Technical Bulletin 1A

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Steel roofing products – selection guide

INTRODUCTION

This Technical Bulletin serves as a guide to selecting the most appropriate BlueScope 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 COLORBOND® prepainted steel and ZINCALUME® aluminium/zinc/magnesium alloy-coated steel with Activate® metallic coating technology[1] 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's roofing products.

ZINCALUME® steel

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 an aluminium/zinc/magnesium alloy-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[2] – for superior thermal efficiency.
COLORBOND® Metallic steel – for an aesthetically distinctive 'metallic' effect.
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.

ATMOSPHERIC EXPOSURE CONDITIONS

BlueScope 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 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 1 (below) are therefore intended to serve as a GUIDE ONLY and it is essential to consult with Steel Direct for advice on the most suitable choice of product.

MARINE INFLUENCE

Table 1 provides an indication of suitable products where the corrosive factor is a marine influence e.g. breaking surf, exposed marine or calm marine.

Table 1: Recommended BlueScope product guide for roofing in marine environments

RECOMMENDED ROOFING PRODUCTS	DISTANCE FROM BREAKING SURF OR EXPOSED MARINE	DISTANCE FROM CALM MARINE
ZINCALUME® steel COLORBOND® steel COLORBOND® Coolmax® steel COLORBOND® Metallic steel	> 200m	> 100m
COLORBOND® Ultra steel	> 100m	> 0m
COLORBOND® Stainless steel	> 0m	> 0m

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 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.

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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 sheeting, 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 Steel Direct for advice on suitable products to use. Likewise, any site immediately adjacent to such activity should also be referred to 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 considered 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 ZINC-COATED STEEL

COLORBOND® steel and ZINCALUME® steel provide superior corrosion performance in most roofing applications. Zinc-coated (galvanised) steel roofing for this reason is not recommended except for buildings where unique environmental conditions (e.g. intensive animal farming) make zinc-coated steel the preferred product. For zinc-coated steel roofs on heritage buildings, specific conditions apply regarding warranty* eligibility – refer to 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 of BlueScope coated steel products during transport and storage

Technical Bulletin TB-13
General guide to good practice in the use of exterior BlueScope coated steel products

Technical Bulletin TB-16
Fasteners for roofing, walling and accessory 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[3] provides further thermal efficiency benefits and is incorporated in COLORBOND® steel standard and matt finish colours (except for Night Sky®) and COLORBOND® Ultra steel standard colours. COLORBOND® Coolmax® steel has also been developed specifically for high solar reflectance. These technologies are designed to reflect more of the sun's heat on hot, sunny days and may help reduce cooling costs.

For more information please refer to:

Technical Bulletin TB-28 Building materials, thermal efficiency and reflectivity.

RELATED BLUESCOPE TECHNICAL BULLETINS

Technical Bulletin TB-7
Care of BlueScope coated steel products during transport and storage

Technical Bulletin TB-13
General guide to good practice in the use of exterior BlueScope coated steel products

Technical Bulletin TB-14
Professional's guide to Australian Standards for steel sheet and strip products

Technical Bulletin TB-16
Fasteners for roofing, walling and accessory 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

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1. Activate® technology is not available for COLORBOND® Stainless steel or COLORBOND® steel products with a galvanised substrate. 2. COLORBOND® Coolmax® steel is only available in the colour Whitehaven®. 3. Thermatech® technology is not available in Night Sky®, or non-standard colours, and is not available in COLORBOND® Stainless steel, COLORBOND® Metallic steel, or COLORBOND® Coolmax® steel. Results will depend on roof colour, level and location of insulation, type and location of building shape and function. * Warranties are subject to exclusions, application and eligibility criteria. For full terms and conditions and to determine the eligibility of your product for the warranty visit www.bluescopesteel.com.au/warranties or contact Steel Direct. 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 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 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.