

LYSAGHT



SELECTION
guide

ABOUT BLUESCOPE LYSAGHT

The company comes under the umbrella of BlueScope Steel, one of the world's leading steel solutions provider with 100 manufacturing plants in 17 countries around the world and strength of more than 21,000 employees.

BlueScope Lysaght offers an extensive range of building envelop solutions for roofing and walling, structural decking, pre-engineered building systems and steel framing systems under its LYSAGHT® brand.

The LYSAGHT® brand is synonymous with producing high quality steel building components that are part of Asia's built environment. BlueScope Lysaght's portfolio, ranging from cutting-edge architecture, landmark projects, utility buildings for industrial, commercial and residential applications is a testament of its enduring reputation as a steel building solutions provider.

Products backed by Research & Development in world-class laboratory

Behind every solution, lies a commitment of continuous research and development as well as innovation to ensure that LYSAGHT® products stay at the forefront of technology through stringent quality control and testing procedures.

With a LYSAGHT® solution, there is an assurance that they are stringently tested in BlueScope Lysaght Technology Centre's and world class National Association of Testing Authorities (NATA) registered laboratory. Performance is our top priority.

LYSAGHT® products are manufactured under strict process governed by ISO9001:2000 Quality Management System and ISO14001:2004 Environment Management System.

Solutions based on Partnership

With decades of experience, BlueScope Lysaght possesses the competence and expertise to assist customers in construction projects that need customised design and consultation services.

The company has an advantageous position of tapping on the resources from its network all over the region to tailor-fit or trouble shoot customers' building requirements.

Our team of experts bring together engineering insights and practical skills to give you real world solutions.

With quality and services being the focus, BlueScope Lysaght will maintain its market leadership, giving confidence to its customers and partners in an increasingly competitive market.

Occupational Health & Safety Management

The company is recognised for her outstanding achievement in safety management systems and is conferred by the Ministry of Manpower, Singapore, an outstanding achievement award for two consecutive years. BlueScope Lysaght Singapore is honoured to be presented with Occupational Safety & Health Best Practices Award 2006 and 2007 for Outstanding Achievement in Safety Solutions - Working at Heights.

Lloyd's Register Quality Assurance has also accredited OHSAS 18001:2007 to the company. With a proper health & safety management system, this has convinced Singapore's Workplace Safety and Health Advisory Committee (WSHAC) to award a "bizSAFE" status to BlueScope Lysaght Singapore for delivering excellence in WSH management system.

YOUR TRUSTED PARTNER FOR BUILDING SYSTEMS



BlueScope Lysaght is one of Asia's largest rollformers that is dedicated to manufacture, supply and installation of top quality steel building products and solutions with a legacy of more than 150 years worldwide and 50 years in Asia.



SAFETY

BlueScope Lysaght encourages all installers to put on appropriate safety gear and take safety precautions when working at heights.



The use of Ausmesh 300 is recommended to assist in the prevention of falls during roof sheet laying. Please contact BlueScope Lysaght Singapore for more information on this product.

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LYSAGHT® KLIP-LOK® 406

Concealed Fix, Fluted Pan Profile

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® KLIP-LOK® 406 profile is a strong, durable and versatile long length roofing and walling profile. It combines the strength of steel, smart fluted pans and a lock-action rib design and concealed fastening, to allow application on low pitched roofs. It is also suitable for walling both horizontal and vertical installation.

The profile has an effective cover width of 406mm and a rib height of 41mm.

Custom-cut lengths are available at any measurement to a maximum transportable length.

APPLICATIONS

The profile can be used for any roofing and walling, fascia and soffit. The straight lines of the roof remain clean and smooth with its positive concealed clip fixing with no exposed fasteners.

PRODUCT BENEFITS

- Concealed fixing method.
- Total leak-proof and aesthetic solution.
- Conformity to International Building codes and standards.
- Excellent wind resistance.
- Lightweight yet exceptional strength.
- All weather performance.
- Genuine material warranty and product certification.

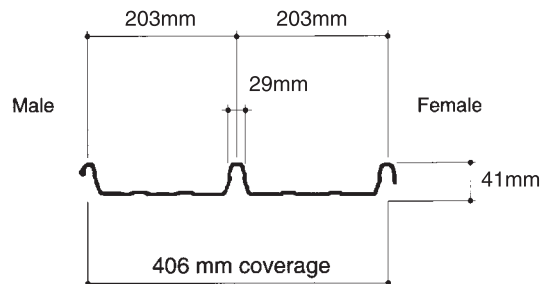


ACS Junior School



Pioneer Primary School

	0.54mm TCT Standard		0.68mm TCT Non Standard	
THICKNESS				
Base Metal Thickness in mm (BMT)	0.48		0.60	
Total Coated Thickness in mm (TCT)	0.54		0.66	
Effective coverage width (mm)	406		406	
Rib Depth (mm)	41		41	
MASS				
	Zincalume® steel	Colorbond® steel	Zincalume® steel	Colorbond® steel
Mass per unit area kg/m ²	5.68	5.85	7.02	7.12
Mass per unit length kg/m	2.31	2.34	2.85	2.89
Coverage m ² /tonne	177	174	143	141
MAXIMUM ALLOWABLE SUPPORT SPACINGS (NON-CYCLONIC AREA)				
Roof application				
Single span (mm)	1800		2300	
End span (mm)	2400		2700	
Internal span (mm)	3000		3600	
Overhang (mm) - Unstiffened	200		300	
- Stiffened	600		900	
Wall application				
Single span (mm)	2400		2700	
End span (mm)	2400		3000	
Internal span (mm)	2400		3000	
Overhang (mm)	400		600	
ROOF PITCH				
Sheet length without end lap	2° (1 in 29 approx.)			
Sheet length with end lap	3° (1 in 20 approx.)			
Grade of steel	G550 (550N/mm ² yield strength)			
Coating class (min.)	AZ200			



PROJECT REFERENCES



Ngee Ann Secondary School (Temporary Building)



Bukit Batok Industrial Park (Re-roofing Works)



Jurong East MRT



Pharmaceutical Factory, Tuas



Changi International Airport, Terminal 2



Singapore Exposition Hall 7-10



Trelodge@Punggol



Pathlight School



Bukit Panjang Government High School

LYSAGHT® SPANDEK®

Trapezoidal Steel Cladding

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® SPANDEK® Profile is a tough, symmetrical trapezoidal ribbed roofing and wall cladding profile, ideal where a stronger, bolder and more modern corrugated appearance is required.

LYSAGHT® SPANDEK® profile capitalizes on buildings requiring 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 radius falls between 20000mm and 60000mm. When used for wall cladding, the trapezoidal ribs can run either vertically or horizontally. Available in long lengths, it is governed only by transportation considerations.

This profile combines strength with lightness, rigidity and economy.

TYPICAL APPLICATIONS

- Fascia
- Feature wall
- Internal ceiling
- Soffit
- External wall cladding

PRODUCT BENEFITS

- Trapezoidal ribs can be run vertically or horizontally.
- Aesthetically pleasing and suits contemporary and modern design.
- Conformity to International Building codes and standards.
- Excellent wind resistance.
- Lightweight yet strong.
- First class resistance against corrosion, discoloration and tropical dirt staining.
- Genuine material warranty and product certification.



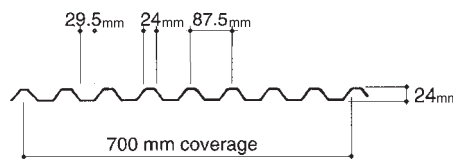
	0.48mm TCT Standard		0.54mm TCT Non Standard	
THICKNESS				
Base Metal Thickness in mm (BMT)	0.42		0.48	
Total Coated Thickness in mm (TCT)	0.48		0.54	
Effective coverage width (mm)	700		700	
Rib Depth (mm)	24		24	
MASS				
	Zincalume® steel	Colorbond® steel	Zincalume® steel	Colorbond® steel
Mass per unit area kg/m ²	4.72	4.81	5.36	5.45
Mass per unit length kg/m	3.31	3.37	3.75	3.81
Coverage m ² /tonne	212	208	187	184
MAXIMUM ALLOWABLE SUPPORT SPACINGS (NON-CYCLONIC AREA)				
Roof application				
Single span (mm)	1300		2000	
End span (mm)	1800		2200	
Internal span (mm)	2400		3000	
Overhang (mm) - Unstiffened	300		400	
- Stiffened	600		700	
Wall application				
Single span (mm)	2500		3000	
End span (mm)	3000		3000	
Internal span (mm)	3300		3300	
Overhang (mm)	300		400	
ROOF PITCH				
Sheet length without end lap	3° (1 in 20 approx.)			
Sheet length with end lap	5° (1 in 12 approx.)			
Grade of steel	G550 (550N/mm ² yield strength)			
Coating class (min.)	AZ200			

Crimp Curved Convex Roof

Crimp curved LYSAGHT® SPANDEK® steel cladding is designed to provide versatility and creativity to bring new and refreshing designs to commercial, industrial and domestic buildings. The combination of curves and contours in convex shapes with flats and angles in LYSAGHT® SPANDEK® have produced many aesthetically pleasing buildings. Minimum radius of crimp curved roof is 550mm.

This design freedom has resulted in significant cost savings in construction, mainly due to:-

- Less supporting framework required for fascias, parapets and roofs.
- Simplified and reduced work involved in installation of fascia cladding.
- Reduction or elimination of many flashings and cappings.
- Less cladding material required to cover a given curve.



PROJECT REFERENCES



Pit Building (Photo Courtesy of Jurong International)



3M Factory



Singapore Equine Quarantine Station



HDB Lift Upgrading Programme



Sengkang Sports and Recreation Centre



Commercial Building, Alexandra Road



Ngee Ann Polytechnic



Church of Saints Peter and Paul



Showa Denko Factory



HDB Linkway

LYSAGHT® TRIMDEK®

Subtle Square Fluted Steel Cladding

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® TRIMDEK® profile is a subtle square fluted roofing and walling profile. The fluting in the pans provides strength and long spanning capabilities, making it one of the more economical LYSAGHT® profiles.

It has bold, widely spaced ribs and is available in long lengths, governed only by transportation considerations. Due to its strength, spanning ability, lightness and rigidity, wide support spacings can be used with safety.

LYSAGHT® TRIMDEK® profile 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 450mm to underside or pan of sheet.

Custom-cut lengths are available at any measurement to a maximum transportable length.

TYPICAL APPLICATIONS

- Roof
- Wall
- Fascia
- Feature wall
- Fencing
- Internal ceiling
- Soffit

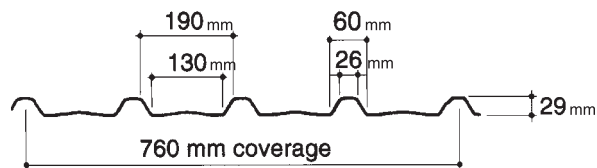
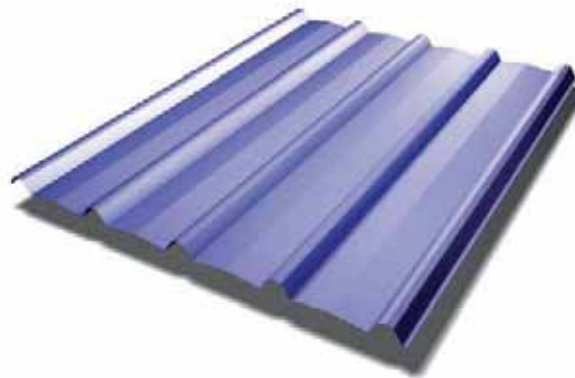
PRODUCT BENEFITS

- Excellent wind resistance.
- Superior against severe rainfall intensity.
- First class resistance against corrosion, discoloration and tropical dirt staining.
- Genuine material warranty and product certification.
- Excellent spanning capacity.
- Conforms to international building codes and standards.



Ang Mo Kio Market & Food Centre (A&A)

	0.48mm TCT Standard		0.54mm TCT Non Standard	
THICKNESS				
Base Metal Thickness in mm (BMT)	0.42		0.48	
Total Coated Thickness in mm (TCT)	0.48		0.54	
Effective coverage width (mm)	760		760	
Rib Depth (mm)	29		29	
MASS				
	Zincalume® steel	Colorbond® steel	Zincalume® steel	Colorbond® steel
Mass per unit area kg/m ²	4.35	4.43	4.95	5.02
Mass per unit length kg/m	3.31	3.37	3.75	3.81
Coverage m ² /tonne	230	226	203	200
MAXIMUM ALLOWABLE SUPPORT SPACINGS (NON-CYCLONIC AREA)				
Roof application				
Single span (mm)	1100		1600	
End span (mm)	1300		1850	
Internal span (mm)	1900		2600	
Overhang (mm) - Unstiffened	150		200	
- Stiffened	300		350	
Wall application				
Single span (mm)	2400		2700	
End span (mm)	3000		3000	
Internal span (mm)	3000		3000	
Overhang (mm)	150		200	
ROOF PITCH				
Sheet length without end lap	3° (1 in 20 approx.)			
Sheet length with end lap	5° (1 in 12 approx.)			
Grade of steel	G550 (550N/mm ² yield strength)			
Coating class (min.)	AZ200			



PROJECT REFERENCES



Bedok Sports Complex



Sengkang Sports and Recreation Centre



Fernvale Garden School



STAR Automotive Centre



Anglo Chinese Junior College



Outward Bound Singapore, East Coast Campus



Terrace Industrial Development,
Changi North Street 1



Market & Food Centre, Upper Boon Keng

LYSAGHT® SELECT SEAM® SERIES

Concealed Fastened Roof System

FEATURES & PRODUCT DESCRIPTION

Sleek and aesthetically pleasing standing seam roof profiles from LYSAGHT® roofing and walling solutions are known for form and function attributes, which has made countless popular applications in residential, institutional and commercial roofing projects. Minimum accessories are needed to install the roofing sheets with ease.

TYPICAL APPLICATIONS

LYSAGHT® standing seam roofing profiles are widely used in roof, wall and fascia applications with capability to form both straight and curved roof with classic and sleek pitch.

There are two profiles available in LYSAGHT® standing seam series profiles :

1. LYSAGHT® SELECT SEAM®
2. LYSAGHT® SELECT SEAM® II

Maximum length available is 12000mm.

PRODUCT BENEFITS

LYSAGHT® SELECT SEAM®

- A concealed fastened roof system
- Versatile for both vertical and inclined applications
- Flexible for difficult hip and mansard roofs
- Clean wide pan appearance is ideal for classic architectural effect
- Recommended roof pitch is 7.5°

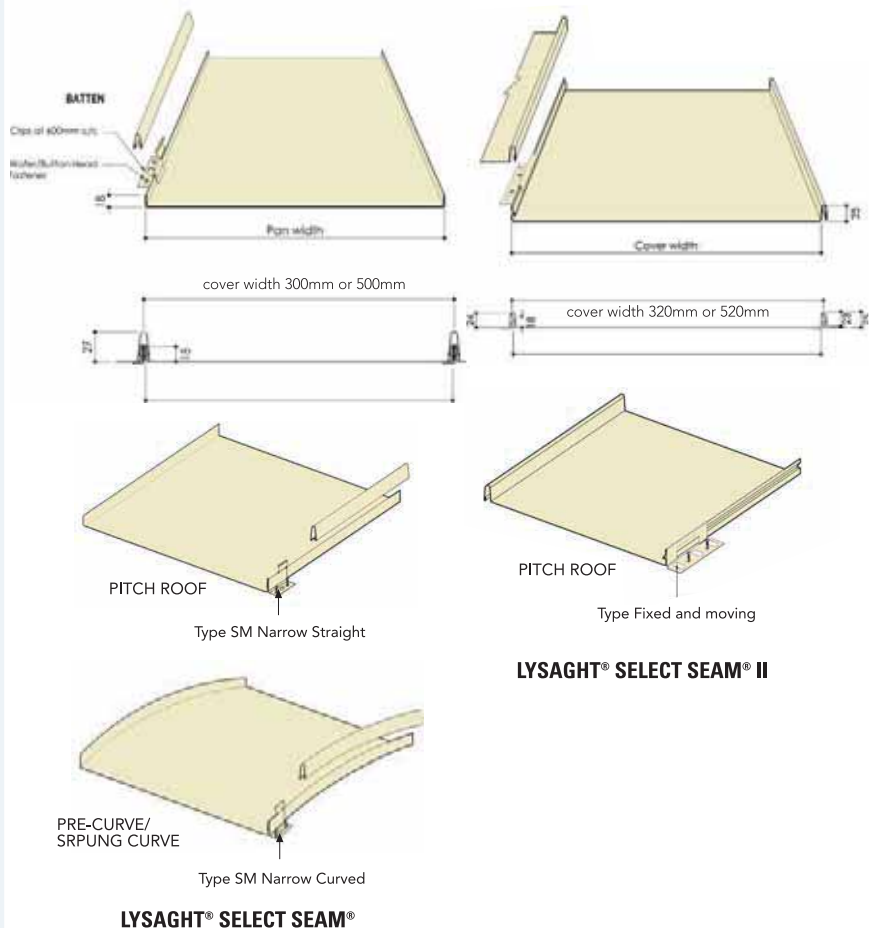
LYSAGHT® SELECT SEAM® II

- Extremely high-performance snap-on profile
- Traditional standing seam panel aesthetics
- Excellent seal at seam height of 25mm
- Does not require a preformed batten
- Easy to fix and install
- Utilized in roofing, mansards and fascia applications.
- Its simplicity only allows application in non-curved roofs
- Superior flatness
- Greater workability on site
- Recommended minimum roof pitch is 7.5° (for roofing sheet without capping)

See page 26 for note on Oil Canning

	LYSAGHT® SELECT SEAM®	LYSAGHT® SELECT SEAM® II
Cover Width (mm)	300 or 500	520
Height of Seam (mm)	27 (batten seam height)	25
Roof Pitch (mm)	7.5° min	
Grade of Steel	G300 (300MPa)	
Metallic Coating	ZINCALUME® steel (zinc/aluminium alloy coated steel)	
RECOMMENDED RADIUS CURVATURE (applicable to LYSAGHT® SELECT SEAM® profile only)		
Sheet Profile	Minimum Radius (mm)	Maximum Radius (mm)
Pre-curved	800	10,000
Sprung curved	10,000	60,000
Batten		
Pre-curved	800	20,000
Sprung curved	20,000	60,000

Note: • Please refer to BlueScope Lysaght Singapore for more information on pre-curved and tapered sheet profile.
• Please consult your BlueScope Lysaght Singapore Sales Consultant to assist in determining the choice of LYSAGHT® SELECT SEAM® or LYSAGHT® SELECT SEAM® II profile.



PROJECT REFERENCES



Greenridge Secondary School



Ascott Training Centre



The Calrose Condominium



SAFRA Clubhouse @ Boon Lay



Public Housing Estate Upgrading Works



Greendale Primary School



Private Residence at Lloyd Road

LYSAGHT® LOCKED SEAM®

Flat Pan, Concealed-fix Roofing

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® LOCKED SEAM® series of roof profile is an engineered high quality and lightweight standing seam roof profile, designed as a fully-supported roof and wall cladding for curved, pitched and tapered conditions. LYSAGHT® LOCKED SEAM® series of standing seam profile is economical, durable, which can be adapted to contemporary architecture.

TYPICAL APPLICATIONS

LYSAGHT® LOCKED SEAM® series of roof profile offers multiple design options in:

- Straight sheets
- Smooth curved sheets without crimped marks
- Tapered sheets
- Tapered curved sheets

The maximum length available is the maximum transportable length.

PRODUCT BENEFITS

LYSAGHT® LOCKED SEAM®

- A modest and discreet roof
- Specially designed height at 32mm contributes to the modernity, lightness and regularity of the roof architecture
- Minimalism and simplicity effect
- Gives a distinctive appearance when used on more complex shapes



Natura Loft

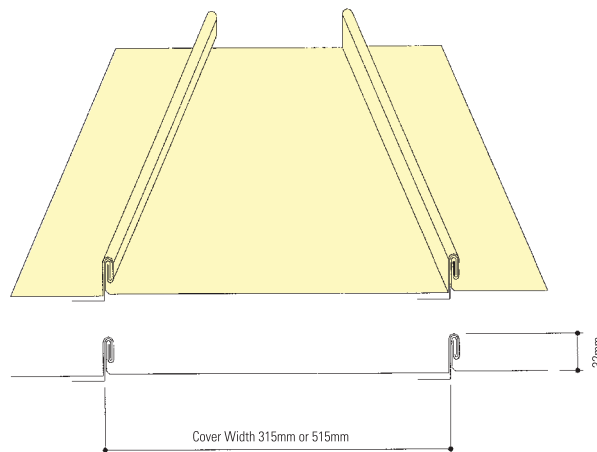


Indoor Sports Hall, School Upgrading Programme, West Spring Secondary School

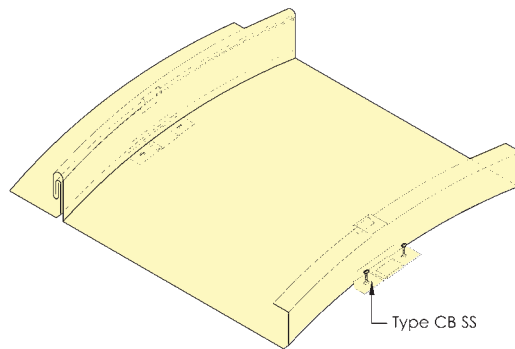
See page 26 for note on Oil Canning

LYSAGHT® LOCKED SEAM®	
STANDARD	
THICKNESS	
Base Metal Thickness in mm (BMT)	0.55
Total Coated Thickness in mm (TCT)	0.61
Cover width (mm)	315 or 515
Seam height (mm)	32
Nominal Weight (kg/m ²) in COLORBOND® ULTRA steel	5.848 / 5.348
RECOMMENDED RADIUS	
Sheet Profile	
Pre-curved	Min / Max Radius (mm)
Sprung curved	800 / 30000
Grade of steel	30000 / 60000
Coating class (min)	G300 (300N/mm ² yield strength)
Minimum roof pitch	AZ200
	3° (without end-lap)

Note: • Please consult your BlueScope Lysaght Singapore Sales Consultant for information on non-standard widths, non-standard material and drag load.
• Cover widths specified herein are applicable for non-cyclonic areas only. For cyclonic area and high wind conditions, panel cover width will be configured separately.



LYSAGHT® LOCKED SEAM® Profile



PRE-CURVE / SPRUNG CURVE

PROJECT REFERENCES



Private residence at Sennet Avenue



Outram MRT



Lakeside Primary School



Esplanade Theatres on the Bay



Manjusri Secondary School



Indoor Sports Hall, School Upgrading Programme, Fuhua Secondary School



Pit Building (Photo Courtesy of Jurong International)



Singapore Flyer, Outdoor Retail

LYSAGHT® ZIPDEK®

High-ribbed Standing Seam Roofing & Walling System

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® ZIPDEK® profile is high-ribbed standing seam roofing profile that is set to meet the requirements and specifications of architecturally demanding applications. Its bold lines and uncommon flexibility enable virtually any roofing design to be constructed.

A concealed-fixed roofing profile, its versatility allows it to be used on straight, tapered, convex and concaved roof forms. Its high-ribbed profile provides excellent rain water drainage capacity.

LYSAGHT® ZIPDEK® profile can be used as a single wall or double skin roof system depending on the acoustic requirements of the building. Its lightweight design is available in wide range of widths and lengths of up to 12000mm and can be rolled on site.

Maximum length are available as per on site rolling.

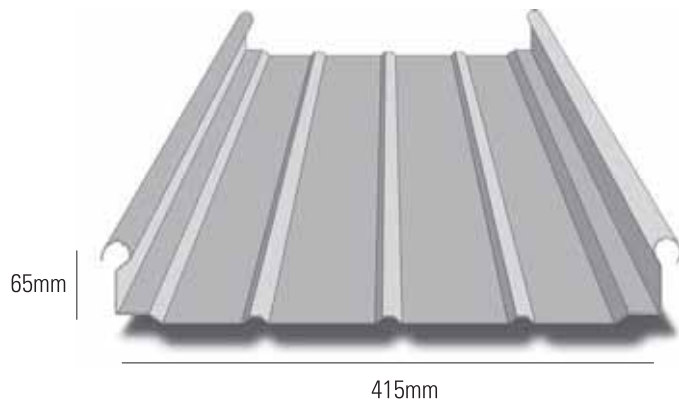
TYPICAL APPLICATIONS

Ideal for modern building facades and imaginative roof landscapes. It is suitable for large commercial, institutional and infrastructural roofing that require large roof spans.

PRODUCT BENEFITS

- Lightweight to strength ratio.
- Structural roofing strength.
- Excellent rain water drainage capacity.
- Large spans can be bridged with a variety of shapes.
- Can be used as a single skin roof.

	Standard
THICKNESS	
Base Metal Thickness in mm (BMT)	0.55
Total Coated Thickness in mm (TCT)	0.61
Effective coverage width (mm)	415
Rib Depth (mm)	65
MASS	
Mass per unit area kg/m ²	6.57
Coverage m ² /tonne in COLORBOND® ULTRA steel	153
ROOF PITCH	
Minimum Recommended Pitch	2° (1 in 29 approx)
Sheet Length without end lap	3° (1 in 20 approx)
Sheet Length with end lap	
Grade of steel	G300 (300N/mm ² yield strength)
Coating class (min.)	AZ200



PROJECT REFERENCES



Jurong Secondary School



Yu Neng Primary School



Jing Shan Primary School

LYSAGHT® PRESTIGE® PANEL II

Subtle Square Fluted Steel Cladding

FEATURES & PRODUCT DESCRIPTION

The LYSAGHT® PRESTIGE® PANEL II is an improved version of its predecessor, a quality product which provides a wider choice of durable and functional wall claddings to building designs in the region.

- High-strength design can be used for exterior and interior walls, ceilings as well as soffits.
- Panels are factory corrective-leveled during roll-forming to provide the flattest product possible.
- Available perforated for acoustical applications.

Custom-cut lengths are available in continuous length (up to 12000mm).

TYPICAL APPLICATIONS

- Vertical surface cladding
- Walling
- Fascias
- Feature wall, ceiling and fencing

Oil Canning

Flat metal surfaces (e.g. LYSAGHT® PRESTIGE® PANEL II) will display waviness commonly referred to as oil canning. This is caused by steel mill tolerances. Oil canning is a characteristic, not a defect, resulting from panels manufactured from light gauge metal. Panels are to be factory corrective leveled to minimize oil canning. Oil canning is not a valid reason for panel rejection.



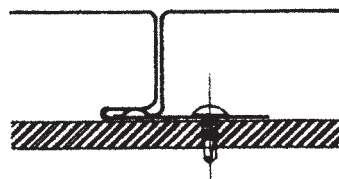
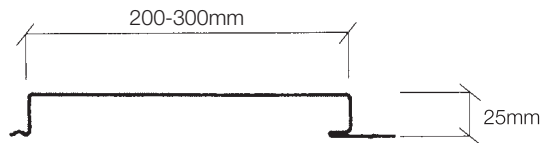
Tan Tock Seng Hospital (Extension Building)

Standard	
THICKNESS	
Base Metal Thickness (BMT)	0.55mm
Total Coated Thickness (TCT)	0.61mm
Mass per unit area	200mm-6.85kg/m ² , 300mm-6.10kg/m ²
Cover Width	200 & 300mm*
Panel Depth	25mm
Grade of steel	G300 (300N/mm ² yield strength)
Lengths	up to 6000 mm* (Custom-cut* to size requirements in continuous lengths available)
Tolerances	Length + 0, -5mm Cover Width ±4mm Rib Height ±0.5mm
Coating class	AZ200
Packing	In strapped bundles of 30 sheets maximum not exceeding one tonne

*Note : • Please refer to BlueScope Lysaght Singapore for more information on non-standard orders with different widths and other materials.
• For non-standard orders, a minimum order quantity and delivery lead time is applicable.



LYSAGHT® PRESTIGE® PANEL II



PROJECT REFERENCES



Changi Storage Hub



HDB Lift Upgrading Programme



West Park BizCentral



HarbourFront Mall Taxi Stand



Industrial Factory, Soon Lee Drive



Industrial Factory, Singapore



Sengkang Sports and Recreational Centre

DECRA® METAL TILE ROOFING SYSTEMS

The Beauty of Steel and Stone

The suite of solution encompassing the synergy of steel and stone complements BlueScope Lysaght Singapore's existing steel building solutions.

The use of ZINCALUME® steel substrate from BlueScope Steel, combined with the development of specialised surface coatings and pressing technology contributes to a suite of steel roofing tile building solutions to complement many different home styles.

DECRA® roofing tiles' distributed by BlueScope Lysaght exhibited remarkable resilience which have met the requirements of the most stringent laboratory tests as well as the toughest building codes and standards worldwide.

Product Benefits

- Light-weight and durable
- Quiet
- Excellent Fire Resistance
- Superior Wind Resistance

Weathering Resistance Test

American Society for testing and materials standard (ASTM) G26.

Weathering Security

High speed dynamic rain penetration and high wind loading tests and low speed dynamic penetration test.

Corrosion Resistance

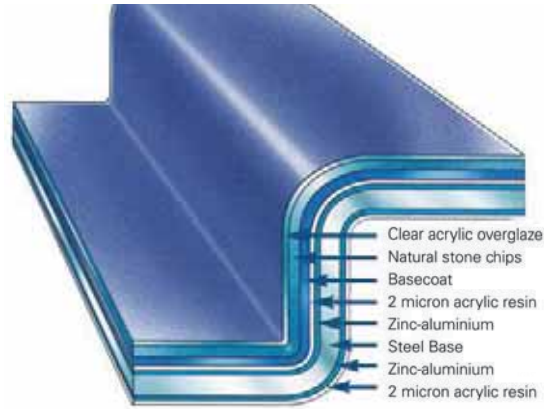
Salt/fog test to ASTM B117 and ASTM D2247

Concentrated Loading

Force on roofing tiles to Australian Standard 1582 and Rule 5.2, (1973) by Cyclone Testing Station, Australia

Fire Resistance

Class A&B under UL790 (ASTM E-108) when applied in accordance with instructions.

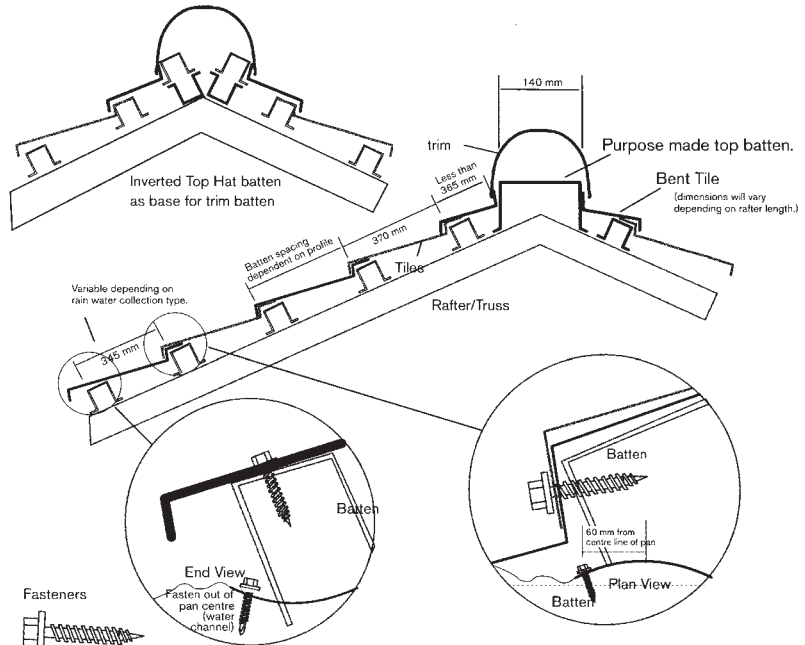


Note :

1. The basecoat of the Roofing tile includes a Biocide to combat the growth of fungi.
2. The natural stone chips are bonded to the steel base of the tile using clear acrylic resins, which are cured using the latest heat technologies. The result still allows enough flexibility for bending without damages during installation.
3. The textured roof tiles covered in a stone chip helps to absorb noise from rain

TYPICAL INSTALLATION OF TILES USING TOP HAT BATTENS

Note: all dimensions given are nominal



12 gauge, 25 mm pierce point screw recommended by AHI Roofing Limited.

It is the responsibility of architects, builders and roof installers to ensure that all local standards, building codes, by-laws and requirements are satisfied.

DECRA® Roofing tiles have a unique horizontal fixing methods, which means NO LEAKAGE or loose edges and wind shear is virtually eliminated.

DECRA® ROMAN TILE

Beautiful, Strong and Enduring

DECRA® Roman Tile, distributed by BlueScope Lysaght, is pressure formed from 0.48mm steel, where five tile impressions are formed horizontally in one panel. Light in weight, they are easily handled and installed in a short time. There is no need for expensive reinforcing of the sub-structure.

Available in ROSSO colour, Decra® Roman Tiles give today's architects, specifiers and engineers precisely what they want – distinction, versatility and quality.



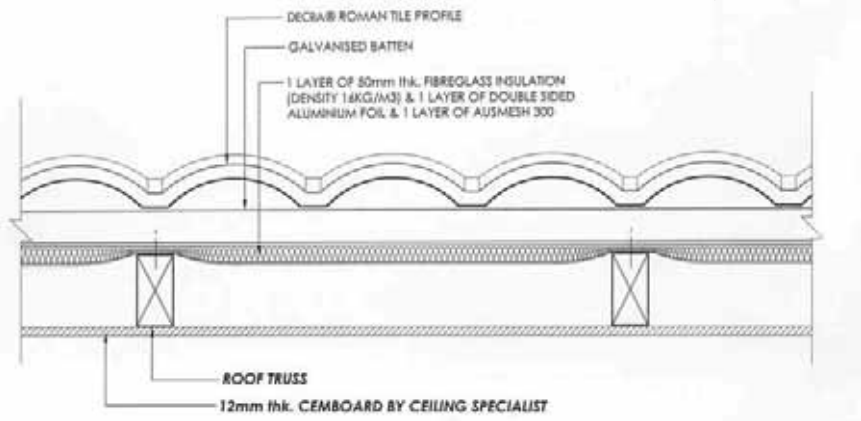
Linkway at Toa Payoh, Singapore

TECHNICAL SPECIFICATIONS

Overall Length	1160mm
Length of Cover	1100mm
Width of Cover	370mm
Upstand	20mm
Roof Cover / Tile	0.41m ²
Coverage	2.5 tiles/m ²
Weight / Unit	3.0kg



DECRA® Roman Tile



Typical Roof Build Up for DECRA® Roman roof tiles.

DECRA® SHINGLES

Character, Elegance and Simplicity

DECRA® Shingles recreate the look of combination shingles. Advanced pressing technology gives it a more pronounced 3D effect. A unique two-tone, shaded stone chip effect is incorporated into each of the shingle profiles.

TECHNICAL SPECIFICATIONS

Overall Length	1320mm
Length of Cover	1250mm
Width of Cover	368mm
Upstand	16mm
Roof Cover / Tile	0.45m ²
Coverage	2.2 tiles/m ²
Weight / Unit	3.0kg



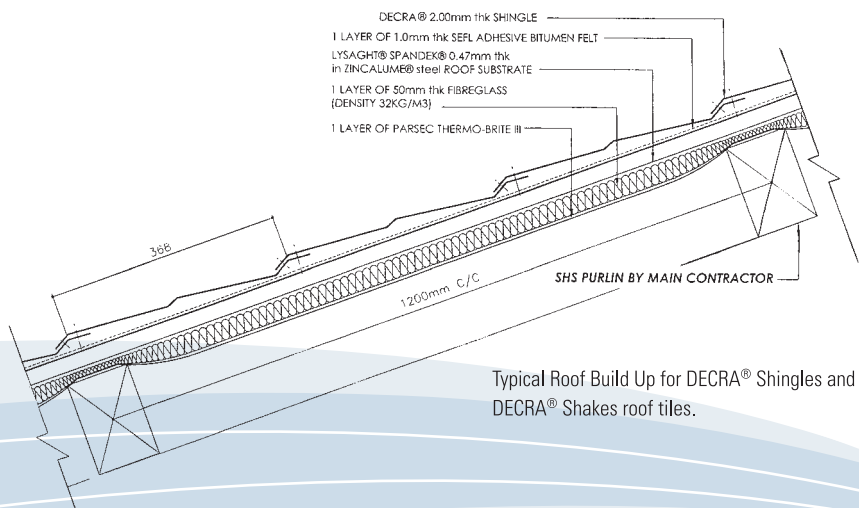
DECRA® Shingle has a stone textured surface which is ideal for resurfacing the walls of this urban building

DECRA® SHAKE

Manufactured with advance metal-pressing technology to recreate the deep grain profile of cedar wood shakes. Made with ZINCALUME® steel base, it is popular with designers who desire the natural look of timber shake with light-weight, durability and ease of handling.

TECHNICAL SPECIFICATIONS

Overall Length	1310mm
Length of Cover	1250mm
Width of Cover	370mm
Upstand	25mm
Coverage	2 panels/m ²
Weight / Panel	3.0kg
Weight / m ²	6.5kg



Typical Roof Build Up for DECRA® Shingles and DECRA® Shakes roof tiles.

PROJECT REFERENCES

DECRA® ROMAN TILE - Beautiful, Strong and Enduring



Brda Wine Cellar, Slovenia



BlueScope Lysaght DECRA® Roman Tile



Sienna, New Zealand
The owners of this new family used BlueScope Lysaght DECRA® Roman Tile to create a contemporary Mediterranean style



Sienna, Slovenia
The sunlit courtyard is softened and opened out with a relaxed atmosphere created by roman tiling



Brda Wine Cellar, Slovenia



Slovenia

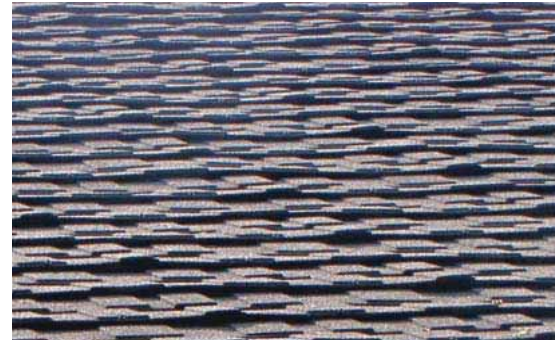
BLUESCOPE LYSAGHT DECRA® SHINGLES - Character, Elegance and Simplicity



Fidelio Street



Hamilton House



DECRA® Shingles



BlueScope Lysaght DECRA® Shingles has a stone textured surface which is ideal for resurfacing the walls of this urban building



Private Apartment, The Ford



Residential Project, Rienzi Street, Singapore



Private Apartment, The Ford



Commercial Establishment, Harding Road

LYSAGHT® BONDEK® II

Structural Decking for Composite Formwork

FEATURES & PRODUCT DESCRIPTION

LYSAGHT® BONDEK® II steel structural decking system is a highly efficient and robust profiled zinc coated steel sheeting for use in the construction of composite floor slabs. It has been tested to perform as formwork and longitudinal reinforcement in one-way composite slabs.

It has an effective longitudinal tensile reinforcement and the top of the ribs has been embossed to bring about greater mechanical bonding between the steel sheet and concrete.

LYSAGHT® BONDEK® II steel structural decking system is a complete structural system for concrete, masonry or steel frame construction.

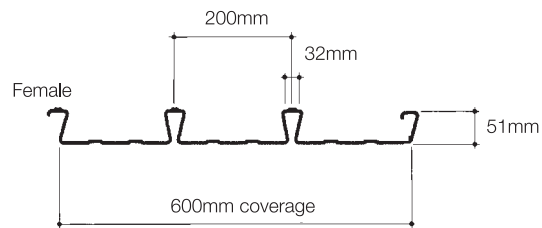
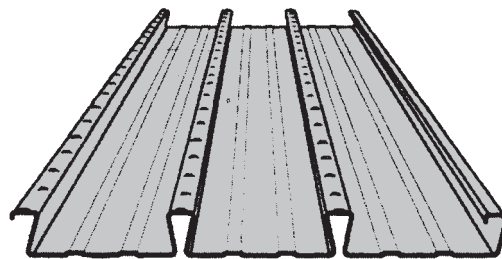
PRODUCT BENEFITS

- Excellent spanning capacities for greater strength and less deflection. Unpropped spans of up to 3.2m.
- Reliable interlocking mechanism provides horizontal lapping for faster installation.
- Fast and easy to install. Reduction in construction time by as much as 10 days per slab.
- One-step assembly of sturdy working platform, bottom reinforcement and permanent formwork.
- Composite slab's fire performance is in accordance to British Standard BS 5950: Part 8.
- Works as composite slab saving on concrete and reinforcement costs.
- Ribs at 200mm centres creating a safe working platform with slip resistant embossments.
- Installation of suspended services and ceilings without drilling into the concrete slab.
- High tensile steel 550MPa.
- Durable galvanized coating of Z275.
- Tested to PSB Corporation Singapore standards and requirements.
- Can be used in concrete frame construction.

MATERIAL SPECIFICATIONS

Manufacture	Cold rolled-form	
Yield strength	500-550MPa	
Finish	Hot-Dipped Zinc Coated* 275g/m ² and Chromate Passivated	
Base Metal Thickness in mm (BMT)	0.75mm	
	1.0mm	
	1.2mm	
Effective Coverage Width (mm)	600mm	
Rib Height (mm)	51mm	
Mass (Unit Weight)	0.75mm	10.3kg/m ²
	1.00mm	13.6kg/m ²
	1.20mm	16.2kg/m ²
Maximum Length	12,500mm, extra length available (subject to transportation constraints)	
Grade of Steel	G550 (0.75mm and 1.0mm)	
	G500 (1.2mm)	
Coating class (min.)	Z275	

**Conforms to BS EN 10147*



Pit Building (Photo Courtesy of Jurong International)



Novena Medical Center

PROJECT REFERENCES



Republic Polytechnic



One Raffles Quay



National Library



The Star Vista



HDB Lift Upgrading Programme



Pit Building (Photo Courtesy of Jurong International)



Marina Bay Sands™ Integrated Resorts, Sky Park



Paragon Shopping Mall (A&A Works)



Fusionopolis @ One-North (Phase 1)

LYSAGHT® POWERDEK®

Long Spanning Steel Decking Profile

PRODUCT DESCRIPTION

LYSAGHT® POWERDEK® steel structural decking system is a high performance profiled zinc coated steel decking system used as a formwork system during construction and reinforcement in composite slabs.

Two different depths of POWERDEK® steel structural decking system are available, namely POWERDEK®100 (100mm overall depth) and POWERDEK® 120 (120mm overall depth).

FEATURES & APPLICATIONS

- Spanning capacity – Significantly increased unpropped spans of up to 5.2m and 6.0m with POWERDEK® 100 and POWERDEK® 120 respectively 1.5mm thickness of sheeting and increased load carrying capacities.
- Greater composite action – High shear bond capacity for imposed loads up to 30KPa without additional conventional reinforcements.
- Economical design for fire – Profiles are encased in concrete, providing exceptional fire performance, with no extra fire reinforcement required for up to a 4-hours fire rating.
- Quicker trouble-free installation – A positive interlocking rib requires minimal fixing or ribs during installation and provides a strong, secure working platform.
- Design efficiency – Range of gauges available (1.5m, 1.2mm and 1.0mm) allows a closer matching of design requirements and deck performance.
- Made from zinc coated (Z275), high tensile steel for strength and durability.
- Optional: Coating of high corrosion, resistant sheet is available on request.
- Tested and conform to PSB Corporation Singapore standards and requirements

BENEFITS

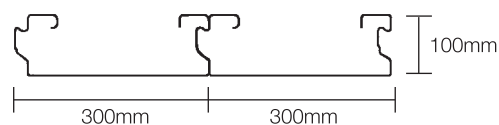
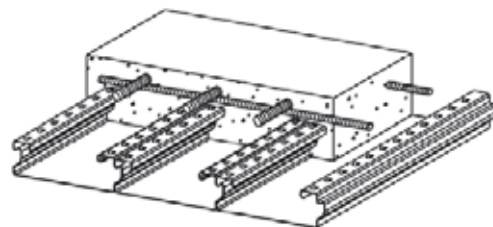
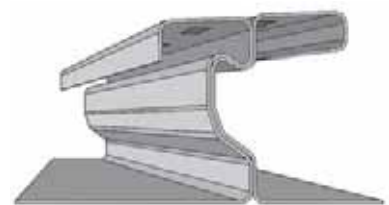
- Longer, unpropped spans
- Better appearance with exposed ceilings
- Exceptionally secure working platform
- Reduces construction costs
- Superior durability.

MATERIAL SPECIFICATIONS

Manufacture	Cold rolled-form	
Yield strength	450-550MPa	
Finish	Hot-Dipped Zinc Coated*, high tensile ZINC HI-TEN™ steel Z275g/m ²	
Base Metal Thickness in mm (BMT)	1.0mm 1.2mm 1.5mm	
Effective Coverage Width (mm)	300	
POWERDEK® 100	Rib Height (mm)	Unit Weight (kg/m²)
1.0mm	100	18.6
1.2mm	100	22.1
1.5mm	100	27.5
POWERDEK® 120		
1.2mm	120	23.5
1.5mm	120	29.2
Maximum Length	12,500mm, extra length available <i>(subject to transportation constraints)</i>	
Grade of Steel	G550 (1.0 BMT) G500 (1.2 BMT) G450 (1.5 BMT)	
Coating class	Z275	

Embossments on the top of flanges provide the mechanical connection between the steel and concrete. Punches on sides of embossments allow formation of air pockets under flanges to be avoided.

* Conforms to AS 1397 and BS EN 10147



PROJECT REFERENCES



Raffles Junior College



Institute of Technical Education, Simei



One Raffles Quay



Changi Storage Hub



St. James Power Station



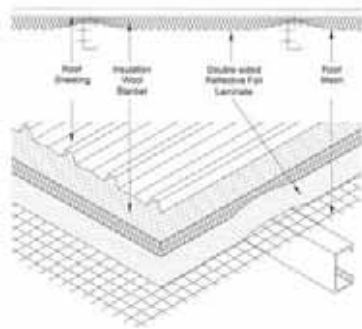
Marina Bay Sands

GENERAL NOTES

BLUESCOPE LYSAGHT ACOUSTIC ROOF SYSTEM

BlueScope Lysaght roofing system is acoustically proven and tested to meet the Sound Transmission Class, *STC41, STC 45 and STC 51 from PSB Corporation, Singapore. The test was conducted in accordance with ASTM E90-97.

STANDARD ROOF SYSTEM



COMPATIBILITY

Lead, Copper and Stainless Steel are not compatible with ZINCALUME® and COLORBOND® 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.

OIL CANNING

Flat metal surfaces will display waviness commonly referred to as oil canning. This is caused by steel mill tolerances. Oil canning is a characteristic, not a defect, resulting from panels manufactured from light gauge metal. Panels are to be factory corrective leveled to minimize oil canning.

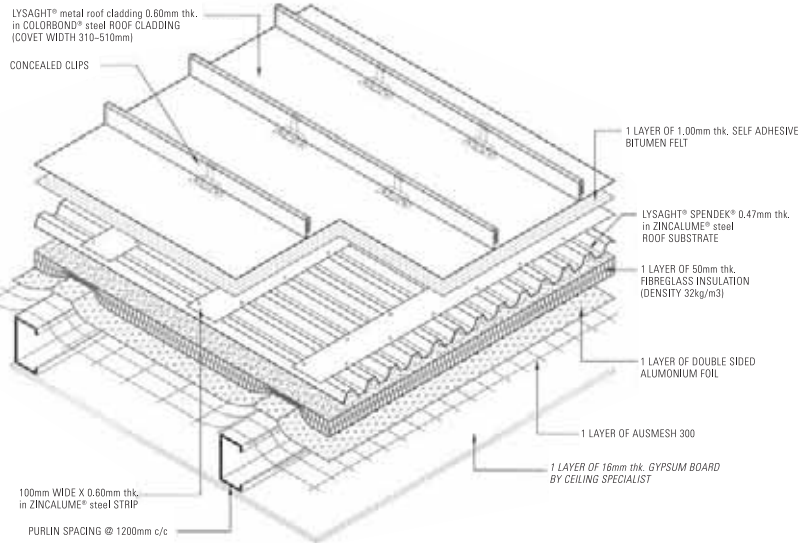
The appearance of flatness depends on the distribution of the stress across the surface of the metal sheet. These stress will change as temperature changes. The ability of a metal to transfer the effect of these stress across the surface without buckling or distorting out of plan, will determine the level of "oil canning" that will occur.

"Oil canning" is a metaphorical term used to describe the tendency of flat surfaces to show variations in reflectivity. For example, a curved mirror will show a stretched and distorted image of a person standing in front of it. A metal surface too, will distort the reflection of light if minor variations in and out of a level plane exist. The appearance of flatness is very much dependent on surface reflectivity. It is also caused by mill tolerances, variations in the substrate/decking and purlin alignment. Some paint finishes and metals that have high gloss index will exhibit highly apparent distortion. The visual effects of oil canning can be exacerbated by different light conditions and orientation. Darker colours visually accentuate oil canning to a greater extent than the lighter and more neutral colours.

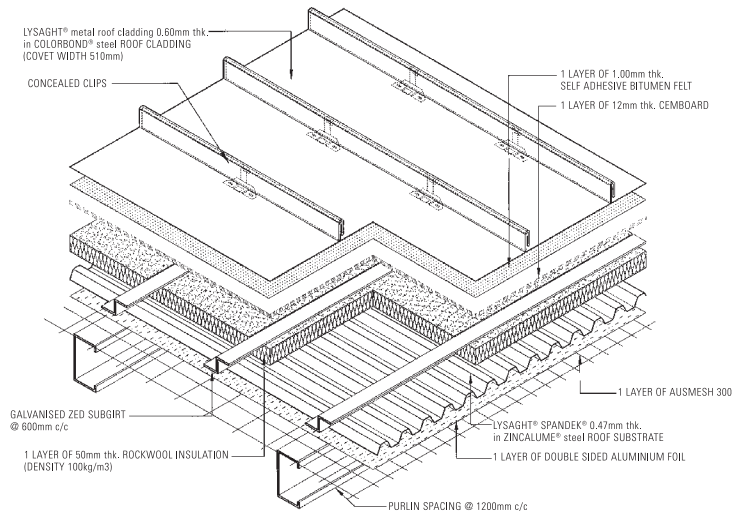
There are several precautions that can be taken to reduce the oil canning effect. One is to use thicker material, because thicker metal tends to oil-can less than thinner metal.

Oil canning is an inherent characteristic and not a defect of a standing seam profile. It is therefore not a cause for panel rejection.

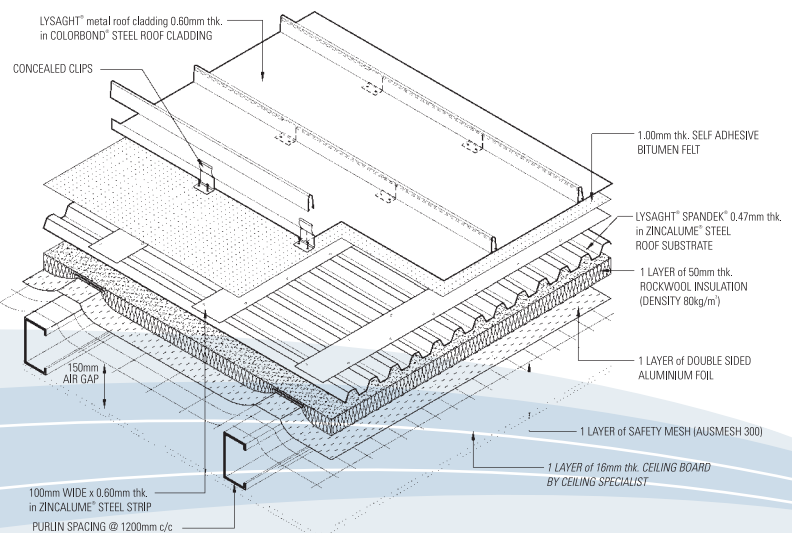
ACOUSTIC ROOF SYSTEM (STC 41)



ACOUSTIC ROOF SYSTEM (STC 45)



ACOUSTIC ROOF SYSTEM (STC 51)



ZINCALUME® STEEL & COLORBOND® STEEL

STRONG BRANDS, QUALITY MATERIALS

LYSAGHT® products are manufactured from high quality ZINCALUME® steel and COLORBOND® steel, which are leading proprietary brands from BlueScope Steel, 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 to classic roofing styles for residential projects.

Zincalume®

ZINCALUME® steel is a premium metallic coated steel product that is composed of 55% aluminium, 43.5% zinc and 1.5% silicon. The zinc/aluminium alloy coating on ZINCALUME® steel imparts corrosion resistance of up to four times the life of galvanised steel.

ZINCALUME® steel is backed by a material warranty of up to 50 years*

Typical applications featuring ZINCALUME® steel include roofing, wall cladding, gutters and steel framing.

Product Attributes

- Durable and strong.
- Superior corrosion resistance and has an 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 for excellent spanning ability.
- Non-combustible.
- Clear resin coating resists scuffing and handling marks.

*Warranty terms and conditions apply



ZINCALUME® steel

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.

It has been developed as a "Defence System Against Tropical Staining." Its unique oven-cured paint system prevents surface staining common to tropical environments caused mainly by temperature, moisture and air-borne contaminants.

COLORBOND® steel is backed by a material warranty of up to 20 years.*

Product Attributes

- Available in a range of attractive colours.
- The zinc/aluminium alloy coating on ZINCALUME® steel, plus the oven-baked, pre-painted finish on COLORBOND® steel provide superior corrosion resistance for long life.
- Thermal-efficient. Roofs made from COLORBOND® steel absorb less heat, thus cools very quickly.
- Light weight 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 roof designs.
- Resists cracking, chipping and peeling.

Colorbond®
ULTRA

For applications in exterior building profiles requiring excellent corrosion resistance. Suited to moderate severe marine and industrial environments.

Colorbond®
ULTRA MATT

New trend for steel roofing with stylish matt finish, suited to address the unwanted glare from sunlight common in urban areas.



COLORBOND® steel

Compatibility Notes

LEAD, COPPER and 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 ZINCALUME® steel to bare steel contact is avoided.

Stainless steel fasteners are not recommended for ZINCALUME® and COLORBOND® steel.



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* Warranty terms and conditions apply.

Sep 2020

