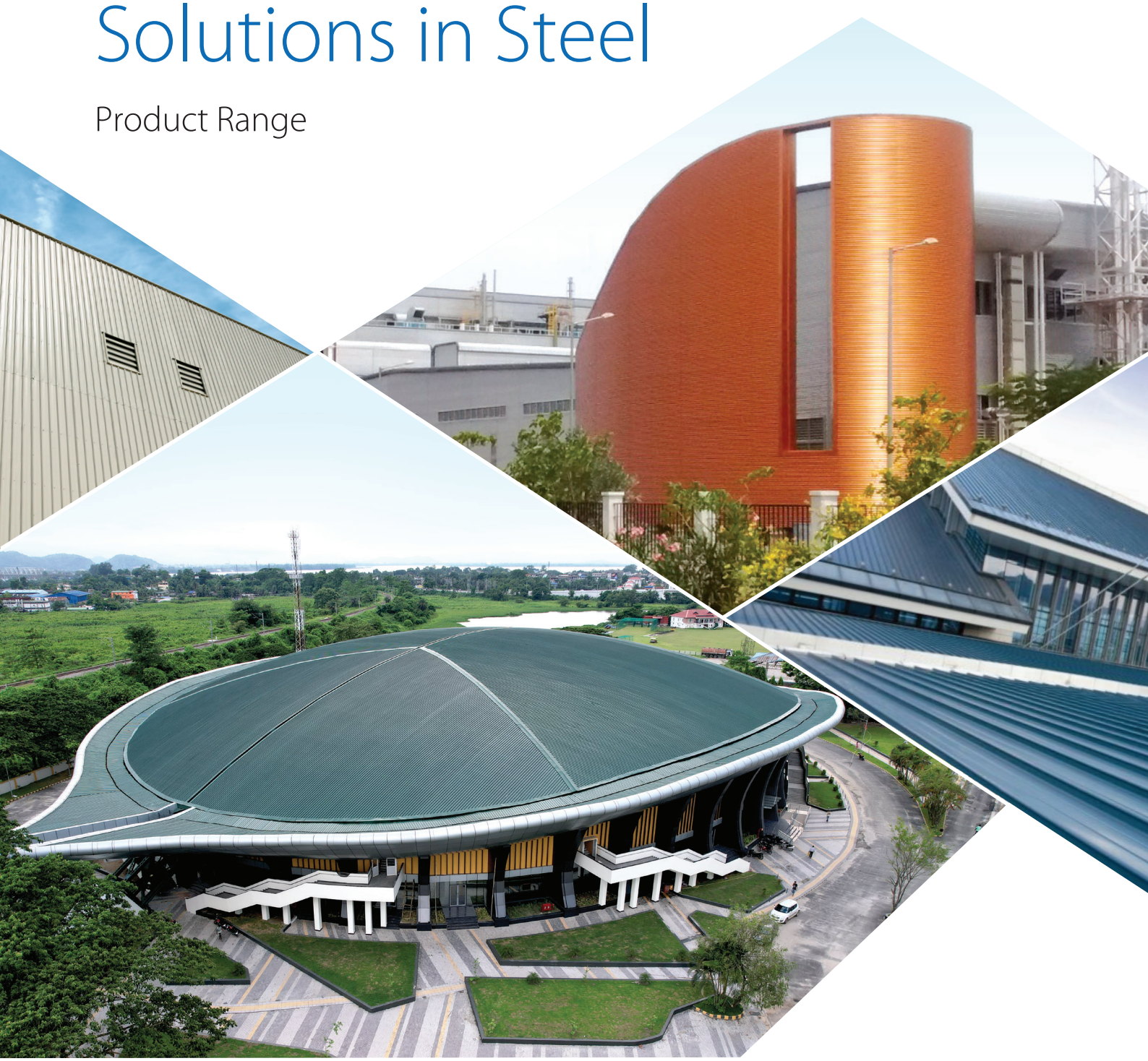
LYSAGHT®

Global Excellence since 1857

TATA BLUESCOPE STEEL

Architectural Solutions in Steel

Product Range



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LYSAGHT®

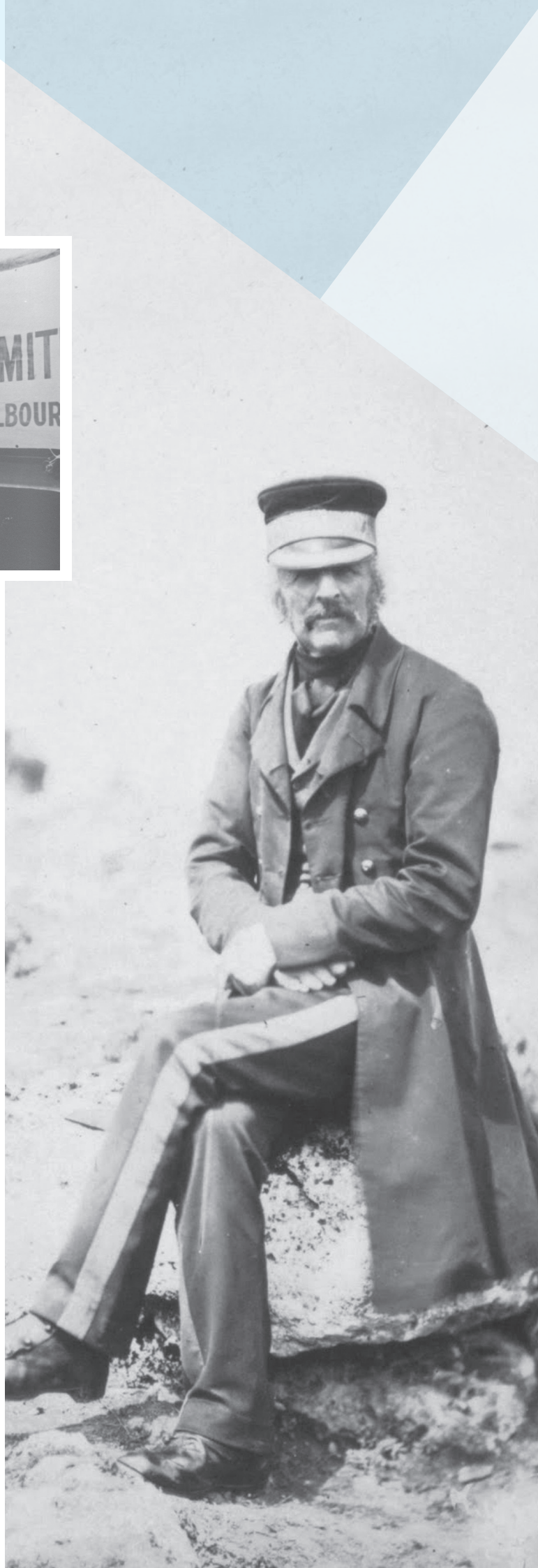
Global Excellence since 1857

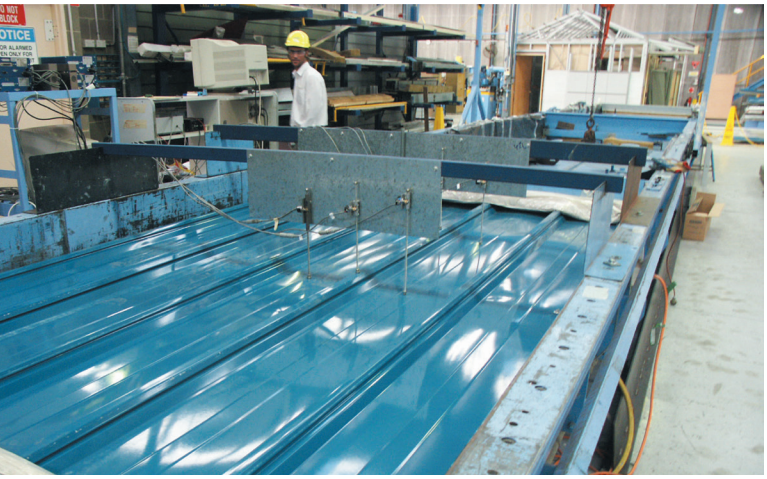
Legacy of over 150 years

An impressive history of over 150 years, LYSAGHT® took birth in 1857 when Mr. John Lysaght commenced operations in Bristol, England. The brand expanded its reach to Australia in 1879. Later the brand was acquired by BHP Limited renamed as BlueScope Steel.

Continuing its journey across the globe, in 2005, LYSAGHT® entered SAARC region, when two leading players Tata Steel and BlueScope Steel inked a 50:50 joint venture, to form Tata BlueScope Steel Limited.

Today LYSAGHT® offers a wide range of premium roof and wall cladding profiles, structural products and accessories for the industrial, infrastructure and commercial segments, being a part of various architectural and heritage buildings across the globe.





Direct-Pressure Cladding Tests

Load Testing Rig-Composite Decking

Universal Testing of Concrete-Slip Block Test

A trust built with performance

Research and Development

A legacy backed by Technical Excellence, LYSAGHT®'s first research and development centre was founded in the 1960's and has been dedicated to new product research, development and testing with a strong focus on customer needs. In pursuit of constant innovation and excellence, LYSAGHT® profiles undergo several rigorous tests and proven processes like pressure cladding test, multi-loading test, water penetration test on roof system and connection system test.

All LYSAGHT® profiles offer full benefits of latest methods for modelling wind pressures. The wind pressure capacity table is determined by full scale tests conducted at LYSAGHT® R & D centre Australia, a NATA registered testing laboratory, using direct-pressure testing rig.

Testing was conducted in accordance with AS 1562.1-1992 design and installation of sheet roof and wall cladding metal, and AS 4040.2-1992 resistance to wind pressure for non-cyclonic regions.

The pressure capacities for serviceability are based on a deflection limit of (span/120) + (maximum fastener pitch/30). The pressure capacities for strength have been determined by testing the cladding to failure (ultimate capacity). These pressures are applicable when the cladding is fixed to a minimum of 1.0mm, G550 steel. For material less than 1.0 mm thick, seek advice from nearest Tata BlueScope Steel office.

LYSAGHT® Advantage

Design & engineering excellence

A strong in-house engineering team offers technical support that includes optimized design and detailing, through internationally acclaimed software such as MegaFloor, SMARTLINK, CFS, STAAD, MBS and AUTOCAD. LYSAGHT® team continues to use CAD/CAM software that provides customers, architects and engineers with professional, customized solutions meeting their building requirements. Our team of experts bring together engineering insights and practical skills to give you real world solutions.

From design to build and maintenance; LYSAGHT® team of professionals ensure an architect's vision is put to reality!

Roll Forming

Bhiwadi

Advanced Multi-locational Manufacturing Capabilities

With an equally Efficient Supply Chain

LYSAGHT® with it's world-class manufacturing facilities strategically located in Chennai, Pune, Bhiwadi, Jamshedpur, India and one in Sri Lanka, ensures easy product availability and an on-time delivery with consistency in quality of the products supplied. The plants are equipped with high end manufacturing machinery supplied by internationally acclaimed brands like Hayes and Bradbury. With a roll forming capacity of over 2.5 lakh tonnes per annum, LYSAGHT® manufactures high strength steel with improved resistance to oil canning and edge rippling defects.

Our advanced logistics system with an excellent warehouse management, safe transportation and high quality product packaging units; lay a strong foundation for a sound Supply Chain Management system.

Our quality accreditions

Chennai

Tata Steel, Odisha

An OHSAS 18001:2007 Certified Company

An ISO 14001:2004 Certified Company

Global Benchmark in Safety Practices

We aspire towards a goal of Zero Harm to people, plant and environment. This goal is an important driver for continuous improvement in health and safety performance across Tata BlueScope Steel. A comprehensive company-wide Occupational Health and Safety Management System, ensures the health and safety of our employees, customers, contractors, visitors and the public in general. Reiterating its contribution towards Safety, LYSAGHT® was recognised with the CIDC Vishwakarma Award for Safety, Health and Environment twice in a row (2017 & 2018); for stringently following safety practices along with design detailing, engineering & construction support.

In-built with Energy Efficient Technology

Our products are sustainable, made from high performance steel with lead free paint system. LYSAGHT® profiles made from COLORBOND® steel is backed by energy efficient Thermatech® technology that enhances the thermal performance (Higher Solar Reflectance value (SRI)) of the roof, ensuring lesser energy consumption. In moderate to hot climates, compared to roofing materials of similar colour with low solar reflectance, COLORBOND® steel with Thermatech® can reduce annual cooling and energy consumption by up to 15%.

LYSAGHT® Advantage

A Brand you can depend on

Quality, Innovation & Customer Focus at the Core

Over the years LYSAGHT® brand has been associated with high quality products, innovative designs and a strong customer focus. LYSAGHT® range of premium building products are manufactured from high-quality steel; COLORBOND® steel and ZINCALUME® steel. The brand's product superiority is well complemented by Tata BlueScope Steel's manufacturing expertise that enables customised solutions for various applications.

Withstanding the test of time, LYSAGHT® has set exemplary benchmarks for flexibility in design, catering to diverse architectural requirements.

Today the brand is highly respected by design and construction fraternity including renowned architects, consultants, developers, government institutions and agencies world over.

Chennai Metro Stations

Guaranteed Peace of Mind

LYSAGHT® steel roofing is designed for Australian and Indian Standards, fully engineered and full scale tests conducted at LYSAGHT® R & D centre Australia a NATA registered testing laboratory, using direct-pressure testing rig. That means you can be confident a new LYSAGHT® steel roof will be as beautiful as it is strong. LYSAGHT® steel roofing is also backed by the Tata BlueScope Steel material warranty* against corrosion to perforation by weathering in the natural elements upto 10 yrs.

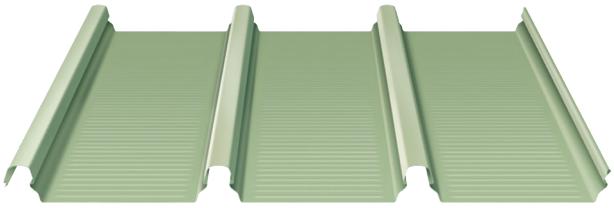
*Subject to terms and conditions

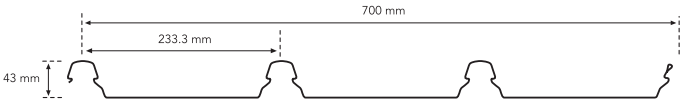
Roof and Wall Cladding

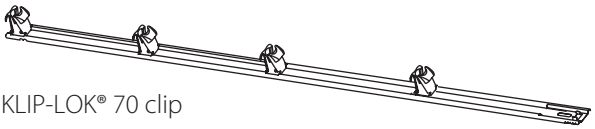
LYSAGHT®

KLIP-LOK® 700

An advanced concealed fix roof cladding with pronounced ribs







KLIP-LOK® 70 clip

Profile

LYSAGHT KLIP-LOK® 700 is a concealed fixed cladding with an effective cover width of 700 mm, 43mm deep rib spaced at 233.3mm c/c along with micro-stiffener perpendicular to bold ribs for strength. Specially designed ribs with unique anti-capillary side lap, makes it leak proof roof slope of even upto 1^0 (1 in 50)

LYSAGHT KLIP-LOK® has long been a design favourite, for prestigious commercial, industrial and architectural projects.

With a bold rib geometry rising from wide, flat pans, LYSAGHT KLIP-LOK® roof provides a strong visual statement on any building. Flat pans also mean the profile has excellent water carrying capacity and can be used on roof pitches as low as one degree*. Installed using a proprietary concealed fixing system there are no exposed fasteners to spoil the long, straight clean lines of LYSAGHT KLIP-LOK® roof.

The use of concealed clip system ensures secure fastening to the purlin sub-structure, while allowing thermal expansion to be accommodated along the length of the sheet without compromising the weathertight properties of the KLIP-LOK® profile. The absence of screw penetrations also eliminates the possibility of water ingress around fasteners over the time.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Roof application		
Single span	1420	1500
End span	1200	1400
Internal span	1500	1700
Overhang - Unstiffened	150	200
- Stiffened	450	500
Wall application		
Single span	2100	2250
End span	1500	1700
Internal span	1800	2000
Overhang	150	200
(All dimensions are in mm)		
Roof pitch		
Minimum recommended pitch	2^0	
Grade of steel	G550 (550 MPa Yield strength)	
Coating class (min.)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. * Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	700	700
Rib depth	43	43
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.64	4.95
Mass per unit length Kg/m	3.25	3.47
Coverage m^2/tonne	215	201
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.72	5.04
Mass per unit length Kg/m	3.30	3.53
Coverage m^2/tonne	211	198

Step out with LOK-KLIP®

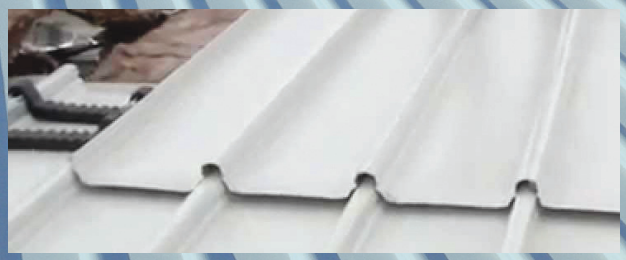
Even when using long length roofing sheets there are times when end joints are unavoidable.

Comprising of a fully engineered ZINCALUME® steel bracket and custom shaped weather resistant polyethylene strips, these low profile systems maintain the roof's long, clean lines without cluttering the roof space with clearly visible step joints.

LOK-KLIP® is a fast and effective solution for weather resistance and expansion joints, when used with KLIP-LOK® 700 Roof cladding. Its low profile design enables zero interruption in visual impact on the bold ribs and flat pans.

The innovative end and expansion joint solutions:

- Are fully NATA tested for both cyclonic and non-cyclonic applications
- Can deliver transport savings by allowing easily transportable shorter sheet lengths to be utilised as part of a long run roofing solution
- Are easy to install without any special tooling or fasteners
- Provide time, material and cost savings when compared to traditional, complicated step joint designs



Profile with LOK-KLIP® on expansion joints

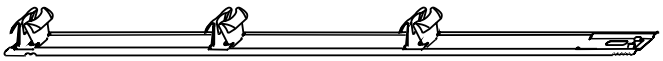
Salcomp, Chennai

Benefits

- Strongest profile with longer spanning capability
- No piercing, it is fixed/ locked with special clips hence no chance of roof leakage
- Fixed on specially designed clip which holds uplift pressure to the base purlin much easily and also takes care of thermal expansion and contraction
- On site roll forming facility eliminates step joint and end laps. In case of end laps, LOK-KLIP® is the perfect solution
- Specially designed ribs, with unique anti-capillary side lap, makes it leak proof roof slope of even upto 1^0 (1 in 50)
- Pre-crimping is possible to enable bull nose curve
- Is economical and fast to install
- Manufactured from High Strength ZINCALUME® steel and or COLORBOND® steel

KLIP-LOK® 770

Widest concealed fixed cladding



KL77 clip

KLIP-LOK® 770 is a new generation of wide-cover concealed fixed cladding. It has a wide span and the best uplift performance.

Profile

LYSAGHT KLIP-LOK® 770 is concealed fixed cladding with effective cover width of 770 mm, 31.5mm deep rib spaced at 256mm c/c along with two strengthening ribs parallel to bold ribs for strength. Specially designed ribs, with unique anti-capillary side lap, which makes it leak proof roof slope of even upto 1^0 (1 in 50)

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Roof application		
Single span	1000	1200
End span	1000	1300
Internal span	1300	1500
Wall application		
Single span	1500	1600
End span	1500	1600
Internal span	1800	2000
(All dimensions are in mm)		
Roof pitch		
Minimum recommended pitch	2^0	
Grade of steel	G550 (550 MPa Yield strength)	
Coating class (min.)	AZ150	

Above spans are applicable up to wind speed of 39m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	770	770
Rib depth	31.2	31.2
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.22	4.50
Mass per unit length Kg/m	3.25	3.47
Coverage m^2/tonne	236	221
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.29	4.58
Mass per unit length Kg/m	3.30	3.53
Coverage m^2/tonne	232	217

Shenzhen Airport Terminal, China

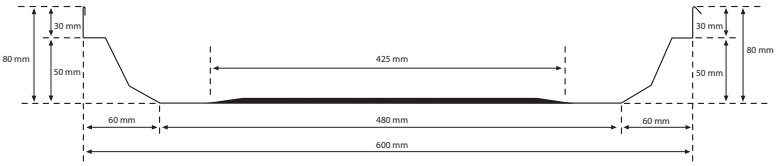
Monorail Station, Maharashtra

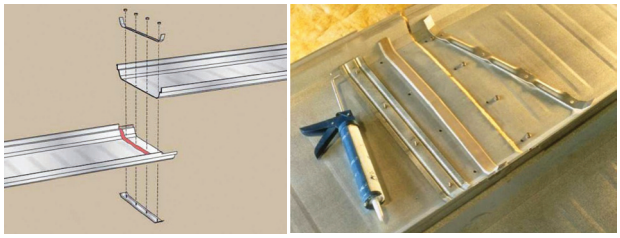
Benefits

- Wide cover concealed fixed cladding system with no exposed fasteners for weather tight roofs
- Bold ribs make strong visual appeal
- Fixed on specially designed clip which holds uplift pressure on the base purlin much easily and allows thermal expansion and contraction
- Suitable for curve shape buildings
- Economical and quick to install
- Available with onsite mobile roll forming for even, long, uninterrupted and low roof pitch
- Appealing architectural appearance and multiple colour choices enable different design features
- Manufactured from G550 COLORBOND® steel or ZINCALUME® steel

MR-24®

Standing seam roof system





Sheet overlapping technology

Steel Thickness (TCT)	0.65 mm	0.77 mm
Base metal thickness (BMT)	0.60	0.72
Total coated thickness (TCT)	0.65	0.77
Effective coverage width	600	600
Rib depth	50	50
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	5.97	7.12
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	6.05	7.20

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

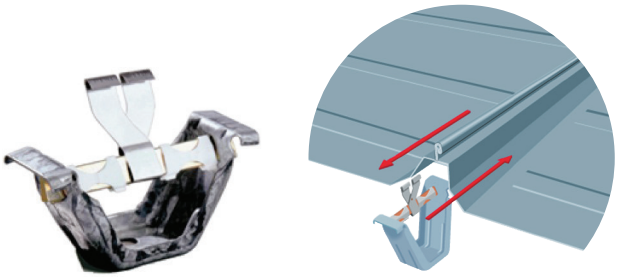
Roof pitch	
Minimum recommended pitch	1.2^0
Grade of steel	G345 (345 MPa Yield strength)
Coating class (min.)	AZ150

The MR-24® roof system is one of the most timetested and widely used standing-seam roof system available. This record has been validated time and again by successful tests conducted in accordance with the most demanding & recognised specifications in the industry.

Profile

MR-24® is a 360^0 standing seam roofing system. This profile has an effective width of 600 mm, with two major corrugations, 50 mm high (80 mm including seam.) The valley of the panel contains cross flutes of 430 mm length perpendicular to the major corrugations over the entire length of the panel.

MR-24® Roof Clip



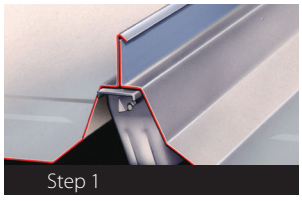
Allows roof movement

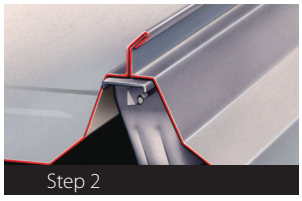
The roof clip is an "invisible component" that holds the standing seam roof panels to the supporting structural member.

Because metal roofs expand & contract with daily and seasonal temperature changes, the clip is carefully designed to provide a positive attachment allowing the roof to move freely in both directions. Without this mobility, the roof panels would tug and pull on the clip, a process that will eventually cut into the roof panels, pull out the fasteners or damage the clip, making the building vulnerable to leaks and wind damage.

KONE Elevators, Chennai

Seaming Process

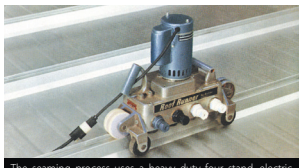

Step 1


Step 2

Step 3

Step 4

Step 5


The seaming process uses a heavy duty four stand, electric, portable roll-framing machine called the Roof Runner®.

Benefits

- MR-24® roof clip allows roof to expand and contract with changing temperatures, ensuring free movement of the clip, assuring a long term leak proof performance
- Pre-punched system does not require extensive field modifications and enables an error-free building
- Weather tight seams protect against leaks
- It is made from ZINCALUME® steel & COLORBOND® steel ensuring aesthetics with durability
- Slice support secures solid structures
- MR-24® have stronger fasteners that maintain credible strength
- Staggered panel splices prevent exposed seams
- MR-24® roof system's internal flange design conceals fasteners within the opening and eliminates leaks

FORTISS 470™

Standing seam roof system

The FORTISS 470™ is a new generation 360º seam locking roof system. This is specifically designed for large industrial, commercial and warehousing sectors looking for large spans, better performance, a quick turnaround and customization.

Profile

FORTISS 470™ is a 360º standing seam roofing system. This profile has an effective width of 470mm, with two major corrugations, 74 mm high (85 mm including seam.) The valley of the panelcontains cross flutes of 250 mm length perpendicular to the major corrugations over the entire length of the panel.

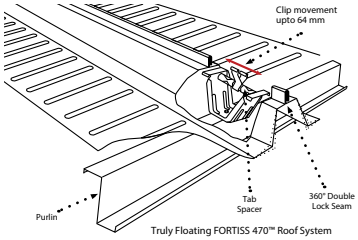
Steel Thickness (TCT)	0.55 mm	0.60 mm
Base metal thickness (BMT)	0.50	0.55
Total coated thickness (TCT)	0.55	0.60
Effective coverage width	470	470
Rib depth	74	74
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m²	5.211	5.712
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m²	5.288	5.789

Available in metal coated and colour coated steel

Roof pitch	
Minimum recommended pitch	2º
Grade of Steel (Yield Strength)	G300*
Coating Class	AZ 150

*Also available in G340 Yield Strength

FORTISS 470™ ROOF CLIP

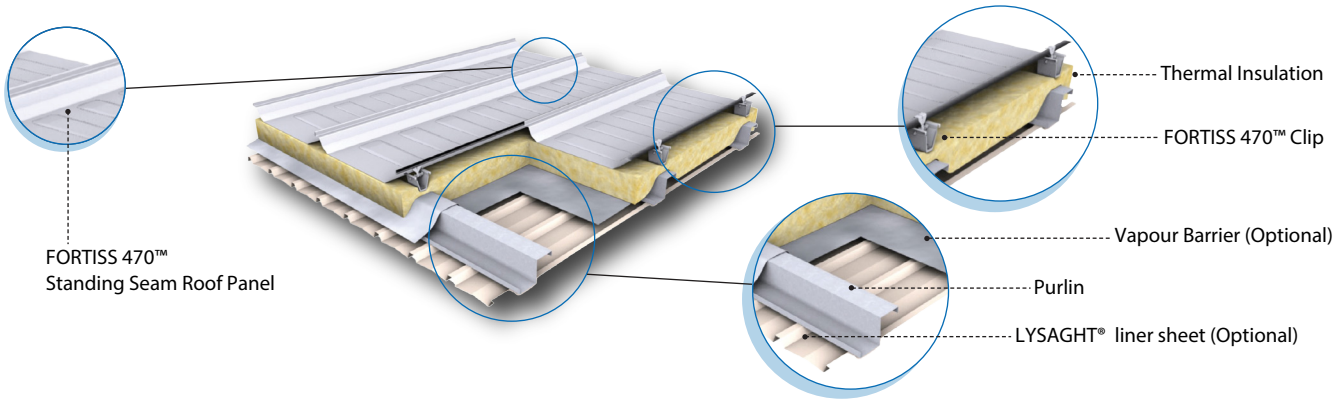


Truly Floating FORTISS 470™ Roof System

Metal roof expands and contracts with daily and seasonal temperature changes. This roof clip is carefuly designed to provide a positive attachment and allows the roof to move freely in both directions. Without this mobility, the roof panels would tug and pull on the clip, a process that will eventually cut into the roof panels, pull out the fasteners or damage the clip, causing the building to be vulnerable to leaks and wind damage.

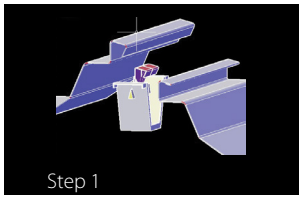
FORTISS 470™ Clip Advantages

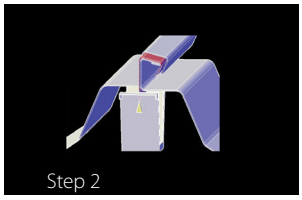
- Allows FORTISS 470™ roof system to 'truly float'
- Excellent weather-tight performance
- Easy thermal expansion & contraction
- Zinc coated triangular bar provides smooth surface for tab movement



Seaming Technique

First class seamer with advanced motor and tooling making excellent seaming and shortens the roof erection time


Step 1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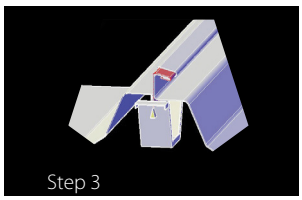
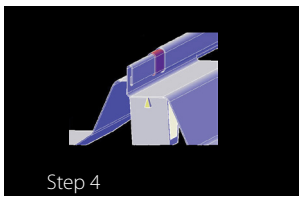

Step 3


Step 4

Seaming through machine

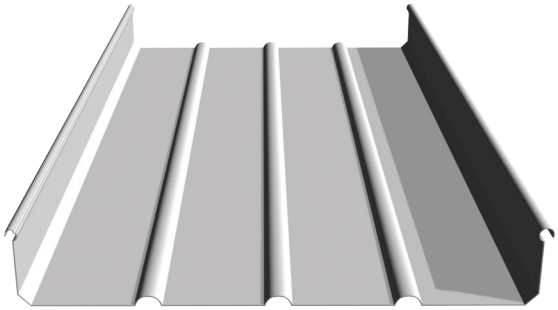
Benefits

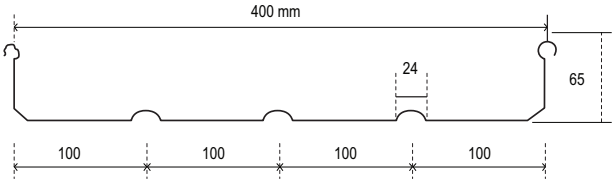
- FORTISS 470™ roof clip allows roof to expand and contract with changing temperatures, ensuringfree movement of the clip
- Zero overlapping of sheets, provides leak-proof roof system and speeds up the installation process
- The product showcases improved anti-deformation performance.
- Containerized production ensures uniform quality even under unstable conditions
- Enables possibility of roof-top level roll-forming
- Best-in-class safety practices and unmatched construction capability

*Terms & conditions apply

FLEXLOK® 400

Concealed fixed standing seam roof system





LYSAGHT FLEX-LOK® concealed standing seam system is a roofing system with an innovative architectural appearance. It is available in steel or aluminum and provides a flexible design. It can be slope, curved or tapered to achieve various architectural requirements and provides architects with a more creative resource.

Profile

LYSAGHT FLEX-LOK® standing seam profile comes with 400 mm effective cover width, three stiffener symmetrically spaced (100mm c/c) parallel to 65mm deep rib. The profile lapping is mechanically field seamed using electric steamer tool to achieve increased weatherability and greater resistance to wind uplift.

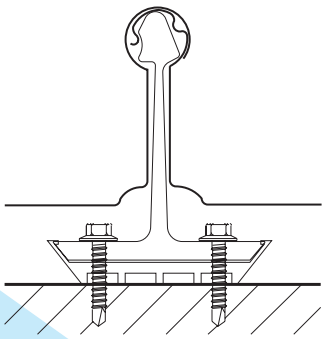
Note: FLEX-LOK® standing seam profile is also available in 300mm and 500mm wide profile.

Maximum allowable support spacings Steel Thickness (TCT)	0.55 mm	0.60 mm
Roof application End Zone (mm) Internal Zone (mm) (All dimensions are in mm)	1200 1500	1500 1800
Roof pitch Minimum recommended pitch	2^0	
Grade of steel	G300 (300 MPa Yield strength)	
Coating class (min.)	AZ150	

Note: FLEX-LOK® standing seam profile is tested at LYSAGHT® BlueScope R & D NATA approved Lab as well as IIT Chennai for wind uplift pressure (strength and serviceability parameter)

Above spans are applicable for wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.55 mm	0.60 mm
Base metal thickness (BMT)	0.50	0.55
Total coated thickness (TCT)	0.55	0.60
Effective coverage width	400	400
Rib depth	65	65
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	5.92	6.49
Mass per unit length Kg/m	2.37	2.60
Coverage m^2/tonne	169	154
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	6.00	6.58
Mass per unit length Kg/m	2.40	2.63
Coverage m^2/tonne	166.5	152



Panel Overlap

FLEX-LOK® Clip

Insulated clip for better thermal performance

FLEX-LOK® profile panel is fixed to every purlin with a help of structural grade aluminium clip with UPVC thermal pad at the bottom of the clip. The head of clips accurately matches the roof sheeting; ensuring the sheet slides freely during thermal movement.

Shandown Stadium, China

Profile Shapes

Concave

Min. Curve Radius
Steel - 8 m
Aluminium - 6 m

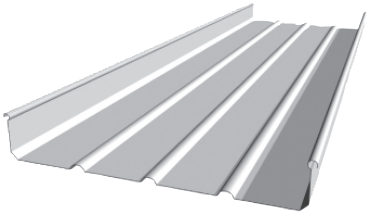
Convex

Min. Curve Radius
Steel - 8 m
Aluminium - 4 m

Tapered

Tapered width -
250 mm at one end and upto 500 mm at other end.

Tapered length -
3500 mm (min.)

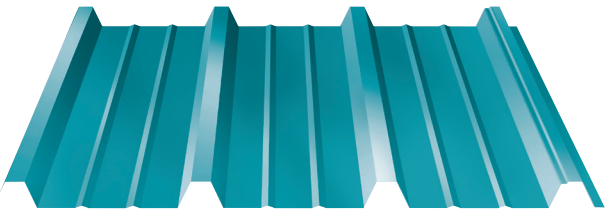


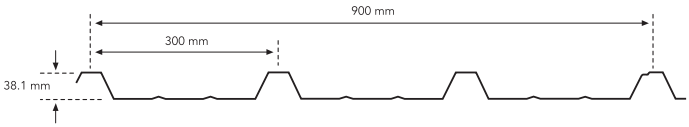
Benefits

- FLEX-LOK® system gives real design freedom and provides a choice of solutions for modern architectural requirement
- A specially designed, concealed clip system requires no through fasteners. This provides excellent weather and uplift resistance
- The original heat insulated clip allows for movement which results from the thermal effect. This minimizes the need for step expansion joints
- Specially engineered thermal pad, slides neatly onto base of the clip, which can reduce or eliminate thermal bridging effects
- Can be roll-formed on site to achieve extreme long length according to project requirements
- It can be used as single skin roofing as well as double skin roofing. (FLEX-LOK® made from aluminium material require metal liner sheet)

BR-II™ 900

The strongest roofing profile





BR-II™ 900 is the strongest fastened roof system in the industry. It is weather-tight roofing system that is economical to install and maintain. It is ideal for industrial and commercial applications.

Profile

LYSAGHT® BR-II™ 900 roof profile comes with an effective cover width of 900 mm, with four major corrugation, 38.1 mm deep rib spaced at 300mm c/c with two stiffeners in the pan. The end rib has anti-capillary groove and return leg.

Maximum allowable support spacings **Steel Thickness (TCT)**	0.47 mm	0.50 mm
Roof application		
Single span	1300	1500
End span	1500	1700
Internal span	2000	2300
Overhang - Unstiffened	150	200
- Stiffened	300	350
Wall application		
Single span	1900	1950
End span	2100	2250
Internal span	2500	2800
Overhang		
(All dimensions are in mm)		
Roof pitch		
Sheet length without end lap	3^0	
Sheet length with end lap	5^0	
Coating class (min.)	G550 (550 MPa Yield strength)	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	900	900
Rib depth	38.1	38.1
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.36	4.65
Mass per unit length Kg/m	3.92	4.19
Coverage m^2/tonne	229	214
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.43	4.73
Mass per unit length Kg/m	3.99	4.26
Coverage m^2/tonne	225	211

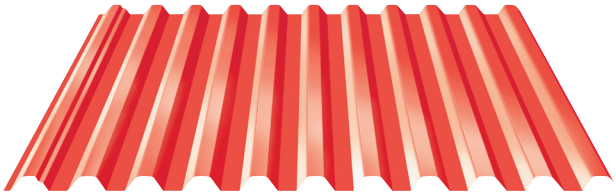
Daramic Batteries, Gujarat

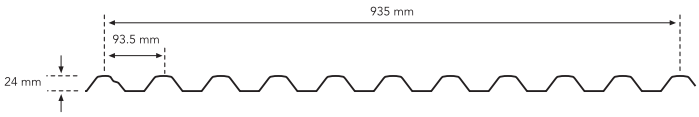
Benefits

- Strongest trapezoidal profile - best suited for cyclonic areas
- Prominent anti-capillary groove, excellent for leak proof performance. The groove can also be used for sealant placement to ensure weather tightness
- Factory-slotted holes allow roof panels to move with thermal expansion and contraction forces without tearing holes in the panels at fasteners locations (only supply on request)
- Pre-punched to assure proper fit and alignment of each panel joint ensuring weather tightness
- FM Approved profile

SPANDEK® 935

A modern, simple, square-corrugated roof and wall cladding





Profile

LYSAGHT SPANDEK® 935 roof and wall cladding profile has an effective cover width of 935 mm, with eleven major corrugations, 24mm high rib spaced at 93.5mm c/c. The end rib has an anti-capillary groove and return leg.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Roof application		
Single span	800	900
End span	1200	1500
Internal span	1700	2000
Overhang - Unstiffened	250	300
- Stiffened	500	600
Wall application		
Single span	1500	1700
End span	1300	2000
Internal span 1800	1900	2500
Overhang	300	350
(All dimensions are in mm)		
Roof pitch		
Sheet length without end lap	3^0	
Sheet length with end lap	5^0	
Convex sprung curve	min 20 m	
Concave sprung curve	min 20 m	
Coating class (min.)	G550 (550 MPa Yield strength)	

Note: Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

SPANDEK® 935 is a tough, symmetrical, trapezoidal ribbed roofing and wall cladding profile, making it ideal for projects with a modern appearance. LYSAGHT SPANDEK® capitalises on buildings that require long spans, as it permits wider purlin spacings and utilizes fewer fasteners. Its rigid trapezoidal ribs make it an excellent choice among designers for contemporary roof and wall cladding designs.

It can be sprung curved if the curvature falls between 20m and 60m. When used for wall cladding, the trapezoidal ribs can run vertically or horizontally. Available in long length, it is governed only by transportation considerations. The profile combines strength with lightness, rigidity and economy.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	935	935
Rib depth	24	24
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.51	4.81
Mass per unit length Kg/m	4.21	4.51
Coverage m^2/tonne	221	207
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.61	4.91
Mass per unit length Kg/m	4.31	4.59
Coverage m^2/tonne	217	203

Valpoi Bus Stand, Goa

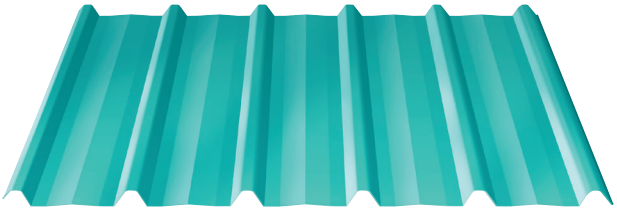
Global Printing & Packaging Pvt. Ltd.

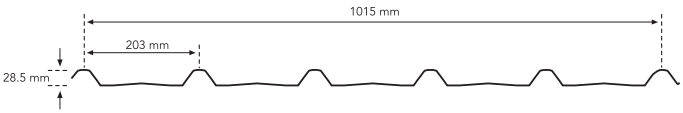
Benefits

- Bolder contemporary corrugated profile
- Excellent for withstanding high wind load, snow load or impact load i.e. foot traffic
- Shorter roof runs, steeper roof slopes (5^0)
- Suitable for curved roofs – larger spring curved roofs (30- 60 m with 1.2 m purlin spacing)
- Good rainfall capacity
- Longer spanning capability in comparison to any conventional system in the market

TRIMDEK® 1015

A versatile roofing and walling product





TRIMDEK® 1015 is modern ribbed roof and wall cladding profile with subtle fluting in the pans to provide strength and long spanning capabilities. It is ideal for industrial and commercial applications.

LYSAGHT TRIMDEK® can be curved by crimp curving process. It is available in both convex and concave shapes to provide versatility and creativity to building designs. The minimum radius of curvature must be at least 500 mm for convex and 500 mm for concave to underside or pan of sheep. Custom-cut lengths are available in any measurement of maximum transportable length.

Profile

LYSAGHT TRIMDEK® 1015 roof and wall cladding profile has effective coverwidth of 1015 mm, with five major corrugation, 28.5 mm height, spaced at 203mm centre with subtle square fluting in the pan. The end rib has an anti-capillary groove and return leg.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Roof application		
Single span	1090	1300
End span	1280	1400
Internal span	1600	1800
Overhang - Unstiffened	150	200
- Stiffened	300	350
Wall application		
Single span	1780	1900
End span	1600	1800
Internal span	1900	2300
Overhang	150	200
(All dimensions are in mm)		
Roof pitch		
Sheet length without end lap	3^0	
Sheet length with end lap	5^0	
Concave sprung curve	min 40 m	
Coating class (min.)	G550 (550 MPa Yield strength)	
Coating class (min.)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	1015	1015
Rib depth	28.5	28.5
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.152	4.44
Mass per unit length Kg/m	4.214	4.50
Coverage m^2/tonne	237	225
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.22	4.51
Mass per unit length Kg/m	4.29	4.57
Coverage m^2/tonne	236	221

Kirloskar Ferrous Industries Ltd.

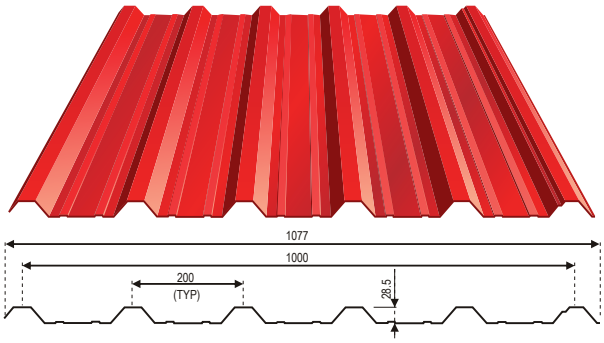
Veeline Media Pvt. Ltd., Surat

RUJ & SRM Mechanics Pvt. Ltd, Jaipur

Benefits

- TRIMDEK® is our most cost effective roofing and walling profile
- Strong and wider coverage, makes it economical for all types of buildings
- Troughed valleys enhance easy water flow, roof traffic and to avoid oil canning effect
- Long roof runs at shallow roof slope (min 3^0)
- Specially designed ribs, with unique anti-capillary side lap, which makes it leak proof
- Curved roof: it is possible only in crimping option
- Very good rainfall capacity
- Easy to install on roof and wall cladding application

VARYDEK™ 1000



VARYDEK™ is an innovative subtle square fluted steel cladding is used as a versatile roofing and wall cladding profile for Industrial, Infrastructure, Commercial and Residential projects .

Profile

VARYDEK™ is available with a 1000 mm wide coverage option with nominal 28.5 mm deep ribs along with subtle square fluting at nominal 200 mm centre-to-centre respectively. The end ribs are designed for anti-capillary action, to avoid seepage of water through the lateral overlap.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Roof application		
Single span	1200	1400
End span	1400	1500
Internal span	1700	2100
Overhang - Unstiffened	150	200
- Stiffened	300	350
Wall application		
Single span	1800	1900
End span	2000	2100
Internal span	2300	2600
Overhang		
(All dimensions are in mm)		
Roof pitch		
Minimum recommended pitch	5^0	
Grade of steel	G550 (550 MPa Yield strength	
Coating class (min.)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	1000	1000
Rib depth	28.5	28.5
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.21	4.50
Mass per unit length Kg/m	4.21	4.50
Coverage m^2/tonne	237.3	222
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.29	4.574
Mass per unit length Kg/m	4.29	4.574
Coverage m^2/tonne	233	218

KYB Conmat Systems, Vadodara

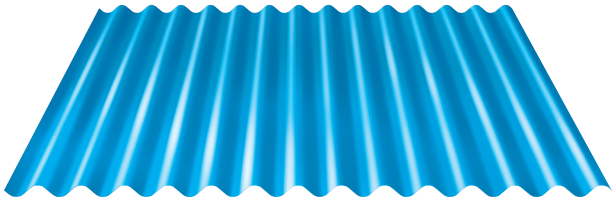
Kirloskar Oil Engnies, Maharashtra

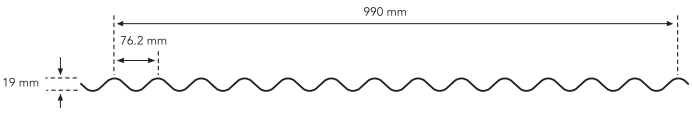
Benefits

- Stronger profile having two strengthening ribs at the pan
- Long roof runs at shallow roof slope (min 3 degree)
- Specially designed ribs, with unique anti-capillary side lap, makes it leak proof
- Curved roof : it is possible only in crimping option
- Very good rainfall capacity
- Easy to install on roof and wall cladding application

CUSTOM ORB® 990

The shape that built a nation





CUSTOM ORB® 990 is a tough and corrugated profile that offers flexibility of design for roof and wall cladding application for industrial, commercial, residential and public buildings.

LYSAGHT CUSTOM ORB® can either be used as typical, straight or pitched roof or can be sprung curved between the radius of 12 m to 35 m for convex curvature, and radius of 12 m to 35 m for concave curvature.

When used in wall applications, LYSAGHT CUSTOM ORB® can either run vertically or horizontally, Available in long lengths, it is governed only by transportation considerations.

Profile

LYSAGHT CUSTOMORB® 990 roof and wall cladding has an effective cover width of 990 mm, with fourteen smooth sinusoidal corrugation, 19mm rib height spaced at 76.2mm c/c. The end rib shall have anti-capillary groove.

Maximum allowable support spacings **Steel Thickness (TCT)**	0.47 mm	0.50 mm
Roof application		
Single span	690	750
End span	950	1100
Internal span	1200	1400
Overhang - Unstiffened	150	200
- Stiffened	250	300
Wall application		
Single span	1000	1100
End span	1000	1250
Internal span	1300	1500
Overhang	200	250
(All dimensions are in mm)		
Roof pitch		
Minimum recommended pitch	7^0	
Convex sprung curve	min 12 m	
Concave sprung curve	min 12 m	
Grade of steel	G550 (550 MPa Yield strength)	
Coating class (min.)	AZ150	

Note: For smooth curve requirements, it recommended to use 300MPa Yield strength ZINCALUME® / COLORBOND® steel sheets.

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width (mm)	990	990
Rib depth (mm)	19	19
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.26	4.55
Mass per unit length Kg/m	4.21	4.50
Coverage m^2/tonne	234	219
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.33	4.62
Mass per unit length Kg/m	4.29	4.57
Coverage m^2/tonne	230	215

Dolphin Quay, Australia

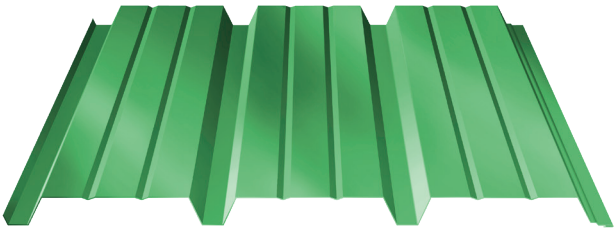
BASF, Tamil Nadu

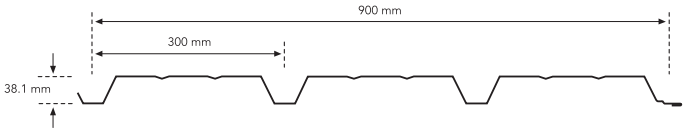
Benefits

- Product especially suited for Contemporary buildings
- Smooth sinusoidal shape preferred for superior aesthetics
- Short Roof Run, Steep roof slopes (7 degree and above)
- CUSTOM ORB® can be curved smoothly for modern & stylish architectural designs. It can be pre-curved in the factory by a machine with a minimum radius of 500 mm
- Can be used for wall cladding applications in horizontal direction
- G300 has a gentle curve in it's shape. The extra ductility of LYSAGHT CUSTOM ORB® allows easy curving without distortion of the profile, and without damage to the finish

SHADOWRIB™ 900

Matching strength with aesthetics





SHADOWRIB™ 900 is the most preferred walling system when in comes to matching strength with aesthetics. LYSAGHT® SHADOWRIB™ 900 walling profile is engineered to take high wing load and pressure. It offers features that make it the strongest walling system. Panels are 900 mm in width and up to 12 meters in length so wall erection occurs quickly even on large buildings.

Profile

LYSAGHT® SHADOWRIB™ 900 wall cladding profile comes with effective cover width of 900 mm, with four major corrugation, 38.1 mm deep rib spaced at 300mm c/c with two stiffener in the pan. The one lap side (edge) is hemming helps for fixing the fastener at the valley and also helps in improving aesthetics.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Wall application		
Single span	1300	1450
End span	1500	1600
Internal span	1800	1900
Overhang		
(All dimensions are in mm)		
Grade of steel	G300 (300 MPa Yield strength	
Coating class (min.)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	990	900
Rib depth (mm)	38.1	38.1
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	4.20	4.48
Mass per unit length Kg/m	3.77	4.03
Coverage m^2/tonne	238	223
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	4.26	4.55
Mass per unit length Kg/m	3.84	4.10
Coverage m^2/tonne	234	219

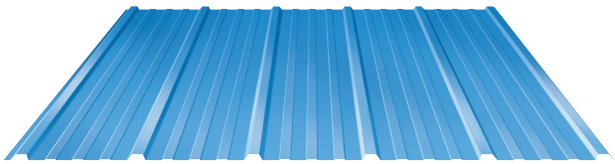
Tata BlueScope Stee Ltd., Maharashtra

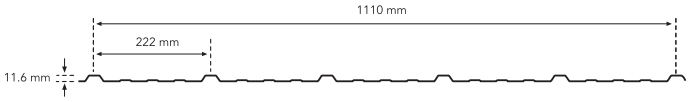
Benefits

- Strongest wall cladding profile, designed to take heavy lateral load and accidental impacts
- Wide pan visibility gives an aesthetically pleasing look to the exterior of the building
- The panel is hemmed at one side to avoid edge visibility to the wall cladding providing aesthetics, and helps to place fastener making it weather tight
- Up to 100mm additional space of insulation
- Required Fewer fasteners than other profile (15-20% lower than other profile)
- Fasteners are recessed deep in the corrugation, panel gives walls an attractive uniform pattern from distance
- The panels are manufactured from G300 grade COLORBOND® pre-painted steel or ZINCALUME® steel

FLEXICLAD® 1110

Versatile steel wall cladding





FLEXICLAD® 1110 is designed to provide an aesthetic and economical solution for wall cladding not only for commercial application, but also for residential and industrial application.

Profile

LYSAGHT FLEXICLAD® 1110 is 1100 mm wide coverage profile with nominal 11.6 mm deep ribs at nominal 222 mm centre-to-centre with three stiffeners in between the ribs. The end ribs are designed for anti-capillary action, to avoid any seepage of water through the lateral overlap.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Wall application		
Single span	1060	1150
End span	1260	1500
Internal span	1500	1650
Overhang		
(All dimensions are in mm)		
Grade of steel	G550 (550 MPa Yield strength)	
Coating class (min)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	1110	1110
Rib depth	11.6	11.6
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	3.80	4.05
Mass per unit length Kg/m	4.21	4.50
Coverage m^2/tonne	262	246
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	3.876	4.14
Mass per unit length Kg/m	4.29	4.58
Coverage m^2/tonne	258	242

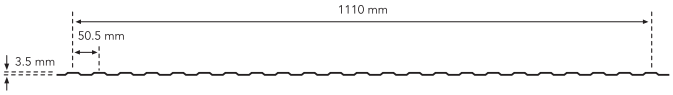
Ador Welding Limited, Maharashtra

Benefits

- Attractive multi-ribbed profile
- Covers very wide surface area
- Quick and easy to install
- Available in ZINCALUME® steel and an attractive range of colours in COLORBOND® steel
- Suitable for wall cladding in industrial, commercial and residential building, as well as for garages, screens and fascias

PANELRIB® 1110

Wall cladding and ceiling application



PANELRIB® 1110 is an attractive, slightly fluted wall and ceiling cladding profile suitable for many applications where a flat sheet would not be normally considered. Its longitudinal flutes provide rigidity and strength along the length of the sheet while retaining full flexibility across the width.

Profile

PANELRIB® 1110 is 1110 mm wide coverage profile with nominal 3.5 mm deep rib with pitch of nominal 50.5 mm centre to centre distance.

Maximum allowable support spacings		
Steel Thickness (TCT)	0.47 mm	0.50 mm
Wall application		
Single span	900	1000
End span	900	1000
Internal span	1150	1150
Overhang		
(All dimensions are in mm)		
Grade of steel	G550 (550 MPa Yield strength)	
Coating class (min)	AZ150	

Above spans are applicable up to wind speed of 44m/sec. Supports must be not less than 1 mm BMT. Please contact Tata BlueScope Steel office considering the above for designs.

Steel Thickness (TCT)	0.47 mm	0.50 mm
Base metal thickness (BMT)	0.42	0.45
Total coated thickness (TCT)	0.47	0.50
Effective coverage width	1110	1110
Rib depth	3.5	3.5
(All dimensions are in mm)		
Mass	**ZINCALUME® steel**	
Mass per unit area Kg/m^2	3.80	4.05
Mass per unit length Kg/m	4.21	4.50
Coverage m^2/tonne	262	246
Mass	**COLORBOND® steel**	
Mass per unit area Kg/m^2	3.86	4.14
Mass per unit length Kg/m	4.29	4.58
Coverage m^2/tonne	258	242

Bus Stands BRTS, Gujarat

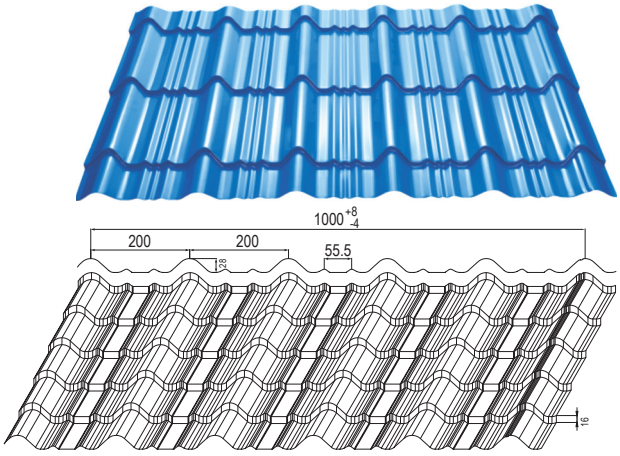
Bus Stands BRTS, Gujarat

Benefits

- Slightly fluted panel gives an attractive look
- Lightest wall cladding for interior and exterior application
- Provides easy solution for false ceiling and wall partition
- Panels can be installed in horizontal as well as in vertical direction
- Manufactured from high strength ZINCALUME® steel or COLORBOND® steel

TILE PROFILE

Aesthetic Roofing with Wider Coverage



Benefits:

Aesthetically Pleasing | Lightweight and Easy to install | Corrosion Resistant

The wider and durable steel tile profile provides an aesthetically pleasing appearance to the roof. The steel tile profile is a nominal 1000 mm wide coverage profile with nominal 28 mm rib height of nominal 200 mm centre-to-centre pitch length. The profile step length is 200 mm with height of 16 mm, having interlock arrangement to make it leak proof.

The profile is easy and quick to install, handle and transport. It is ideal for commercial and residential applications.

Technical Details:

The feed material is manufactured out of nominal 0.45 mm Base Metal Thickness (BMT), with min. 300 MPa yield strength steel. Metallic hot dip coating of Aluminium-Zinc alloy (55% Aluminium, 45% Zinc) as per AS 1397 - Bare AZ150 (Min. 150 gms/sq.mt total on both sides) with Super Durable Polyster/ approved equivalent quality paint coat as per AS/NZS 2728 type 3-4. The paint has a total coating thickness of 35 µm, comprising of 20 µm exterior coat on top surface and 5 µm reverse coat on back surface over 5 µm primer coat on both surfaces of the approved colour.

Material Specification:

Base Metal Thickness (BMT)	0.45 mm
Overall Profile Width	1090 mm
Effective Cover Width	1000 mm
Minimum Roof Slope	15 degrees
Rib Height	28 mm
Maximum Span	800 mm*
Total Paint Coating Thickness	35 micron
Metallic Coating	Total 150 g/m2 on both side
Grade	G300 MPa
Weight	4.9 kg/m2
Pitch /Steps	200 mm with 16 mm step depth

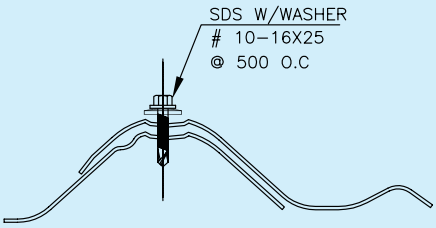
- Contact LYSAGHT® technical team for more information
- Non-standard sizes and colours are also available on special request.

Applications

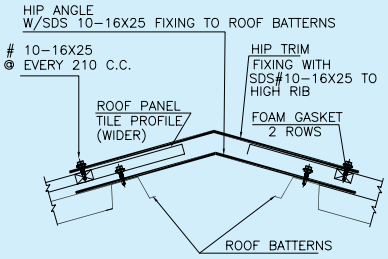
TILE PROFILE

Fixing Details:

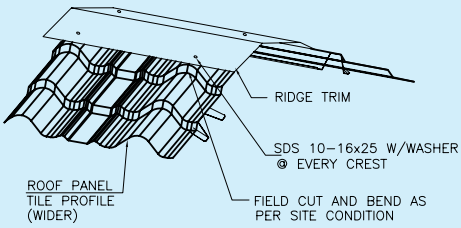
The tile profile is fixed using 5 fastners. The screws are hidden under the lap to effectively secure the tile to the steel support. With no exposed fastners, the clean straight lines of the roof provide an aesthetic look.



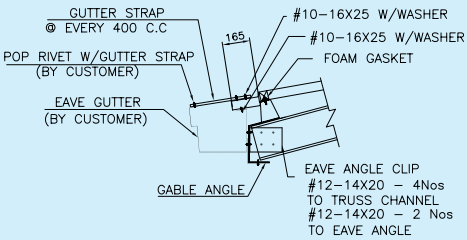
SIDE LAP DETAILS



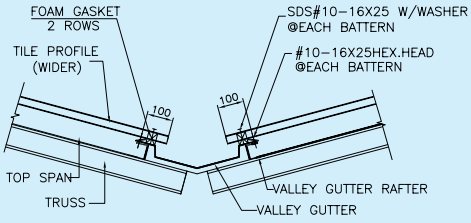
HIP PLATE & HIP TRIM FIXING DETAILS



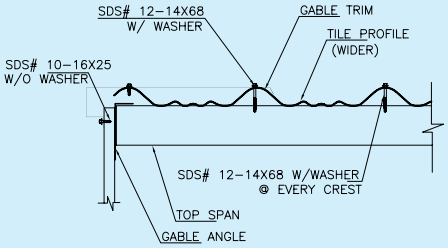
RIDGE DETAILS



EAVE CLOSING DETAILS



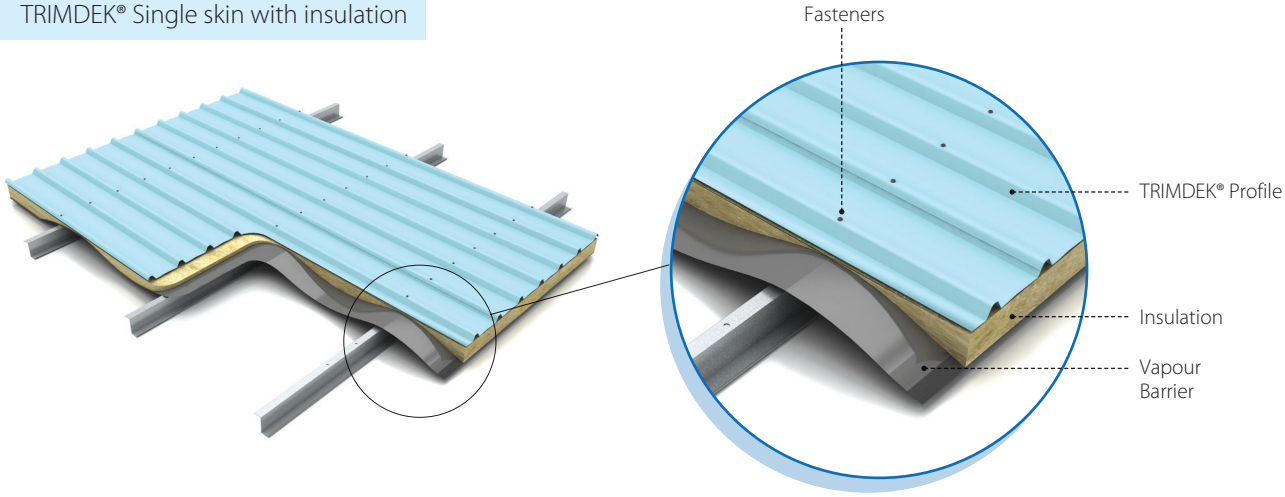
VALLEY DETAILS



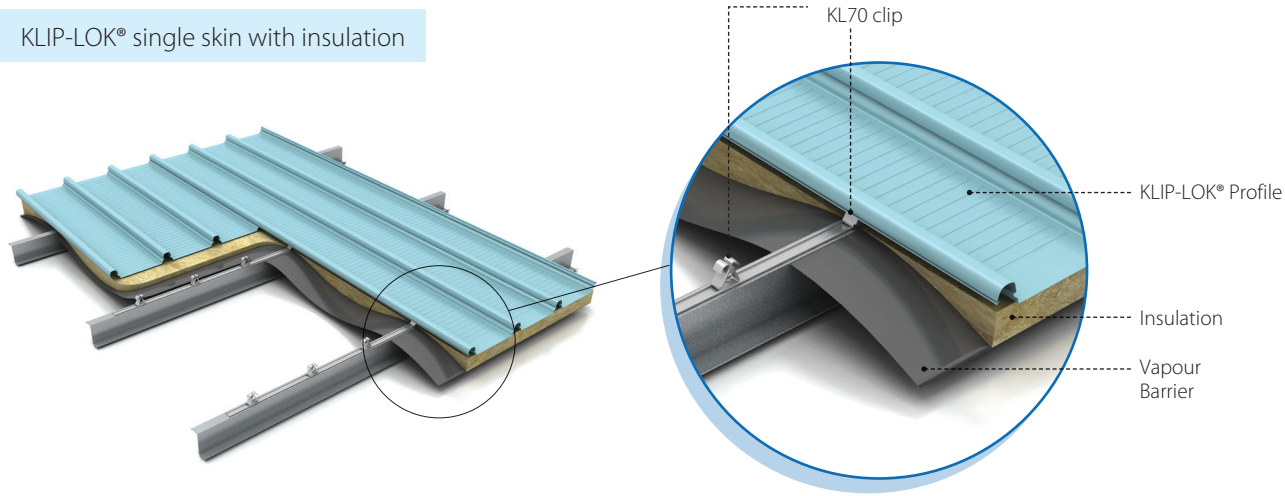
GABLE TRIM FIXING DETAILS
at EXTENSTION SIDE (TYP)

Insulated Roof Systems - Cross Section

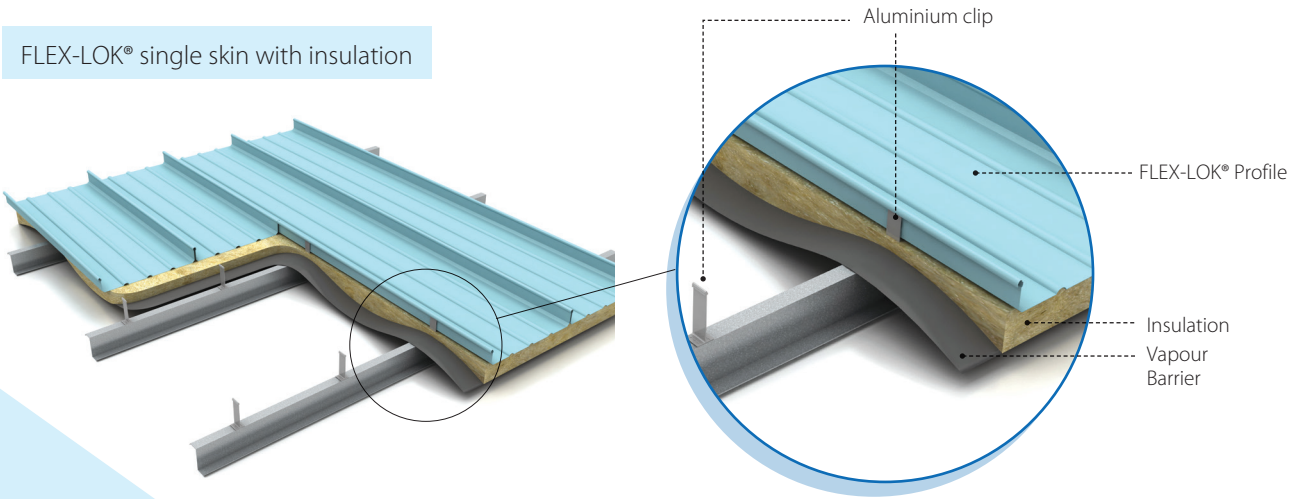
TRIMDEK® Single skin with insulation



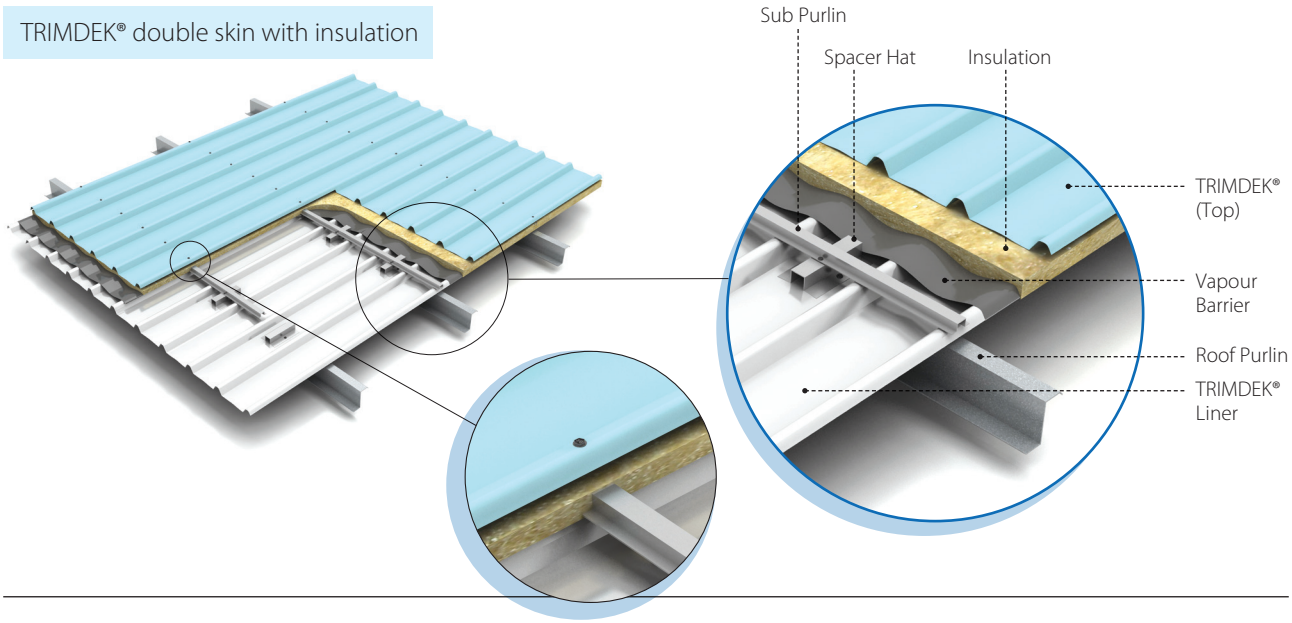
KLIP-LOK® single skin with insulation



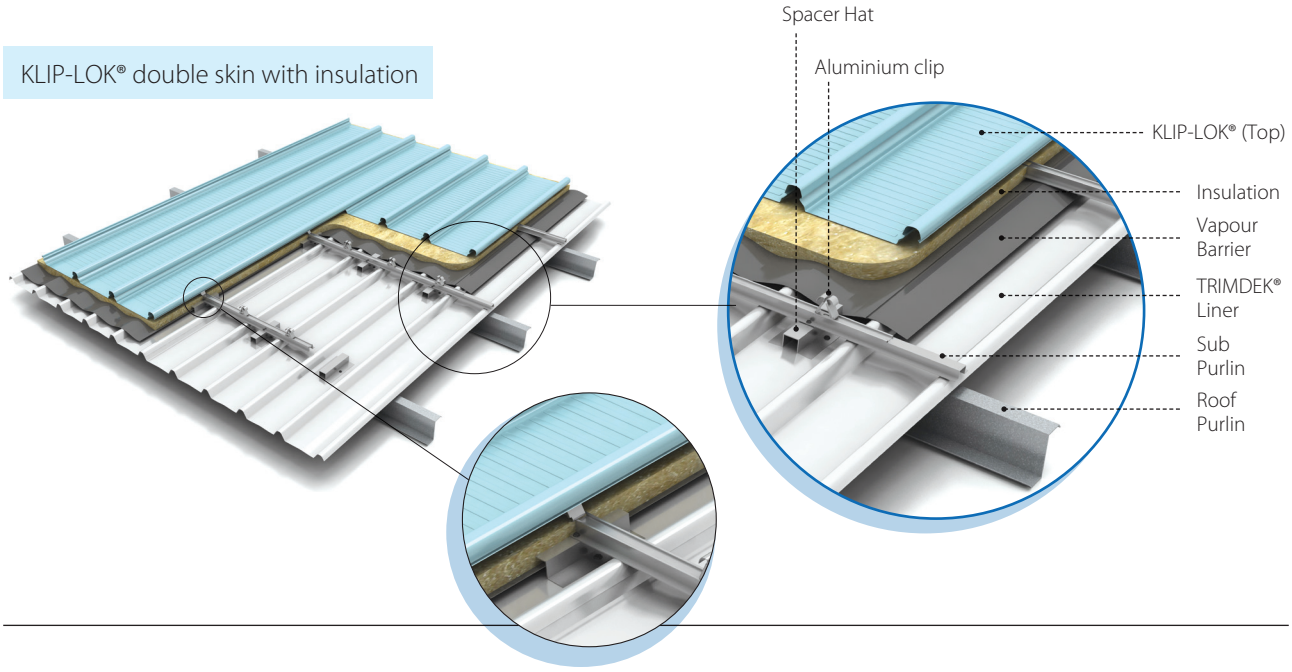
FLEX-LOK® single skin with insulation



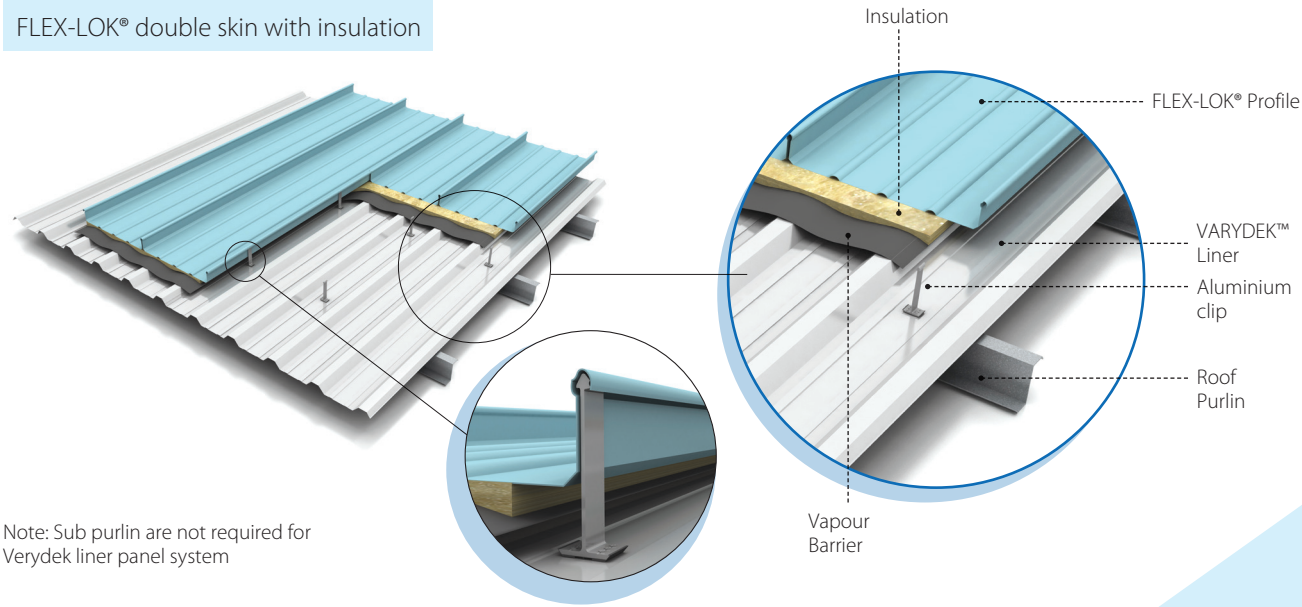
TRIMDEK® double skin with insulation



KLIP-LOK® double skin with insulation



FLEX-LOK® double skin with insulation

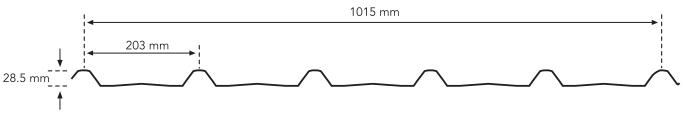


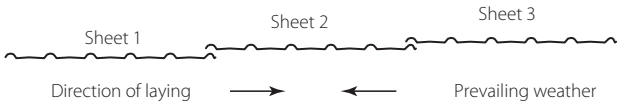
Note: Sub purlin are not required for Verydek liner panel system

Installation of Roof & Wall Claddings

1. Pierced fixed roof and wall cladding profiles

Step 1: Direction of laying for side laps under prevailing weather conditions





Industry practice is to start laying sheets from the end of the building that will be in the lee of the prevailing weather wherever possible. This is more important when the roofing profile is more vulnerable (shallow profile, simple nesting of the side-laps, longer spans, shallow slopes, etc.) and when the profile is in exposed situations. Deeper/stiffer roofing profiles and roofing profiles that interlock at the side-lap (e.g. KLIP-LOK® type roofing) have considerably less reliance on laying direction.

Step 2: Fastening sheets to supports

- Place roof screws through the crests. For walling, you may use either crest or valley fixing.
- Always drive the screws perpendicular to the cladding, and in the centre of the corrugation or rib

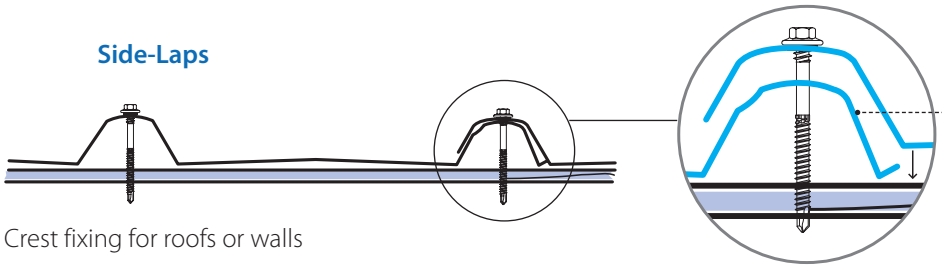
Roof - Screw fix through rib

Wall - Screw fix through pan

Step 3: Sidelaps

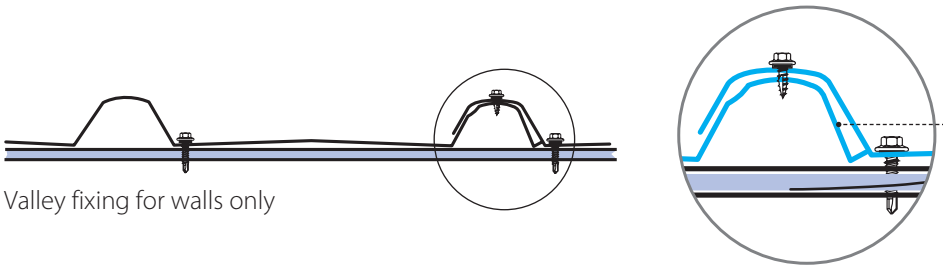
- The edge of TRIMDEK® 1015 with the anti-capillary groove is always the underlap.
- It is generally considered good practice to use fasteners along side-laps.

Side-Laps



Crest fixing for roofs or walls

The edge of TRIMDEK® 1015 with the anti-capillary groove is always the underlap.



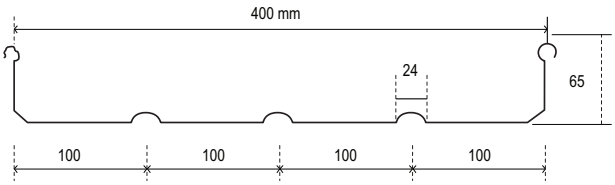
Valley fixing for walls only

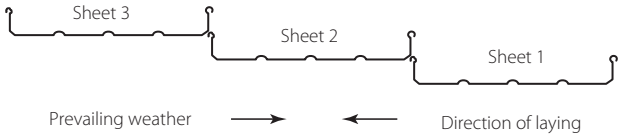
Step 4: Ends of sheets

- Overlap Roof sheets into gutters by about 50 mm.
- If the roof pitch is less than 25 degree or extreme weather is expected, the valleys of sheets should be turned down at lower ends and turned-up at upper ends by about 80 degree

2. FLEX-LOK® standing seam roof system installation

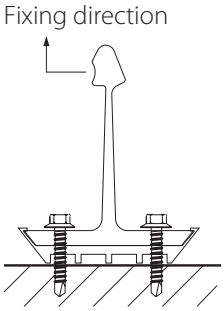
Step 1: Direction of laying for side laps under prevailing weather conditions





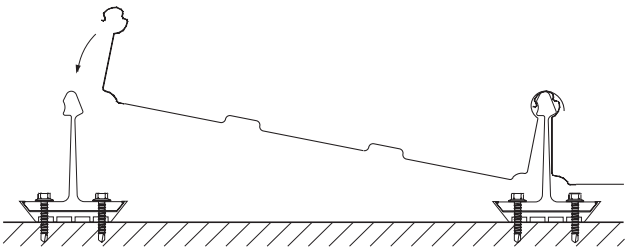
Step 2: Fixing clips:

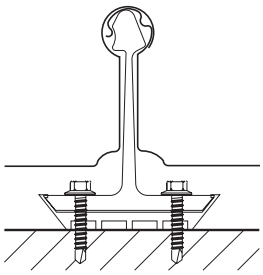
- LYSAGHT FLEX-LOK® is anchored onto the purlins with heat insulated concealed clips. Pay attention to the correct direction



Step 3: Fixing sheets on the clips:

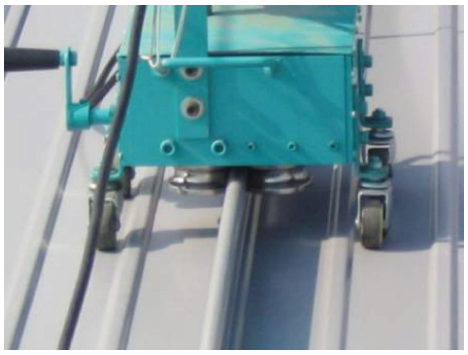
- Place the female rib overlapping the male rib of the previous sheet





Step 4: Locking the ribs

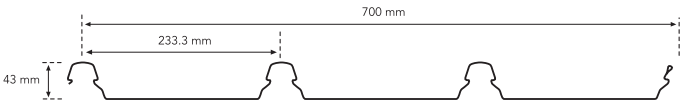
- Final locking of overlapped ribs is done by using seamer machine on site

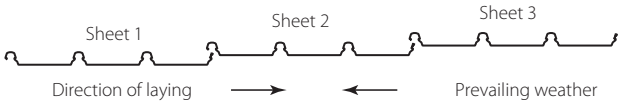


3. KLIP-LOK® concealed fixed roof and wall cladding installation

Step 1: Direction of laying for side laps under prevailing weather conditions

- Consider which end of the building is best to start from.
- For maximum weather - tightness, start laying sheets from the end of the building that will be downwind of the worst - anticipated or prevailing weather





Step 2: Fixing the clips on purlins

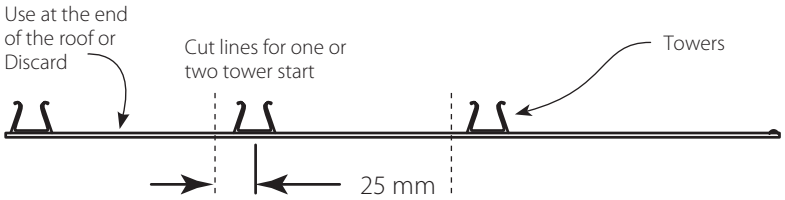
- Position the first clips on each purlin by placing onto the purlin nearest to the roof edge
- Fix the first clip on the support so they point in the direction of laying. Ensure the clip is 90 degrees to the edge of the sheet
- Drive hex head screw through the top of the clip, into the purlin.

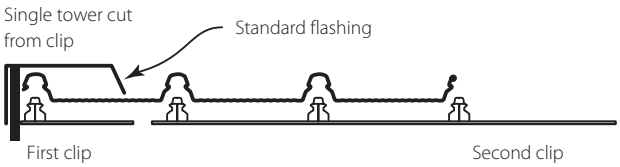
Alternate Starting Methods for Step 2:

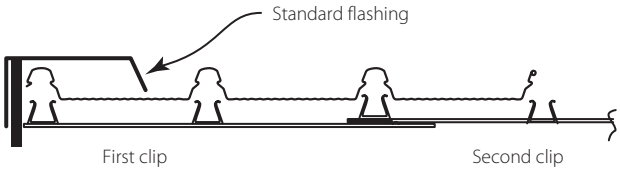
Starting Method 1 (Preferred start)

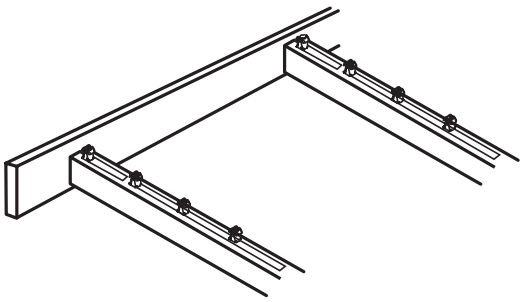
Cut the 1st clip 25mm from the centre of the second tower or third tower (as shown).

The first tower on the cut clip locates in the 1st rib of the first sheet. Two clips must be fixed at the start before any sheets are installed.

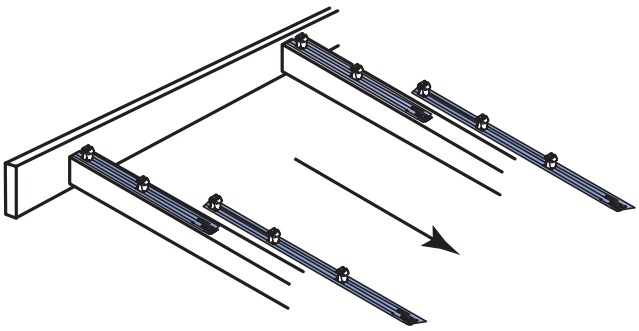








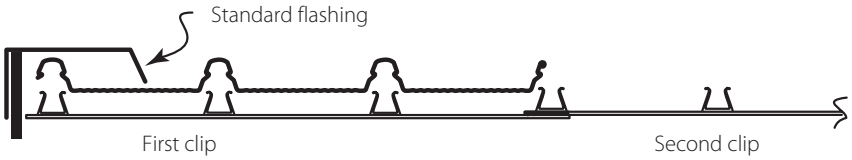
Single or one, tower start



Two tower start

Starting Method 2 for Step 2:

The first tower on the first clip locates in the first rib of the first sheet. The clip fixes the edge of the first sheet. Installation of the second clip will require the first sheet to be slightly lifted to allow clip engagement of clip slots/ tabs (see step 9 below).

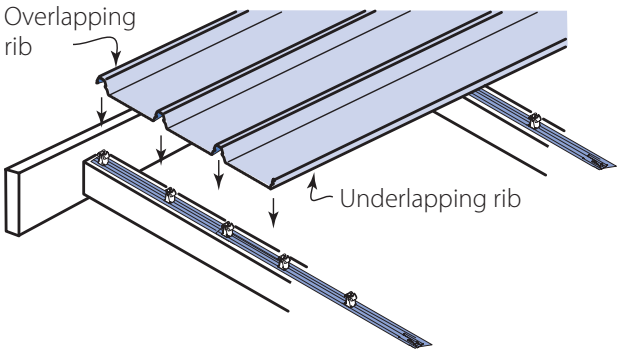


KLIP-LOK® 700: Starting method 2

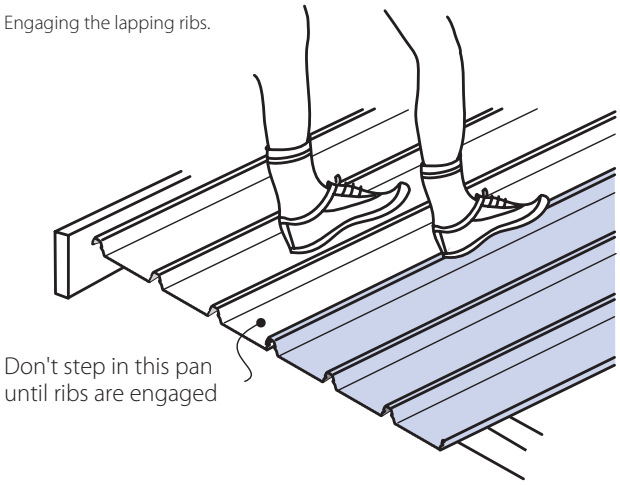
Step 3: Fixing sheet on clips

- Position the first sheet so that it overhangs the desired amount to the gutter. Ensure the first sheet is placed square to adjacent edges.
- Engage the sheet with clips using vertical foot pressure on all the ribs over each clip.
- Fix the next row of clips, one to each support with the slots and tabs engaged. As before, place the next sheet over its clips ensuring you also engage the edge of the preceding sheet.
- Occasionally check that the sheets are still parallel with the first sheet, by taking two measurements across the width of the fixed sheeting.
- If the final space is less than the full width of a sheet, you can cut a sheet along its length and shorten the clips as appropriate.

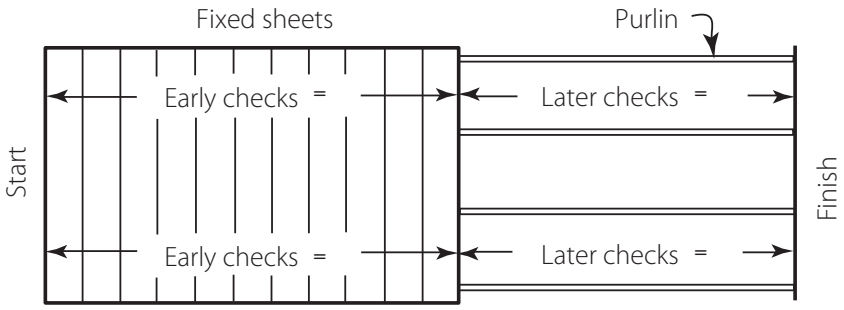
Placing the first sheet.



Engaging the lapping ribs.



Check alignment occasionally.



Accessories

LYSAGHT®

Accessories

The selection of right accessories is as critical as choosing the right roofing and walling material. We supply high-quality accessories that not only match but are also compatible with our cladding material. They ensure longevity, are weatherproof as well as leak proof and enhance aesthetics of the buildings.

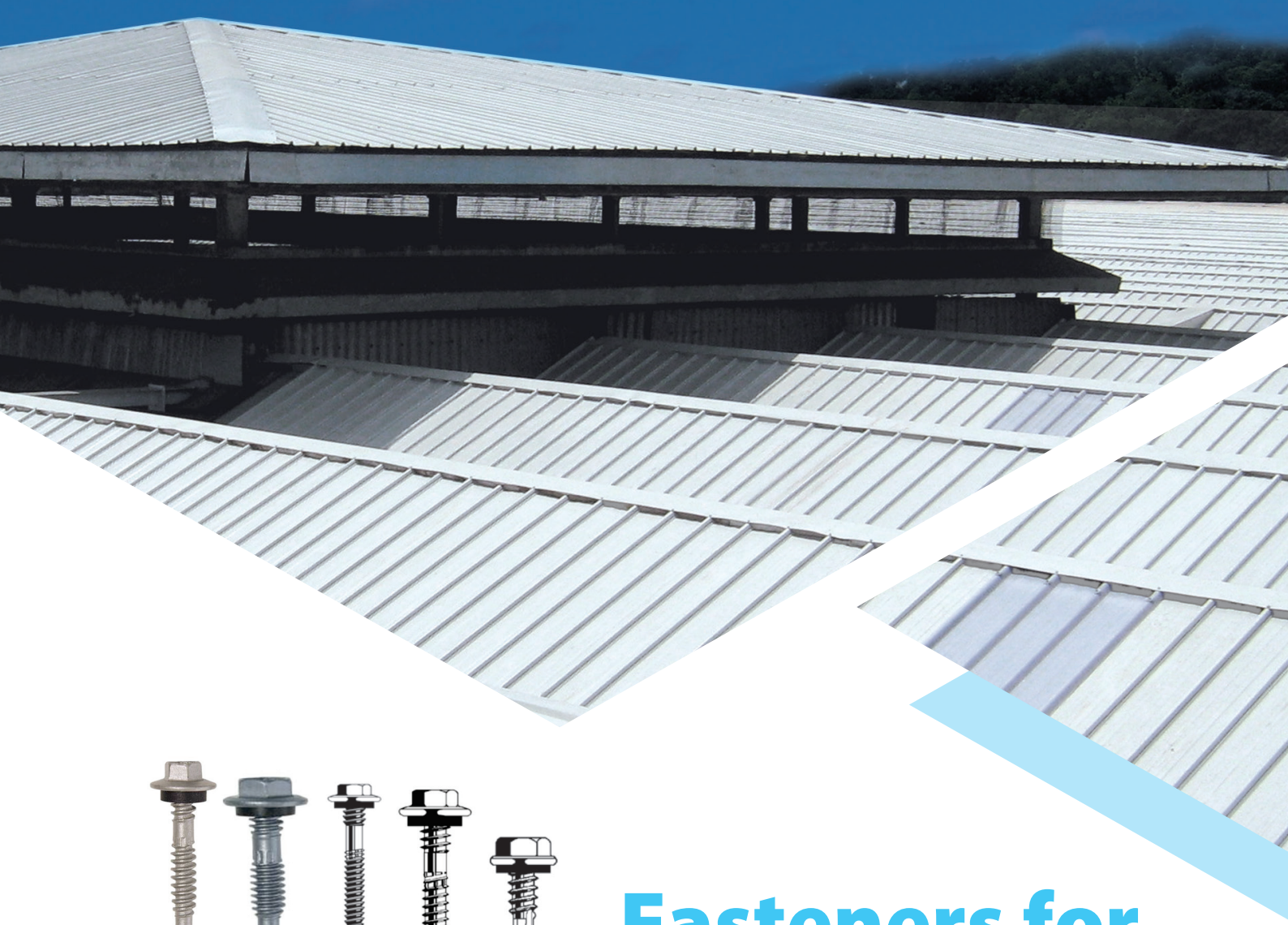
Trims & flashing

Pre-formed light gauge metal used as a cover to cut edges, sides or junctions of sheeting

- Experience of more than 140 years in making connections attractive and weatherproof
- Strong, light weight and corrosion resistant coating, manufactured from ZINCALUME® Steel or COLORBOND® steel
- Specializing in non-standard design and tailored solution for different structures
- Weatherproof roof penetrations

LOUVREMAX™ -Ventilation Solutions

Effective ventilation is an important aspect of productive work environment, to disperse heat, avoid condensation and control temperature within the building.
LOUVREMAX™ louver system is strong, durable and built to perform for many years. Its innovative baffles help minimize rainwater penetration while maximizing natural airflow. It has given excellent sand, dust and water resistant results in weather-ability tests conducted at our NATA-registered laboratory.



Fasteners for LYSAGHT® system

The fasteners (screws/rivets) used to fix cladding and the accessories should have the same service life as the cladding product with which they are to be used. Screws used for attaching panels and trims to girt and purlins are confirm to Australian standard AS3566 : 2002 class 3-4.

- High corrosion resistant coating
- Equivalent to service life of LYSAGHT® profiles
- Provides 4-6 times more life than conventional galvanized fasteners
- Unique shank protection system minimizes damage to the protective coating on the screw
- Grip sheeting towards the seal to maximize water-proof ability
- Strong self tapping drill point and durable washer
- To maxmise watertightness, always place roof screws with EPDM washers with shank guard through the crests. For walling, you may use either crest or valley fixing.

Natural Lighting Solutions

Fibre glass reinforcement plastics-specially designed skylights are composed of translucent, UV stabilized thermosetting polyester resin with a thoroughly impregnated glass fiber reinforcing mat (FRP) with UV protection coating/film on weathering face and comply with AS/NZS 4256.

- Excellent light diffusion property
- It is a strong, translucent, extruded profiles by fully automatic process
- Its light transmission is from 54% (Opal Colour) -70% (in clear)
- It matches the steel profile which enables smooth joints and good roof performance

Insulation Solutions

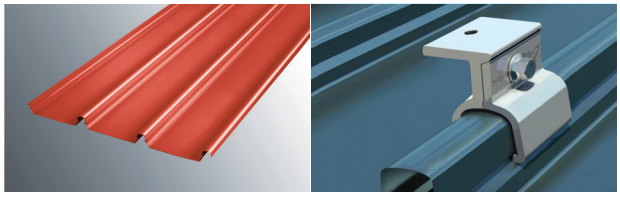
Our insulation solution helps by reducing the rate of heat transfer or applying the methods and processes used to reduce heat transfer. Fibre glass insulation provides better thermal resistance and low conductivity in comparison to other insulation material for building application. Flexible Glass Fibre Insulations composed of stable and uniformly textured inorganic glass fibers bonded together by non water soluble and fire retardant thermosetting resin are available with LYSAGHT® products.

- Better for environment control during fire, smoke emission and toxicity, it is suitable for all types of buildings
- Customised insulation thickness
- Different insulation solution depending upon local weather conditions
- Foil laminates available to reflect heat and provide vapour barrier

Roof Top Solar compatibility

LYSAGHT® profiles are compatible with ILIOS™ Roof Top Solar Mounting Solutions. Special clips are indigenously designed and developed to suit LYSAGHT® profiles. The clips are tested for the wind uplift forces with safe design factors. Solar panels are directly mounted on LYSAGHT® profiles using these clips.

- Smart solution enabling green building construction
- Quick and reliable installation
- A fully integrated solution



KLIPLOK® 700 and Solar Mounting Clip

Roof Top Solar Mounting Solutions are also available in MR-24® and FLEX-LOK® 400 Roof System.

Gutter & down pipes – Drainage solutions

To complete its range of drainage solution, we offer roll formed downpipes and down ender manufactured from ZINCALUME® steel and a wide range of COLORBOND® steel colours.

- Strong, light weight and corrosion resistant
- Drainage solution is as important as water tightness performance
- Its save you from worrying about water drainage
- Available in various panels and lengths subject to different pitches and local rainfall
- Professional eave gutter design

Infill Strips / Foam Filler

Infill Strips / Foam Filler are – specially designed infill strips manufactured from closed cell polyethylene form, sandwiched between undersigned roof sheeting and support.

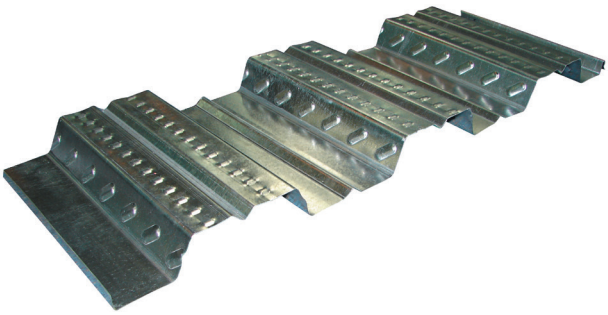
This provides positive seal against dust, insects, bords, rodents, windswept rain, salt and free embers from entering through rib cavities. The infill material has uniform compressability, waterproof, weather resistance, UV resistance, chemical resistance, is non tosic, odorless and environment friendly to meet installation requirement in accordance with AS2424-43 A & B

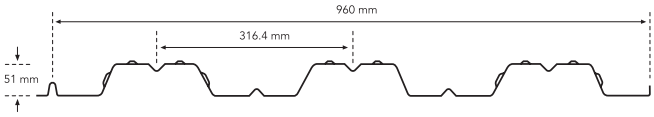
Decking System

LYSAGHT®

SMARTDEK® 51

Structural decking system





Sectional Properties			
Base Metal Thickness	0.7	1	1.2
Steel Grade (Mpa)	550	550	500
Zinc coating (g/m^2)	275	275	275
Self Weight (Kg/m^2)	7.35	10.34	12.33
Full Cross – sectional Area (mm^2/m)	855	1222	1467
Inertia Moment Ix1 (mm^4/m)	381700	545300	654300
Section Modulus Zx1 (mm^3/m) (min)	14090	20050	24000

LYSAGHT SMARTDEK® 51 Structural Decking System is an innovative "W" Profile structural steel decking system. It brings greater economy and design freedom as it is precision engineered and provides ease of use as well as safety. Its has excellent spanning capacities that ensure greater strength and less deflection, specially used in construction of composite floor slab.

LYSAGHT SMARTDEK® which is designed using a specialized software based on Windows named MegaFloor, has a more economic value and provides flexibility in designing due to its accuracy in size, easy montage and safety features.

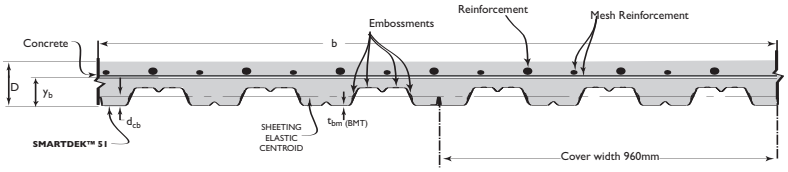
Profile

LYSAGHT SMARTDEK-51® structural decking panel comes with 960mm effective cover width, 51mm deep ribs with nominal 316mm centre-to-centre pitch with the embossments (shear groove) on top and side of ribs for better mechanical interlock between steel and concrete. The "V" shape stiffener at the top rib and valley for greater strength. The profile comprises of intermediate male and female ribs for every interlocking side lap- joint.

Material specifications

SMARTDEK® 51 panel is manufactured from hot dipped zinc coated high strength steel with 550 MPa yield strength and coating mass of Z275 (min 275g/m^2 total of zinc coating on both sides). The available thickness ranges from 0.70 mm to 1.2 mm BMT (Base Metal Thickness). The steel conforms to AS1397 and BS EN 10147:2000.

Cross sectional view



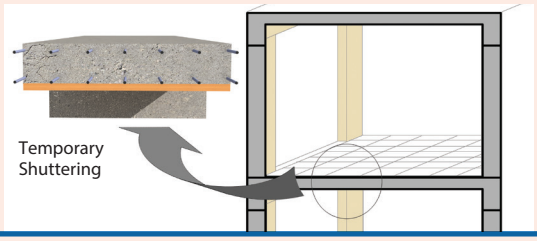
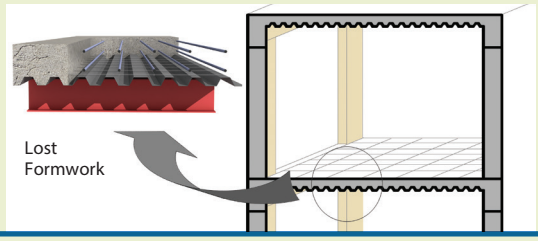
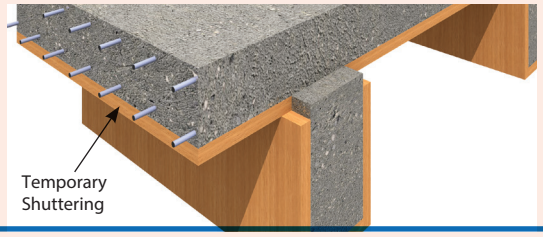
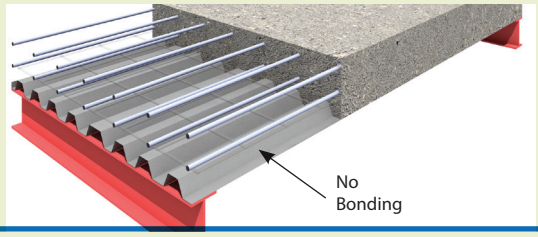
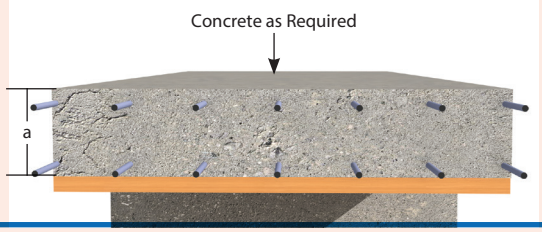
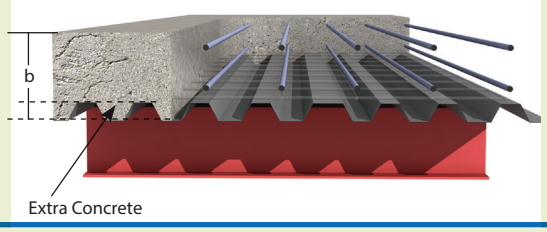
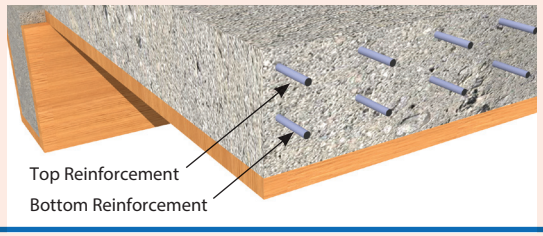
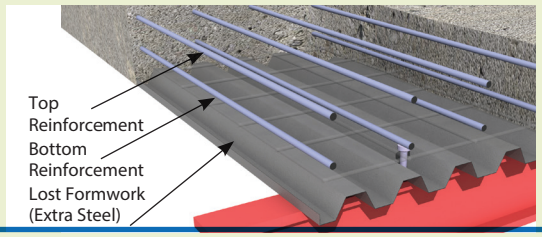
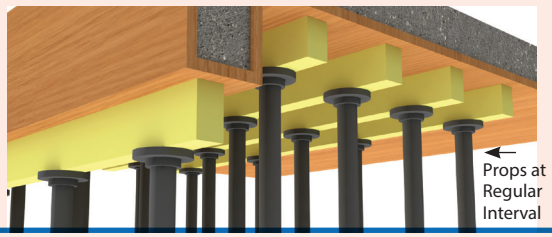
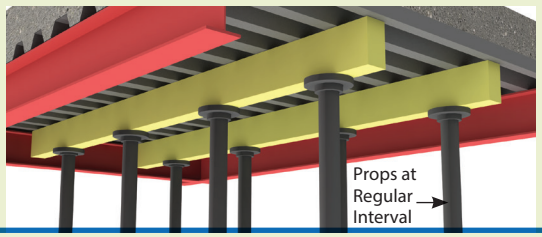
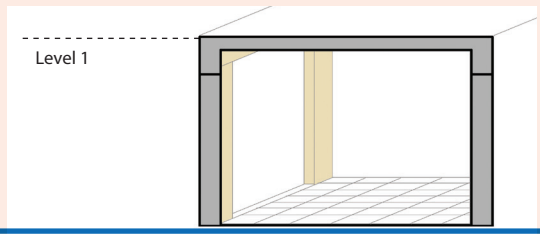
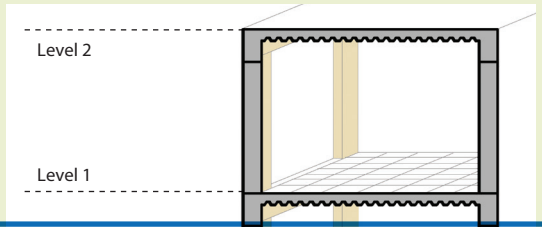
Shear Studs

D Y Patil University, Navi Mumbai

Benefits

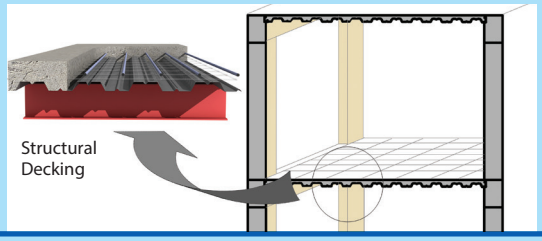
- Excellent spanning capacities for greater strength and less deflection 1.2 mm BMT SMARTDEK® 51 can span more than 3 metres unpropped
- Embossments provide mechanical interlock ensuring adequate composite action
- SMARTDEK® 51 acts as bottom tensile reinforment and eliminates the need of bottom rebars
- Precision engineered; brings greater economy and design freedom
- Ease of installation combined with safety
- Saves on concrete and reinforcement cost
- Greater corrosion resistance provides long life
- SMARTDEK® 51 composite slabs can be designed for up to 4 hours of fire rating

Advantages of SMARTDEK® 51 Decking system over conventional RCC slab

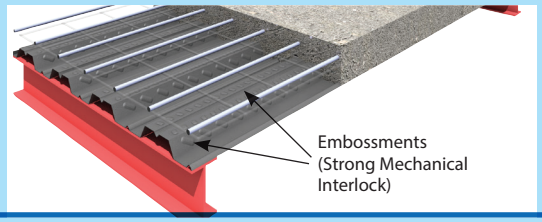
	Conventional RCC Slab	Lost Formwork Decking Slab
Structural Element	Temporary Shuttering removed after concrete curing  	Decking acts as a lost formwork material 
Composite Action	Temporary Shuttering removed after slab sets  	No bonding between steel sheet & concrete 
Concrete Saving	Concrete volume as per required slab depth  	Extra concrete required at the profile valleys 
Steel Saving	Reinforcement steel as required  	Decking acts as extra steel to the slab 
Prop Arrangement	Requires complex prop arrangement  	Reduction in props 
Construction Time	Normal speed of construction  	Decking application enhances construction speed 

SMARTDEK® 51 Structural Decking Slab

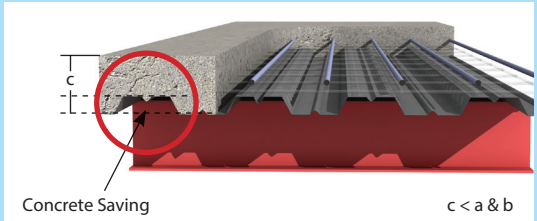
SMARTDEK® 51 acts as an integral structural element



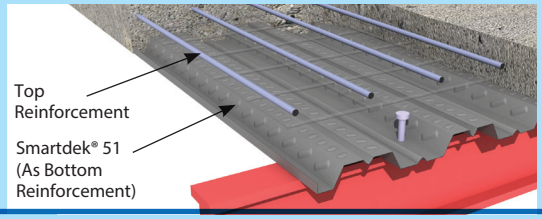
Embossments provide mechanical interlock between steel & concrete avoids slippage



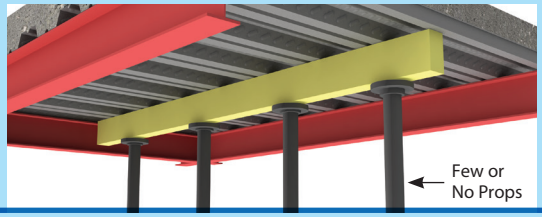
upto 20% savings in concrete makes construction economical



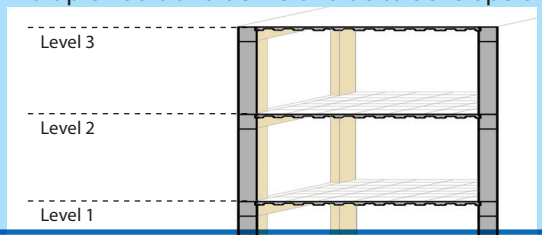
SMARTDEK® 51 acts as bottom tensile reinforcement – Upto 30% to 50 % steel saving



High tensile steel (G550) provides large unpropped spans

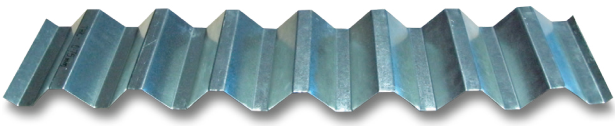


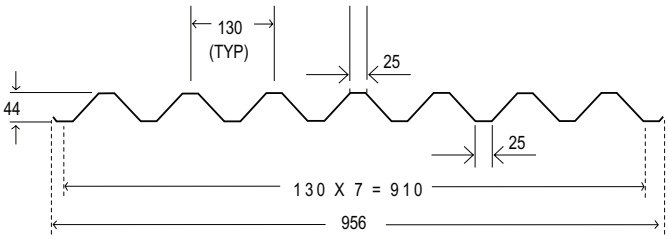
SMARTDEK® 51 application enables casting of multiple floors and delivers value to developers



EZYDEK™ 44

Decking System





EZYDEK™ 44 profile is a simple trapezoidal decking profile that enables easy and quick slab construction. It acts as a permanent formwork and provides a strong working platform during slab construction.

EZYDEK™ 44 sheet supports the load of wet concrete, imposed construction load and imposed storage load. It acts as a permanent shuttering solution and provides simultaneous casting of multiple floors. EZYDEK™ 44 sheet is available in customised lengths to meet customer specific requirements.

Available in multiple material choices, EZYDEK™ 44 profile provides ease of use and installation with safety. EZYDEK™ 44 profile is a steel decking system suitable for concrete, masonry or steel frame construction for application in infrastructure, industrial and commercial segments.

Sectional Properties					
Thickness TCT* (mm)	0.7	0.8	1	1.2	1.5
Unit weight (Kg/m)	6.67	7.63	9.54	11.46	14.33
Unit weight (Kg/m^2)	6.98	7.98	9.98	11.99	14.99
Moment of Inertia (cm^4)	21.96	25.28	31.93	38.58	48.55
Sectional Modulus (Top) (cm^3)	9.67	11.11	13.97	16.81	21.02
Sectional Modulus (Bottom) (cm^3)	10	11.49	14.44	17.37	21.72

Please contact Tata BlueScope Steel office considering the above for designs.

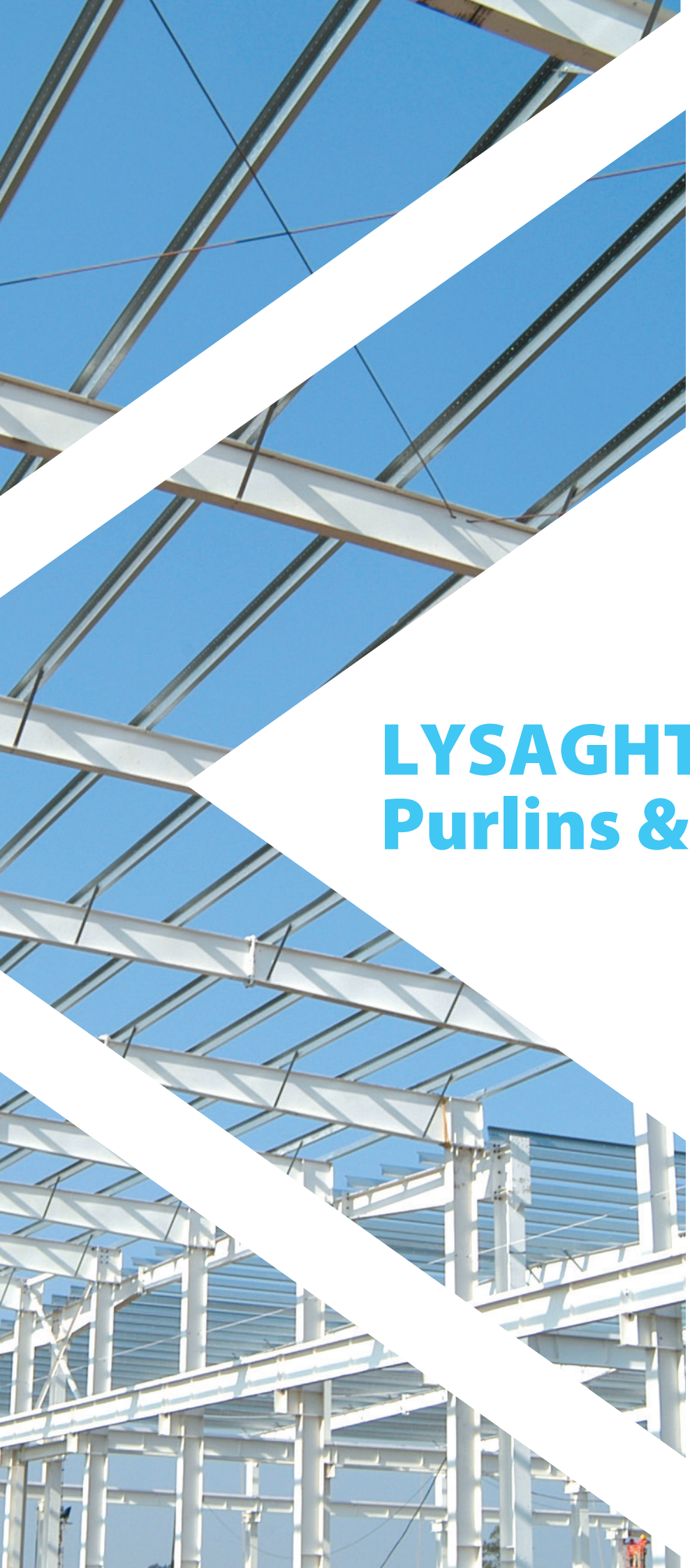
Profile:

EZYDEK™ 44 profile has an effective cover width of 910 mm and a depth of 44 mm. The profile has a pitch of 130 mm centre to centre and is available in Total Coated Thickness (TCT) from 0.7 mm to 1.5 mm. EZYDEK™ 44 profile is available in pre-galvanized steel and pre-painted galvanized steel.

Guangxi Fangchenggang Power Station, China

Benefits

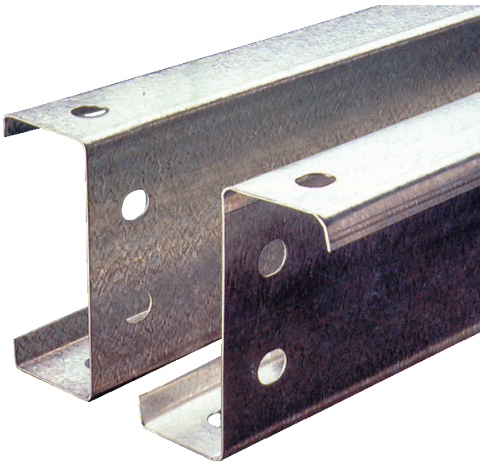
- Speedy construction ensures faster project completion
- Acts as a permanent shuttering
- Stronger than conventional shuttering
- Enables the casting of multiple floors
- Ease of installation with safety
- Greater corrosion resistance provides long life
- Provides strong working platform for allied construction activities



LYSAGHT®
Purlins & Girts

LYSAGHT®

Structural Purlins and Girts



LYSAGHT® Purlins and Girts are lightweight structural steel members, designed in accordance with the As/Nzs 4600 : 1996 Cold Formed Steel Structures utilising high Strength Zinc-coated Steel.

LYSAGHT® ZED-plus™ Sections may be used over single spans, un-lapped and lapped continuous spans in multi-bay buildings. Lapped continuous spans result in considerable capacity increase in the system.

LYSAGHT® CEE-plus™ Sections may be used in single spans, and un-lapped continuous spans in multi-bay building and are ideal as eave purlins or where compact sections required for detailing.

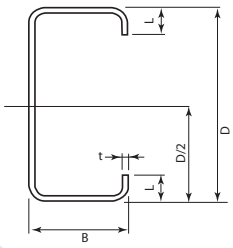
Dimensions of Purlin and Girts

Purlin Catalogue No.	Thickness	D	Mass Per Unit Length	ZED-Plus™			CEE-Plus™		ZEE-Plus™	
				E	F	L	B	L	B	L
	(mm)	(mm)	(kg/m)	(mm)	(mm)	(mm)	(mm)	(mm)		
C/Z10010	1.0	102	1.75	53	49	12.5	51	12.5	50	12.5
C/Z10012	1.2	102	2.09	53	49	12.5	51	13.5	50	13.5
C/Z10015	1.5	102	2.59	53	49	13.5	51	14.0	50	14.0
C/Z10019	1.9	102	3.27	53	49	14.5	51	15.5	50	15.0
C/Z10024	2.4	102	4.11	53	49	17	51	17.0	50	16.0
C/Z15010	1.0	152	2.36	65	61	13.5	64	12.5	60	16
C/Z15012	1.2	152	2.86	65	61	15.5	64	15.5	60	17
C/Z15015	1.5	152	3.56	65	61	16.5	64	16.0	60	18
C/Z15019	1.9	152	4.49	65	61	17.5	64	17.5	60	19
C/Z15024	2.4	152	5.64	65	61	19.5	64	19.0	60	20
C/Z20012	1.2	203	3.59	79	74	15	76	15.5	70	20.5
C/Z20015	1.5	203	4.46	79	74	16	76	16.0	70	19.8
C/Z20019	1.9	203	5.70	79	74	20	76	19.5	70	23
C/Z20024	2.4	203	7.17	79	73	21.5	76	21.5	70	23.8
C/Z25015	1.5	252	5.13	79	74	18	76	15.5	70	19.8
C/Z25019	1.9	252	6.46	79	74	19	76	16	70	23
C/Z25024	2.4	252	8.13	79	73	21	76	19.5	70	23.8
C/Z30019	1.9	300	7.98	100	93	27	96	26.5	95	23
C/Z30024	2.4	300	10.04	100	93	28	96	27.5	95	23.8
C/Z30030	3.0	300	12.52	100	93	29.5	96	29.5	95	24.8

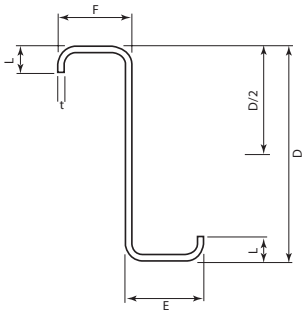
Note : Zinc coating is 275 gsm

Please contact Tata BlueScope Steel office considering the above for designs.

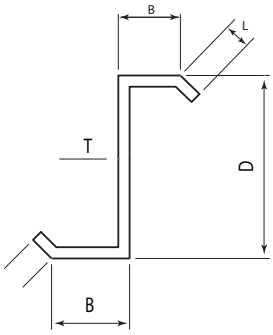
CEE-plus™ Section



ZED-plus™ Section



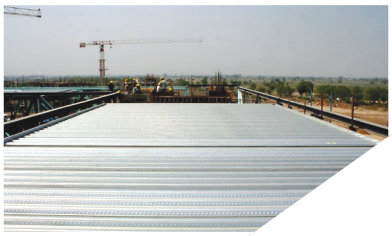
ZEE-plus

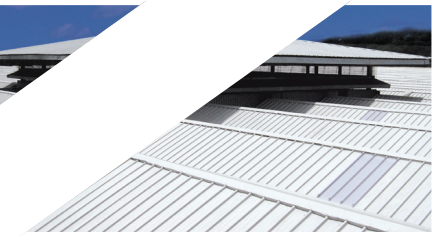


Benefits

- High Strength Steel for better load carrying capacity and greater spanning capability.
- Zinc coated to provide corrosion resistance
- Light weight, easy and quick to install
- Pre-punched to avoid welding and cutting at site
- Saves 40-60% steel in comparison with traditional steel
- Lower maintenance cost
- Cladding fixing is easier and quicker

BUTLER
LYSAGHT





LYSAGHT®
Project Gallery

LYSAGHT®

Daramic Batteries, Gujarat

Industrial

Tata Steel Kalinganagar, Odisha

Mahindra Vehicle Manufacturers Ltd., Maharashtra

JCB Manufacturing Unit, Rajasthan

Wipro Infrastructure Engineering, Karnataka

Siemens, Maharashtra

Industrial

BASF, Tamil Nadu

Inter Auto, Tamil Nadu

Perto India Ltd., Rajasthan

SRG Spinning Mills, Tamil Nadu

ABG Shipyard, Gujarat

Warehouse

Amazon India, Telangana

Apollo Tyres, Gujarat

Prakhhyat Infraprojects Pvt. Ltd., Maharashtra

Hindustan Unilever Ltd., Uttarakhand

Kolkata Metro, West Bengal

Infrastructure

BRTS Bus-Stops, Gujarat

Mumbai Monorail Stations, Maharashtra

Chennai Metro Rail Depot, Tamil Nadu

BAI National Centre of Excellence, Guwahati

Balewadi Sports Stadium, Maharashtra

Materials & Finishes

Strong Brands, Quality Steel

LYSAGHT® products are manufactured from high quality ZINCALUME® steel and COLORBOND® steel, and are leading brands with a wide range of applications. These products have been used with striking effect by leading architects to create the latest in modern building designs, through aesthetic roofing styles for building projects.

Zincalume®

ZINCALUME® steel is a premium metallic coated steel product composed of 55% aluminium, 43.4% zinc and 1.6% silicon. The zinc/aluminium alloy coating on ZINCALUME® steel imparts corrosion resistance of up to four times the life of glavanised steel.

Product Attributes

- Durable and strong
- Superior corrosion resistance and excellent combination of physical and cut edge protection
- Lightweight for easy handling
- Thermally efficient roofing
- Excellent flexibility in design, can be curved, for truly individual designs
- Weather tight and secure when installed to manufacturer's specifications
- Resistance to termite attacks
- Structural strength of steel allows excellent spanning ability
- Non-Combustible
- Clear resin coating resists scuffing and handling marks

ZINCALUME® steel in manufactured and supplied as per AS1397 and IS15961

Colorbond®

COLORBOND® pre-painted steel combines the superior strength of steel, the corrosion resistance and protection of a zinc/aluminium alloy (ZINCALUME® steel) coating that maintain its long lasting beauty with excellent colour retention.

Product Attributes

- Available in a range of attractive colours
- The zinc/aluminium alloy coating on ZINCALUME® steel plus the oven-backed, prepainted finish on COLORBOND® steel provide superior corrosion resistance for long life.
- Thermally efficient roofs made from COLORBOND® steel absorb less heat, thus cool very quickly.
- Lightweight compared to concrete and clay tiles (on a per area basis)- reduced load on supporting structures.
- Excellent flexibility in design, can be curved, for truly individual designs.
- Flexibility of design allows for both traditional straight roof sheeting as well as innovative curved roofing design.
- Resists cracking, chipping and peeling
- COLORBOND® steel is designed for exterior environment and conforms to Australian Standard AS 2728 Type 3 & 4.

Compatibility Notes

Lead copper ans stainless steel are not compatible with COLORBOND® steel and ZINCALUME® steel. Direct contact should therefore be avoided. Where inside condensation conditions are likely, coated steel girts should be used so that any ZINCALUME® steel to bare steel contact Is avoided.

Materials & Finishes

Strong Brands, Quality Steel

LYSAGHT® products are manufactured from high quality ZINCALUME® steel and COLORBOND® steel, and are leading brands with a wide range of applications. These products have been used with striking effect by leading architects to create the latest in modern building designs, through aesthetic roofing styles for building projects.

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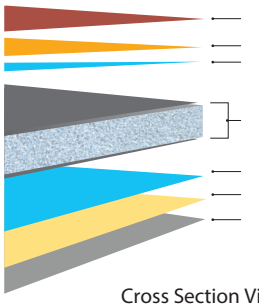


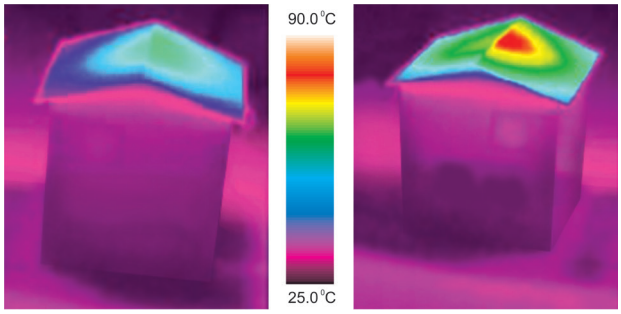
Cross Section View of COLORBOND® steel

Cool Comfort for Building Occupants

THERMATECH®

Thermatech® Solar Reflectance Technology is incorporated into COLORBOND® steel to lower temperature by absorbing less heat from the sun. COLORBOND® steel can reduce annual cooling energy consumption by up to 15%* and also reduces peak roof temperature by up to 6^0 C compared to roofing materials of similar colour with low solar reflectance. In other words, Thermatech® is able to increase the Solar Reflectance Index (SRI) of roofing material.

**Depending on level of insulation, colour, building shape, orientation and function.*

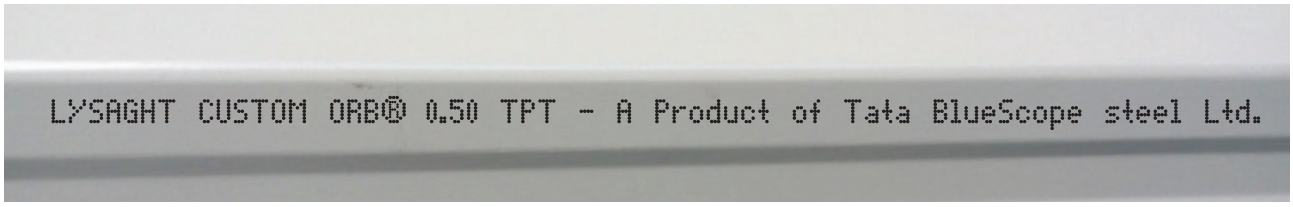


COLORBOND® steel with Thermatech® Technology

Standard pre-painted steel

Quality Assurance

LYSAGHT® profiles are supplied with a brand mark at regular intervals on the reverse side of profile. The brand mark includes - name of the profile and Total Paint Thickness. This brand mark ensures authenticity and quality of the product.



Standard Colour Range

Note : Above standard colour shades are given for guidance only. The Colour shades may look different due to print limitation. Please contact the nearest Tata BlueScope Steel sales office for any other colour shade enquiry.

General Care and Handling Guidelines

These guidelines provide only a general direction to the safe storage and handling for Tata BlueScope Steel supplied products. They are not intended to be nor should they be relied on as a substitute for technical and professional engineering advice regarding the safe storage and handling of products in the particular circumstances of individual customers. Advice for any particular situation/query can be obtained by contacting a sales representative at Tata BlueScope Steel or an appropriately qualified engineer.

1. Safety

It is common-sense to work safely, protecting yourself and workmates from accidents on the site. Safety includes the practices you use; as well as personal protection of eyes and skin from sunburn, and hearing from noise. Some sunscreens contain titanium oxides. These have been shown to break down some paint compounds and these should be avoided. Occupational health and safety laws enforce safe working conditions in most locations. Laws in every state require you to have fall protection which includes safety mesh, personal harnesses and perimeter guardrails. We recommend that you are fully aware of all local codes of safe practice and you adhere strictly to all laws that apply to your site.

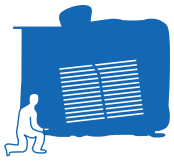
2. Care and storage before installation

Rain or condensation is easily drawn between the surfaces of stacked sheets by capillary action, or they can be driven in by wind. This trapped moisture cannot evaporate easily, so it can cause deterioration of the coating which may lead to reduced life expectancy or poor appearance. If materials are not required for immediate use, stack them neatly and clear of the ground and minimise the duration of exposure if left for extended periods. If left in the open, protect them with waterproof covers. If stacked or bundled product becomes wet, separate it without delay, wipe it with a clean cloth and stack it to dry thoroughly.

Wherever possible, do not leave uncovered stacks of sheets lying in the open.

If stacks cannot be kept under cover, barricade the stack and cover it with a waterproof tarpaulin, but leave space between the cover and the sheets to allow air to circulate

Store off the ground and on a slope so that if rain should penetrate the covering, water will drain away



Inspect the storage site regularly to ensure that moisture does not penetrate in the stock

3. Handling cladding on site

On large building projects you can reduce handling time by lifting bundles with a crane direct from the delivery truck onto the roof frame. Use a spreader bar for long sheets. For small to medium size projects, without mechanical handling facilities, you can unload sheets by hand and pass them up to the roof one at a time. Handling Safety - our product may be sharp and heavy. It is recommended that heavy-duty cut-resistant gloves and appropriate manual handling techniques or a lifting plan be used when handling material. Handle materials carefully to avoid damage: don't drag materials over rough surfaces or each other; carry tools, don't drag them; protect from swarf.

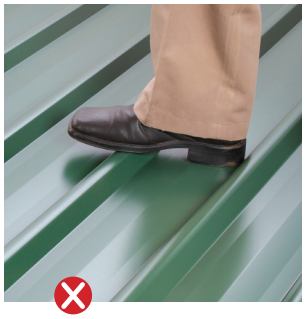
4. Walking on Roofs

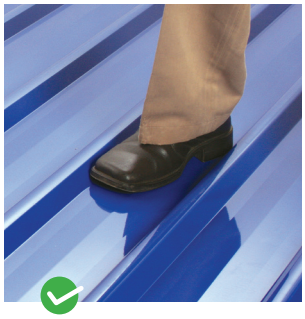
It is important that you walk on roofing carefully, to avoid damage to either the roofing or yourself. Generally, keep your weight evenly distributed over the soles of both feet to avoid concentrating your weight on either heels or toes. Always wear smooth soft-soled shoes; avoid ribbed soles that pick up and hold small stones, swarf and other objects.

For ribbed roofing walk on at least two ribs or corrugation (CUSTOM ORB® and SPANDEK®)

For pan type roofing walk in the pans (KLIP-LOK® and TRIMDEK®)

When you walk across the ribs, walk over or close to the roofing supports. Always take particular care when walking on wet or newly laid sheets – particularly on steeply pitched roofs. If there is heavy foot traffic on roof, provide a temporary walkway or working platform to minimize damage.





5. Cutting and Drilling

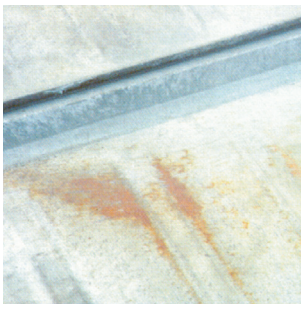
Cutting – Where possible, you should minimize sitework by using sheet cut to length in the factory. For cutting thin metal onsite, it is recommended that you use a power saw with a metal cutting blade because it produces fewer damaging hot metal particles and leaves less resultant burr than a carborundum disc. Cut materials over the ground and not over other materials where hot particles can fall and cause damage the finish – especially COLORBOND®

steel finish. It is best to have the exterior finish of a COLORBOND® steel sheet facing down. If you have to cut materials near sheets already installed, mask them or direct the stream of hot particles away. Reciprocating nibblers are also widely used in the roofing trade and they produce an excellent cut. The resulting small sharp scrapes can damage finishes and can cause potential injury. Take special care to collect these scrapes.
Making Holes -Holes are often made by drilling or cutting by hole saw or jig saw. Mask the area around the hole to protect paint from damage by swarf (metal scrap or abrasive particles resulting from cutting and drilling.)

6. Clean Up

Swarf (metal scraps and/or abrasive particles resulting from cutting and drilling) left on the surfaces of materials will cause rust stains which can lead to reduced life of the material.

- Sweep or hose all metallic swarf and other debris from roof areas and gutters at the end of each day and at the completion of the installation.
- If swarf has become stuck on a finish, it can be removed. Take great care not to remove the paint or the metal coatings.
- For critical applications inspect the job two weeks after completion, when rain or condensation will have caused any remaining swarf to rust, and thus highlight affected areas.



7. Warn other Contractors

Many stains arising from swarf do so, not from the work of roofing installers, but from other contractors working on the job. Similarly, problems can arise from contact with incompatible materials, like copper piping or chemically treated timber. Acid cleaning of bricks can also be a problem. Remember to warn them to walk on pans, not on the ribs. Architects and builders need to be aware of all this, and warn contractors accordingly.

Maintenance

Factors that most affect the long life of a roof (or wall) are original design, the environment of the installation, and the maintenance of the installation. Maintenance is probably the biggest factor.

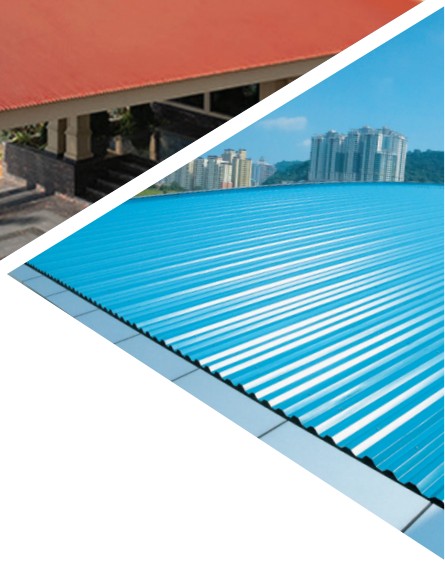
Maintenance includes:

- Regular inspection for problems before they become major corrosion sites
- Regular washing down, especially near coastal or industrial influences
- Removal of leaves and other debris from gutters, downpipes, leaf-guards, slots, holes and other overflow devices
- Keep walls free of soil, concrete and debris near the ground
- Don't overspray pesticide Factors that most affect the long life of a roof (or wall) are original design, the environment of the installation, and the maintenance of the installation.

Maintenance of COLORBOND® Pre-Painted steel: The paint system on COLORBOND® steel sheet is very durable. Simple maintenance of the finish enhances its life and maintains attractiveness for longer periods. Where the paint finish is naturally washed by rainwater (roofs, for example) there is usually no additional maintenance needed. However areas to be washed include soffits, wall cladding under eaves, garage doors, and the underside of eave gutters. Washing should be done at least every six months and more frequently in coastal areas where sea spray is prevalent, and in areas where high levels of industrial fallout occur. Avoid accumulation of salty deposits or industrial dirt. Establish a regular routine for washing COLORBOND® pre-painted steel products. Often garage doors can be washed with clean water at the same time as your car is being washed. Guttering and eaves can be hosed down when windows are being cleaned. Walls can be hosed down (if water restrictions permit) while watering the garden. Where regular maintenance doesn't remove all the dirt, wash the surface with a mild solution of pure soap or non-abrasive non-ionic kitchen detergent in warm water. Use a sponge, soft cloth or soft bristle nylon brush; be gentle to prevent shiny spots. Thoroughly rinse off the detergent with clean water. Never use abrasive or solvent cleaners (like turps, petrol, kerosene and paint thinners) on COLORBOND® steel surfaces. For advice on grease, oil or deposits not removed by soap or detergent contact Tata BlueScope Steel Ltd..

LYSAGHT®

Global Excellence since 1857



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