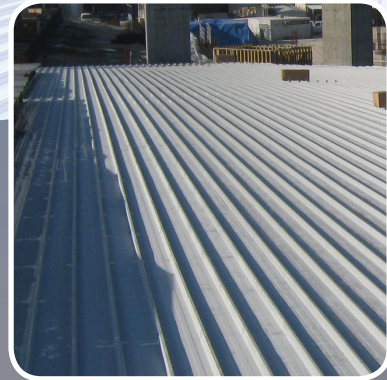




LCP KLIPDECK®

Metal Roof & Wall Cladding System



Integrity In **Partnership**



CERT NO. FM 59595
BS EN ISO 9001 : 2008



LCP KLIPDECK®

FEATURES

LCP KLIPDECK® gives a traditional appearance coupled with excellent span characteristics. It has a high rib for a "non-punctured" roof system, providing excellent water tightness with suitable roof applications down to pitch as low as 1°. The wide reinforced trough ensures excellent water-shedding as well as walkability. It can also be used for wall cladding.

AESTHETICALLY PLEASING & COST EFFECTIVE

- ▶ 650mm Cover – wide sheet coverage.
- ▶ Hi-tensile Steel – light weight and high strength with improved damage resistance.
- ▶ Bold Ribs – provide better performance with an architecturally pleasing profile.
- ▶ Quick Installation – wide design provides fewer clips ensuring effective cost saving.
- ▶ Secret Fixing – concealed clips for enhanced security and appearance.
- ▶ 1° minimum pitch in long lengths to save support structure.
- ▶ On-site rollforming capabilities.

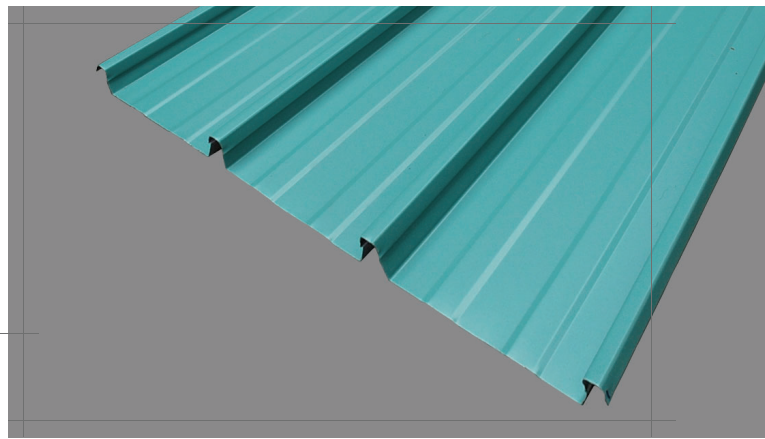
MATERIALS

LCP KLIPDECK® is a cold roll formed roof and wall cladding manufactured from G550 base material (550MPa minimum yield stress) in zinc-aluminium coated (55% Al and 45% Zn) steel and pre-painted zinc-aluminium coated steel available in numerous colours.

Other materials such as ZINCALUME® steel (Zinc & Aluminium alloy) coating in accordance with AS 1397, COLORBOND® steel finishes in accordance with AS 2728, galvanised steel subject to enquiry. For further information, please contact **LCP Building Products Pte. Ltd.**

COLOURS/AVAILABILITY

LCP KLIPDECK® is normally stocked in standard thickness in zinc-aluminium coated steel, ZINCALUME® steel as well as a wide range of colours in pre-painted zinc-aluminium coated steel and Clean COLORBOND® steel. Please check with **LCP Building Products Pte. Ltd.** Technical Department for specific colour availability.



COMPATIBILITY

Lead flashing should not be used in conjunction with zinc-aluminium coated steel, pre-painted zinc-aluminium coated steel, ZINCALUME® steel or Clean COLORBOND® steel sheeting. Drainage from zinc-aluminium coated steel, pre-painted zinc-aluminium coated steel, ZINCALUME® steel or Clean COLORBOND® steel roofing (inert material) should not be allowed to discharge onto galvanised rainwater components. Drainage from copper roofing should not be allowed to discharge onto zinc-aluminium coated steel, pre-painted zinc-aluminium coated steel, ZINCALUME® steel, Clean COLORBOND® steel or aluminium rainwater components. Any of these combinations can result in premature corrosion.

ADVERSE CONDITIONS

If it is intended to use LCP Building Products range of roofing, walling or rainwater products within 1Km of salt marine or industrial and unusually corrosive environments, please contact our Technical Department for advice.

ROOF PITCH

The water carrying capacity of a LCP KLIPDECK® roof allows for a minimum recommended slope of 1° (1 in 60). It is imperative that this minimum is adhered to at all points of the roof to prevent ponding from occurring. The 1° minimum pitch may be used for roofing run lengths up to 60m for rainfall intensities of up to 250mm/hr. Where alternative design rainfall intensities are known or required, or for greater run lengths, contact **LCP Building Products Pte. Ltd.** Technical Services Department for revised slope calculations. Please note however that in most locations, roofs with a slope of 5° or more generally have an improved life, as debris is more readily washed away. Where a primary roof or down pipe outlet discharges directly onto a secondary roof, damming, splashing or a standing wave may form which may need special design attention to prevent water intrusion. Care must also be taken for roofs with skylights, vents, etc where the water flow from several "pans" may be concentrated into just one or two pans, and standing waves may again occur.

ARCHITECTURAL SPECIFICATION

The roofing and/or wall cladding metal sheets shall be 0.48mm BMT (i.e. 0.53mm TCT) or 0.60mm BMT (i.e. 0.65mm TCT) **LCP KLIPDECK®** as produced by **LCP Building Products Pte. Ltd.**, with ribs of 44mm height spaced at 218mm centres. The effective cover width for the metal sheets shall be 650mm.

The sheeting material shall be ZINCALUME® protected steel sheet to Australian Standard AS1397 with a minimum yield stress of 550MPa (Grade G550), metallic hot-dip coated with ZINCALUME® zinc / aluminium alloy-coated steel comprising 55% aluminium, 43.5% zinc and 1.5% silicon. The minimum coating mass for the ZINCALUME® zinc/aluminium alloy - coated steel shall be AZ200 (200 g/m² minimum coating mass) as determined by Australian Standard AS 1397.

Wherever applicable, the installation of the metal sheets shall be in accordance to the "Installation code for metal roofing and wall cladding; Standards Australia SAA HB39-1997". The sheets shall be installed using concealed fixing clips in accordance to manufacturer's recommendations. The fasteners used to secure the fixing clips to the supports shall conform to Australian Standard AS 3566 and be compatible with the roofing material used. The clips shall be concealed and no fasteners are to penetrate the cladding.

Sheets shall be laid in such a manner that the approved side lap faces away from the prevailing weather. A minimum of 50mm shall be provided for projection into gutters. Flashings shall be supplied in compatible materials as specified, minimum cover of flashing shall be 150mm.

All sheets shall be fixed in a workman like manner, leaving the job clean and weather-tight. All debris (nuts, screws, cuttings, filings etc.) shall be cleaned off daily.

COLOUR COATING OPTIONS

Clean COLORBOND® pre-painted steel is resistant to dirt pick-up and staining. The various categories of Clean COLORBOND® pre-painted steel finishes offer excellent gloss and long lasting life span to the roof and wall cladding.

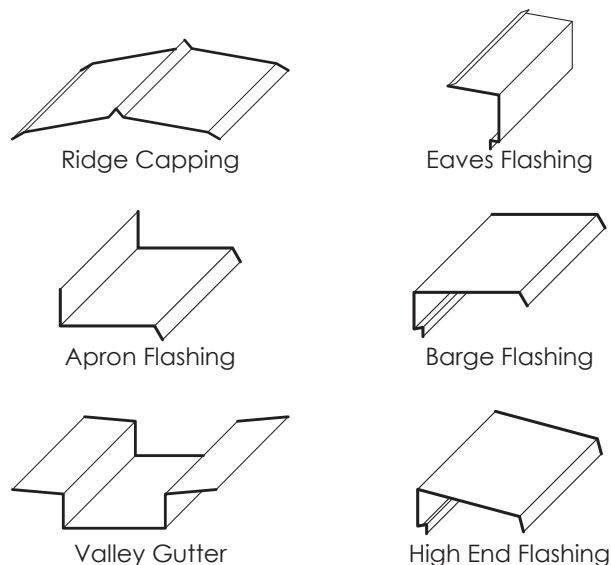
The following Clean COLORBOND® pre-painted steel finishes are available:

1. **Clean Colorbond® Ultra Steel** (Used for severe applications that require premium durability.)
2. **Clean Colorbond® XPD Steel** (Used for moderate/severe applications that require premium durability.)
3. **Clean Colorbond® XPD Pearlescent Steel** (Used for moderate/severe applications that require premium durability and a decorative alternative.)



FLASHING DETAIL

When designing the flashing, the rib needs to be taken into account. The shape of the rib affects how the flashing interface is designed and installed.



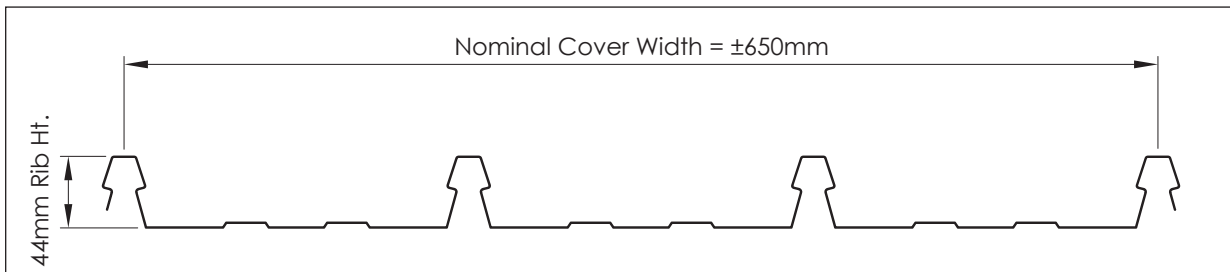
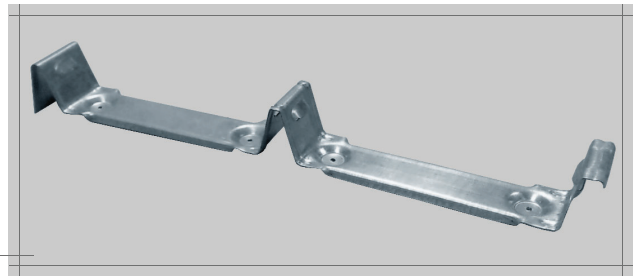
Typical common flashing used. Full range of flashings is available.



LCP KLIPDECK®

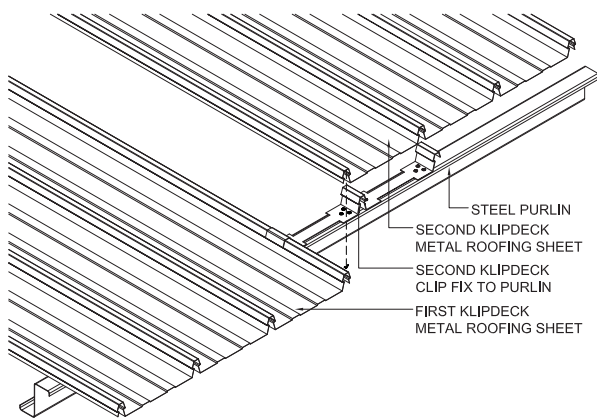
PANEL FIXING CLIPS

Attachment clips for **LCP KLIPDECK®** are hidden within the ribs where they engage the male and female rib, depending on the clip design. The strength of the clip attachment method and spacing are therefore coordinated with the panel size and structural characteristics to provide the necessary wind uplift resistance and allowance for the thermal movement.



INSTALLATION

All roof slopes require a turn up at top of the sheet and also need to be turned down at the low end. This is best achieved using a **LCP KLIPDECK®** Stop Ending tool. For maximum protection from weather intrusion the sheet should be laid with the exposed edge of the overlaps away from the direction of the prevailing weather. To commence installation, the first row of clips should be fixed inline, ensuring that the "arrow" is pointing in the direction of laying. Check the alignment of the clips either using a string line or the edge of the sheet as a guide. Lay the first sheet over the clips and snap home both the centre rib and the female rib (in cyclonic regions the first female rib must be mechanically fastened through to the clip). The second row of clips can be rotated into place over the male rib of the first sheet and fastened in position. The second sheet is then snapped home over the clip as before, ensuring that the female rib of the second sheet is fully engaged along the full length over the male rib of the first sheet.



This procedure is then continued for all the sheeting. Finally a finishing clip (cut from the normal clip, do not use an internal clip) is placed over the male rib of the last sheet and fastened both to the purlin and the sheet rib.

FOOT TRAFFIC

When walking on **LCP KLIPDECK®** always wear clean, non-marking and flat rubber soled shoes. Avoid unnecessary foot traffic and walk on the flat of the panel at or near the supporting roof structural members as much as possible. Do not use the roof panel as a working platform.



STRUCTURAL SPECIFICATION

PROPERTIES

LCP KLIPDECK® Mass/Thickness Chart

Thickness		Material Mass kg/m ² of Roof Cover		
BMT (mm)	TCT* (mm)	Zincalume®	Galvanised	Colorbond®
0.48	0.54	5.54	5.71	5.71
0.60	0.66	6.86	7.03	7.03

*TCT (Total Coated Thickness) values are based on ZINCALUME® coating and are nominal only.

MAXIMUM SPAN CHART

LCP KLIPDECK® - Sheltered Suburban and other conditions as noted below

Thickness		Roofs Spans (mm)			Wall Spans (mm)			Overhang (Roof & Wall)	
BMT (mm)	TCT (mm)	Double Spans	Equal Spans	Internal (End Span) * Combination	Double Spans	Equal Spans	Internal (End Span) * Combination	Unstiffened	Stiffened
0.48	0.54	1600	1600	2000 (1600)	2500	2300	3000 (2400)	200	450
0.60	0.66	2000	2000	2800 (2000)	2800	2550	3000 (2400)	200	500

- Exposed Sub-Urban and other condition as noted below

0.48	0.54	1600	1600	2000 (1600)	2150	2000	2700 (2150)	200	450
0.60	0.66	2000	2000	2800 (2000)	2400	2250	3000 (2400)	200	500

CONDITIONS

The maximum span charts apply to buildings no more than 10m in height, and less than 1000m² in plan area. The spans listed are based on the testing requirements of AS1562 for both foot traffic and wind loadings, and assume both the end and first internal span to be subject to local pressure zone factors. Assumed wind loads are: Sheltered suburban -0.93kPa and 0.72 kPa; exposed suburban -1.43 kPa and 1.10 kPa, for roof and walls respectively.

*For optimum spanning capacity, end spans are shorter than internal spans in a fixed ratio, (End Span = 0.8 x Internal Span). The Internal/End Span combinations shown must only be used in this specific ratio, rounded to the nearest 50mm.

PERFORMANCE

LCP KLIPDECK® Permissible Wind Pressure (kPa)

Thickness		Span Type	Maximum Span for Foot Traffic Limitations	Internal Span (End Span) Combination (mm) ‡						
BMT (mm)	TCT (mm)			(750) 900	(1000) 1200	(1250) 1500	(1500) 1800	(1750) 2100	(2000) 2400	(2250) 2700
0.48	0.54	Internal (End)	2000 (1600)	3.94	2.95	2.36	1.97	1.69	1.48	1.12
		Equal	1600	3.45	2.59	2.07	1.49	0.94	0.63	0.44
		Double	1600	3.15	2.36	1.89	1.57	1.20	0.80	0.56
0.60	0.66	Internal (End)	2500 (2000)	4.81	3.61	2.89	2.41	2.06	1.80	1.58
		Equal	2000	4.22	3.17	2.53	2.11	1.33	0.89	0.63
		Double	2000	3.85	2.89	2.31	1.92	1.65	1.14	0.80

Loads have been determined from testing to AS 1562 and also conforms to BS 5950 and IS 875 – Design and Installation of Metal Roofing.

‡Spans shown in brackets are the end spans to be used in conjunction with the internal spans shown.

Note – Spans shown in shaded (■) areas are not suitable for trafficable roofs. The pressures shown for 0.48mm BMT (0.53mm TCT) and 0.60 mm BMT (0.65mm TCT) materials should only be used where steel purlin thickness exceeds 1.2mm.

MANUFACTURING and CONSTRUCTION

ORDERING

When ordering, please have the following information available to ensure a speedy processing of your requirements:

- ▶ Customer/Company name, address, phone number & fax number.
- ▶ Contact person name & phone number
- ▶ Name of Product (e.g. **LCP KLIPDECK®**) and material (e.g. G550 steel). Thickness of product (e.g. 0.54mm TCT).
- ▶ Coating or Colour (e.g. Clean **COLORBOND®**: Enduring White colour).
- ▶ Number/quantity and length of sheets (e.g. 10 pieces of 5 metres length per piece)
- ▶ Flashing – style, quantity and colour.
- ▶ Delivery address (e.g. No. 10 Telok Kurau Lane, Singapore).
- ▶ Delivery date & preferred time.
- ▶ Site access (please specify whether current access to delivery location would permit entry by standard 12 metres length flat-bed trailers).
- ▶ Cranage requirement (please specify whether crantage will be required at site).

LENGTH

LCP KLIPDECK® can be supplied in any length up to the limit of the local Transport Authority regulations. Lengths specified must be actual site measurements and not plan dimensions. The length should be measured accurately and allowance should be made for clearance at the ridge (unless the sheet is continuous over the ridge) of normally around 50mm, and at the eave an overhang into the gutter which is normally not less than 50mm. Where a step down, or expansion joint is incorporated into the roof, an allowance of not less than 300mm should be added.

FLASHING

Standard flashings are readily available for use with **LCP KLIPDECK®** roofing. **LCP Building Products Pte. Ltd.** will give design advice for flashing details and will manufacture the required flashing.

DELIVERY

Delivery can normally be made within 2 or 3 days, subject to order quantity, delivery location and material availability, or can be at a pre-arranged date and time. Please assist us to provide undamaged product by ensuring that suitable arrangements have been made for truck unloading. When lifting sheeting by crane, care should be taken to ensure that the load is spread to prevent sheeting damage. Where a crane is not available, sufficient labour must be supplied to assist in manual unloading.

LAPPING OF SHEET

The minimum end lap should be 250mm when lapping metal to metal and 300mm when lapping metal to polycarbonate or fiberglass sheet.

HANDLING

LCP KLIPDECK® (especially Clean **COLORBOND®**) should be handled with care at all times to preserve the quality of the finish. Packs should always be kept dry and stored above ground level whilst on site. If however the sheets have become wet then they should be separated, wiped and placed in the open to aid drying.

FASTENERS

All fasteners should conform with AS3566 and be compatible with the roofing material used.

For steel purlins use the **LCP KLIPDECK®** fixing clips with No. 10 x 16mm self drilling, tapping hex head screws, four per clip.

When fastening into timber, use 60mm x 3.75mm galvanized fluted drive nails or No. 10 x 25mm hex head cross recessed hex type 17 screws, two per clip in non-cyclonic conditions.

FOOT TRAFFIC

When walking on **LCP KLIPDECK®** roofing, always wear flat rubber soled shoes and place feet only in the pans.

CUTTING

Sheeting can be cut, where necessary, by means of metal snips or electric nibbler. The use of cutting discs should be avoided but if it is used, the Clean **COLORBOND®** pre-painted steel sheeting should be placed downwards, or carefully shielded, to minimise the risk of hot filings embedding in the painted surface.

CLEAN UP

Ensure that all debris, nails, rivets, screws, rags, and especially filings & particles from cutting or drilling, are carefully cleared from the surface after each day's work, otherwise premature corrosion could occur.

RIB END STOPS

Rib End Stops can be used to provide a neat closed finish to exposed ribs or to enhance roof sealing. Use self sealing pop rivets to secure rib end stops in position.

BIRD PROOF INSERT

Bird proof inserts fit inside exposed rib ends to prevent bird intrusion. Simply clip the insert onto the last fixing clip as each sheet is laid.

IMPORTANT NOTE: The information published in this brochure is as far as possible accurate at the date of publication, however, prior to application in a particular situation, **LCP Building Products Pte. Ltd.** recommends that you obtain qualified expert advice confirming the suitability of product(s) in question for the application proposed. While **LCP Building Products Pte. Ltd.** accepts its legal obligations, be aware however that to the extent permitted by law, **LCP Building Products Pte. Ltd.** disclaims all liability (including liability for negligence) for all losses and damages resulting from the use of the information provided in this brochure.



LCP BUILDING PRODUCTS PTE. LTD.
CO. No. 200009173 C

No. 6 Gul Circle, Singapore 629562

Tel: (65) 6865-1550 Fax: (65) 6861-4218
Email: lcp@lcp.sg website: www.lcp.sg

LCP BUILDING PRODUCTS PVT. LTD.
(CO. No. U28112 TN2004 PTC053236)

Old No.6, New No.17, 4th Floor,
Viswanathapuram Main Road,
Kodambakkam, Chennai – 600 024, India

Tel: + 91-44 -298 92772
Fax: + 91-44 -298 92772
Email: lcpindia@lcpgroup.asia
website: www.lcpindia.com

Photographs of the premises displayed in this Brochure are not to be construed as an endorsement or recommendation by the owners of the premises to LCP and its products.

LCP KLIPDECK® Brochure 07/18 ©2018 LCP Building Products Pte. Ltd. All rights reserved.

LCP KLIPDECK® Brochure 07.2018 edition.

Clean **COLORBOND®**, **COLORBOND®** and **ZINCALUME®** are registered trademarks of **BLUESCOPE STEEL LIMITED**