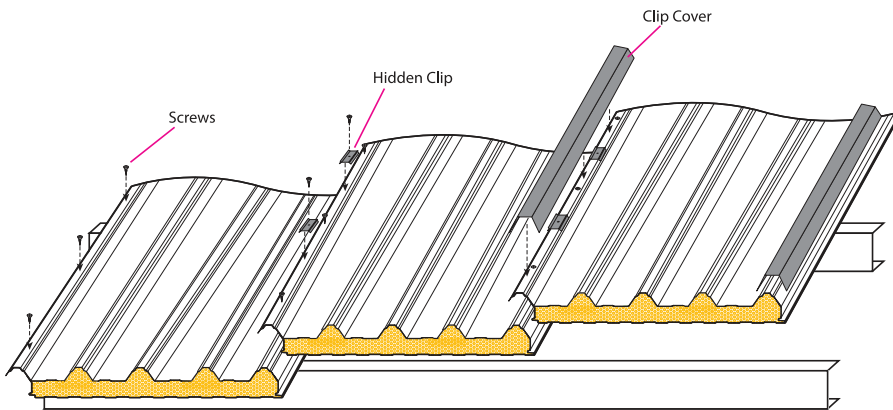
Free End Capping Side View (Slot in)



Full End Capping Side View (Screw in)

HIDDEN CLIP & CLIP COVER

With concealed fixing, screws are covered with clip covers, hence prevent exposing screws to corrosion. It is less likely to have leaks, minimising maintenance.

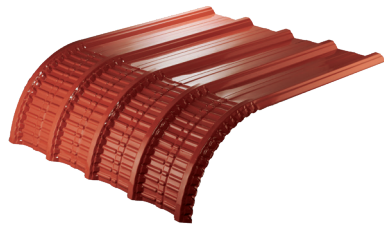


Hidden Clip

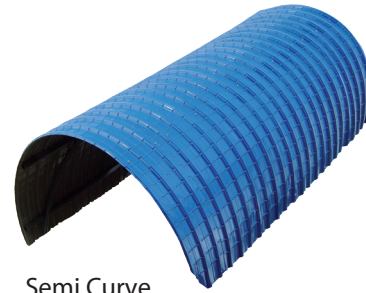


Clip Cover

# Ledex® Flex Crimp Curve/Semi Curve

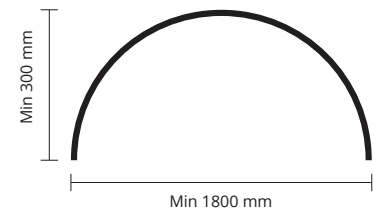
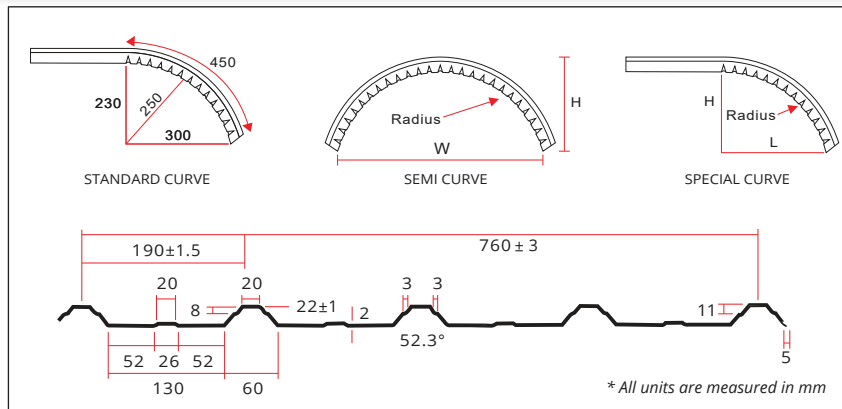


Crimp Curve



Semi Curve

## SPECIFICATION DRAWING



Please provide your height measurement and width measurement

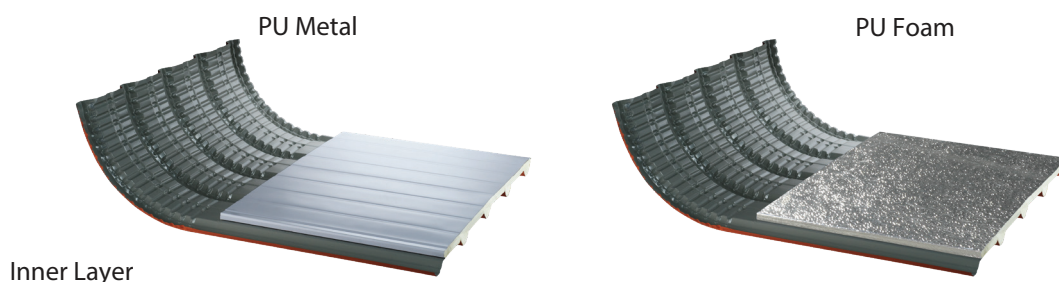
## PRODUCT SPECIFICATIONS

Profile	Ledex Flex Crimp Curve
Effective Width	760 mm
Depth of Rib	23 mm
Steel Grade	Zincalume G300 Steel
Finishing	Zacs, Zacs Cool, Zacs Natural, Prima Maju, Vermoe, Zincalume, Colorbond
Minimum Roof Pitch	5° Sheet without end lap
Semi Curve Curvature	Natural Curve: > 80 mr Radius / Crimp Curve: > 600 mr Radius
Tolerance	Length ± 3 mm, Width ± 3 mm, Thickness ± 0.03 mm

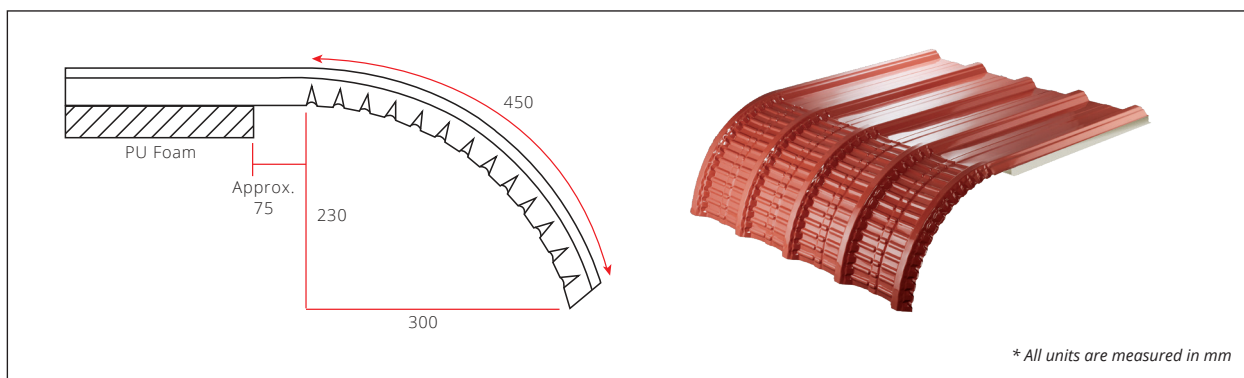
## THICKNESS AVAILABLE

Thickness BMT (mm)	Thickness TCT (mm)	Weight (kg/meter)
0.20	0.25	1.50
0.25	0.30	1.90
0.30	0.36	2.30
0.35	0.40	2.70
0.40	0.45	3.00
0.42	0.47	3.10
0.48	0.53	3.60

# Ledex<sup>®</sup> Flex PU Foam Crimp Curve



## SPECIFICATION DRAWING



## PRODUCT SPECIFICATIONS

Profile	Ledex Flex PU Foam Crimp Curve			
Effective Width	760 mm			
Depth of Rib	23 mm			
Steel Grade	Zincalume G300 Steel			
Outer Layer Finishing	Zacs, Zacs Cool, Zacs Natural, Prima Maju, Vermoe, Zincalume, Colorbond			
Inner Layer Finishing (PU Foam)	Aluminium Foil 0.22 mm			
Inner Layer Finishing (PU Metal TCT)	Metal 0.25 mm, Metal 0.30 mm			
PU Foam Thickness (PU Foam)	20 mm, 25 mm, 30 mm, 40 mm			
PU Foam Thickness (PU Metal)	20 mm, 25 mm, 30 mm, 40 mm			
PU Foam Insulation Density	35 kg/m <sup>3</sup> - 40 kg/m <sup>3</sup>			
K Value (Thermal Conductivity)	0.024 w/mk - 0.026 w/mk			
PU Foam Thickness	20 mm	25 mm	30 mm	40 mm
R Value (Thermal Resistance)	0.7692 w/mk	0.962 w/mk	1.154 w/mk	1.539 w/mk
U Value (Thermal Transmittance)	1.30 w/m <sup>2</sup> k	1.04 w/m <sup>2</sup> k	0.867 w/m <sup>2</sup> k	0.65 w/m <sup>2</sup> k
Natural Curve Curvature (PU Foam)	Natural Curve: > 80 mr Radius / Crimp Curve: > 600 mr Radius			
Minimum Roof Pitch	3° Sheet without end lap			
Tolerance	Length ± 3 mm, Width ± 3 mm, Metal Thickness ± 0.03 mm, PU Thickness ± 2 mm			



PROJECT REFERENCE



Tian Seng Hang, Science Park



Spritzer, Taiping



Residential Cassa Maya, Sg. Dua



PROJECT REFERENCE



Tambun Indah, Low cost apartment



Futsal Stadium, Bandar Tasek Mutiara



EDM Holding, Science Park