

# FASTENERS FOR ROOFING AND WALLING PRODUCT – SELECTION GUIDE

## TECHNICAL BULLETIN TB-16

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This issue supersedes all previous issues

### INTRODUCTION

Fasteners used to fix roofing, walling and accessory products manufactured from steel strip and sheet must give long, trouble free service when exposed to the atmosphere in environments ranging from benign to severe in terms of corrosive effect.

### CHOICE OF FASTENER FOR LONG LIFE

When a long lasting product is used for roofing, walling or accessories, it is vital the performance of fasteners used to fix cladding and accessory materials have the same or superior service life as the BlueScope Steel Limited product with which they are to be used. (See TB-1a or TB-1b for appropriate product). **Consequently, the correct selection of fastener for these jobs is of paramount importance for long term structural performance and aesthetics.**

Table 1 gives a general guide to the fastener metal type recommended for various BlueScope Steel strip and sheet products. In the interest of quality assurance it is essential fasteners used comply with Australian Standard AS 3566.

Fasteners which conform to AS 3566 are sold as such and marked appropriately. **IF NOT SO MARKED, THE FASTENERS DO NOT COMPLY and must not be used.**

It should be noted that recommendations made by BlueScope Steel wherever practicable support Australian standards and accepted codes of good building practice.

Whilst BlueScope Steel supply the materials from which the roof sheeting and some accessories are made, materials supplied from other manufacturers are also commonly used in conjunction with these, eg, fasteners and flashings. It is in the best long-term interests of both the installer and end user to ensure that all materials used in an installation are in accordance with the published recommendations.

The steel strip supplied by BlueScope Steel for manufacturing into roofing products is made to the highest standards, and conforms to the relevant Australian standards. BlueScope Steel will not accept any liability for the poor performance caused by installation in conjunction with inappropriate materials. In addition, BlueScope Steel will not be held liable for the performance of any fastener or its coating; users should obtain written confirmation from suppliers that their product complies with AS 3566 - 2000 and seek independent test reports to support their claims.

### WASHERS USED WITH FASTENERS

The rubber washer component of self-drilling screws must be manufactured from materials compatible with the roofing material.

Washers containing significant levels of conductive carbon black fillers are **NOT** suitable for use with ZINCALUME® zinc/aluminium alloy coated and COLORBOND® prepainted steel products, particularly in marine environments.

Table 1 Fastener materials for use with roofing and walling manufactured from BlueScope Steel strip and sheet products.

BLUESCOPE STEEL PRODUCT	APPROPRIATE FASTENER TYPE
COLORBOND®, XMA, XPD, steel ZINCALUME® AZ150 steel	Fasteners conforming to AS 3566 Class 3
COLORBOND® Ultra* steel COLORBOND® steel  (*Note: Applies to COLORBOND® steel used 200 - 400m from marine environments ie "severe" environments).	Fasteners conforming to AS 3566 Class 4  (*Note: Stainless steel fasteners which conform to AS3566 Class 4 are not recommended for use with COLORBOND® or COLORBOND® ULTRA steel.)
COLORBOND® Stainless steel	Quality stainless steel fasteners

‡Fasteners conforming to AS3566, class 3, should not be used within 400 metres of the ocean or other severe marine influence.

**Therefore fasteners must be assembled with substantially carbon – black – free washers.**

#### **SHANK CORROSION**

In certain environments the fastener may be exposed to a greater risk of corrosion as a result of specific internal environments (e.g high condensation, specific service environments such as intensive animal farming). In such cases, consideration must be given to corrosion protection of the fastener shanks. Under AS3566, corrosion classification is based on the fastener heads, rather than the shanks. The fastener manufacturer should be consulted with regards to shank corrosion resistance.

#### **COMPATABILITY**

Stainless steel, lead, copper, and copper containing alloys (such as MONEL) should not be used in conjunction with Metallic Coated or Galvanised, ZINCALUME® steel, COLORBOND®, COLORBOND® XPD, COLORBOND® XMA OR COLORBOND® Ultra steel.

#### **FASTENER TYPES**

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

- self-drilling screws complying as with AS3566 -2000 for fastening cladding to a building structure, and
- accessory fasteners for fastening roofing accessory items such as flashings.

Where accessory fasteners such as pop rivets are required, they should be manufactured from aluminium when fastening Galvanized, ZINCALUME®, COLORBOND®, COLORBOND® Ultra and COLORBOND® XPD steel. However, in the case of COLORBOND® Stainless Steel, compatible stainless steel pop rivets must be used.

The information and advice contained in this Bulletin is of a general nature only, and has not been prepared with your specific needs in mind. You should always obtain specialist advice to ensure that the materials, approach and techniques referred to in this Bulletin meet your specific requirements.

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