

COLORBOND® prepainted steel – colour design considerations

INTRODUCTION

The purpose of this Technical Bulletin is to outline the extensive product knowledge, testing regime and market understanding that is utilised when designing, formulating and specifying the COLORBOND® prepainted steel colour palette that is offered by BlueScope Steel.

Next generation COLORBOND® steel with Activate™ technology is designed to withstand harsh environmental conditions with minimal maintenance during its service life and conforms to Australian/New Zealand Standard AS/NZS 2728:2013 *Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance requirements.*

UNDERSTANDING PAINT SYSTEMS

All durable paint systems are comprised of the following:

- i) A stable resin (a polymeric component of the coating also known as a ‘binder’); and
- ii) Stable pigments (the components of the coating providing colour).

BlueScope Steel’s current COLORBOND® steel range includes 22 core colours. While the core colour palette may not cover all individual tastes or requirements, the current colour range has been developed to optimize the performance of resin and pigment combination as the use of unsatisfactory pigmentation will almost certainly lead to dissatisfaction in the long-term.

BlueScope Steel is continually working to enhance the colour durability of COLORBOND® steel in order to achieve even higher standards of product quality and performance. It is important to understand that colour change is normal and will inevitably occur over time with **ANY** paint system exposed to outdoor weathering. Colour change results from gradual surface degradation caused by outdoor exposure. As the coating weathers, preferential loss or retention of pigments may cause unacceptable degrees of colour change.

Over forty years of experience ensures COLORBOND® steel is subject to a high specification regarding expected colour change. To achieve this, BlueScope Steel ensures that only suitable resin and pigment combinations are used. As such, not all colours are able to be incorporated into the standard COLORBOND® steel range.

Durability (including colour durability) is an integral aspect of sustainability. A more durable product is a more sustainable solution. To achieve high levels of colour durability it is necessary to have a combination of pigments which is less susceptible to preferential loss of particular pigments from the resin.

In cases where a colour outside the core COLORBOND® steel colour range is required, there can be some difficulties in

providing customers with the exact colour they specify in the COLORBOND® steel grade they require. BlueScope Steel attempt to provide specified colours to COLORBOND® steel standards, however, even with the best available resin/pigment combinations, there may be some colours which cannot meet the established COLORBOND® steel colour change criteria. In such cases, it may be possible to offer a particular colour but the customer may be required to assume more risk (for example, accepting that no warranty applies) than if specifying a colour from the core COLORBOND® steel colour palette.

If a colour is not considered to be suitable, it will not be supplied as COLORBOND® steel to a customer who intends to use it for exterior roofing or walling. Some reasons for this are:

1. Some colours require the use of pigments which are not considered to have adequate quality and/or durability for incorporation in a COLORBOND® steel coating.
2. The pigmentation required to achieve certain colours may provide less than adequate opacity at the specified top coat film thickness. This means the top coat may have an unacceptable level of transparency to light of various wavelengths resulting in undue colour sensitivity to minor variations in film thickness. Inadequate top coat opacity can affect performance in the ultraviolet and/or visible light region of the spectrum which may result in degradation of the primer and consequent loss of top coat adhesion (known as “paint flake and peel”).

Advances in paint technologies and an enhanced understanding of their performance means that BlueScope Steel can support eligible COLORBOND® steel products within the core colour range with a warranty against paint flake and peel for a variety of different building applications.*

Figure 1: Outdoor Exposure – Hot Racks, Rockhampton, QLD.



PRODUCT TESTING REGIME

A unique aspect of COLORBOND® steel is the attention BlueScope Steel pays to research, product development and testing of potential product candidates. BlueScope performs extensive research and testing to understand the factors that influence the product performance in Australia. It has exterior exposure sites in Rockhampton (QLD), Bellambi Point (NSW), Burrawang (NSW) and other locations to test different facets of performance such as colour durability and corrosion resistance. The colour performance of COLORBOND® steel products is tested on 'hot racks' designed to simulate 'in-service' conditions on an insulated roof (see *Figure 1*). The 'Weathering Laboratory' in Port Kembla co-ordinates the exposure testing regime and also performs accelerated laboratory testing using the latest technology for colour durability and substrate corrosion, utilising 'Hot QUVA, Solar eye' cabinets (see *Figure 2*) and Q-FOG cabinets respectively.

COLOUR SELECTION FOR YOUR PROJECT

In order to keep up with changing market and consumer trends BlueScope Steel, with the assistance of external colour consultants, refreshes the COLORBOND® steel colour palette periodically. It is therefore important to ensure that you are referring to the most recent colour range (using either current brochures or the following website: www.colorbond.com) when selecting colours for your new roof, wall and accessories.

REFERENCED AUSTRALIAN STANDARDS

- **AS/NZS 2728:2013** – *Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance requirements.*

Figure 2: Hot QUVA with Solar Eye technology – used to test accelerated rates of weathering.



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.



* Warranty subject to application and eligibility criteria. Warranties are not available for all products and applications. The duration and terms and conditions of any available warranty will depend on product use and application. For full terms and conditions and to determine the eligibility of your project refer to www.bluescopesteel.com.au/warranties or call BlueScope Steel Direct on 1800 800 789.

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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