

## Steel roofing products – selection guide

### INTRODUCTION

This Technical Bulletin serves as a guide to selecting the most appropriate BlueScope Steel product for your roofing needs considering its intended location and the environmental factors likely to be encountered during its service life. Selecting the correct product for the location will contribute to ensure that your roof achieves a long service life.

The ability of next generation COLORBOND® prepainted steel and ZINCALUME® aluminium/zinc/magnesium alloy coated steel with Activate™ technology to excel in the climatic conditions of Australia is the result of the advanced coating technologies applied to the base steel strip. Below is a brief description of BlueScope Steel's roofing products.

#### ZINCALUME® steel with Activate™ technology – for exterior roofing.

Aluminium/zinc/magnesium alloy coated steel strip (Type AM as per AS1397-2011: *Continuous hot-dip metallic coated steel sheet and strip – Coatings of zinc and zinc alloyed with aluminium and magnesium*).

**COLORBOND® steel with Activate™ technology** – combines a metallic coated steel substrate with a range of factory applied paint systems to cope with exposure to various environments.

- **COLORBOND® steel** – for exterior roofing.
- **COLORBOND® Coolmax® steel** – for superior thermal efficiency.
- **COLORBOND® Metallic steel** – for superior aesthetic qualities.
- **COLORBOND® Ultra steel** – for severe exterior environments.

#### COLORBOND® Stainless steel

Incorporates a stainless steel substrate with factory applied paint systems and is suited to very severe exterior environments.

#### NOTE:

- i. COLORBOND® steel products are available in a variety of colours selected to match the needs of the building industry.
- ii. COLORBOND® Coolmax® steel is only available in the colour Whitehaven®.

### ATMOSPHERIC EXPOSURE CONDITIONS

BlueScope Steel has strategically positioned long term exposure test facilities across a range of climatic conditions that have allowed decades of testing and monitoring of our products in some of the harshest environments. The wealth of data accumulated from these sites has allowed BlueScope Steel to develop products and provide product recommendations suitable for a given location.

Localised environmental conditions will impact the corrosive nature of a particular site which may alter recommendations. Such conditions include the direction of prevailing winds, amount of rainfall, time of wetness, temperature, shelter and areas not naturally washed by rainfall. The following environmental descriptions and table are therefore intended to serve as a **GUIDE ONLY** and it is essential to consult with BlueScope Steel Direct for advice on the most suitable choice of COLORBOND® steel and ZINCALUME® steel products.

### MARINE INFLUENCE

Marine exposure conditions have been categorised into five groups: *benign, moderate, marine, severe* and *very severe*, as shown in *Table 1*. This table provides an indication of the recommended product where the corrosive factor is a marine influence e.g. breaking surf, exposed marine or calm marine.

### INDUSTRIAL INFLUENCE

The range of COLORBOND® steel and ZINCALUME® steel products quoted in *Table 1* are suitable for light industrial applications.

For industrial buildings the internal activities and external environment of the building must be considered. Where the roof cladding, either internally and/or externally, is subject to heavy dust, emissions fallout, contact with heat, moisture, corrosive chemicals or acids etc, it is essential to consult BlueScope Steel Direct for advice on

*Table 1: Recommended BlueScope Steel Product Guide for Roofing in Marine Environments*

RECOMMENDED ROOFING PRODUCT/S	MARINE ENVIRONMENT SEVERITY	DISTANCE FROM BREAKING SURF OR EXPOSED MARINE	DISTANCE FROM CALM MARINE
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel COLORBOND® Metallic steel	Benign	>1km	>1km
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel COLORBOND® Metallic steel	Moderate	401–1000m	201–1000m
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel	Marine	201–400m	101–200m
COLORBOND® Ultra steel	Severe Marine	101–200m	0–100m
COLORBOND® Stainless steel	Very Severe Marine	0–100m	N/A

#### NOTE:

- i. Absolute performance is subject to local conditions including, but not limited to, prevailing winds, and presence of unwashed areas.
- ii. Distance is as measured from the high water/tide mark.
- iii. *Table 1* applies to salt marine influences only. For installations subject to severe or heavy industrial conditions or internal humidity, it is essential to contact BlueScope Steel Direct for advice on suitable products.
- iv. Definitions and examples of surf, exposed and calm marine are outlined in **Technical Bulletin TB-35 Australian Salt Marine Classifications**.

suitable products to use. Likewise, any site immediately adjacent to such activity should also be referred to BlueScope Steel Direct for specific recommendations on suitable products.

In addition, the concentration and nature of industrial activity and the effects of the combustion of fossil fuels must also be taken into account in some localities, whilst the direction, intensity and nature of prevailing winds will also exert an influence.

### UNUSUALLY HARSH INTERNAL SERVICE CONDITIONS

There are many activities carried out in sheds and industrial buildings that have a severe impact on metals and steel products. In some instances COLORBOND® steel and ZINCALUME® steel products are unsuitable due to the micro environment within the building. Information on some common applications can be found in the following Corrosion Technical Bulletins:

#### **Corrosion Technical Bulletin CTB-21**

*Special Service Environments: Enclosed swimming pool buildings*

#### **Corrosion Technical Bulletin CTB-22**

*Special Service Environments: Intensive animal farming*

#### **Corrosion Technical Bulletin CTB-24**

*Special Service Environments: Fertiliser manufacturing and storage buildings*

### ROOFING MADE FROM GALVANISED STEEL

COLORBOND® steel and ZINCALUME® steel provide superior corrosion performance in most roofing applications. Galvanised steel roofing for this reason is not recommended except for

buildings where unique environmental conditions (e.g. intensive animal farming) make galvanised steel the preferred product. For galvanised steel roofs on heritage buildings, specific conditions apply in regard to warranty eligibility – refer to BlueScope Steel Direct for advice.

### FASTENERS AND ACCESSORIES

To support product longevity, information should be sought on the correct choice of fasteners, accessories, and good storage and handling practice. Please refer to:

#### **Technical Bulletin TB-7**

*Care and Storage of BlueScope Steel Coated Steel Products Prior to Installation*

#### **Technical Bulletin TB-13**

*General Guide to Good Practice in the use of Steel Roofing and Walling Products*

#### **Technical Bulletin TB-16**

*Fasteners for Roofing and Walling Product – Selection Guide*

In relation to fastener suitability, fastener manufacturers should be familiar with these recommendations and be able to give the appropriate advice.

### THERMAL EFFICIENCY

Properly insulated steel roofing has inherent thermal efficiency benefits due to its low thermal mass. Thermatech® solar reflectance technology provides further thermal efficiency benefits and has been incorporated across BlueScope Steel's standard COLORBOND® steel range\*. COLORBOND® Coolmax® steel, in the colour Whitehaven®, has also been developed specifically for high solar reflectance. These technologies

are designed to reflect more of the sun's heat and can help keep cooling costs down.

For more information on Thermatech® solar reflectance technology and COLORBOND® Coolmax® steel, as well as other notes on thermal efficiency, please refer to **Technical Bulletin TB-28** *Building Materials, Thermal Efficiency and Reflectivity*.

### RELATED BLUESCOPE STEEL TECHNICAL BULLETINS

#### **Technical Bulletin TB-7**

*Care and Storage of BlueScope Steel Exterior Products Prior to Installation*

#### **Technical Bulletin TB-13**

*General Guide to Good Practice in the use of Steel Roofing and Walling Products*

#### **Technical Bulletin TB-14**

*Builders Guide to Australian Steel Sheet and Strip Standards*

#### **Technical Bulletin TB-16**

*Fasteners for Roofing and Walling Product – Selection Guide*

#### **Technical Bulletin TB-28**

*Building Materials, Thermal Efficiency and Reflectivity*

#### **Technical Bulletin TB-35**

*Australian Salt Marine Classifications*

#### **Corrosion Technical Bulletin CTB-21**

*Special Service Environments: Enclosed swimming pool buildings*

#### **Corrosion Technical Bulletin CTB-22**

*Special Service Environments: Intensive animal farming*

#### **Corrosion Technical Bulletin CTB-24**

*Special Service Environments: Fertiliser manufacturing and storage buildings*

**If you have any questions regarding this Bulletin, please contact BlueScope Steel Direct on 1800 800 789.**

**To ensure you have the most current Technical Bulletin, please go to [bluescopesteel.com.au](http://bluescopesteel.com.au).**



The information and advice contained in this Technical Bulletin ('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.

BlueScope Steel Limited makes no warranty as to the accuracy, completeness or reliability of any estimates, opinions or other information contained in this Bulletin and to the maximum extent permitted by law, BlueScope Steel Limited disclaims all liability and responsibility for any loss or damage, direct or indirect, which may be suffered by any person acting in reliance on anything contained in or omitted from this Bulletin.

\* Nightsky® does not contain Thermatech®.

COLORBOND®, ZINCALUME®, Thermatech®, Coolmax®, Whitehaven® and BlueScope are registered trade marks and Activate™ is a trade mark of BlueScope Steel Limited.



©2013 BlueScope Steel Limited ABN16 000 011 058. BlueScope Steel (AIS) Pty Ltd ABN 19 000 019 625. All rights reserved.