

Fertiliser manufacturing and storage buildings

The manufacture of fertilisers utilises high concentrations of phosphorus, sulphur and chloride containing compounds along with other corrosive contaminants. Storage of the final fertiliser product in open piles i.e. not sealed bags, will also release these contaminants into the environment. The presence of these contaminants in the surrounding environment of a building will accelerate the corrosion of ZINCALUME® steel, COLORBOND® steel and COLORBOND® Ultra steel.

The broad spectrum 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. Therefore, COLORBOND® Stainless 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® Z450 steel and incorporate a turned-down lip to prevent the build up of fertiliser dust. Furthermore, the purlins must be post-painted with an appropriate high-build industrial paint system as recommended by a reputable paint supplier.

Figure 1: Example of corrosion resulting from contact with fertiliser.



Figure 2: Build-up on a purlin.



DESIGN

Experience has shown that the incorporation of a masonry dwarf wall can dramatically reduce the instance of mechanical damage and corrosion to wall cladding. This avoids 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 amount of neutral cure silicon rubber sealant, to prevent the retention of fertiliser dust (refer CTB-8)

Figure 3: Example of a dwarf wall.



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

- 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

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