

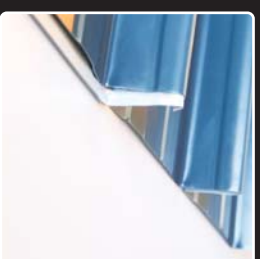
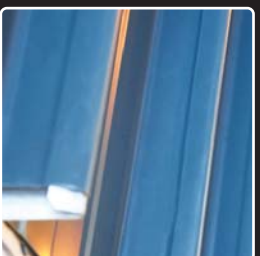
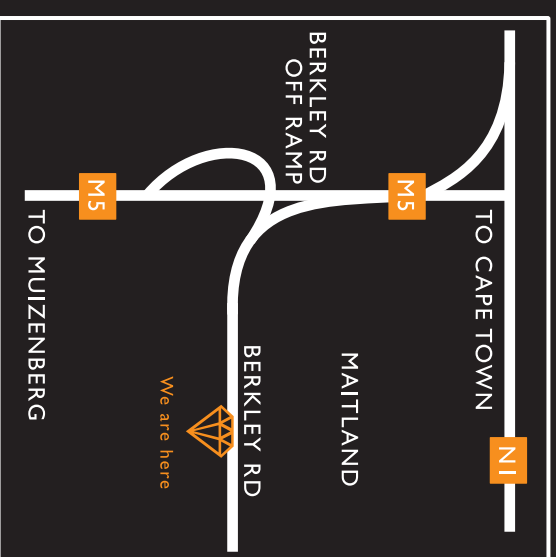
## CONTACT US

Physical Address:  
22 Berkley Road  
Maitland  
7405

Postal Address:  
P.O. Box 568  
Maitland  
7405

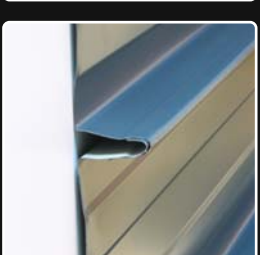
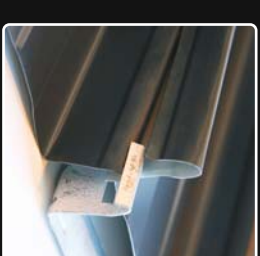
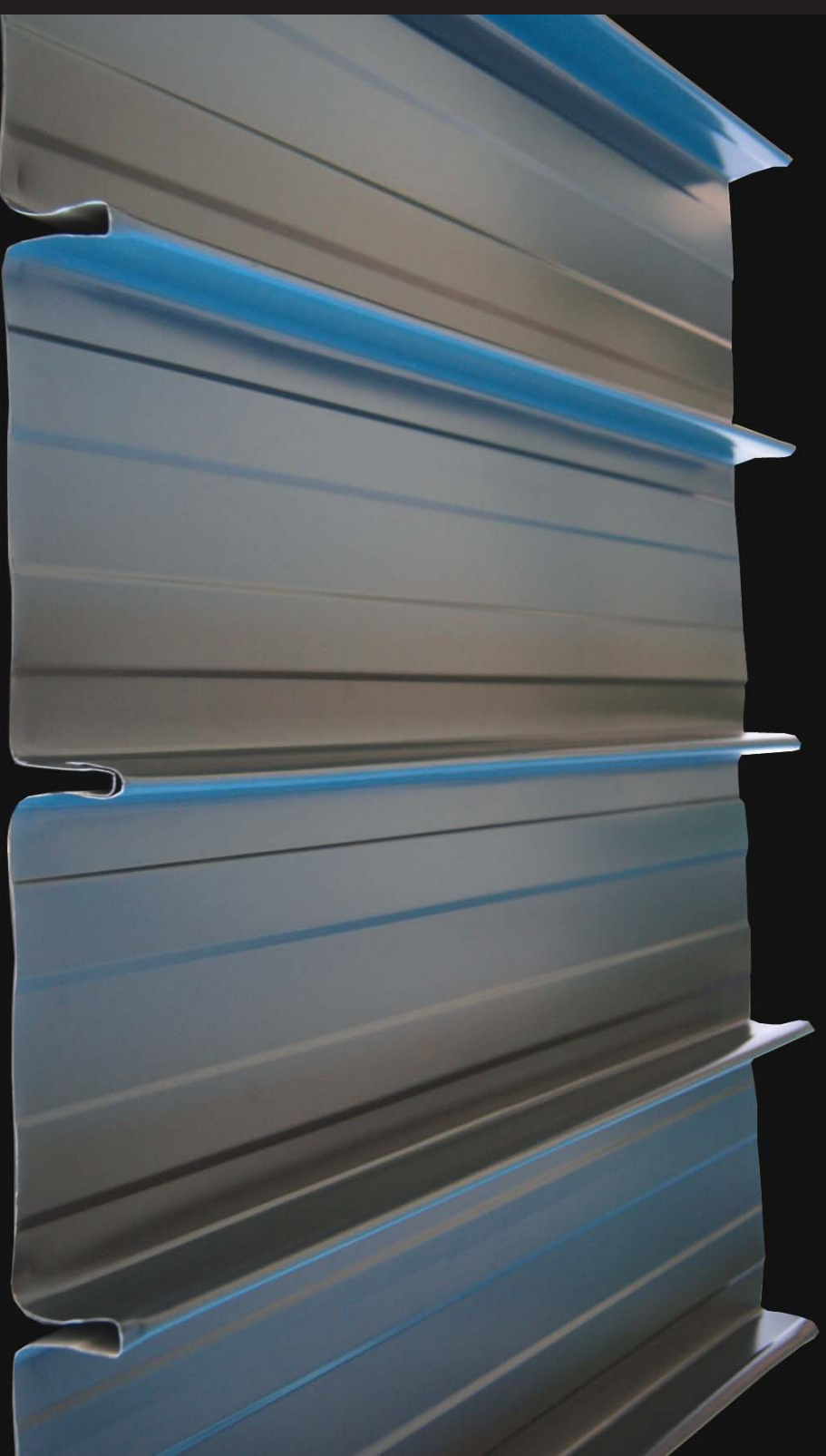
Tel: 021 511 8125  
Fax: 021 511 4960  
Email: [info@youngman.co.za](mailto:info@youngman.co.za)

[www.diamondek.co.za](http://www.diamondek.co.za)  
[www.youngman.co.za](http://www.youngman.co.za)



# DIAMONDEK

THE ROOFING SYSTEM THAT DOESN'T LEAK



DIAMONDEK concealed fix roof sheeting is a modern high-tech aesthetically pleasing profile, suitable for residential, industrial and commercial buildings.

INTRODUCTION

DIAMONDEK is the established brand leader in the secret fix market. The profile has been in the market for over 20 years and has been tried and tested on a multitude of designs and applications. DIAMONDEK is a modern high-tech aesthetically pleasing profile, suitable for residential homes as well as industrial or commercial buildings.

DIAMONDEK is manufactured and distributed by Youngman Roofing, who offers specialised advice and free estimates, ensuring the client receives the best solution for their application.

DIAMONDEK concealed fix roof sheeting is designed to provide a roof covering, without end laps, to buildings with roof pitches as low as 1.5 degrees, without piercing the sheet when fixing to purlins. This is achieved by attaching the sheets with clips that are screwed to the purlins.

DIAMONDEK is manufactured by cold rolling and is available in ZINCALUME® and Clean COLORBOND™ steel, manufactured by Bluescope Steel who offers a manufacturer's warranty on the material of up to 15 years depending on site conditions. Other materials, such as aluminium, can also be profiled subject to availability of coil.

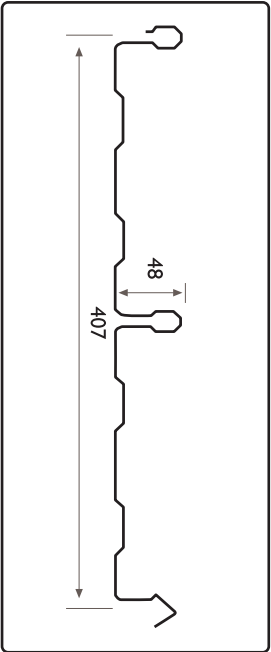
Significant expansion of the sheets is accommodated by the DIAMONDEK clip. Long DIAMONDEK sheets can be sprung to meet certain tolerances. DIAMONDEK sheets can also be cranked to obtain tighter radii.

DIAMONDEK roof sheeting is available in any length. This flexibility of sheet length is available as the mill can be transported to the site. The sheets are then profiled and cut to size on-site according to the client's requirements.

DIAMONDEK can also be used as either cladding or as soffits.

Projects where DIAMONDEK has been specified include: Cape Town Airport, Waterkloof Winery, Tyger Valley Shopping Center, Newlands Cricket Ground, Spearhead Park in Montague Gardens and numerous private residences.

Diamondek profile



Diamondek clip



Minimum Roof Pitch

DIAMONDEK roofing will perform at very low pitches. This is owing to the profile having the highest crown when compared to competing products. It therefore follows that the profile can carry more water than competing profiles.

A minimum of 1.5 degrees is recommended to achieve maximum performance. The life of a roof is extended when it is washed by rainwater and pooling is prevented from occurring.

Available Materials

Owing to their vastly superior performance, Clean COLORBOND™ steel, Clean COLORBOND™ Ultra steel and ZINCALUME® steel are the preferred materials used to manufacture DIAMONDEK.

Youngman Roofing is the authorised distributor of Clean COLORBOND™ steel, Clean COLORBOND™ Ultra steel and ZINCALUME® steel.

Standard Product Range

Thickness in mm	Mass in kg/square meter
0.47	5.28
0.53	5.99



Maximum recommended purlin spaces in metres (Western Cape)

Material thickness	Roof Single	End	Internal	Overhang	Vertical Cladding Single	End
G300 0.47mm AZ150	1.2	1.2	1.6	0.3	1.8	1.8
G300 0.53mm AZ150	1.2	1.5	1.8	0.3	1.8	1.8

Fixing Guidelines

Overview

Significant expansion will occur as long lengths of steel sheets are affected by variations in temperature, as is the norm in South Africa. This expansion and contraction of the sheets is accommodated by the DIAMONDEK clip.

When preparing to lay sheets, start by carefully fixing the first row of clips to each purlin along the outer edge of the roof. The clips would be fixed with either jacking screws into timber or wafer head screws into steel purlins. We recommend the use of Corroshield Class Three fixings.

The sheets should be laid as follows:

- ♦ Fix the first row of clips to each purlin along the outer edge of the roof
- ♦ The first sheet should be laid with the female rib to the this side
- ♦ To lay the next sheet, place the DIAMONDEK clips over the male rib and secure at each purlin
- ♦ Position the female rib of the next sheet over the male rib and secure at each purlin
- ♦ Position the female rib of the next sheet over the male rib of the first and press down to ensure the female and center ribs are securely engaged on the fixing clips along the entire length of the sheet



◆ **Fixing the first row of clips**

- 1. Orientate the first sheet, before lifting, with the female (overlapping) rib of the sheet towards the side of the building where you intend to start.
- 2. Carefully determine the position of the first sheet.
- 3. Fix the first clip to the purlin nearest to the gutter and, using a string, position and fix a clip to each purlin for the first sheet. (see fig 1)

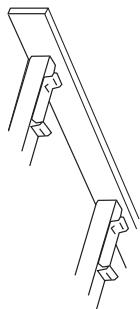


Figure 1.  
Fix the first row of clips

◆ **Placing of the first sheet**

- 1. Locate the first sheet over the fixed clips. (see fig 2)
- 2. Position the sheet so that it will overhang the gutter by the desired amount (usually about 50 mm). It is important to keep the gutter end in a straight line.
- 3. Fully engage the sheet with all clips with the aid of a rubber hammer. Positive fixing the first sheet may be advised in certain instances.

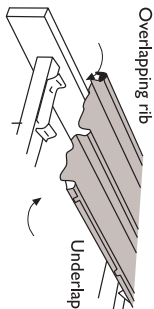


Figure 2.  
Placing the first sheet

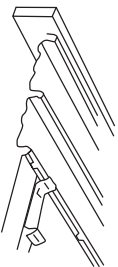


Figure 3.  
Clip engaged over rib of installed sheet

◆ **Fixing subsequent clips and sheets**

- 1. Engage another row of clips, with the triangularly punched hole of each pointing in the direction of laying, with each fitting over the male (or underlapping) rib of the last sheet installed. (see fig 3 & 4)
- 2. Continue this procedure until all sheets have been laid. Fully engage each sheet with the clips along the full length of the sheet. It is essential that the sheets interlock properly. The spurs on the free edge of the male rib must be fully engaged in the shoulder of the female rib.

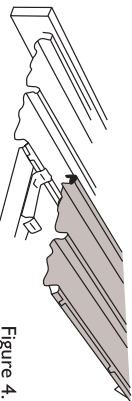


Figure 4.  
Placing next sheet(s)

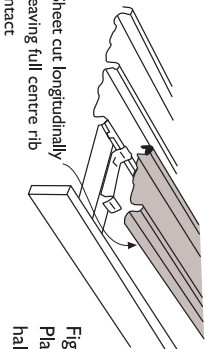


Figure 5.  
Sheet cut longitudinally leaving full centre rib intact

◆ **Check alignment**

Periodically check that the sheets are still parallel to the first sheet, by taking two measurements across the width of the fixed sheeting.

◆ **Placement of the last sheet**

- 1. If the space left between the last full sheet and fascia or parapet is more than half the width of a sheet, cut a sheet along its length leaving the center rib complete. (see fig 5) Secure the cut sheet to a row of clips, as for a full sheet.
- 2. If the space left between the last full sheet and fascia or parapet is less than half a sheet, fix the edge of it at each purlin with a clip that has been cut in half.
- 3. Cover the gap with a flashing, attaching it to the sheet using a flashing angle. (see fig 6) Positive fixing may be advised.
- 4. The higher end of each sheet should be turned up 90 degrees, forming a wall, which will prevent water from being blown up into the building. The lower end should be partially bent down to form a slope. This will help water to flow into the gutter and prevent it from creeping back under the sheet. Bending can easily be carried out using a bending tool available from the Youngman Roofing. (see fig 7 & 8)

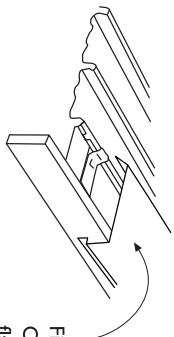


Figure 6.  
Cover gap left with flashing

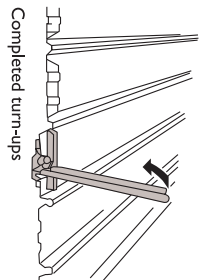


Figure 7.  
Bending tool ready to turn-up

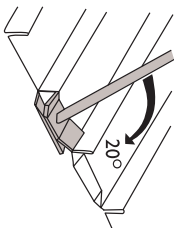
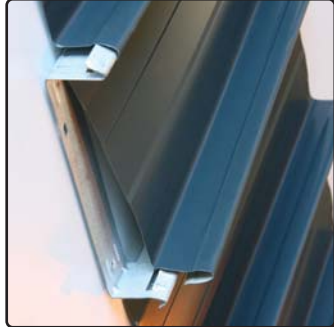


Figure 8.  
Turning down the gutter end

The use of a rubber hammer will make the task easier. Always fix towards the direction of the prevailing weather. (see fig 1-4 )

Should DIAMONDEK be specified for use as side cladding:

- 1. First fix the sheets through the pan to the top sheeting rail. This will prevent the sheets from sliding down.
- 2. Continue to fix, as described in the fixing guidelines.



**Flashings**

Purpose designed flashings, in compatible\* materials, can be obtained from Youngman Roofing. Those shown in this brochure are suitable for a DIAMONDEK roof, but other architectural designs may be desirable in particular circumstances. These custom made flashings can be made to suit the architect's requirements. Closers, as such, are not used in the DIAMONDEK system but some flashings will inevitably be required to return into the pan. This is achieved with the use of a notching tool, which can be bought or hired from Youngman Roofing.

**Springing, Curving and Bullnosing**

Long DIAMONDEK sheets can be sprung to a minimum radius of 36 meters. The pans of the sheets may tend to "oilcan" (minor waviness) when sprung. This is a normal result that will arise owing to the inherent properties of steel. Aesthetic requirements need to be taken into consideration when springing sheets.

An alternative is to crank the sheets. Cranking forms indentations across the sheets resulting in a smaller radius being achievable.

The smallest curve achievable, usually used to form a bullnose (a curve often seen at the end of a straight sheet or where the roof and side cladding become one) is 450 mm. This small radius can be used to form a ridge in order to use one sheet without a ridge flashing. For practical reasons avoid bullnosing or cranking a sheet in more than one place.

**Rib Caps**

Where sharp deviations in direction are required, the contractor can cut the ribs of the sheet at the desired place and bend the pan to the necessary angle. The cut ribs are made watertight by riveting purpose made rib caps over the cut areas and applying good quality silicone to seal any gaps.

**Compatible Materials**

Always ensure that all materials used are compatible with each other. It is not desirable to use non-compatible materials on a structure. Use of non-compatible materials can lead to corrosion or staining of materials as well as contamination of the water run-off.

Acceptability of Drainage from Upper Surface onto a Lower Metal Surface and Direct Contact

Flashing and Cranking Details

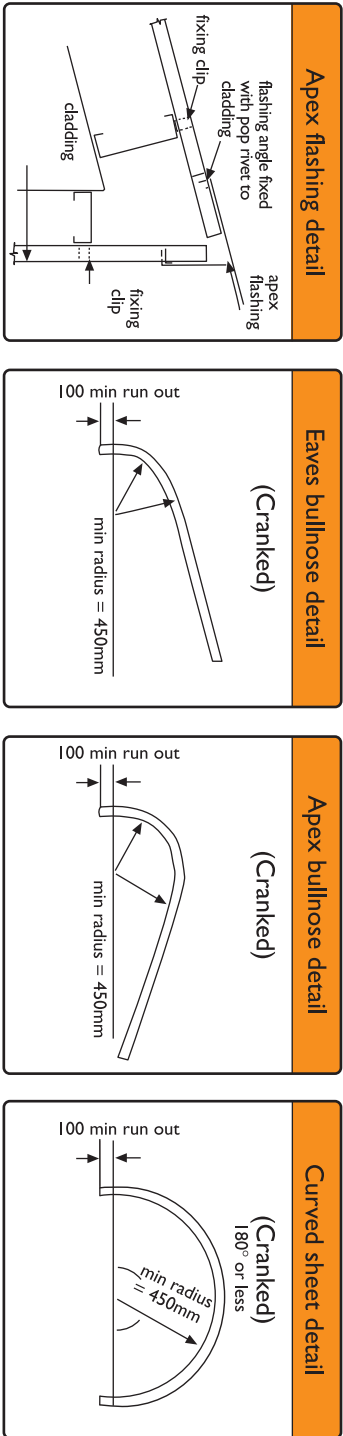
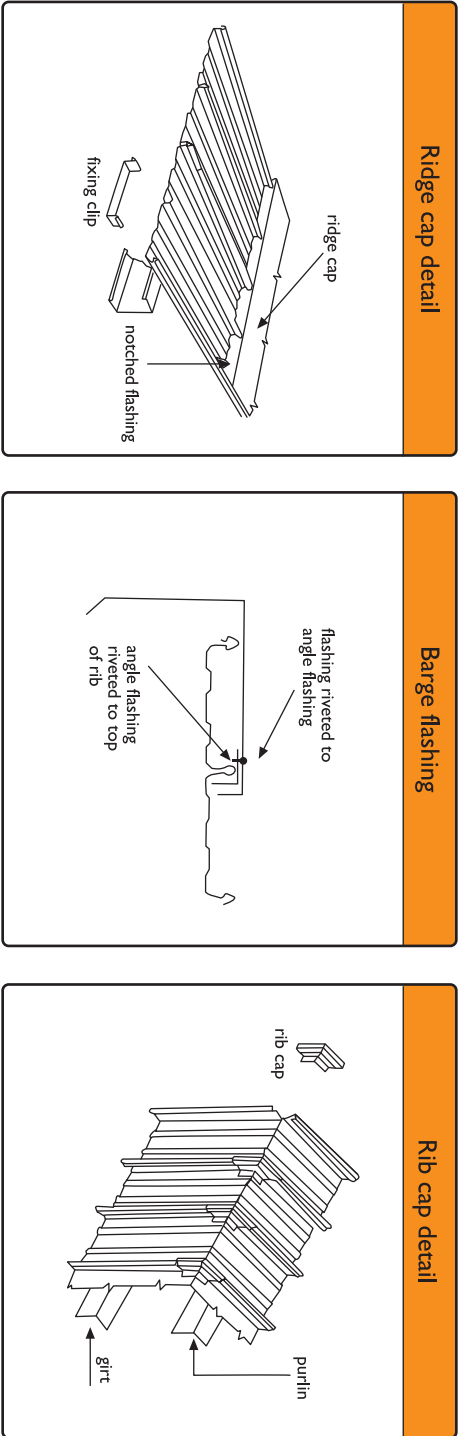
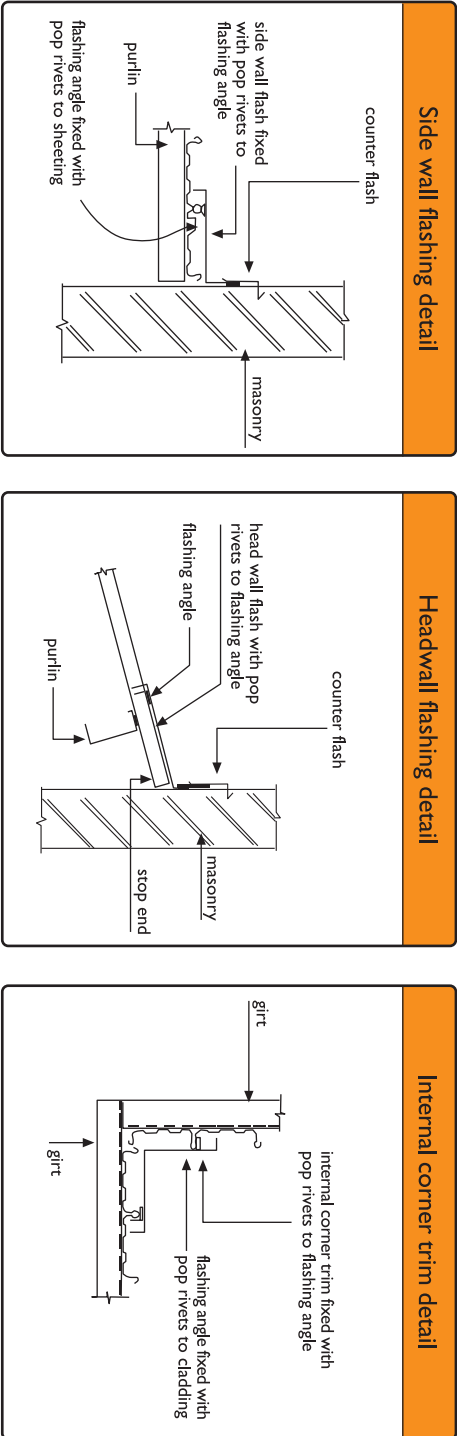
Compatibility of direct contact between metals or alloys

ACCESSORIES OR FASTENER OR (UPPER SURFACE)									
ROOF DRAINAGE SYSTEM COMPONENTS & ANY CLADDING MATERIAL	ZINCALUME®	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND®, COLORBOND® ULTRA, COLORBOND® METALLIC	COLORBOND® STAINLESS	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER ALLOYS <sup>(1)</sup>	LEAD
ZINCALUME®	YES	YES	YES	YES	NO	NO	YES	NO	NO
GALVANISED (ZINC COATED STEEL)	YES	YES	YES	YES	NO	NO	YES	NO	NO
ZINC	YES	YES	YES	YES	NO	NO	YES	NO	NO
COLORBOND®, COLORBOND® ULTRA, COLORBOND® METALLIC	YES	YES	YES	YES	NO	NO	YES	NO	NO
COLORBOND® STAINLESS	NO	NO	NO	NO	YES	YES	NO	NO	NO
STAINLESS STEEL	NO	NO	NO	NO	YES	YES	NO	NO	NO
ALUMINIUM ALLOYS	YES	YES	YES	YES	NO	NO	YES	NO	NO
COPPER & COPPER ALLOYS <sup>(1)</sup>	NO	NO	NO	NO	NO	NO	NO	YES	YES
LEAD	NO	NO	NO	NO	NO	NO	NO	YES	YES

Acceptability of drainage from an upper surface to a lower metal surface

UPPER CLADDING OR ROOF DRAINAGE SYSTEM MATERIAL									
LOWER ROOF DRAINAGE SYSTEM MATERIAL	ZINCALUME®	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND®, COLORBOND® ULTRA, COLORBOND® METALLIC	COLORBOND® STAINLESS	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER ALLOYS <sup>(1)</sup>	LEAD
ZINCALUME®	YES	YES	YES	YES	YES	YES	YES	NO	NO
GALVANISED (ZINC COATED STEEL)	NO	YES	YES	NO	NO	NO	NO	NO	YES
ZINC	NO	YES	YES	NO	NO	NO	NO	NO	YES
COLORBOND®, COLORBOND® ULTRA, COLORBOND® METALLIC	YES	YES	YES	YES	YES	YES	YES	NO	NO
COLORBOND® STAINLESS	YES	YES	YES	YES	YES	YES	YES	YES	YES
STAINLESS STEEL	YES	YES	YES	YES	YES	YES	YES	YES	YES
ALUMINIUM ALLOYS	YES	YES	YES	YES	YES	YES	YES	NO	NO
COPPER & COPPER ALLOYS <sup>(1)</sup>	YES	YES	YES	YES	YES	YES	YES	YES	YES
LEAD	YES	YES	YES	YES	YES	YES	YES	YES	YES

(1) Monel, copper/nickle alloy  
(2) For further guidance refer to AS/NZS 3500.3:2003  
\* Information extracted from Lysaght Australia Installation Manual 2010 - 2011 Edition.



Tygervalley Shopping Center

Cape Town International Airport

Waterkloof Winery and Restaurant

