

STEEL Fact File

An information source for design professionals

FF5 – Roofing and walling fastener essentials

CC Version 1 July 2008

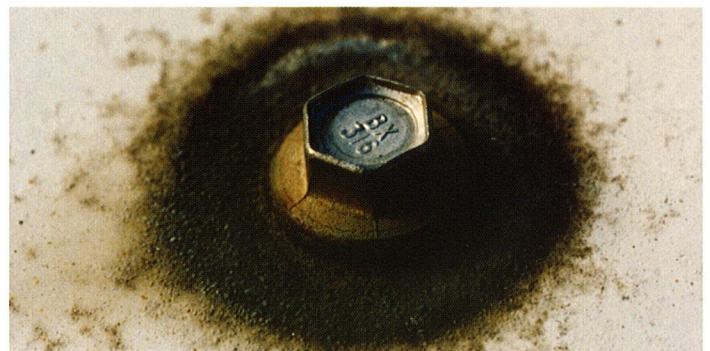


Fast Facts

- Fasteners **MUST** have the same or superior service life as the cladding material
- BlueScope Steel only recommends Class 3 and Class 4 screws for roofing and walling, in accordance with AS3566.2 – 2002.
- All fasteners must be clearly labelled with a traceable brand on the head. Packaging must identify whether product complies with AS 3566.2 – 2002.
- Conductive washers must not be used. All sealing washers supplied on self drilling fasteners shall be non-conductive (ie conductivity $\leq 0.5 \times 10^{-6}$ amps) – for further information consult with fastener supplier.
- Stainless steel fasteners are not recommended for use with any metallic coated or prepainted steel.
- Accessory fasteners such as pop rivets should be made from aluminium when fastening metallic coated or prepainted steel.
- More detailed information on fasteners is available in BlueScope Steel Technical Bulletin TB16 *Fastener for Roofing and Walling Product – Selection Guide*.



The rubber washer component of screws must be made from materials compatible with the cladding material. Conductive washers are not suitable for use with ZINCALUME® steel or Clean COLORBOND™ steel products. Conductive washers can cause galvanic cell corrosion between the washer and the cladding material.



Fasteners used must be compatible with the selected cladding material. Stainless steel fasteners should not be used with galvanised ZINCALUME® steel or Clean COLORBOND™ steel products.

Behind the Facts

Q. What impact does the use of incorrect fasteners have on the life of a roof?

A. The sole purpose of fasteners is to secure the roof and wall cladding to the building's structure.

When a long lasting product is used for roofing, walling or accessories, it is vital the performance of the fasteners used to fix the cladding and accessory materials gives the same or superior life as the cladding material with which they are used.

Premature failure of fasteners may reduce the overall life of the roof and wall cladding to the lesser lifespan of these fasteners.

Fasteners should match the corrosion performance or life of the selected roof and wall cladding material.

Consequently, the correct selection of fastener is of paramount importance for the long term structural performance and aesthetics of any building.



Q. Which fasteners should be specified?

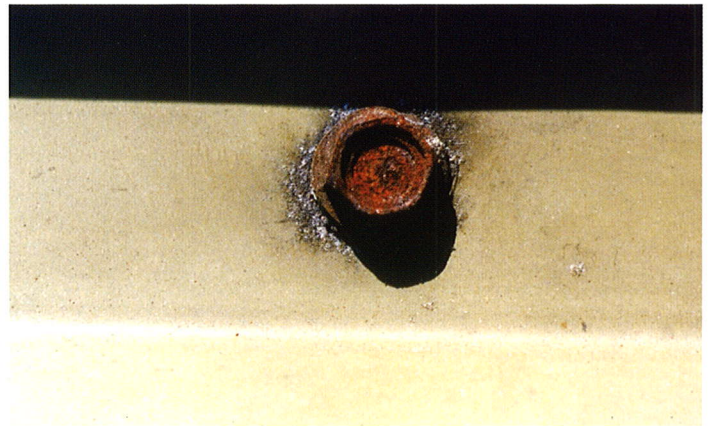
A. BlueScope Steel recommends the use of fasteners according to the Australian Standard 3566.2 – 2002.

Conductive washers are not suitable for use with galvanised, ZINCALUME® or Clean COLORBOND™ steel products.

Stainless steel fasteners are NOT recommended for use with galvanised or ZINCALUME® steel products.

To assist in understanding the actual difference between corrosion Class 3 and Class 4 fasteners, the table below details the minimum physical metallic coating requirements of both Corrosion Class 3 and Class 4 zinc and zinc-tin coated fasteners.

Corrosion Class	Minimum Porosity rating (mechanically plated)	Coating Type	Coating Composition (by mass)	Min. local metallic coating thickness (um)
3	-	Electro plated zinc	98% zinc	30
3	8	Mechanically plated zinc	98% zinc	40
3	8	Mechanically plated zinc-tin	20 – 30% tin, balance zinc	25
4	8	Mechanically plated zinc-tin	20 – 30% tin, balance zinc	45
4	-	Hot Dip Galvanised	98% zinc	50



Above:

Poor quality fasteners or fasteners with low coating thickness (less than Class 3 or 4) may fail well before the roof cladding material, cause water leaks and ultimately reduce the overall life of the cladding materials.

BlueScope Steel

Copyright 2008 BlueScope Steel Limited
 BlueScope Steel Limited ABN 16 000 011 058
 BlueScope Steel (AIS) Pty Ltd ABN 19 000 019 625

BlueScope Steel Southern Africa (Pty) Ltd
 Phone: +27 21 442 5420
 Fax: +27 21 448 9132