

Fasteners for roofing, walling and accessory product – selection guide

INTRODUCTION

Fasteners used to fix roofing, walling and accessory products manufactured from coated steel sheet and strip are required to give long, trouble-free service. They must do so in environments which range from mild to very severe in terms of corrosive effect.

The purpose of this Technical Bulletin is to provide recommendations of compatible fasteners, most commonly self-drilling screws, for use with BlueScope roofing, walling and accessory products.

CHOICE OF FASTENER FOR LONG LIFE

The correct selection of fastener for fixing roof and wall cladding and accessories is of paramount importance for long term fastening integrity and aesthetics.

When fasteners are selected to fix coated steel building products, it is vital that the fasteners have the same or superior service life as the material with which they are to be used. Table 1 below provides a general guide to the fastener type recommended for various BlueScope products. In areas of uncertainty, it is advisable

to use fasteners with a higher corrosion resistance rating.

BlueScope does not manufacture fasteners and does not control the quality of any given fastener type. Consumers should obtain written confirmation from suppliers that their fasteners are suitable for the relevant corrosivity category.

To assist in cladding selection please refer to the list of related BlueScope Technical Bulletins on page 3 of this document.

Table 1: Fastener materials for use with products manufactured from BlueScope coated strip and sheet products

BLUESCOPE PRODUCT	DISTANCE FROM BREAKING SURF OR EXPOSED MARINE	DISTANCE FROM CALM MARINE	ENVIRONMENT SEVERITY	RECOMMENDED FASTENER TYPE (ISO 9223:2012 / AS 4312:2019 CORROSIVITY CATEGORY)
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel COLORBOND® Metallic steel	>400m	>200m	Mild / Moderate	Metallic coated screws suitable for corrosivity category 3
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel COLORBOND® Metallic steel	> 200m	> 100m	Moderate / Industrial	Metallic coated screws suitable for corrosivity category 4/5
COLORBOND® Ultra steel	> 100m	> 0m	Severe Marine / Industrial	Metallic coated screws suitable for corrosivity category 4/5
SuperDura™ Stainless steel	> 0m	> 0m	Very Severe Marine / Industrial	Stainless steel screws suitable for corrosivity category 5

- i. This table is to be considered in conjunction with ISO 9223:2012 and AS 4312:2019
- ii. The correct selection of product and fastener combination should be made with respect to the intended application of the product and its location.
- iii. All fasteners used must have an equivalent, or superior, service life and be compatible with the selected BlueScope product.

WASHERS USED WITH FASTENERS

The washer component of self-drilling screws must be manufactured from materials compatible with the roofing, walling and accessory material.

Washers containing significant levels of conductive carbon black fillers are **NOT** suitable for use with COLORBOND® prepainted steel, SuperDura™ Stainless steel or ZINCALUME® aluminium/zinc/magnesium alloy coated steel products. Therefore, fasteners must be assembled with washers substantially free of carbon black fillers i.e. non-conductive.

It is advisable to ask for a certificate of compliance from your fastener supplier, or similar statement, regarding washer conductivity.

FIXING THE SHEETING

In accordance with Section 4.7 of Australian Standard AS 1562.1:2018 *Design and installation of sheet roof and wall cladding – PART 1: Metal*, unless otherwise specified, all fasteners shall be installed normal to the plane of the roof or wall and all fasteners which pierce the cladding shall be provided with adequate sealing to prevent leakage.

- Crest fasteners: shall be tightened no more than is necessary to form a weatherproof seal without deformation of the sheet profile or damage to the sealing systems (refer Figure 1 below).
- Valley fasteners: care shall be taken to ensure an adequate seal to prevent leakage, particularly where valley fasteners are used in roofing applications.
- Fastener length selection should be appropriate for the profile and insulation detail to ensure the correct batten material screw setting depth is achieved.

FASTENER SHANK CORROSION

In certain environments the fastener may be exposed to a greater risk of corrosion as a result of location, building design or specific internal environments (e.g. high condensation, intensive animal farming etc.). In such cases, consideration must be given to corrosion protection of the fastener shanks.

FASTENER TYPES AND COMPATIBILITY

Materials that are incompatible and must not be used with COLORBOND® steel and ZINCALUME® steel, include stainless steel, copper and copper containing alloys.

Similarly, lead, copper and copper containing alloys are incompatible with SuperDura™ Stainless steel and are not to be used. Use only stainless steel fasteners with SuperDura™ Stainless steel.

For more information, please refer to: [Corrosion Technical Bulletin CTB-12](#) Dissimilar metals.

There are two fastener designs to be considered for use with BlueScope products:

1. Self drilling screws

- Used for fastening cladding to a building structure.
- Use only compatible metallic coated steel screws with COLORBOND® Ultra steel, COLORBOND® steel, COLORBOND® Coolmax® steel, COLORBOND® Metallic steel, ZINCALUME® steel and zinc-coated steel (as per Table 1).
- Use only stainless steel screws with SuperDura™ Stainless steel (as per Table 1).

2. Accessory fasteners

- Used for fastening accessory items such as flashings.
- Use only compatible sealed aluminium rivets with COLORBOND® Ultra steel, COLORBOND® steel, COLORBOND® Coolmax® steel, COLORBOND® Metallic steel, ZINCALUME® steel and zinc-coated steel.
- Use only sealed stainless steel rivets with SuperDura™ Stainless steel.

The coated steel strip supplied by BlueScope for manufacturing into roofing, walling and accessory products is made to the highest standard, and conforms to all relevant Australian Standards.

BlueScope will not accept any liability for poor performance caused by installation using inappropriate and incompatible materials.

In addition, BlueScope accepts no liability in relation to the performance of any fastener or fastener coating.

Figure 1: Correct tightening (driving) of fastener



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REFERENCED AUSTRALIAN STANDARDS

- AS 1562.1:2018 *Design and installation of sheet roof and wall cladding – Metal*
- AS 4312:2019 *Atmospheric corrosivity zones in Australia*

REFERENCED INTERNATIONAL STANDARDS

- ISO 9223:2012 *Corrosion of metals and alloys – Corrosivity of atmospheres - Classification, determination and estimation*

RELATED BLUESCOPE TECHNICAL BULLETINS

Technical Bulletin TB-1A

Steel roofing – product selection guide

Technical Bulletin TB-1B

Steel walling – product selection guide

Technical Bulletin TB-8

Flashing materials for exterior BlueScope coated steel products

Technical Bulletin TB-13

General guide to good practice in the use of steel roofing and walling products

Technical Bulletin TB-14

Professionals' Guide to Australian Standards for steel sheet and strip products

Technical Bulletin TB-15

Selection and use of steel eave, gutter, downpipe and fascia products

Technical Bulletin TB-35

Australian salt marine classifications

Corrosion Technical Bulletin CTB-12

Dissimilar metals

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