

CORROSION

CONTACT WITH UNPROTECTED STEEL SUPPORTS

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This issue supersedes all previous issues

The supporting steel structure for ZINCALUME® zinc/aluminium alloy-coated steel or COLORBOND® prepainted steel roofing and walling must be coated with an appropriate compatible material, preferably zinc or zinc/aluminium alloy. The use of uncoated steel in either hot rolled or cold rolled condition is discouraged as corrosion of the overlying roof sheeting is greatly enhanced. Where heavy steel sections such as hot rolled steel angles are necessary for structural requirements, the steel sections must be post painted with an appropriate high build industrial coating system or post galvanized.

In situations where there is a high condensation load (eg municipal water reservoirs), purlins may be subject to localised inundation of moisture, due to the profile of the ZINCALUME® steel or COLORBOND® steel roof sheeting. In such cases, BlueScope Steel Limited recommend that the purlins be post painted with an appropriate protective coating system.

In corrosive environments, where low coating mass galvanized steel purlins ($\leq 200\text{g}/\text{m}^2$ zinc coating) are used to support ZINCALUME® steel or COLORBOND® steel roof sheeting, the purlins may be subject to accelerated

corrosion, such that the zinc coating is completely consumed. In such cases, the roof sheeting is then left in direct contact with the base steel of the purlins allowing sacrificial corrosion of the ZINCALUME® steel coating to occur. To avoid this situation, BlueScope Steel recommend that heavy coating mass and/or post painted purlins be used.

In severe environments, where COLORBOND® Stainless steel is specified for roof sheeting, BlueScope Steel recommend that galvanized purlins be insulated from the roof sheeting, to avoid dissimilar metal corrosion (*stainless steel/zinc corrosion couple*). This can be achieved by means of an inert polymer separation tape, adhered to the top surface of the purlin.

Such procedures are regarded as imperative to prevent the deterioration of the steel member and consequently the rapid degradation of the roof sheeting.

Advice must be sought from reputable coating manufacturers and tape suppliers in regard to the specification of an appropriate protective system which will offer suitable corrosion resistance for the particular exposure environment.

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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