

Guide to good practice – Processing and application of New Zealand Steel coated steel products

Introduction

The paint system on COLORSTEEL® pre-painted steel offers both a highly durable and decorative finish.

ZINCALUME® aluminium/zinc/magnesium alloy-coated steel is supplied with a specially formulated clear resin film.

AXXIS® and GALVSTEEL® zinc alloy-coated steel are supplied with a blue and clear surface treatment respectively.

While the use of paint, resin and surface treatment films have significant inherent benefits, its use necessitates specific recommendations associated with processing.

Storing New Zealand Steel coated steel products

It is recommended that COLORSTEEL®, ZINCALUME®, AXXIS® and GALVSTEEL® products are kept dry during transit and storage. Storage location should be away from open doorways, off the ground and under cover to prevent water or condensation becoming trapped between adjacent surfaces.

If coil becomes wet, immediately process and dry it. If storage packs become wet, separate sheets and wipe with a dry, clean cloth, then place them in a suitable position to enable air circulation to complete the drying process.

Slitting New Zealand Steel coated steel products

Where friction drag pads are used to maintain tension during slitting/recoiling, dust can be generated. If drag pads are used, then appropriate pad material and pressures should be used to maintain sufficient friction forces to ensure recoiled and slit product stability. Where carpet is used as a drag pad material, New Zealand Steel recommends a 100% wool, long-cut pile carpet.

For personal safety, it is recommended that skin contact be avoided by wearing cut resistant gloves suitable for the task.

Forming New Zealand Steel coated steel products

The resin film applied to the surface of ZINCALUME® steel acts as a lubricant during forming operations. It assists in reducing metal pick-up on forming rolls and helps minimise finger and foot printing during handling.

Due to surface contact and various processing conditions, resin transfer from the product surface onto rolls during forming can sometimes be observed. This behaviour does not impact the performance of the formed product and can be minimised with the use of a lubricant during forming.

The use of rolling lubricants is widely recognised as good industry practice. It helps to reduce surface friction, support consistent forming, maintain surface quality, avoid metal pick-up and extend roll life. Where lubricants are used, fully volatile isoparaffinic (branched-chain hydrocarbon) products are recommended. Water-based or kerosene-based lubricants are not recommended due to the potential risk of corrosion or surface staining.

Roll condition also influences forming performance. Smooth, well-polished rolls generally provide more consistent results and reduced surface interaction compared with rough, worn or aggressively cleaned rolls.

Forming COLORSTEEL® pre-painted steel products

Building products are manufactured by forming, folding and bending sheet steel from a coil of steel. These processes can apply a high level of pressure, which can impact the product, particularly pre-painted steel surfaces.

When processing pre-painted steel coils, pressure marring may occur. Pressure marring is an elastic deformation of the paint and can occur on all pre-painted steel finishes. It appears as a glossier area on the surface. A pressure marred area may appear more noticeable and/or different on certain colours and finishes because of the contrast of the marred area to the unaffected area.

Pressure marring is not a permanent deformation, the areas affected are expected to return to their normal appearance upon exposure to the product in-service.

Figure 1. Pressure marring is visible these sections of formed COLORSTEEL® as a glossy wash pattern.



Field painting ZINCALUME® steel

ZINCALUME® steel may be overpainted after installation. Ensure paint manufacturers' recommendations are followed. Appropriate consideration should also be given to environmental conditions, end use, location and product application.

ZINCALUME® steel is also readily powder coated. For product-specific guidance, please contact your New Zealand Steel representative.

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