

STEEL ROOFING PRODUCTS – SELECTION GUIDE

TECHNICAL BULLETIN TB-1a

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This issue supersedes all previous issues

The materials manufactured by BlueScope Steel Limited for roofing and walling applications are:

COLORBOND® steel – prepainted steel sheet

ZINCALUME® steel – zinc/aluminium alloy-coated steel sheet.

COLORBOND® steel sheet has either a ZINCALUME®, galvanized or stainless steel substrate combined with a range of prepainted coatings applied by BlueScope Steel to cope with exposure to various environments.

Amongst the range of COLORBOND® steel products designed for external applications are:

- COLORBOND® Stainless steel
prepainted stainless steel sheet –
for very severe exterior environments.
- COLORBOND® Ultra steel
prepainted steel sheet & strip –
for exterior severe environments.
- COLORBOND® Metallic steel
prepainted steel sheet & strip –
for superior aesthetic qualities.
- COLORBOND® steel
prepainted steel sheet & strip –
for exterior roofing and walling.

These COLORBOND® steel products are available in a variety of colours selected to match the needs of the building industry.

PERFORMANCE OF STEEL ROOFING

General Applications

The performance of steel roofing is affected by many factors, some are controllable and some are not. The main factor that is not controllable is the environment. The effect of this however, can be minimised by choosing a material appropriate to the conditions under which the steel sheet must perform.

Environmental factors

1. Atmospheric exposure conditions.
2. Unusually harsh service conditions due to the nature of the activity in a building, eg, intensive animal farming.

Atmospheric Exposure Conditions

In a country the size of Australia, with its wide variety of climatic conditions ranging from the tropical north to the alpine regions in the south-east, and from the heavy surf characteristics of much of the coastline to the desert regions of the interior, it is clearly not possible in a brief general description to cover all possibilities in detail.

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, and the direction, intensity and nature of prevailing winds can also exert an influence. Any distances quoted therefore can be indicative only.

The following environmental descriptions and table are therefore intended to serve as A GUIDE ONLY. Prevailing winds, shelter, elevation above the marine influence and unwashed areas are just a few factors that may impact on the corrosive nature of a particular site. The essential thing to do is consult with your roofing supplier or BlueScope Steel Sales Office for the best advice on the most suitable choice of COLORBOND® steel and ZINCALUME® steel product.

In general, atmospheric exposure conditions can be categorised under four main groups; very severe, severe, moderate and benign, as shown in table 1. This table provides an indication of product performance where the corrosive factor is a marine influence (*eg. breaking surf*).

COLORBOND® steel, COLORBOND® Metallic steel and ZINCALUME® steel are all suitable for light industrial applications. However, in applications where the roofing product is subject to heavy fallout, acid or alkali laden air, or other corrosive chemicals, it is essential to consult a BlueScope Steel Sales Office for advice on the correct product to use for very severe and severe conditions.

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

MARINE ENVIRONMENT SEVERITY	DISTANCE FROM BREAKING SURF	DISTANCE FROM CALM MARINE	RECOMMENDED ROOFING PRODUCT
Very Severe Marine	0m - 100m	N/A	COLORBOND® Stainless
Severe Marine	100m - 200m	0m - 100m	COLORBOND® Ultra
Marine	201m - 400m	101m - 200m	COLORBOND®
Moderate	401m - 1000m	201m - 1000m	COLORBOND® COLORBOND® Metallic ZINCALUME®
Benign	1001m +	1001m +	COLORBOND® COLORBOND® Metallic ZINCALUME®

NOTE:

- Absolute performance is subject to local conditions (eg prevailing winds) and unwashed areas (ie regions of the roof not naturally washed by rain).
- Above table applies to roofing product only.
- The above table applies to salt marine influences only. For installations subject to severe, heavy industrial conditions, it is essential to consult a BlueScope Steel Sales Office for advice on the appropriate product.

Information should also be sought concerning the correct choice of fasteners and accessories, and good installation practice. In relation to suitability of fasteners, fastener manufacturers are also familiar with these recommendations and will give the appropriate advice (refer TB-16; Fasteners for Roofing and Walling Product – Selection Guide).

INTENSIVE ANIMAL FARMING AND UNUSUALLY HARSH SERVICE CONDITIONS

There are many activities carried out in sheds and industrial buildings which are quite severe in their effects on steel cladding products.

The micro environment inside sheds for intensive animal farming provides an example

of this. The product recommended by BlueScope Steel for best performance under these conditions are profiles rollformed from a heavy coating mass, zinc-coated base i.e. ZINCFORM® G300 or G550 steel (depending on profile), with a Z450 or Z600 coating class. **ZINCALUME® steel is not suitable for use in intensive animal farming environments.**

Any proposed structure for industrial activity involving acids, chemicals, heat and moisture, fossil fuel combustion etc, or any site immediately adjacent to such activity, should be referred to BlueScope Steel for specific recommendations on suitable product.

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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