CORROSION

ACID CLEANING BRICKWORK

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When brickwork is completed it is usual to clean excess mortar from the brick surface with a solution of one part hydrochloric acid to 20 parts water. This ratio is often inappropriately increased due to resistant mortar stains and/or inaccurate dosage control on the pressure cleaning units. Such practice can create very corrosive conditions for downstream items such as steel guttering and fascia products, roller doors, meter boxes, metal door frames and window frames etc.

Many of the above items are fabricated from metallic coated steel, such as ZINCALUME® zinc-aluminium alloy coated steel and COLORBOND® prepainted steel. The forming of these items will lead to limited cracking of the coating at the tension bends. Obviously this can result in the penetration of the acid leading to a vigorous corrosive reaction. Normally, the sacrificial ability of the metallic coating is capable of controlling corrosion at these coating defects and negligible corrosion of the material will occur in normal external atmospheric environments.

Acid leaching of pigment directly from paint coatings subjected to acid splash, will result in unsightly "bleached" stained areas which will further deteriorate and lead to corrosion.

Acid cleaning of brickwork associated with two storey construction may pick up lead from lead flashings and re-deposit with sand from the mortar, within the roof gutters. Corrosion of the guttering rapidly follows.

BlueScope Steel Limited recommend that wherever possible acid cleaning should not be conducted subsequent to erection of metallic coated items. However, when this is not possible it is recommended that the areas be appropriately masked during the acid cleaning operation. Where the possibility of inundating the metallic item appears to be present, the item should be thoroughly wetted prior to the application of the acid to the adjacent brickwork. Immediately after acid application, the item should be thoroughly washed with water a number of times, working from the top of the brickwork to allow complete removal of the spent acid products.

It is essential to recognise that no matter how unusual or difficult the building design, or how good the quality of the workmanship is, poor practice during brick cleaning will result in complete degradation of the metallic components associated with the project.

Figure 1: Example of corrosion caused by incorrect acid brick cleaning practices.

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