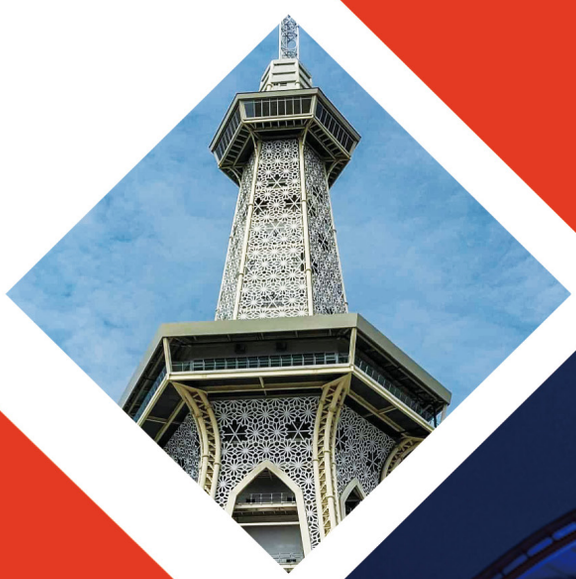
DURO METAL INDUSTRIAL

PRODUCT HANDBOOK



DURO METAL INDUSTRIAL (M) SDN BHD

I CORPORATE PROFILE

Since its inception in 1993, **Duro Metal Industrial (M) Sdn Bhd** has been a beacon of excellence, born in the industrious heart of Balakong, Selangor Darul Ehsan. Our journey of relentless pursuit of quality was recognized in February 2002, when we were bestowed with the esteemed **MS ISO 9002:1994 Quality Systems Certification** by SIRIM QAS Sdn Bhd, a testament to our unwavering commitment. This accolade was further elevated as we seamlessly transitioned to the **MS ISO 9001:2000** certification, underscoring our dedication to excellence.

In April 2003, the thriving enterprise relocated to our current facility in Kapar, Klang enhancing our capacity to serve our cherished clientele with unmatched satisfaction. **Duro Metal Industrial (M) Sdn Bhd**, a prominent subsidiary of **MAYU GLOBAL GROUP BERHAD,** proudly spearheads the manufacturing of superior metal roofing and wall cladding solutions. Our extensive portfolio, featuring profiles such as **DUROSEAM, DUROZIP, SKYDEK II, DUROSPAN, V-CLAD, and 3 PAN KLIP SYSTEM 700**, stands as a testament to our versatility and innovation. Complementing our advanced systems, we provide a wide array of accessories, including standard flashings, cappings, and clips, alongside custom solutions tailored to specific requirements.

Our commitment extends to the production of high tensile galvanized **DURODEK™ metal floor decking system**, catering to both structural and composite concrete floor designs. Our products are meticulously crafted to meet international standards, such as ASTM, AS, and BS, ensuring unparalleled quality.

Independently verified by third-party laboratories, our offerings are available in a comprehensive spectrum of grades, colors, thicknesses, and profiles. We source our premium materials from leading local suppliers, including BlueScope Steel (Malaysia) Sdn Bhd and CSC Steel Sdn Bhd, along with esteemed international suppliers from Japan and Taiwan.

The ‘DURO’ brand is a symbol of enduring reliability, having garnered acclaim in the local industry over the past decade. On the global stage, our products enjoy a robust presence in markets such as China, Singapore, Bangladesh, Maldives, India, and Hong Kong.

At ‘DURO’, we are poised with unwavering confidence to deliver premium products and services, upholding the pinnacle of quality and excellence for our valued customers.

MANUFACTURED TO INTERNATIONAL STANDARDS

All our products are manufactured to international standards, such as, ASTM, AS and BS. Our products are also tested verified by independent third party test labs in accordance with required standards.

COMPLETED RANGE OF MATERIALS

We offer our products in a complete range of materials, in terms of material grade, colour, thickness and profile. Our materials are procured from major local suppliers in the industry.

WE MANUFACTURE

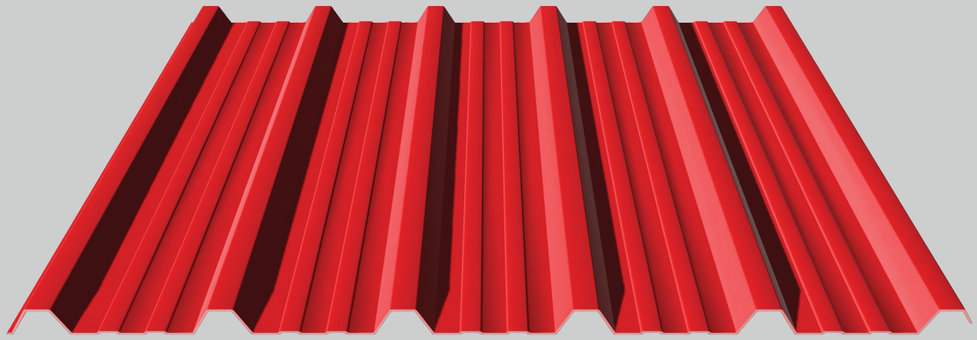
- Metal Roofing Sheets
- Wall Cladding Sheets
- Metal Floor Decking
- Standard Flashings & Cappings
- High Tensile Galvanized C & Z Purlins
- High Tensile Z-spacer

Customization available for non-standard items.

CONTENT

We cater to engineers' specifications and design requirements. provide technical assistance in the design and calculation for application of our products.

MEGADEK

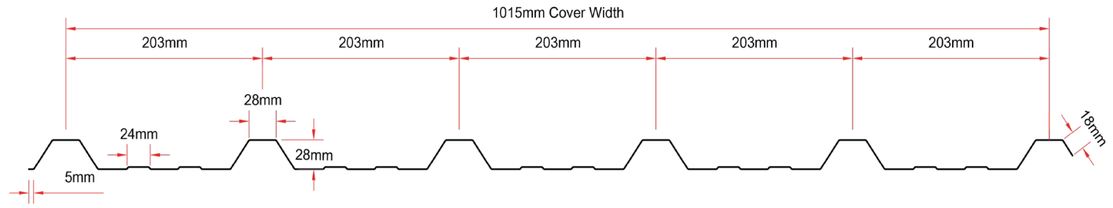


Longer width span minimising lapping requirement. Material options is limited due to coil size but can be customised based on requirement.

- Suitable for wide roofing requirement.
- Screw-down metal with exposed fastener.

LESS LAPPING

LONGER WIDTH SPAN



PROFILE SPECIFICATIONS :

	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel
Base Metal Thickness (mm)	**0.30**		**0.35**		**0.42**		**0.48**	
Total Coated Thickness (mm)	**0.35**		**0.40**		**0.47**		**0.53**	
Mass Per Unit Area (kg /m²)	3.05	3.10	3.53	3.58	4.19	4.24	4.74	4.80
Mass Per Unit Length (kg /m)	3.10	3.16	3.58	3.63	4.25	4.30	4.81	4.87
Coverage (m²/t)	328	322	284	280	239	236	211	208

RECOMMENDED MAXIMUM SUPPORT SPACING :

Base Metal Thickness (mm)	**Roof**			**Wall**		
	Single Span (mm)	Internal Span (mm)	End Span (mm)	Single Span (mm)	Internal Span (mm)	End Span (mm)
0.30	598	1162	825	900	1800	1350
0.35	700	1360	965	1053	2105	1580
0.42	888	1636	1120	1590	2660	2290
0.48	1250	1970	1350	1827	2885	2500

LENGHTS :

All products are available from lengths up to 21 metres custom-cut to your length requirements. Lengths longer than 21 metres can be supplied, provided satisfactory transport and on-site handling can be arranged.

TOLERANCES :

Length : +0, - 15mm
Cover Width : +4mm, -4mm

PACKING :

Sheets are packed in strapped bundles of one tonne maximum mass.

MINIMUM ROOF SLOPE :

The normal recommended minimum roof slope is 1 in 20 (approximately 30) However, in non-cyclonic areas where roofs are in single sheet lengths, with a run of less than 15 metres, a minimum roof slope of 1 in 30 (approximately 20) may be used. For recommended slope of roofs in cyclonic areas, please consult our Duro Distributor's office.

INSTALLATION :

• Fastening sheets to support

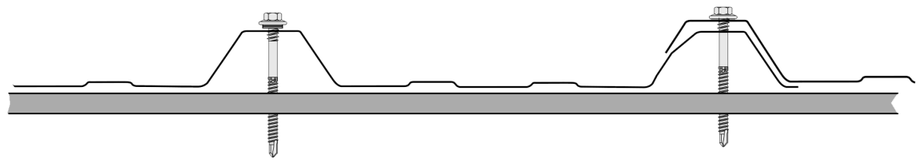
MEGADEK is flexible in that it can be pierced-fixed to either steel or timber supports. This allows fastener screws to either pass through the sheeting or through the crests or in the valleys.

Crest or valley fixing is best used for walling purposes. However, maximize on water tightness, it is best to place roof screws through the crest.

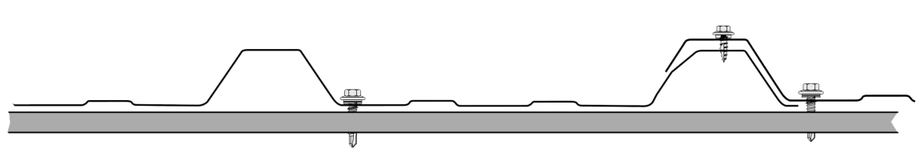
Always drive the screws in the centre of the corrugation or rib and at the square angles to the sheeting. It is important to note fasteners should not be placed less than 25mm from the ends of sheets.

• Side-laps

There is always an under lap at the edge of MEGADEK anti capillary groove. For better results, use fasteners along side-laps, however, note that when cladding is supported as indicated in maximum support spacing. Side-lap fasteners are not usually needed for strength.



Creast fixing for roofs or walls



Valley fixing for walls only

• End-laps

Due to MEGADEK availability in long lengths, End Laps are usually not necessary. However, if you want end-laps and would like to know the sequence of laying and the amount of overlap, please call your nearest DURO Distributor.

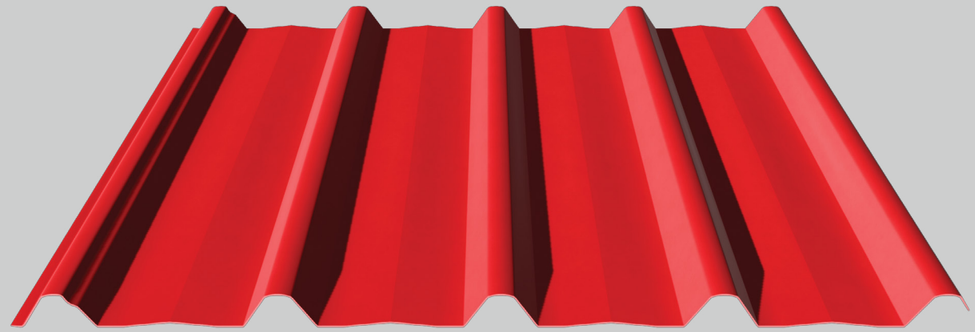
• End Of Sheets

It is most common to allow roof sheet to overlap into gutters by about 50mm. In extreme weather, or if the roof pitch is less than 25 degree, the valleys of the sheets should be turned up at upper ends by about 80 degree and turned down at lower ends.

• Lay Sheets Toward Prevailing Weather

Turning sheets on the ground is always easier and safer. Always check that sheets are the correct way up and that the correct way up and that the overlapping side is towards the edge of the roof before you start installation.

SKYDEK II

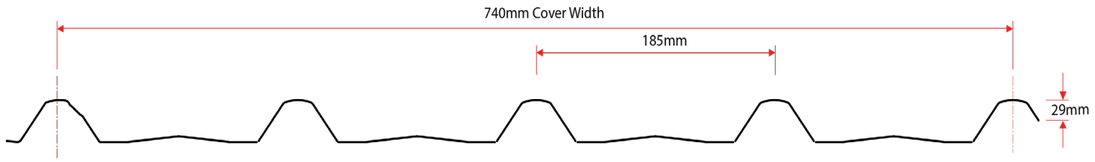


Contemporary design coupled with inherent properties of high tensile steel makes it suitable for vertical cladding and roofing to as low as 3 degree pitch.

- Curvey ribbed, a popular alternative to the common profile.
- Profile can be crimp to curve.
- Easy to install.
- Screw-down metal with exposed fastener.

EASY INSTALLATION

HIGH TENSILE



PROFILE SPECIFICATIONS :

	Economy				Regular		Thick	
	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel
Base Metal Thickness (mm)	**0.30**		**0.35**		**0.42**		**0.48**	
Total Coated Thickness (mm)	**0.35**		**0.40**		**0.47**		**0.53**	
Mass Per Unit Area (kg /m²)	3.14	3.19	3.65	3.68	4.29	4.36	5.39	5.45
Mass Per Unit Length (kg /m)	2.38	2.43	2.74	2.80	3.26	3.32	4.08	4.15
Coverage (m²/t)	318	313	277	271	233	229	205	203

RECOMMENDED MAXIMUM SUPPORT SPACING :

Base Metal Thickness (mm)	Total Coated Thickness (mm)	Roofing					Walling			
		Single Span (mm)	End Span (mm)	Internal Span Overhang (mm)	Unstiffened Overhang (mm)	Stiffened (mm)	Single Span (mm)	End Span (mm)	Internal Span (mm)	Overhangs (mm)
0.30	0.35	700	700	1300	110	220	1300	1300	1560	110
0.35	0.40	850	850	1500	130	260	1550	1550	1880	130
0.42	0.47	1000	1000	1700	150	300	1800	1800	2200	150
0.48	0.53	1200	1200	1900	170	340	2100	2100	2400	170

LOAD DISTRIBUTION CAPACITY OVER CONTINUOUS SPAN :

Base Metal Thickness (mm)	Span (mm)		900	1200	1500	1800	2100	2400
0.30	Safe Load Distribution	kPa	1.3	0.7	0.2	0.2	0.3	0.1
	Deflection Under Above Load	mm	2.7	3.2	4.4	6.2	6.0	6.0
	Safe Wind Uplift	kPa	3.1	2.4	1.8	2.0	1.7	1.5
0.35	Safe Load Distribution	kPa	3.0	2.1	1.2	0.8	0.5	0.3
	Deflection Under Above Load	mm	2.8	4.0	6.0	8.0	10.0	12.0
	Safe Wind Uplift	kPa	3.4	2.6	2.0	1.8	1.4	1.2
0.42	Safe Load Distribution	kPa	6.2	3.5	2.3	1.5	1.1	0.9
	Deflection Under Above Load	mm	2.9	4.8	7.6	9.8	14.0	18.0
	Safe Wind Uplift	kPa	3.7	2.8	2.2	1.6	1.1	0.9
0.48	Safe Load Distribution	kPa	14.3	4.8	3.4	1.8	1.7	2.1
	Deflection Under Above Load	mm	3.0	5.6	9.2	17.6	18.0	24.0
	Safe Wind Uplift	kPa	4.0	3.0	2.4	1.4	0.5	0.6

LENGHTS :

All products are available from lengths up to 21 metres custom-cut to your length requirements. Lengths longer than 21 metres can be supplied, provided satisfactory transport and on-site handling can be arranged.

TOLERANCES :

Length : +0, - 15mm
Cover Width : +4mm, -4mm

PACKING :

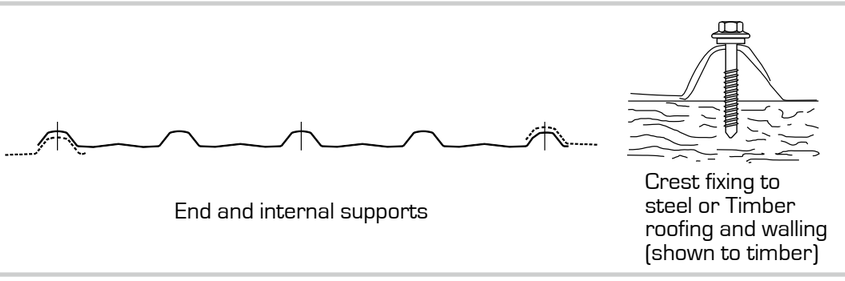
Sheets are packed in strapped bundles of one tonne maximum mass.

MINIMUM ROOF SLOPE :

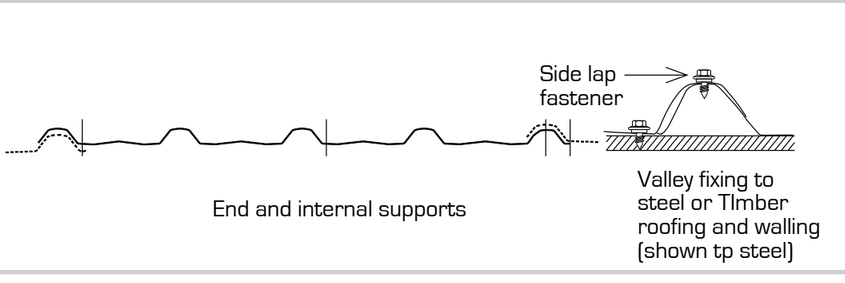
The normal recommended minimum roof slope is 1 in 20 (approximately 30) However, in non-cyclonic areas where roofs are in single sheet lengths, with a run of less than 15 metres, a minimum roof slope of 1 in 30 (approximately 20) may be used. For recommended slope of roofs in cyclonic areas, please consult our Duro Distributor's office.

SHEET LAYING AND FASTENING :

- **Crest Fastener Location** (Recommended for roofing)



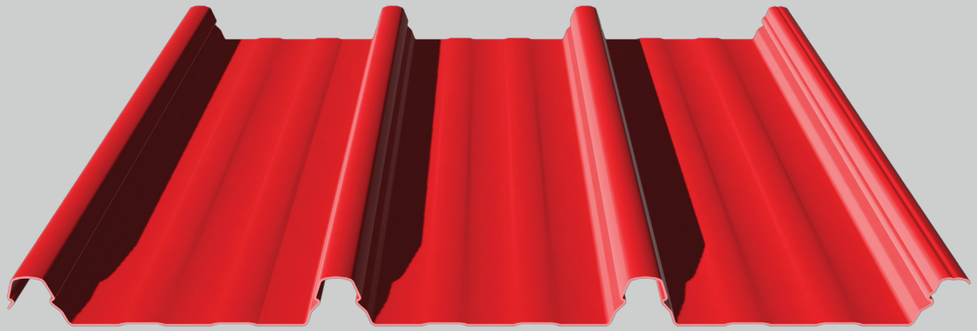
- **Valley Fastener Location** (Recommended for roofing)



3 Unit Factory at Nusajaya

3 PAN KLIP

SYSTEM 700mm



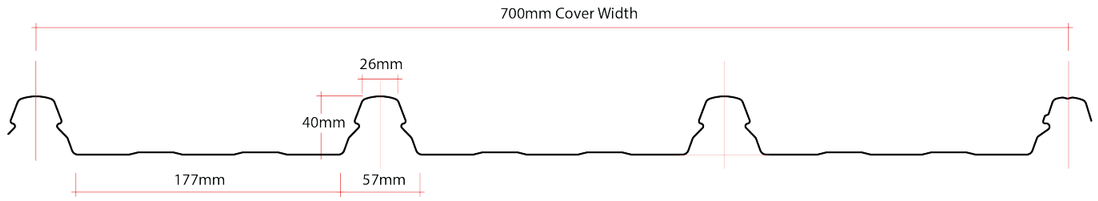
Most popularly used profile in DURO due to the "Clip-Lock" system. This profile also maximise the life-span of the a metal roof.

- High-ribbed profile.
- Suitable for long-span.
- Conceal fastening with a proprietary Duro fixing clip.

HIGH-RIBBED

LONG SPAN

3 PANKLIP SYSTEM 700 mm



PROFILE SPECIFICATIONS :

	Economy		Regular		Heavy	
	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel
Base Metal Thickness (mm)	**0.42**		**0.48**		**0.60**	
Total Coated Thickness (mm)	**0.47**		**0.53**		**0.65**	
Mass Per Unit Area (kg /m²)	4.50	4.61	5.10	5.22	6.35	6.45
Mass Per Unit Length (kg /m)	3.15	3.23	3.57	3.66	4.45	4.52
Coverage (m²/t)	222	217	196	192	158	155

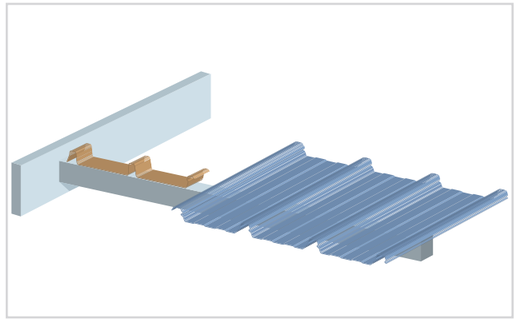
RECOMMENDED MAXIMUM SUPPORT :

Base Metal Thickness (mm)	Roofing			Walling			Maximum Cantilever (mm)
	Single Span (mm)	Internal Span (mm)	End Span (mm)	Single Span (mm)	Internal Span (mm)	End Span (mm)	
0.42	1600	2200	1700	2400	3600	3000	250
0.48	2000	2800	2300	2700	3900	3300	300
0.60	2400	3400	2900	3000	4200	3600	350

LOAD DISTRIBUTION CAPACITY OVER CONTINUOUS SPAN :

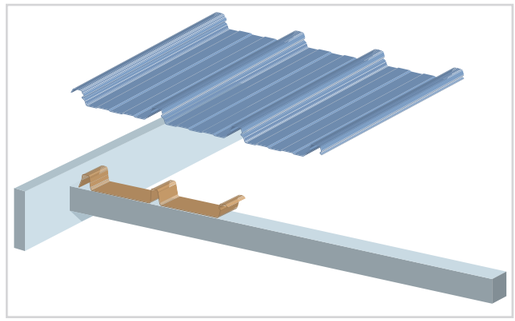
Base Metal Thickness (mm)	Span Type	Limit State	Span (mm)										
			900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900
0.42	Single	Serviceability	3.07	2.50	2.10	1.55	1.16	0.88	0.66	0.51	0.38	-	-
		Strength	4.90	4.11	3.61	2.93	2.32	1.88	1.56	1.30	1.04	-	-
	End	Serviceability	3.04	2.75	2.42	2.01	1.65	1.30	1.08	0.93	0.79	-	-
		Strength	5.56	4.28	3.37	2.78	2.57	2.42	2.21	1.84	1.53	1.17	1.02
	Internal	Serviceability	2.91	2.66	2.36	2.20	1.97	1.78	1.56	1.35	1.22	1.05	-
		Strength	5.41	4.63	3.88	3.21	2.72	2.42	2.19	2.03	1.81	1.52	1.27
0.48	Single	Serviceability	4.25	3.37	2.56	1.86	1.29	0.93	0.67	0.58	0.51	-	-
		Strength	6.31	5.22	4.23	3.38	2.75	2.20	1.81	1.62	1.44	1.39	-
	End	Serviceability	3.83	3.36	2.89	2.42	2.01	1.68	1.57	1.36	1.22	1.05	0.88
		Strength	6.32	5.12	4.17	3.57	3.20	2.92	2.52	2.21	1.82	1.43	-
	Internal	Serviceability	3.78	3.31	2.91	2.55	2.23	2.03	1.85	1.69	1.50	1.28	1.03
		Strength	6.38	5.56	4.81	4.12	3.63	3.30	2.85	2.62	2.27	1.84	1.44
0.60	Single	Serviceability	5.43	4.68	2.98	1.13	1.37	1.06	0.74	0.64	0.72	-	-
		Strength	8.88	6.43	4.38	4.02	3.95	2.99	2.31	1.90	1.70	-	-
	End	Serviceability	4.60	4.42	3.32	3.00	2.03	1.93	1.68	1.36	1.08	0.90	-
		Strength	1.54	6.20	5.21	4.69	4.02	3.38	2.81	2.42	1.87	1.62	-
	Internal	Serviceability	5.47	4.28	2.92	2.05	1.39	1.22	0.74	0.69	0.61	-	-
		Strength	7.37	6.68	5.75	5.21	4.68	4.35	3.33	3.00	2.91	2.32	-

INSTALLATION PROCESURE :



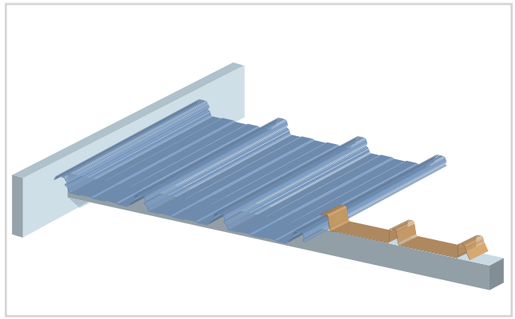
• STEP 1

The first run of clips MUST be in position and fastened, one to each support, so that they will correctly engage in the female and centre ribs of the first sheet when the sheet is located and locked over the clips. It is important that the first sheet be in correct relation to other building elements as it provides the anchor for other sheets to align with it.



• STEP 2

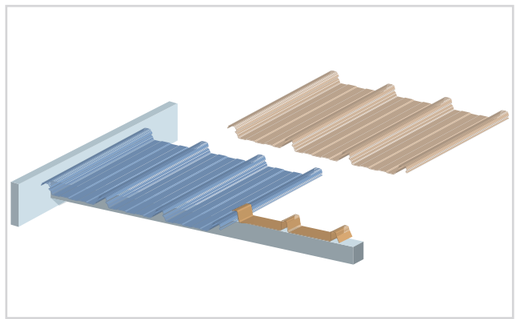
Place the first sheet longitudinally in relation to gutter overhang and position it over the fastened run of clips, taking care to locate the centre rib first, and engage the centre and female ribs onto all clips by foot pressure.



• STEP 3

Fix the next run of clips, one to each support, with the short return leg of the clip over the male rib of the installed sheet.

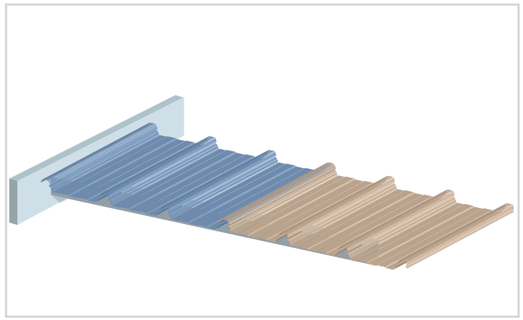
In the event that the clip fouls one the spurs spaces along the outer free edge of the male rib, simply flatten the spur with a blow from a rubber hammer mallet to allow the clip to seat down over the clip.

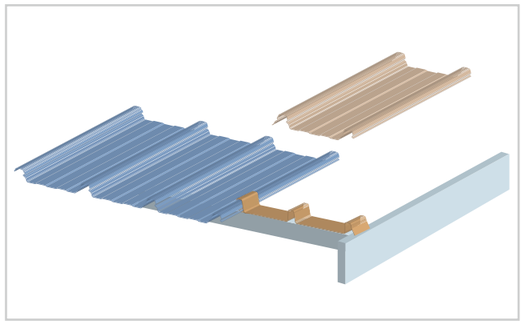


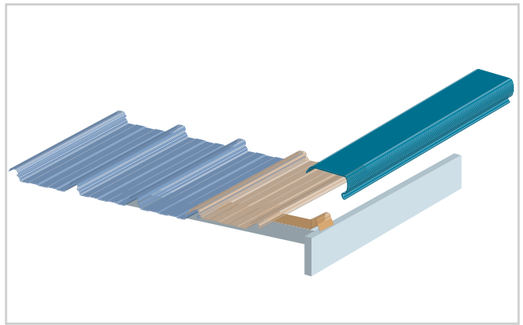
• STEP 4

Position the second sheet over the second run of clips, again locating the centre rib first. To ensure that the ends of the sheets are in line, stretch a string line across the bottom of the sheets and a correct alignment can be obtained.

The interlocking ribs and the centre rib must be fully engaged over each clip. This can be easily be done by walking along the full length of the over lapping sheet, i.e. just walk with one foot in the tray next to the over lapping female rib and the other foot applying pressure to the top of the interlocking ribs at regular interval. Also apply foot pressure to the top of the centre rib over each clip.







• STEP 5

Complete interlocking is essential, i.e. the spurs of Duro-Klip along the underlapping male ribs must be fully engaged in the shoulder of the overlapping female rib.

As the interlocking ribs fully engaged, a distinct “click” will be heard.

When engaging Duro-Klip interlocking ribs, stand only on the sheet being installed, i.e. the overlapping sheet, and not on the preceding sheet.

Install subsequent sheets by following Steps 3 and Steps 4 and make periodic checks that the installed sheets are aligned with the roof perimeter.

On walling application, use a rubber mallet to fully engage the interlocking ribs and engage the centre rib over the clips.

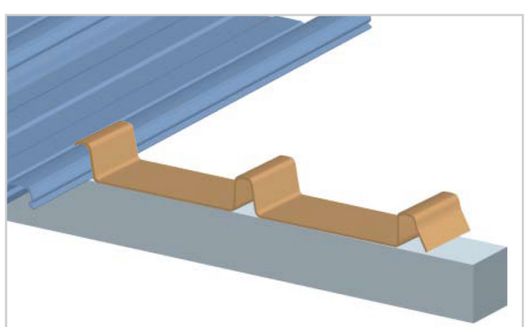
• STEP 6

If the space left between the last full sheet and the fascia or parapet is more than a half a sheet, a sheet can be cut longitudinally, leaving the centre rib complete. This partial sheet can be fully clipped onto a row of clips as if for a full sheet, before installing the capping or flashing.

• STEP 7

If the space left between the last full sheet and the fascia or parapet is less than a half sheet width, it can be covered by capping or flashing. In this case, the last sheet should be secured by cutting clips in halves and fastening the male rib at each purlin with a half clip.

FASTENING METHOD DURO CLIP :



DURO Clip has been designed for DURO-KLIP System, it requires two fasteners per clip and provides an easy, positive engagement in the ribs of the deck.

The two fasteners are inserted only through the two punched holes. Four dimples are also provided in the clip but these are for auxiliary fasteners only, to be used in the event of a fastener breaking or a timber support splitting.

The clip has a short return leg and a long return leg. The clip must be positioned with the short leg engaging over the male rib of the underlapping sheet.

PROJECT REFERENCE - 3 PANKLIP SYSTEM 700mm

JOHOR

FACTORIES AT UTM

The massive structure blends industrial functionality with modern design, showcasing uniform metallic roofing. It has a minimalistic yet imposing aesthetic.

PROJECT REFERENCE - 3 PANKLIP SYSTEM 700mm

JOHOR

3 UNIT FACTORY AT NUSAJAYA

Amid a standard industrial zone, the factories stand out as a steel fortress, its sprawling footprint dwarfing nearby buildings.

PROJECT REFERENCE - 3 PANKLIP SYSTEM 700mm

JOHOR

BANDAR CEMERLANG

Bandar Cemerlang, an integrated mixed-use development located along the Johor – Kota Tinggi Highway. The usage of DURO 3 Pan Klip System with COLORBOND® Steel exudes an aesthetic charm that enhances the overall look of the house. The roofing system's design and colour complement the architectural style, creating a harmonious and appealing visual impact.

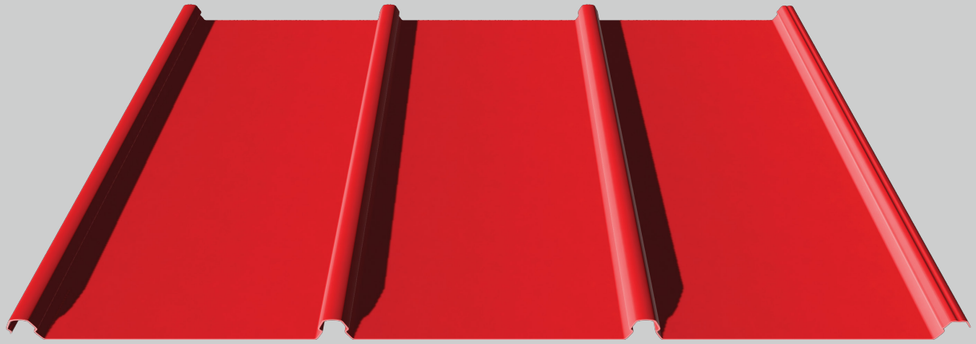
PROJECT REFERENCE - 3 PANKLIP SYSTEM 700mm

JOHOR

SALPACK

The factory looms like a metallic leviathan, a stark reminder of the cost of industrialization and the relentless march of progress.

DUROMAX

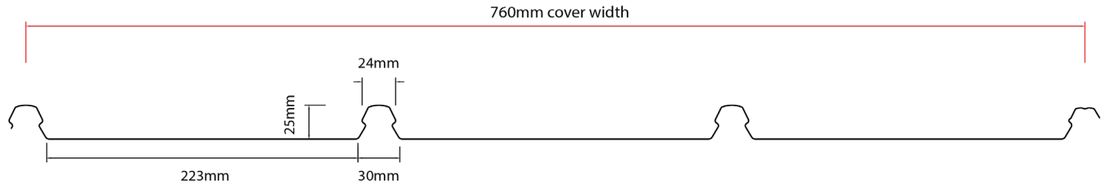


Modern and contemporary design. Using specific texture finishing material, the pan profiles a colour changing contour depending on the reflection of light. This profile also maximise the life-span of the metal roof.

- Suitable for short-span on low pitch degree.
- Conceal fastening with a proprietary Duro fixing clip.
- Excellent when used as cladding to provide a modern European design.

CONCEALED FIXING

MODERN DESIGN



LOAD TABLES (Uniformly Distributed Load Over Continuous Span Conditon) :

- Deflection limited to span / 180

Span (m)	Thickness (BST) mm	0.42 'E'	0.48 'E'	0.60 'E'
1.2	Safe Load (kg/m²)	516	588	738
	Deflection for above load (mm)	6	6	6
1.5	Safe Load (kg/m²)	328	377	472
	Deflection for above load (mm)	8	8	8
1.8	Safe Load (kg/m²)	228	260	327
	Deflection for above load (mm)	10	10	10
2.1	Safe Load (kg/m²)	166	193	238
	Deflection for above load (mm)	13	13	13
2.4	Safe Load (kg/m²)	128	145	183
	Deflection for above load (mm)	17	17	17
2.7	Safe Load (kg/m²)	98	115	143
	Deflection for above load (mm)	22	22	22
3.0	Safe Load (kg/m²)	80	91	116
	Deflection for above load (mm)	27	27	27
3.5	Safe Load (kg/m²)	57	67	83
	Deflection for above load (mm)	36	36	36

END LAPS :

End lapping is not recommended to avoid puncturing the roof. However, if it is required, kindly contact us for advise.

ROOF PITCH :

The minimum recommended roof pitch is at 3° degree.

TURN-UP EDGE :

Irrespective of roof slopes. It is compulsory to turn up the edges of the sheets at the top end. This will act as a shield to any possible back splash of water into the building.

RECOMMENDED MAXIMUM SUPPORT SPACING :

Base Metal Thickness (mm)	Roof			Wall			
	Single Span	Internal Span	End Span	Single Span	Internal Span	End Span	Maximum Cantilever (mm)
0.42	1350	1750	1500	1800	2200	2050	225
0.48	1450	1950	1600	2100	2600	2250	275
0.60	1750	2400	2050	2200	2800	2450	325

PROJECT REFERENCE - DUROMAX

JOHOR

COMMERCIAL HUB (GAYA GARDEN)

Boasting a myriad of bustling lifestyle attractions and dining spots, the Gaya Garden features an undulating barn-inspired design that flows across the 13 unit single storey retail shops with a large open event space punctured at its heart. The structure was complemented by the DUROMAX profile with Dazzling black colour, adding a durable, seamless matt touch to the iconic facility hub.

PROJECT REFERENCE - DUROMAX

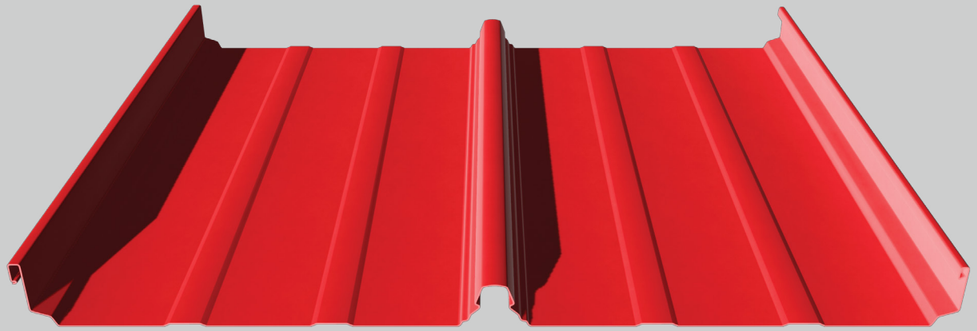
JOHOR

TAMAN SETIA ECO GARDEN

The roof features standing seam metal panels in a matte charcoal finish, with clean vertical lines emphasizing its modern aesthetic. Its streamlined design complements the house's contemporary architecture.

DOUBLEPAN KLIP

SYSTEM 735mm

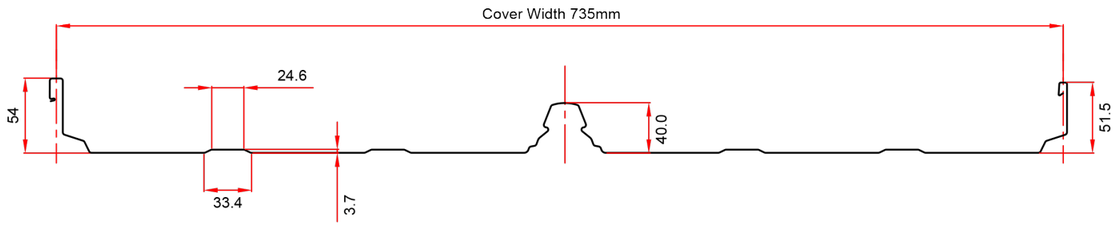


A wider double pan, with high profile rib on a klip system. This profile maximise the life-span of the metal roof.

- A wider effective cover width to reduce over-lapping.
- Conceal fastening with a proprietary Duro fixing clip.
- Suitable for long-span.

CONCEALED FIXING

LONG SPAN



LOAD TABLES (Uniformly Distributed Load Over Continuous Span Conditon) :

Base Metal Thickness (mm)	Span Type	Limit State	Distributed Load Over Continuous Span KN/M2							
			900	1200	1500	1800	2100	2400	2700	3000
0.42	Single	Serviceability	3.87	2.59	1.94	1.56	1.29	1.11	0.97	0.86
		Strength	5.37	3.60	2.70	2.16	1.79	1.54	1.34	1.19
	Internal	Serviceability	2.79	1.87	1.40	1.12	0.93	0.80	0.70	0.62
		Strength	3.85	2.58	1.93	1.55	1.28	1.10	0.96	0.86
	End	Serviceability	3.24	2.17	1.63	1.30	1.08	0.93	0.81	0.72
		Strength	4.49	3.01	2.26	1.80	1.50	1.28	1.12	1.00
0.48	Single	Serviceability	4.42	2.96	2.22	1.78	1.47	1.27	1.10	0.98
		Strength	6.14	4.11	3.09	2.47	2.05	1.76	1.53	1.36
	Internal	Serviceability	3.18	2.13	1.60	1.28	1.06	0.91	0.79	0.71
		Strength	4.41	2.95	2.22	1.77	1.47	1.27	1.10	0.98
	End	Serviceability	3.70	2.48	1.86	1.49	1.23	1.06	0.92	0.82
		Strength	5.14	3.44	2.58	2.07	1.72	1.47	1.28	1.14
0.60	Single	Serviceability	5.54	3.71	2.78	2.23	1.85	1.59	1.38	1.23
		Strength	7.70	5.16	3.87	3.10	2.57	2.21	1.92	1.71
	Internal	Serviceability	3.99	2.67	2.00	1.60	1.33	1.14	1.00	0.89
		Strength	5.53	3.71	2.78	2.22	1.85	1.59	1.38	1.23
	End	Serviceability	4.63	3.10	2.33	1.86	1.54	1.33	1.16	1.03
		Strength	6.64	4.45	3.34	2.67	2.22	1.91	1.66	1.48

ROOF PITCH :

The minimum recommended roof pitch is at 1° degree.

PROFILE SPECIFICATIONS :

	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel
Base Metal Thickness (mm)	**0.42**		**0.48**		**0.60**	
Mass Per Unit Area (kg /m²)	4.29	4.37	4.88	4.93	6.02	6.10
Mass Per Unit Length (kg /m)	3.18	3.23	3.61	3.65	4.46	4.52
Coverage (m²/t)	233	229	205	203	166	164

RECOMMENDED MAXIMUM SUPPORT SPACING :

Base Metal Thickness (mm)	Total Coated Thickness (mm)	Roofing			Walling			
		Single Span	Internal Span	End Span	Single Span	Internal Span	End Span	Maximum Cantilever (mm)
0.42	0.47	1600	2200	1700	2400	3600	3000	240
0.48	0.53	2000	2800	2300	2700	3900	3300	300
0.60	0.65	2400	3400	2900	3000	4200	3600	350

PROJECT REFERENCE - DOUBLE PANKLIP SYSTEM 735mm

JOHOR

EVERGREEN

The factory features a vibrant green Double Pan Klip roof profile that offers a smooth, streamlined, and eco-friendly aesthetic, blending seamlessly with surrounding landscapes while standing out in industrial zones.

PROJECT REFERENCE - DOUBLE PANKLIP SYSTEM 735mm

KULIM

CELESTICA

The envelope of the roof is designed to mimic its structure for a sense of singularity with its matching shiny silver colour.

PROJECT REFERENCE - DOUBLE PANKLIP SYSTEM 735mm

JOHOR

YE CHIU

The roofing design incorporates a mix of polycarbonate and metal, allowing the harnessing of natural lighting.

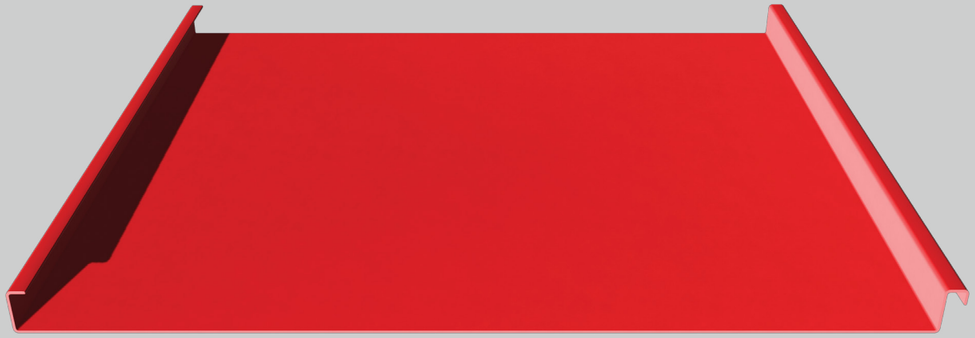
PROJECT REFERENCE - DOUBLE PANKLIP SYSTEM 735mm

JOHOR

EQUALBASE VALDOR

The sharp angles and gleaming surface of the building symbolize progress and innovation, a stark contrast to the more organic forms of the natural surroundings.

DUROSEAM

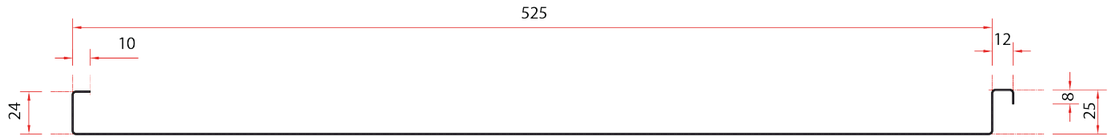


Exception performance without compromise. This standing seam system allows for various customisation to adhere to specific roofing requirements and acoustic + thermal performance.

- Low and slim seam heights.
- Highly customisable roofing design (eg. Parabolic).
- Fully weatherproof system due to watertight joints.
- No exposed fixings
- Excellent when used as cladding to provide a modern European design

SEAM LOW-PROFILE

HIGHLY CUSTOMISABLE



STANDARD SPECIFICATIONS :

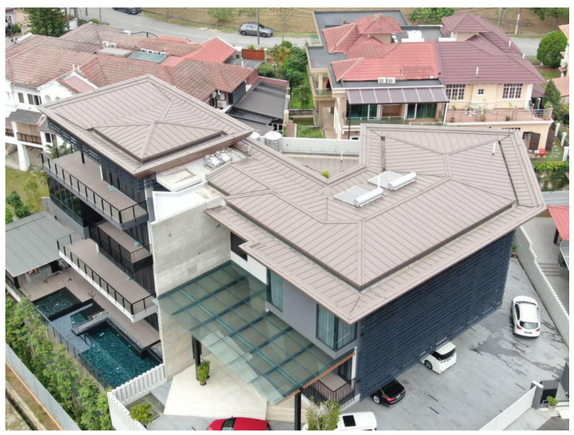
Base Metal	Aluminium	Zincalume
Base Metal Thickness	0.7 mm	0.48 mm / 0.55 mm
Rib Height	25 mm	25 mm
Pan Width	525 mm	525 mm
Finish	PVDF Coating	Clear Colorbond Coating
Seam	Double Standing Seam Angular Standing Seam	Double Standing Seam Angular Standing Seam
Clips	Stainless Steel Clip @ 600mm c/c	Stainless Steel Clip @ 600mm c/c

PROJECT REFERENCE - DUROSEAM

SELANGOR

BANGLO AT RAHMAN PUTRA

The bungalow located in Bukit Rahman Putra gestures a unique blend of structure orientation and roof design that adds an appealing complexity to its façade. The envelope of the roof is designed to mimic its structure for a sense of singularity with its matching Bronzite Brown colour and earthy design.



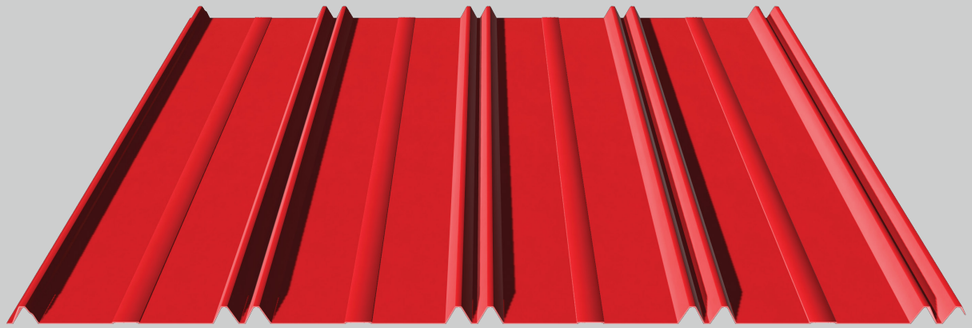
PROJECT REFERENCE - DUROSEAM

MELAKA

THE SAIL SALES GALERY

The sales gallery gleams with an opulent golden facade, its metallic surface catching the sunlight and casting a warm, inviting glow. The sleek, reflective panels evoke a sense of prestige and sophistication, creating an aura of exclusivity for visitors.

V CLAD 750

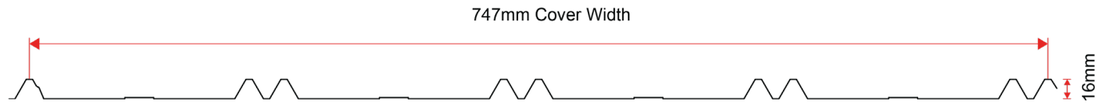


Versatile and flexible – a profile that can be installed both vertically and horizontally as cladding. Some creative designer also used this profile as an under ceiling application.

- Profile can be reverse roll-formed.
- Easy installation.
- Screw-down metal with exposed fastener.

VERSATILE

FLEXIBLE



PROFILE SPECIFICATIONS :

	Regular		Light	
	Bare Finish	Pre- Painted Steel	Bare Finish	Pre- Painted Steel
Base Metal Thickness (mm)	**0.42**		**0.35**	
Total Coated Thickness (mm)	**0.47**		**0.40**	
Mass Per Unit Area (kg /m²)	4.07	4.14	3.43	3.60
Mass Per Unit Length (kg /m)	3.26	3.32	2.74	2.80
Coverage (m²/t)	245	241	292	286
Maximum Span (mm)	1500	1500	1400	1400

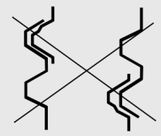
LENGHTS :

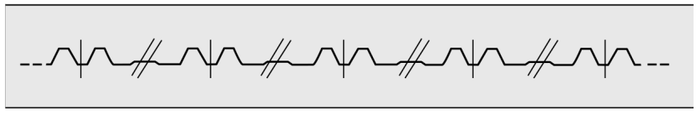
V-CLAD 750 is available from distributors in lengths up to 12 meters custom cut to your length requirements. Lengths longer than 12 meters can be supplied, provided satisfactory transport and on-site handling can be arranged. Please enquire about lengths under 1500mm. Accessory trims are available in stock lengths of 2440mm.

TOLERANCES :

Length : +0, - 15mm
Cover Width : +4mm, -4mm

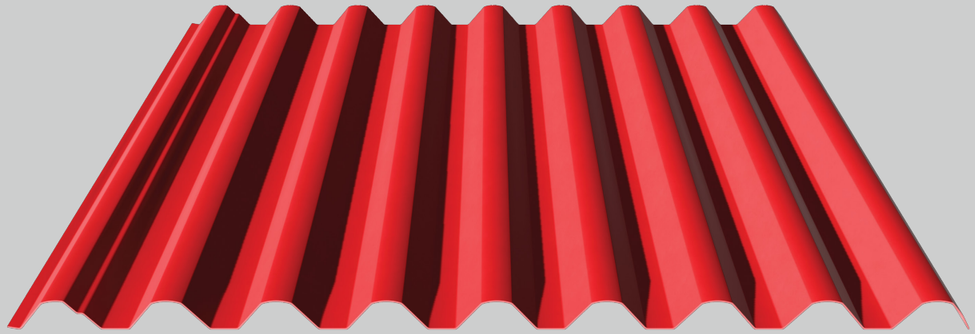
SHEET LAYING :

	RIGHT	WRONG
Vertical Walling	Weatherside 	
Horizontal Walling	Weatherside 	



Maha Tower Langkawi

DUROSPAN

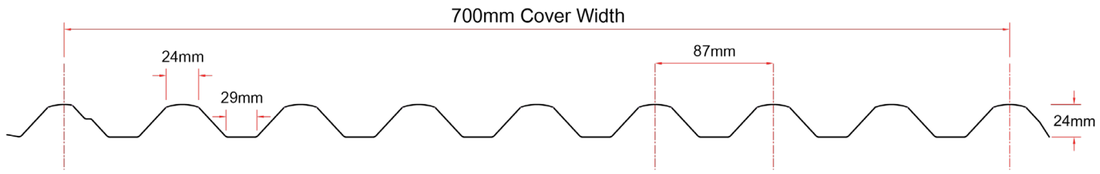


Tough, Symmetrical and Trapezoidal ribbed roll-formed roofing and wall cladding profile. Also commonly used as under-liner for double roof system design.

- Solid and durable design.
- In walling / fencing, the Trapezoidal ribs can be run vertically or horizontally.
- Easy to install.
- Screw-down metal with exposed fastener.

SOLID & DURABLE

EASY INSTALLATION



PROFILE SPECIFICATIONS :

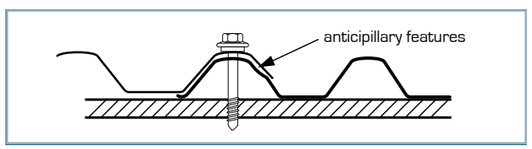
	Light						Heavy			
	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel
Base Metal Thickness (mm)	**0.25**		**0.30**		**0.35**		**0.42**		**0.48**	
Total Coated Thickness (mm)	**0.30**		**0.35**		**0.40**		**0.47**		**0.53**	
Mass Per Unit Area (kg /m²)	2.86	2.94	3.39	3.47	3.92	4.00	4.66	4.74	5.29	5.37
Mass Per Unit Length (kg /m)	2.00	2.06	2.37	2.43	2.74	2.80	3.26	3.32	3.70	3.76
Coverage (m²/t)	350	340	295	288	255	250	215	211	189	186

RECOMMENDED MAXIMUM SUPPORT SPACING :

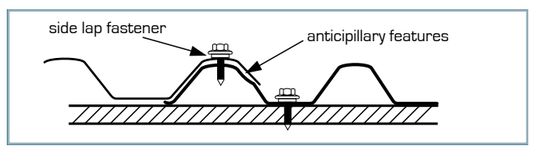
Base Metal Thickness (mm)	**Roofing**				**Walling**			
	Single Span (mm)	End Span (mm)	Internal Span (mm)	Overhang (mm)	Single Span (mm)	End Span (mm)	Internal Span (mm)	Overhang (mm)
0.25	700	950	1300	150	1000	1150	1600	150
0.30	850	1100	1600	200	1250	1400	1900	200
0.35	1000	1300	1900	250	1500	1650	2250	250
0.42	1200	1600	2300	300	1800	2000	2700	300
0.48	1800	2050	2900	400	2300	2600	3000	400

FASTENING AND SUPPORTS :

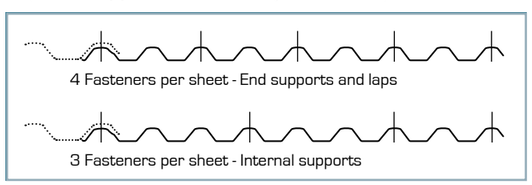
- **Crest Fixing To Steel For Roofing And Walling**



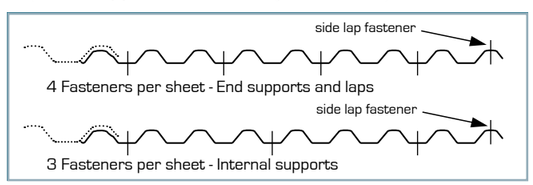
- **Valley Fixing To Steel For Walling Only**



- **Crest Fastener Location**
(Normal applications in non-cyclonic areas)



- **Valley Fastener Location**
(Normal applications in non-cyclonic areas)

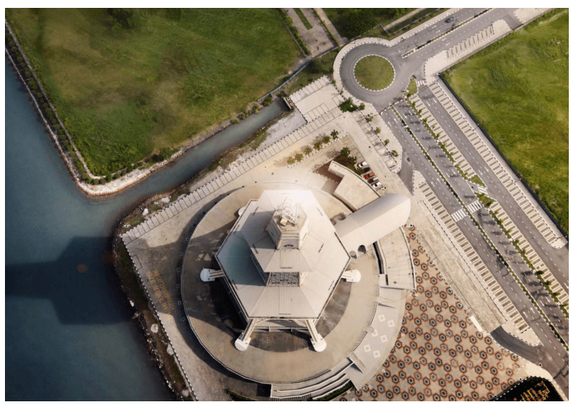


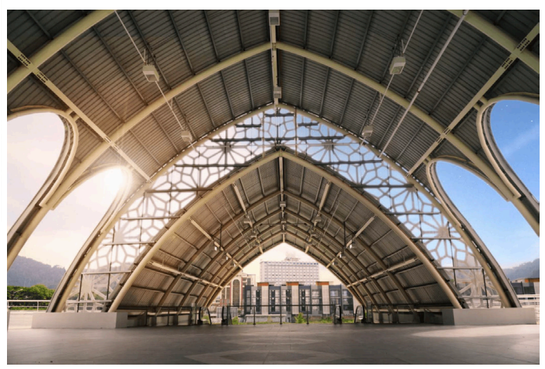
PROJECT REFERENCE - DUROSPAN

LANGKAWI

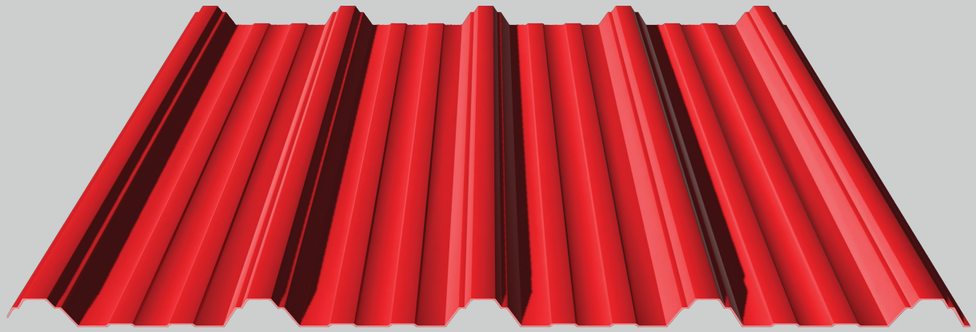
MAHA TOWER

The tower rises to an impressive height of 138 meters, featuring a sleek and tapered silhouette that dominates the skyline of Kuah, Langkawi. Its elegant lines and unique geometric design make it a standout landmark.





ECODEK

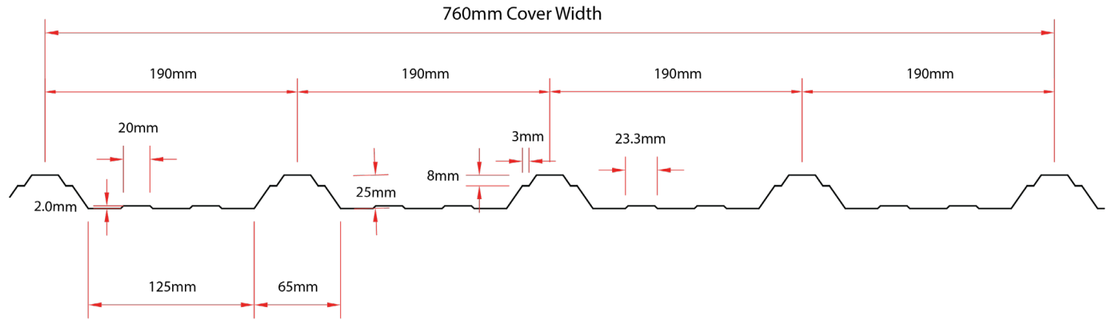


Superior light weight roll-formed roofing and wall cladding profile to meet all basic designing needs.

- Economical.
- Common profile design, easily replaced.
- Profile can be crimp to curve.
- Easy to install.
- Screw-down metal with exposed fastener.

EASILY REPLACED

ECONOMICAL



PROFILE SPECIFICATIONS :

	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel	Bare Finish	Pre-Painted Steel
Base Metal Thickness (mm)	**0.20**		**0.25**		**0.30**		**0.35**		**0.42**	
Total Coated Thickness (mm)	**0.25**		**0.30**		**0.35**		**0.40**		**0.47**	
Mass Per Unit Area (kg /m²)	2.09	2.16	2.56	2.63	3.04	3.11	3.51	3.58	4.17	4.24
Mass Per Unit Length (kg /m)	1.59	1.64	1.95	2.00	2.31	2.36	2.67	2.72	3.17	3.22
Coverage (m²/t)	478	462	390	379	329	322	285	279	240	236

LENGHTS :

All products are available from lengths up to 21 metres custom-cut to your length requirements. Lengths longer than 21 metres can be supplied, provided satisfactory transport and on-site handling can be arranged.

TOLERANCES :

Length : +0, - 15mm
Cover Width : +4mm, -4mm

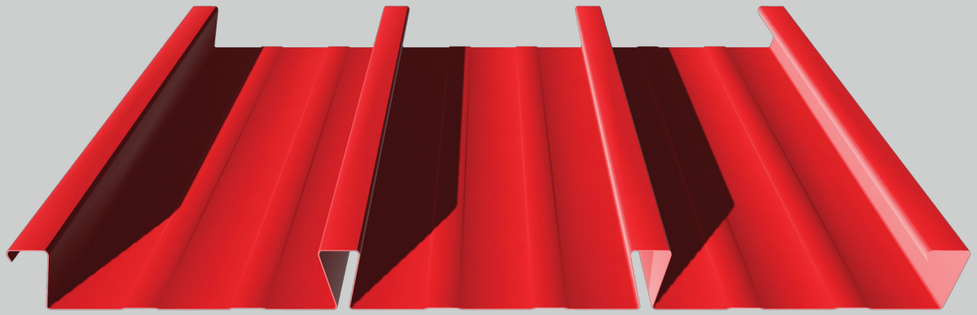
PACKING :

Sheets are packed in strapped bundles of one tonne maximum mass.

MINIMUM ROOF SLOPE :

The normal recommended minimum roof slope is 1 in 20 (approximately 30) However, in non-cyclonic areas where roofs are in single sheet lengths, with a run of less than 15 metres, a minimum roof slope of 1 in 30 (approximately 20) may be used. For recommended slope of roofs in cyclonic areas, please consult our Duro Distributor's office.

DURODEK

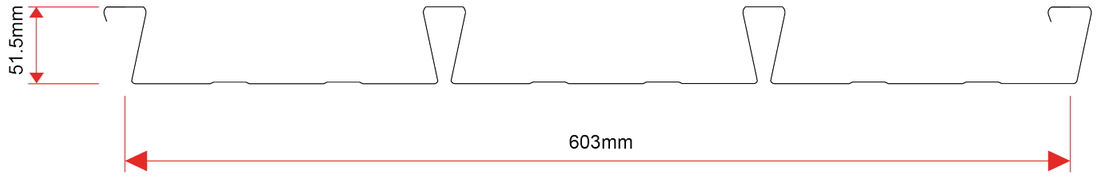


A permanent floor decking as an alternative to contemporary wood form work. By minimised the used of propping requirements, Durodek helps to speed the construction speed especially in a multi-storey building..

- Quick and easy construction.
- Rigid and strong design helps to stiffen supporting frame in tall building.
- Fire resistance with exposed soffit for up to two hours.
- Safe working platform.
- Can be used on steelwork, concrete, blockwork and masonry structures.

EASY CONSTRUCTION

RIGID & STRONG



TEMPORARY PROPPING :

Slab Thickness (mm) D_s	Maximum Span Between Props (m)									
	0.6mm Section		0.75mm Section		0.9mm Section		1.0mm Section		1.2mm Section	
	Single Span	≥2 Spans	Single Span	≥2 Spans	Single Span	≥2 Spans	Single Span	≥2 Spans	Single Span	≥2 Spans
100	2.38	2.83	2.67	3.17	2.87	3.40	3.00	3.55	3.20	3.79
105	2.35	2.79	2.64	3.13	2.83	3.36	2.96	3.51	3.16	3.74
110	2.32	2.75	2.60	3.08	2.79	3.31	2.92	3.46	3.12	3.70
115	2.29	2.72	2.57	3.04	2.76	3.27	2.88	3.42	3.08	3.65
120	2.26	2.68	2.53	3.00	2.73	3.23	2.85	3.38	3.04	3.61
125	2.24	2.65	2.50	2.97	2.69	3.19	2.82	3.34	3.01	3.56
130	2.21	2.62	2.48	2.93	2.66	3.16	2.78	3.30	2.97	3.52
135	2.19	2.59	2.45	2.90	2.63	3.12	2.75	3.26	2.94	3.48
140	2.16	2.56	2.42	2.87	2.61	3.09	2.73	3.23	2.91	3.45
150	2.12	2.51	2.37	2.81	2.55	3.03	2.67	3.26	2.85	3.38
160	2.07	2.46	2.33	2.76	2.51	2.97	2.62	3.10	2.80	3.32
170	2.04	2.42	2.28	2.71	2.46	2.92	2.57	3.05	2.75	3.25
180	2.00	2.37	2.24	2.66	2.42	2.87	2.53	2.99	2.70	3.20
190	1.97	2.33	2.21	2.61	2.38	2.82	2.48	2.95	2.65	3.15
200	1.94	2.30	2.17	2.58	2.34	2.78	2.45	2.90	2.61	3.10

SECTION PROPERTIES :

Base Metal Thickness	Nominal Properties				Web Crushing	Web Shear	Bending Strength	
	Self Weight		Area	I	P_w*	P_y	- M_c	+ M_c
mm	kg / m²	kN / m²	mm²	x 10^6mm⁴	kN / m	kN / m	kN / m	kNm / m
0.60	8.02	0.08	1022	0.472	12.8	44.0	4.13	13.51
0.75	10.03	0.10	1277	0.589	18.9	78.8	5.40	18.07
0.90	12.03	0.12	1533	0.704	26.0	113.5	6.98	21.96
1.00	13.37	0.13	1703	0.781	31.2	140.1	8.10	24.47
1.20	16.04	0.16	2044	0.934	35.5	135.4	8.05	20.08

I -- Second moment of inertia of panel profile (mm⁴/m)
P_w -- Crushing strength of the web (kN/m)
P_y -- Shear capacity of a web (kN/m)
- M_c -- Moment capacity of the section, bending with tension at top (kNm/m)
+ M_c -- Moment capacity of the section, tension at bottom (kNm/m)

Notes:

- Properties calculated in accordance with BS 5950 : Part 6 : 1995
- Design strength P_y = 512 MPa for thickness up to 1mm, 350 MPa for 1.2mm
- *Web crushing strength is based on support width of 50mm
- *Web crushing strength is for an external support, Double the value for an internal support.
- Table verified by BRANZ

PRODUCT BENEFITS :

- Permanent Formwork
- Tensile reinforcement in lieu of positive reinforcement
- Composite construction with composite beam design to reduce steel frame weight
- Lower dead load that reduces frame and foundation loading
- Fire resistance with exposed soffit for up to two hours
- Quick and easy construction with no specialized skills needed
- Safe working platform
- Minimal propping requirements
- High structural efficiency due to high strength steel
- Stiffens supporting frame in tall steel buildings
- Design Flexibility
- On-site shear studs welding through-deck for composite action
- Can be used on steelwork, concrete, blockwork, and masonry structures
- Installation of suspended ceiling and service fittings

APPLICATIONS :

- Suitable for most ceiling finishes including painting and plaster

AVAILABLE LENGTHS :

DURODEK™ profiled sheeting are cut at standard lengths from 600mm up to 12000mm. Custom-cut lengths greater than 12000mm are also available but special freight and handling facilities will be required. Where handling weights permit, DURODEK™ should be used in lengths that cover multiple spans.

CORROSION PROTECTION :

For durability and resistance, DURODEK™ profiled steel sheeting is packaged in strapped bundles that should be stacked neatly off the ground at a slight slope to allow

MATERIAL SPECIFICATIONS :

- Base steel thickness : 0.60mm, 0.75mm, 0.90mm, 1.00mm, 1.20mm
- Steel grade : ASTM A448 Grade E
BS EN 10147 or BS 2989
AS 1397
- Yield stress : Minimum 550 Mpa
- Zinc Coating : 275g/m² minimum coating mass (both sides)
- Mechanical property : Min Y/P 550 MPa
Min T/S 610 MPa
Min E/L 10%

***Notes:** For 1.2mm, ASTM A446 Grade D, minimum 350 Mpa

INSULATION THICKNESS :

D_s OF UNPROTECTED DURODEK™ SLAB

FOR VARIOUS FIRE-RESISTANCE PERIODS INSULATION THICKNESS :

Fire Resistance Period	D_s from BS 5950 : Part 8
60 minutes	90 mm
90 minutes	110 mm
120 minutes	125 mm
180 minutes	150 mm
240 minutes	170 mm

LOAD-SPAN TABLE – WITHOUT BOTTOM REINFORCEMENT FIRE-RATED :

Imposed Load	Slab Depth	Span (m) for Fire Rating Period and Reinforcing Mesh as Indicated Below								
		1.0 Hour			1.5 Hours			2.0 Hours		
kN / m²	mm	A6	A7	A8	A6	A7	A8	A6	A7	A8
2.5	100	4.30	4.77	5.23	3.93	4.34	4.74	X	X	X
	110	4.33	4.84	5.35	4.09	4.57	5.03	X	X	X
	120	4.36	4.88	5.41	4.15	4.67	5.18	3.93	4.40	4.87
	125	4.37	4.90	5.43	4.17	4.69	5.22	3.98	4.48	4.96
	130	4.38	4.92	5.46	4.18	4.72	5.25	4.03	4.54	5.04
	150	4.41	4.98	5.54	4.24	4.80	5.35	4.10	4.65	5.20
	170	-	5.03	5.61	-	4.86	5.44	-	4.73	5.30
	200	-	5.09	5.70	-	4.94	5.55	-	4.83	5.43
5.0	100	3.56	3.95	4.34	3.26	3.60	3.93	X	X	X
	110	3.62	4.05	4.47	3.42	3.82	4.21	X	X	X
	120	3.67	4.11	4.55	3.50	3.93	4.37	3.31	3.71	4.11
	125	3.69	4.14	4.59	3.52	3.97	4.41	3.36	3.78	4.19
	130	3.71	4.17	4.63	3.55	4.00	4.45	3.42	3.85	4.28
	150	3.79	4.27	4.76	3.64	4.12	4.59	3.52	3.99	4.46
	170	-	4.36	4.87	-	4.22	4.72	-	4.11	4.60
	200	-	4.47	5.01	-	4.34	4.87	-	4.25	4.77
7.5	100	3.11	3.45	3.79	2.84	3.14	3.43	X	X	X
	110	3.18	3.55	3.92	3.00	3.35	3.69	X	X	X
	120	3.23	3.62	4.01	3.08	3.46	3.84	2.91	3.27	3.61
	125	3.26	3.65	4.05	3.11	3.50	3.89	2.97	3.34	3.70
	130	3.28	3.68	4.09	3.14	3.53	3.93	3.02	3.40	3.78
	150	3.37	3.80	4.23	3.24	3.66	4.09	3.14	3.55	3.97
	170	-	3.90	4.36	-	3.78	4.22	-	3.68	4.12
	200	-	4.04	4.52	-	3.92	4.40	-	3.83	4.30

Imposed Load	Slab Depth	Span (m) for Fire Rating Period and Reinforcing Mesh as Indicated Below								
		1.0 Hour			1.5 Hours			2.0 Hours		
kN / m²	mm	A6	A7	A8	A6	A7	A8	A6	A7	A8
10.0	100	2.79	3.10	3.40	2.56	2.83	3.09	X	X	X
	110	2.86	3.20	3.53	2.78	3.02	3.32	X	X	X
	120	2.92	3.27	3.62	2.78	3.13	3.47	2.63	2.95	3.26
	125	2.95	3.30	3.66	2.81	3.16	3.52	2.68	3.02	3.35
	130	2.97	3.34	3.70	2.84	3.20	3.56	2.73	3.08	3.42
	150	3.07	3.46	3.85	2.95	3.33	3.72	2.85	3.23	3.61
	170	-	3.57	3.98	-	3.45	3.86	-	3.36	3.76
	200	-	3.71	4.15	-	3.60	4.04	-	3.52	3.95
15.0	100	2.37	2.63	2.89	2.17	2.40	2.62	X	X	X
	110	2.44	2.73	3.01	2.30	2.57	2.83	X	X	X
	120	2.50	2.80	3.10	2.38	2.67	2.97	2.25	2.52	2.79
	125	2.52	2.83	3.14	2.41	2.71	3.01	2.30	2.58	2.86
	130	2.55	2.86	3.18	2.44	2.74	3.05	2.34	2.64	2.93
	150	2.64	2.98	3.32	2.54	2.87	3.21	2.46	2.79	3.12
	170	-	3.09	3.45	-	2.99	3.34	-	2.91	3.26
	200	-	3.24	3.62	-	3.14	3.53	-	3.07	3.45

Notes:

- "x" indicates this slab depth is insufficient for the stated fire resistance.
- "-" indicates this mesh is insufficient for the stated slab thickness.
- Mesh top cover 25mm at supports. Allow to sag 15mm mid span, yield strength 485 MPa.
- Concrete strength minimum 25MPa
- Minimum decking thickness 0.75mm - Yield strength 550 MPa. Or 1.2mm thickness - Yield strength 350 MPa.
- Maximum period of fire resistance - 2 hours
- Slabs require full continuity at supports. Designer must ensure this is provided at end spans.

Remarks:

- Table is verified and derived by BRANZ in accordance to British Standards
- References are made to BRANDZ Report FR2507, 98/1314, SC1073.

General Installation:

1. Hoisting of decks to required floor level.
2. Opening up of bundles, preparing for laying of decks.
3. Cutting of decks to suit its length.
4. After cleaning beam surface and markings completed, decks are laid side by side.
5. Following installation instructions and procedures, firing pins or puddle welding is performed to join decks to beams.
6. Edge form is fixed to prevent concrete grout from failing off.
7. Weld through composite beam shear studs are fixed with welding gun.
8. Reinforcements are placed over after installations of deckings are completed.
9. Clearing the floor ready for concreting.

PROJECT REFERENCE - DURODEK

SELANGOR

ONE UTAMA SHOPPING COMPLEX

The exterior of One Utama Shopping Mall reflects its position as a modern and expansive retail destination while blending functionality with aesthetic appeal. The mall offers a vibrant and cosmopolitan vibe, catering to a diverse crowd that includes locals, expatriates, and tourists. With its mix of retail, dining, and entertainment options, One Utama provides a comprehensive lifestyle experience.

PROJECT REFERENCE - DURODEK

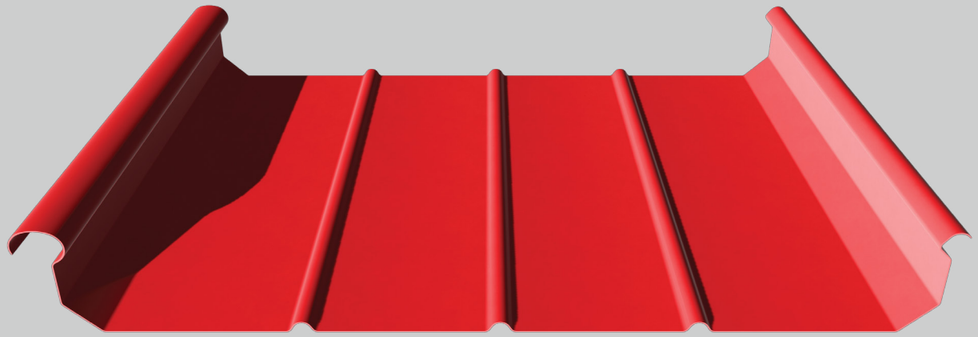
SELANGOR

IKANO POWER CENTRE

Ikano Power Centre embraces Box-Like Modern Architecture. The structure is straightforward, with clean geometric lines. It emphasizes practicality and efficient use of space over ornate design elements. IPC is physically connected to IKEA Damansara, forming a seamless flow between the two buildings. This integration is a key feature of its structure.

Penang International Airport

DUROZIP

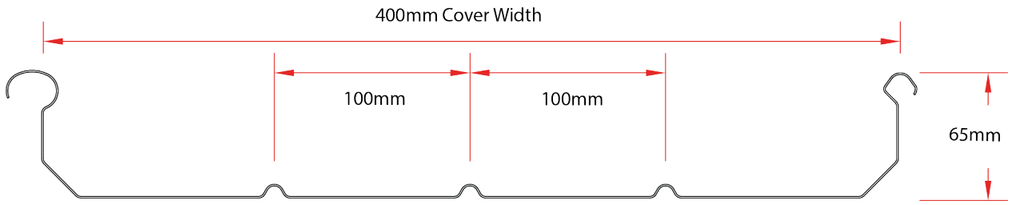


A flexible multi-component roof system based on a light weight metal. This system allows for various customisation to adhere to specific roofing requirements and acoustic + thermal performance.

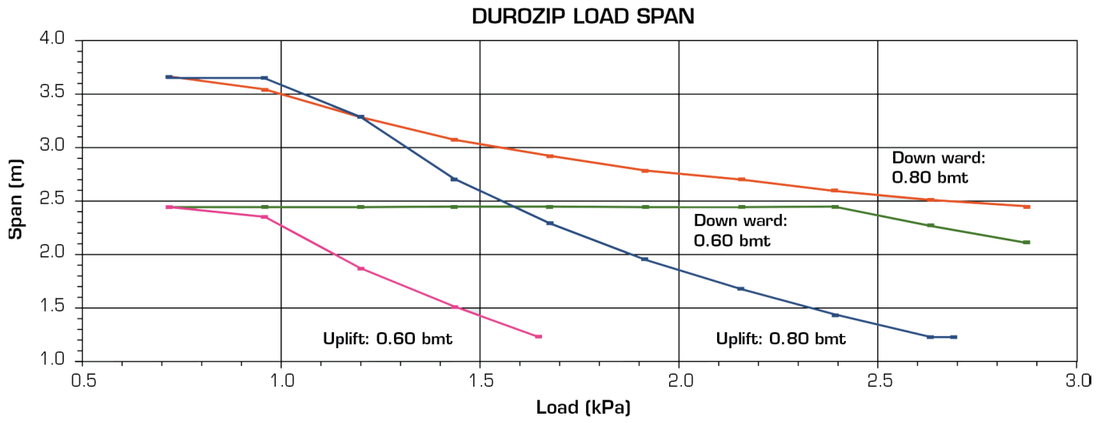
- Highest ribbed height with a wide pan.
- Highly suitable for long length.
- Can be naturally curve to architectural design requirements.
- Fully weatherproof system due to watertight joints.
- No exposed fixings.

WEATHER-PROOF

LIGHT WEIGHT METAL



TECHNICAL GRAPH :



TECHNICAL FACTOR (Please Multiply By The Factor Below For The Following Cases) :

Bare Aluminum	1.04	2-Span Down Load	1.07
Wind Load on Walls	1.33	2-Span Uplift	0.88
Cantilever	0.50	Clip Capacity	1.5 kN

PROFILE SPECIFICATION :

Material	Base Metal Thickness (mm)	Technical Specification on Safety (kN/m2) (i<L/200)							
		1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
Steel	0.48	1.82	1.58	1.44	1.34	1.23	1.13	1.10	1.05
	0.53	2.00	1.75	1.59	1.48	1.36	1.24	1.17	1.14
	0.60	2.27	1.97	1.80	1.67	1.54	1.42	1.33	1.29
Aluminium	0.90	2.35	2.05	1.85	1.65	1.55	1.50	1.45	1.40
	1.20	3.14	2.74	2.47	2.20	2.07	2.00	1.94	1.86

PHYSICAL PROPERTIES :

Steel		Aluminium	
Thickness (mm)	Weight (kg/m²)	Thickness (mm)	Weight (kg/m²)
0.48	5.72	0.90	3.72
0.55	6.52	1.20	4.97
0.60	7.09	-	

PROJECT REFERENCE - DUROZIP

PENANG

PENANG INTERNATIONAL AIRPORT

The undulating pattern of the Durozip roof creates a sense of dynamism and mimics the flow of waves, resonating with Penang's identity as an island state.

PROJECT REFERENCE - DUROZIP

SELANGOR

ALPHA GALAXY LOGISTICS HUB

The exterior of Alpha Galaxy Logistics Hub features a combination of Armour and Gull grey hues, giving it a contemporary and professional appearance.

Practical Advise on Using Steel Products / General Information

DELIVERY :

- Always check the material upon delivery. Check for damages and check material quantities against the delivery order. Note down any damages or shortages at the time of delivery.

HANDLING :

- Lift the sheet bundles with crane directly from the delivery truck onto the roof frame for large building projects.
- For small to medium size projects without mechanical handling facilities, sheets can be unloaded by hand and passed up to the roof at a time.
- For personal safety and to preserve the surface finish, sheets should be handled wearing clean dry gloves.
- Do not slide sheets over rough surfaces or over each other and do not drag tools or any other materials over sheets.

CARE AND STORAGE PRIOR TO INSTALLATION :

- Material should be stored dry at all times, therefore cover stack with a tarp and stack sheets or bundles clear of the ground to avoid material getting wet.
- Should material get wet, unpack wet sheets to allow drying. Use a clean cloth to remove surface moisture, and stack in such a way that air circulation completes the drying process.
- Wet storage stain can occur from condensation alone - even in dry weather. Keep product dry.

WALKING ON THE ROOF :

- Clean soft-soled shoes should be worn.
- Keep weight evenly distributed over the soles of the feet, as new sheets may be slippery.
- Walk on purlin lines whenever possible.
- Comply with relevant “walking at heights” legislation.

BENDING :

- Bending of Clean COLORBOND® steel and ZINCALUME® steel should preferably be done without the use of a lubricant as they soften the paint film
- Bend radii should be within recommendations of the product data sheet.

CUTTING SHEETS ON SITE :

- Cutting should not be carried out on top of other roof sheets. Cut metals over ground and not over other materials.
- Use metal blades rather than carborundum discs / angle grinders as they produce fewer damaging hot metal particles, leaving fewer burrs on the cut sheet.
- Care should be taken to ensure hot swarf does not come into contact with nearby Clean COLORBOND® steel and ZINCALUME® steel sheets as they will cause rust staining.

CLEANING UP :

- Ensure that metallic particles and all other debris are swept off immediately at the end of each day’s work and particularly on completion of roof installation.

GENERAL COMPATIBILITY NOTES :

- LEAD and COPPER are incompatible with both Clean COLORBOND® steel and ZINCALUME® steel. Always use coated steel purlins and girts to avoid any Clean COLORBOND® steel and ZINCALUME® steel contact with bare steel or treated timber.

APPENDIX

CIDB HOLDINGS

PRODUCT CERTIFICATE OF CONFORMITY

This certificate has been approved and issued to the importer in compliance with the CIDBH Product Certification **Scheme (Type 5 - Product Certification Scheme System, ISO/IEC 17067:2013)** for importation of construction products/materials.

Name and Address of Certificate holder

DURO METAL INDUSTRIAL (M) SDN BHD
LOT 717, MUKIM KAPAR,
5 1/2 MILES, JALAN KAPAR,
42100 KLANG, SELANGOR

It is hereby certified that the product as detailed in this certificate has satisfactorily complied with the requirements of the appropriate Product Standard(s).

Particulars of Product

Product Name : SELF-SUPPORTING STEEL ROOFING		Product Standards : MS 2500:2020
Product Description : REFER TO 'ANNEX 1 & 2'		
Brand Name : DURO METAL INDUSTRIAL		
Name and Address of Manufacturer : DURO METAL INDUSTRIAL (M) SDN BHD LOT 717, MUKIM KAPAR, 5 1/2 MILES, JALAN KAPAR, 42100 KLANG, SELANGOR		
Date of Original Issue : 24th DECEMBER 2020	Date of Renewal / Modification : 29th MARCH 2024	Expiry Date : 23rd DECEMBER 2024
Certification Number : CIDBH 04015		Serial Number : 244-025

The **Certificate Holder shall** use this certificate **and the CIDBH Holdings Certification Mark in accordance** to the terms and conditions of the CIDBH Product Certification Agreement.

Certificate Issued by

CIDB HOLDINGS SDN BHD
Level 22, Menara Dato' Onn, Putra World Trade Centre,
No. 45, Jalan Tun Ismail, 50480 Kuala Lumpur
● Tel: +603-4042 8880 ● Fax: +603-4042 2880

SUPIAN MUSA
Chief Executive Officer

PRODUCT CERTIFICATION SCHEME
CIDB HOLDINGS
CIDB Holdings Certification Mark

IQNET

Building trust together.

Certificate

SIRIM QAS International has issued an IQNET recognized certificate that the organization:

DURO METAL INDUSTRIAL (M) SDN. BHD.
Lot 717, Mukim Kapar
Batu 5 1/2, Jalan Kapar
42100 Klang
Selangor Darul Ehsan
Malaysia

has implemented and maintains a
Quality Management Systems

for the following scope:
Roll forming of steel coils into metal roofing, wall cladding, purlins and steel floor decking.

which fulfils the requirements of the following standard :

ISO 9001:2015

Issued on: **07 July 2023**
First issued on: **21 April 2017**
Expires on: **20 April 2026**

Registration Number: **MY — QMS 03122**

Alex Stoichitoiu
President of IQNET

Nur Fadhilah Muhammad
Chief Executive Officer of
SIRIM QAS International Sdn. Bhd.

This attestation is directly linked to the IQNET Member's original certificate and shall not be used as a stand-alone document.

IQNet Members':
AENOR Spain **AFNOR Certification** France **APCER** Portugal **CCC** Cyprus **CISQ** Italy **CQC** China **CQM** China **CQS** Czech Republic **Cro Cert** Croatia **DQS Holding GmbH** Germany **EAGLE Certification Group** USA **FCAV** Brazil **FONDONORMA** Venezuela **ICONTEC** Colombia **ICS** Bosnia and Herzegovina **Inspecta Sertifiointi Oy** Finland **INTECO** Costa Rica **IRAM** Argentina **JQA** Japan **KFQ** Korea **LSQA** Uruguay **MIRTEC** Greece **MSZT** Hungary **Nemko AS** Norway **NSAI** Ireland **NYCE-SIGE** Mexico **PCBC** Poland **Quality Austria** Austria **SII** Israel **SIQ** Slovenia **SIRIM QAS International** Malaysia **SQS** Switzerland **SRAC** Romania **TSE** Turkey **YUQS** Serbia

The list of IQNET Members is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

SIRIM QAS INTERNATIONAL

CERTIFICATE

QUALITY SYSTEM
SIRIM

IAF
STANDARDS MALAYSIA
ACB QMS 01

UKAS
MANAGEMENT SYSTEMS
0074

IQNET

SIRIM QAS International hereby certifies that

DURO METAL INDUSTRIAL (M) SDN. BHD.
LOT 717, MUKIM KAPAR
BATU 5 1/2, JALAN KAPAR
42100 KLANG
SELANGOR DARUL EHSAN
MALAYSIA

has implemented a Quality Management System complying with

ISO 9001 : 2015
QUALITY MANAGEMENT SYSTEMS – Requirements

Scope of Certification

ROLL FORMING OF STEEL COILS INTO METAL ROOFING, WALL CLADDING, PURLINS AND STEEL FLOOR DECKING.

Issue date	:	**07 July 2023**
Original certification date	:	**21 April 2017**
Expiry date	:	**20 April 2026**
Certificate no.	:	**QMS 03122**

Nur Fadhilah binti Muhammad
Chief Executive Officer
SIRIM QAS International Sdn. Bhd.

This certificate is granted subject to the terms and conditions as stated in the Certification Agreement.

SIRIM QAS INTERNATIONAL SDN. BHD.
(Co. No. 410334 - x)
1, Persiaran Dato' Menteri
Section 2, P.O. Box 7035
40704 Shah Alam
Selangor Darul Ehsan
MALAYSIA.
Tel : 06-3-55464604
Fax : 06-3-55446787
http://www.sirim-qas.com.my
http://www.malaysiancertified.com.my

BlueScope | Colorbond®

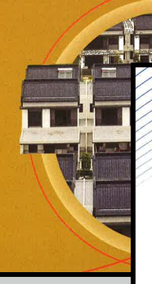
Colorbond® Signature Project 2024

This certificate is proudly presented to

DURO METAL INDUSTRIAL (M) SDN BHD
for
SETIA ECO GLADES SEMI D & BUNGALOW

In recognition of the exceptional project
developed with COLORBOND® steel,
which has created distinctive architecture and landmarks.

COLORBOND NIGHT 2024



Sahattaya T.

Sahattaya Thongpreecha
Country President
NS BlueScope Malaysia Sdn Bhd

BlueScope | Colorbond®

Colorbond® Signature Project 2023

This certificate is proudly presented to

DURO METAL INDUSTRIAL
Duro Metal Industrial
(M) Sdn Bhd

for

The Sail Sales Gallery, Melaka

in recognition of the exceptional project developed with
COLORBOND® steel
in creating distinctive architectures and landmarks

COLORBOND® NIGHT 2023

Wong Sen Meng
Country President
NS BlueScope Malaysia Sdn Bhd

DURO METAL INDUSTRIAL (M) SDN BHD

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