TECHNICAL BULLETIN 31

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This issue supersedes all previous issues

COLORBOND® Permagard® steel for coolroom panels

INTRODUCTION

BlueScope's COLORBOND® Permagard® steel has been specifically developed for use in the coolroom industry. COLORBOND® Permagard® steel comprises traditional zinc-coated steel sheet (ZINCFORM® G300S Z275 steel) coated with a custom formulated, factory applied paint system incorporating an antibacterial additive.

COLORBOND® Permagard® steel is only available in the colour Permagard® White which incorporates antibacterial product protection. Antibacterial product protection inhibits the growth of surface bacteria that may cause odours and stains while actively helping to reduce the risk of cross-contamination.

The specially formulated backing coat on COLORBOND® Permagard® steel has been developed to combine with readily available adhesives to form a strong bond with the foam core of the panel.

This Technical Bulletin outlines the antibacterial characteristic of COLORBOND® Permagard® steel as well as guidelines for installation and good practice relating to coolrooms.

ANTIBACTERIAL CHARACTERISTIC

The antibacterial product protection is an additive incorporated into the topcoat of COLORBOND® Permagard® steel during the paint manufacturing process to provide antibacterial properties.

The effectiveness of antibacterial properties of COLORBOND® Permagard® steel has been tested by an independent laboratory in accordance with International Standard ISO 22196:2011 - *Measurement of antibacterial activity on plastics and other non-porous surfaces.*

Under those test conditions, COLORBOND® Permagard® steel was found to be effective against Staphylococcus aureus and Escherichia coli (E-coli), both of which can be of particular concern in maintaining food hygiene standards.

COLORBOND® Permagard® steel has undergone assessment by HACCP Australia (the recognised independent authority on food-safety programmes) and received certification as a FoodSafe product for ceiling and wall linings of food storage and processing facilities.

For further detail on HACCP certification, please visit:
www.steel.com.au/permagard

WARNING: Use of COLORBOND® Permagard® steel is not a substitute for good hygiene practices. Its proper use, however, significantly increases the level of protection against bacteria in between cleanings, and regular cleaning should not remove the antibacterial protection. However, note that any damage to the topcoat surface will result in a reduction in antibacterial properties. Also be aware that food items should not be stored in intimate contact with COLORBOND® Permagard® steel.

INSTALLATION GUIDE

Coolrooms manufactured from COLORBOND® Permagard® steel have the benefit of ease of installation. However, it is still recommended that you seek professional advice prior to designing and constructing your coolroom.

Listed below are some factors you should consider:

- Consultation of **Corrosion Technical Bulletin CTB-2** *Galvanic Protection* and **Corrosion Technical Bulletin CTB-12** *Dissimilar Metals* prior to choosing fittings.
- The lightweight nature of a composite panel coupled with an inherent structural capability may make the need for an internal frame for smaller projects obsolete.
- In a coolroom, moisture is ever present. It is **VITAL** to overall corrosion performance that water is allowed to drain freely away from a composite panel. This is especially the case at the base of the panel where poor detailing can allow water to become trapped in the foam core. Once moisture is trapped in a panel, corrosion will be accelerated.
- It is recommended that a dwarf masonry wall be incorporated in the coolroom design. This will allow water to drain away and also protect the base of the coolroom wall.
- Bottom channels of the walling should be manufactured from compatible materials and be designed to allow water to drain freely.

Each panel manufacturer has a different method of joining panels. Most employ a variation of a male/female slip joint. Both corrosion performance and the efficiency of the coolroom will be affected if particular attention is not paid to these joints which must fit snugly together to stop the ingress of moisture. This is especially important if the panels are to be washed down regularly. Mastic type vapour barriers are also recommended for some installations.

For specification details and tools please visit the following website:
www.permagard.steelselect.com

IMPORTANT: It is a condition of a BlueScope warranty* applicable to your project, that your design, construction, installation and ongoing maintenance prevent moisture ingress into panel cores and joints throughout the life of the product. It is also a condition of the warranty* that the recommendations set out in this Technical Bulletin (and any other applicable Technical Bulletins) be complied with.

GOOD PRACTICE

The following good practice is recommended:

- Cleaning chemicals used for cleaning coolrooms should only be used in concentrations and contact durations, as prescribed by the chemical supplier. In any event, the concentration of the active ingredient in the cleaning solution should not exceed 5%.
- Cleaning using soft nylon bristle brooms coupled with water pressures of less than 400psi (2760kPa) is recommended.
- Regular inspection of slip joints, base channels and the general detailing of the coolroom should allow detection of problems before they escalate into major concerns.
- Monitoring of sealant performance at the base of the panel is critical to prevent water ingress.
- Consideration should be given to means of preventing damage to coolroom walling incurred whilst handling stock stored within and around the coolroom.

IMPORTANT: Once moisture has entered the panel, it will expand if frozen, causing the panel to bulge. This may cause the seals to be broken and moisture-laden air to enter the panel, potentially causing the panel to bulge further, greatly diminishing the efficiency of the coolroom. Bulging of panels could indicate that moisture has entered the panel through the following means:

– a poorly sealed joint
– a gap that has developed between the bottom channel and the panel
– a panel has been punctured (for example by forklift tines)

RELATED TECHNICAL BULLETINS

Corrosion Technical Bulletin CTB-2
Galvanic Protection

Corrosion Technical Bulletin CTB-12
Dissimilar Metals

REFERENCED INTERNATIONAL STANDARDS

- **ISO 22196:2011** - *Measurement of antibacterial activity on plastics and other non-porous surfaces*

NOTE:
All International Standards should be read to incorporate any and all amendments to the most recently published version.

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

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