

Steel walling products – selection guide

INTRODUCTION

This Technical Bulletin serves as a guide to selecting the most appropriate BlueScope Steel product for your walling 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 ensuring that your wall 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 walling products.

ZINCALUME® steel with Activate™ technology – for exterior walling.

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 – 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 walling.
- **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:

- ZINCALUME® steel and COLORBOND® Metallic steel are only warranted in Commercial and Industrial walling applications.

PERFORMANCE OF STEEL WALLING

Like steel roofing (please refer to Technical Bulletin TB-1A *Steel Roofing Products - Selection Guide*), the performance of steel walling can be influenced by a number of factors, including the environment, particularly its proximity to a salt marine influence. Typically, walling experiences less natural washing by rainfall when compared to roofing, which has influenced product recommendations. *Table 1* serves as a **GUIDE ONLY** for the selection of a suitable walling product for your location. In combination with a **REGULAR 6 MONTHLY MAINTENANCE PROGRAM**, this should provide optimum performance and longevity.

UNWASHED AREAS

A common issue in the case of walling is in areas not naturally washed by rainfall, known as “unwashed areas”. Since walls are vertical surfaces, they can be sheltered from general rain washing, particularly towards the top of the wall, adjacent to overhanging eaves. In these regions dust and dirt, that would otherwise be washed away by rain, tends to build up. Condensation can be absorbed by the dust and dirt leading to an increase in the time that the material is in contact with sufficient moisture to initiate corrosion (i.e. time of wetness). The associated effects of these unwashed areas can be accelerated in the vicinity of a salt

marine influence, when the build-up of dust and dirt includes marine salts, and/or other pollutants (e.g. industrial fall out), unwashed area corrosion is further exacerbated.

The potential for corrosion to occur in unwashed areas can be reduced by regular washing with fresh clean water.

DESIGN

To improve the thermal efficiency of a building, modern building design often incorporates large overhanging eaves, verandahs and walkways in combination with walling made from COLORBOND® steel and/or ZINCALUME® steel. It is important for a designer to recognise that the inclusion of such overhanging features will create unwashed areas.

Where unwashed areas are created, selecting a suitable product (refer to *Table 1*) and implementing a regular maintenance regime will aid in the longevity of the walling product.

Wall cladding installed with the formed profile in a horizontal orientation creates inherent unwashed areas which may hold dust and dirt. Accordingly, a more regular maintenance program than quoted may be required.

Consideration also needs to be given to ensuring that the wall cladding is installed in such a way that it is not immersed in concrete, dirt, soil or other moisture retaining substances. More information can be found on the above topics in the following Technical Bulletins:

Table 1: Recommended BlueScope Steel Product Guide for Walling in Marine Environments.

RECOMMENDED WALLING PRODUCTS	DISTANCE FROM MARINE ENVIRONMENT
ZINCALUME® steel COLORBOND® steel	>1km
COLORBOND® Metallic steel	>1km for commercial applications >2km for residential applications
COLORBOND® Ultra steel	501-1000m
COLORBOND® Stainless steel	0-500m

NOTE:

- Absolute performance is subject to local conditions including, but not limited to, prevailing winds, and presence of unwashed areas.
- Distance is as measured from the high water/tide mark.
- 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.

Technical Bulletin TB-13

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

Corrosion Technical Bulletin CTB-16

Immersion

MAINTENANCE, FASTENERS AND ACCESSORIES

Maintenance, in the form of regular washing with clean water, should be performed at 6 month intervals. 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-4

Maintenance of COLORBOND® steel and ZINCALUME® steel

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 OF STEEL WALLING

Properly insulated steel walling 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*. This technology is designed to reflect more of the sun's heat and can help keep cooling costs down.

For more information on Thermatech® solar reflectance technology, 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-1A**

Steel Roofing Products – Selection Guide

Technical Bulletin TB-4

Maintenance of COLORBOND® steel and ZINCALUME® steel

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 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

Corrosion Technical Bulletin CTB-16

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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.



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.



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* Nightsky® does not contain Thermatech®.

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