

Fertiliser Manufacturing and Storage Buildings

IMPORTANT: COLORBOND® Stainless steel for cladding and post-painted GALVSPAN® steel with a minimum Z450 metallic coating class for purlins are recommended for fertiliser manufacturing and storage buildings

INTRODUCTION

This Technical Bulletin provides an outline of the steel roofing, walling and purlin product selection and design considerations for fertiliser manufacture and storage buildings.

The manufacture of fertilisers utilises high concentrations of phosphorous, sulphur, ammonia and chloride containing compounds along with other corrosive compounds.

Storage of the final fertiliser product in open bulk piles, i.e. not in sealed bags, also increases the risk of corrosion (see Figure 1).

The presence of these compounds in the surrounding environment of a building may

Figure 1: Corrosion due to fertiliser contact



accelerate the corrosion of COLORBOND® prepainted steel, COLORBOND® Ultra prepainted steel and ZINCALUME® aluminium/zinc/magnesium alloy-coated steel.

The broad range of fertiliser products manufactured to meet the demands of the agriculture industry may expose the cladding material to a variety of fertiliser products during the service life of the building.

PRODUCT SELECTION

Therefore, COLORBOND® Stainless prepainted steel is the only product recommended by BlueScope for roof and wall sheeting on fertiliser manufacturing and storage buildings.

As purlins are exposed to the same environment, BlueScope recommend they be manufactured from GALVSPAN® zinc-coated steel with a minimum coating class of Z450 and incorporate a turned-down bottom lip to prevent the build-up of fertiliser dust (see Figure 2).

Figure 2: Build-up on purlin



Furthermore, the purlins should be post-painted with an appropriate high-build industrial paint system as recommended by a reputable paint supplier.

Further advice for post-painting structural steels is contained in Australian and New Zealand Standard AS/NZS 2312.1: 2014 *Guide to the*

protection of structural steel against atmospheric corrosion by the use of protective coatings – Paint coatings.

DESIGN

Experience has shown that the incorporation of a masonry dwarf wall (refer Figure 3 next page) can dramatically reduce the instance of mechanical damage and corrosion to wall cladding. This can minimise the likelihood of direct contact between the fertiliser and the cladding.

In cases where end lapping of roof sheeting is required, particular care should be taken to encapsulate the top end of the lapped sheet, using a generous bead of neutral cure silicone sealant, to prevent the retention of fertiliser dust. Refer to:

[Corrosion Technical Bulletin CTB-8](#)

Product performance considerations in roofing applications.

Figure 3: Example of a dwarf wall



Should products other than COLORBOND® Stainless steel be used as cladding, the following problems may be encountered:

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June 2019. Revision 4.
This issue supersedes all previous issues.

- accelerated corrosion under flashings, ridge cappings and at the roof/purlin interface, where fertiliser dust is allowed to build up
- reduced service life.
- exclusion of a BlueScope warranty*.

RELATED BLUESCOPE TECHNICAL BULLETINS

[Corrosion Technical Bulletin CTB-8](#)

Product performance considerations in roofing applications

REFERENCED STANDARDS

AS/NZS 2312.1: 2014 *Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings – Paint coatings*

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