

CORROSION

SPECIAL SERVICE ENVIRONMENTS: Intensive Animal Farming

TECHNICAL BULLETIN CTB-22

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The environment within intensive animal farms is considered to be exceptionally corrosive. Often the environment is closely controlled to produce optimum growth rates for large numbers of poultry, pigs or cattle. The irregular removal of defecation products from within the building may be such that a unique atmospheric environment exists within the building. This is typically rich in sulphur and ammonia based products which are known to be corrosive to ZINCALUME® zinc/aluminium alloy coated steel. While ZINCALUME® steel offers superior corrosion resistance under the majority of atmospheric conditions, this performance is actually reduced in intensive animal farming situations.

The design of the structure to prevent corrosion as well as to optimise animal growth is imperative. The inclusion of masonry dwarf walling and the use of insulation materials with very low moisture retaining properties are desirable to aid the prevention of corrosion.

Regular cleaning of not only the animal waste products from the floor of the structure but the cleaning of general dirt and waste material from the walling and roof sheeting is required to obtain the desired service life from the structure.

During operation, water misting and combustion heating will lead to high

condensation loads, which when combined with a high feed dust loading, will lead to an extended time of wetness and accelerated corrosion.

When designing structures utilising light weight galvanized steel purlins, close attention must be paid to the purlin lip design. The environment requires that the bottom purlin lip must be turned down to reduce the retention of general detritus and condensation leading to corrosion of the flange area.

RECOMMENDED PRODUCTS

BlueScope Steel Limited recommend that intensive animal farming buildings (*cladding and purlins*) be fabricated from galvanized material with a minimum coating mass of 450 g/m². Where possible 600 g/m² cladding is preferable. (*There is a direct relationship between coating mass and the expected performance life of the product*).

For an extended life of the structure, COLORBOND® Stainless sheeting in conjunction with ZINCFORM® Z450 purlins postpainted with a corrosion resistant paint system should be used.

COLORBOND® Stainless, ZINCFORM® Z600, ZINCFORM® Z450 and GALVSPAN® Z450 are appropriate materials for the construction of intensive animal farming buildings.

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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