TB - 8
Technical Bulletin

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Flashing materials for exterior BlueScope coated steel sheet

Introduction

Flashing forms the intersections and terminations of roof and wall cladding to seal against water penetration. The most common locations for roof flashing are at valleys, ridges, eaves, at roof-to-wall intersections and roof penetrations such as chimneys and skylights.

Flashing materials must be durable, weather resistant and compatible with adjoining materials, and should be able to accommodate movement in the roof and/or wall cladding and have low maintenance requirements.

Bi-metallic corrosion

Due to a phenomenon known as galvanic corrosion (also commonly known as bi-metallic corrosion) some metals commonly used as flashing materials can cause accelerated corrosion when used with COLORBOND® pre-painted steel, SUPERDURA® Stainless prepainted steel and ZINCALUME® aluminium/zinc/ magnesium alloy coated steel sheet.

Refer to:

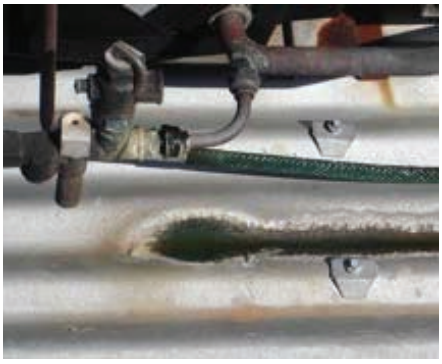
Corrosion Technical Bulletin CTB-12 Dissimilar metals.

Copper contact

Bi-metallic corrosion of exterior BlueScope coated steel occurs when these products are in direct contact with copper, and from contact with “copper-rich” water run-off e.g. hot water system overflows (see Figure 1).

Painting the outside of copper piping is recommended. Hot water discharge pipes should be extended beyond the roof, preferably to the ground.

Figure 1. Bi-metallic corrosion caused by ‘copper-rich’ water run-off



Lead contact

Although lead is generally considered to be compatible with zinc-coated steel in some environments, it IS NOT compatible with COLORBOND® steel, SUPERDURA® Stainless steel or ZINCALUME® steel which are prone to corrosion when in contact with, or receiving run-off water from, lead.

Pure zinc or aluminium are suitable alternatives as they are both compatible with COLORBOND® steel and ZINCALUME® steel, although typically neither are as malleable as lead. However, it is recognised that lead flashing must be retained in some re-roofing situations when existing lead flashing is built into the existing masonry work. In these cases, painting will provide a suitable barrier between the flashing and roofing sheet surfaces. The top surface of lead flashing should also be painted with a good quality exterior paint system so that water running off the flashing is not contaminated with lead ions which will lead to contamination and corrosion of the catchment systems.

Alternatively, a plastic strip such as polythene damp course material can be used as a separator between the ZINCALUME® steel sheeting and the lead flashing. However, the top surface of the lead flashing must still be painted to prevent contamination and corrosion of the associated catchment system.

For water catchment systems supplying drinking water refer to the Australian Drinking Water Guidelines 2011 (Updated 2018) and your water testing authority for guidance.

Compatible flashing materials

Roof penetration flashings are also available in a wide range of rubber and aluminium materials which are compatible with COLORBOND® steel and ZINCALUME® steel.

The most desirable and suitable flashing materials are COLORBOND® steel or ZINCALUME® steel sheet formed to suit the application. While zinc-coated steel can be used as flashing material with COLORBOND® steel or ZINCALUME® steel, it has a reduced lifespan and risk of inert catchment corrosion, making it less desirable for long-term applications.

Only stainless steel flashing products should be used with SUPERDURA® Stainless steel. Flashing made from zinc-coated steel, ZINCALUME® steel or COLORBOND® steel (with an aluminium/zinc/magnesium alloy coated steel base) is NOT compatible with SUPERDURA® Stainless steel.

Roof penetrations

The majority of roof penetrations are effectively sealed with a flexible EPDM or silicone rubber flanged sleeve, which can be obtained for flashing penetrations up to 600 mm in diameter.

The metal flange around the base of the sleeve should be contoured by hand to match the sheeting profile, before it is sealed and fastened to the sheeting. This allows drainage of water run-off down the trays or valleys each side of the penetration. The sleeve tapers up from the flange to a water tight fit around the penetration. While using these rubber sleeves care must be taken not to block any valleys or trays which would prevent water draining from the high side of the roof penetration. Ponding in such areas will cause deterioration of the sheet coating which will lead to perforation.

However, if the roof penetration can be located closer to the ridge capping or other flashing units, an alternative flashing method would be to fit a simple flat tray water shed, over the top of the sheeting profile.

This should extend from under the flashing or capping down to the sleeve around the penetration thus preventing the ponding of run-off water. Often specialist flashing is required around roof penetrations such as chimneys, skylights and other architectural features. On low pitched roofs any penetration through sheeting large enough to block one or more of the sheet drainage channels or deck pans will require special attention to the flashing around the penetration. This can be achieved by diverting run-off water from the blocked channels by fitting a head gutter on the high side of the penetration. Run-off water from the roof area immediately above the blocked channels is then discharged into clear channels either side of the penetration.

It should be noted that the sheeting on the high side has to be stopped clear of the penetration to allow a suitable space for installation of a head gutter which can be flashed under and sealed, to the upper sheet.

Further details pertaining to appropriate flashing methods at roof penetrations are covered in Australian Standard SA HB39:2015.

Rectification

Where localised corrosion has occurred on a roof, the damaged area should be repaired, refer to:

Technical Bulletin TB-2 Overpainting and restoration of exterior BlueScope coated steel products.

Related BlueScope Technical Bulletins

Technical Bulletin TB-2 Overpainting and restoration of exterior BlueScope coated steel products

Corrosion Technical Bulletin CTB-12 Dissimilar metals

Referenced Australian Standards

AS SA HB39:2015 – *Installation code for metal roof and wall cladding.*

Related Guidelines

Australian Drinking Water Guidelines 2011 (Updated 2018)

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most current information

1800 800 789
steeldirect@bluescopesteel.com
For more information contact Steel Direct