

GUIDE TO GOOD PRACTICE – PROCESSING AND APPLICATION OF ZINCALUME® STEEL

TECHNICAL BULLETIN TB-18

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This issue supersedes all previous issues

INTRODUCTION

ZINCALUME® zinc/aluminium alloy-coated steel is supplied with a specially formulated clear resin film, which has excellent adhesion to the substrate and very good impact resistance and flexibility. The resin film also provides excellent resistance to hand marking.

The inherent benefits of the resin film, has necessitated some specific recommendations associated with the processing of ZINCALUME® steel.

For BlueScope Steel Limited recommendations regarding other attributes, performance and applications of ZINCALUME® steel, not discussed below, please refer to the complementary range of brochures and technical bulletins available from your nearest BlueScope Steel State Sales Office.

STORING ZINCALUME® STEEL

The resin coating on ZINCALUME® steel minimises staining problems associated with wet storage, however it is recommended practice to keep ZINCALUME® steel dry in transit and in storage. It must be stored clear of the ground and under cover, to prevent water or condensation being trapped between adjacent surfaces. If packs should become wet, sheets should be separated, wiped with a dry, clean cloth and placed to enable air circulation to complete the drying process. For further details on storage of ZINCALUME® steel, refer to Technical Bulletin TB-7 "Care and Storage of Exterior BlueScope Steel Products Prior to Installation".

FORMING ZINCALUME® STEEL

The clear resin film on the surface of ZINCALUME® steel acts as a lubricant during forming operations.

Rollforming lubricant is not normally needed, however, if a lubricant is deemed essential due to the severity of the profile being formed, then SHELLSOL-T, Solvent 11 or an equivalent formulation is recommended. **Kerosene based lubricants must not be used.**

The benefits of using no lubricant while forming ZINCALUME® steel include:

- Reduced clean-up after processing.

- Improved final appearance.
- Less slippery surface for roof fixers and following trades (*however, any pitched roof may be slippery, consequently reference should be made to the appropriate safe working codes*).

FIELD PAINTING

ZINCALUME® steel is readily overpainted once installed provided paint manufacturers' recommendations are followed. Appropriate consideration should also be given to environmental conditions, end use, location and product application.

ZINCALUME® steel offers distinct advantages in that the resin film can be readily overpainted with a high quality water based acrylic topcoat without priming, provided a lubricant has not been used in the forming process and the surface is clean and dry. A primer however, is recommended in particular circumstances where solvent based decorative paint systems are to be used.

BlueScope Steel recommendations for post painting of ZINCALUME® steel can be summarised as follows:

Architectural/Decorative Use

Where a painting system is to be chosen for aesthetic or minimal additional corrosion resistance.

Surface Preparation Wash surface with a 5% solution of a non-ionic detergent.

Coating Apply two coats of a water based acrylic.

ZINCALUME® steel is also readily powder coated. For BlueScope Steel recommendation on this issue, please refer enquiries to the Technical Representatives at BlueScope Steel State Sales Offices.

SLITTING ZINCALUME® STEEL

Where friction drag pads are used to maintain tension during slitting/recoiling, pick up of the passivant can occur. Some chromate is present in this pick up, therefore the following guidelines are recommended. As hexavalent compounds may have harmful health effects and cause skin sensitisation, every attempt

should be made to ensure worker exposure is as low as reasonably possible.

Specifically:

- Skin contact should be avoided by wearing chemical resistant gloves, which include coverage for the fingers.
- Good personal hygiene, which includes washing hands prior to eating or smoking after using products coated with passivant should be practised.
- Safety glasses and protective clothing should be worn to ensure dust does not come into contact with the eyes or skin.
- If drag pads are used then appropriate pad pressures should be utilised to minimise the frictional forces.
- If resin dust is produced by the drag pad then an appropriate and approved respiratory device is recommended for personnel working in close proximity (1-2 metres).
- Drag pads should be disposed of in accordance with local government regulations.
- Dust levels should be minimised by the use of extractor systems where appropriate. Extractor systems should have sufficient velocity to ensure that all dust generated is captured.
- Dust should not be allowed to accumulate on benches or floors. Vacuuming or wet rags are useful methods to remove dust from these areas.
- It is recommended (without substituting the procedures outlined above) that users also consider any additional health and safety measures that are adopted within their environment/organisation.

FASTENING, JOINING AND WELDING

Recommendations for sealing, fastening, joining and welding ZINCALUME® steel, may be found in the appropriate Technical Bulletin (TB-9, TB-16, TB-21 respectively).

ADVERSE CONDITIONS

The performance of ZINCALUME® steel is superior to zinc coated steel in the vast majority of environments. However, under certain specific conditions zinc/aluminium alloy coated steels are less suitable than galvanised steels. These conditions are a result of particular micro-environments and include the following:

- Intensive animal shelters
- Contact with wet concrete (eg formwork)
- Contact with lead
- Some severe industrial environments (eg cement works)
- Composite panel applications in coolrooms

For high temperature applications (>200°C) the resin coating on ZINCALUME® steel is prone to degradation. For such applications, GALVALUME® zinc/aluminium alloy coated steel is recommended. GALVALUME® steel is a non-resin coated product.

OTHER ISSUES

For other issues relating to the use, performance properties and storage of ZINCALUME® steel please refer to the relevant BlueScope Steel literature, readily available from your nearest BlueScope Steel State Sales Office.

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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