

## CONTACT WITH TIMBER

### TECHNICAL BULLETIN CTB-13

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This issue supersedes all previous issues

Green timber should not come into contact with galvanized steel or ZINCALUME® zinc-aluminium alloy coated steel, due to acidic substances in the timber which have a corrosive effect on the metallic coating. The use of kiln dried or appropriate dried timber species is therefore recommended for any situation where intimate contact between the metallic coated steel and timber is considered.

Some preservative treatments for wood can have an adverse effect on the metallic coated steel with which it is in contact. Timber treated with acidic preservatives of copper chromium arsenic type can be severely corrosive to the majority of the metallic building components. The presence of soluble salts (*eg sodium sulphate*) derived from the treatment process, will contribute to the corrosion mechanism by increasing ionic conductivity. The time of wetness of the metal surface contributes to the overall corrosion mechanism. The further development of micro galvanic cells (*ie dissimilar metal corrosion*) at the metal surface may occur due to the plating of metallic copper arising from the timber treatment. Such deposition will significantly contribute to the corrosion of bare steel, galvanized steel, ZINCALUME® zinc/aluminium alloy-coated steel and aluminium materials both treated and untreated.

Corrosion of metals (*ie fasteners*) embedded in timber is known to take place when the timber moisture content exceeds 17% moisture. This situation is likely to occur as a result of humid tropical environments leading to entrapped condensation (*ie wet timber*). It can also arise from sub-standard detailing during construction, green timber or timber which is constantly moist.

Copper/chrome/arsenic (CCA) timber cladding used in a run-off situation, can result in a corrosive leachate from the timber containing

copper, which if it contacts galvanized, or ZINCALUME® steel will promote corrosion. BlueScope Steel Limited specifically recommend against the use of treated timbers of this type for high moisture situations such as roof and ceiling batons, composite fence constructions and built up flooring or external decking which may utilise a metallic coated steel structural support system.

If CCA treated timbers must be used then the timber and/or steelwork should be sealed by fully painting the material prior to installation.

At the time of this document's compilation many alternative timber treatments are being tested by the timber industry. We suggest that the timber treatment must be examined closely for possible detrimental effects on metallic coupled items prior to general specification and application of the material.

Nail plates are commonly used to fabricate wooden truss components. BlueScope Steel recommend that the timber must be seasoned or kiln dried prior to use. Some end use environments will require the use of heavier coating mass or more corrosion resistant coatings to prevent long term degradation.

Figure 3: Example of Corrosion that results from contact of CCA Treated Timber with Galvanized Purlins



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