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Technical Bulletin

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Acid cleaning of brickwork

Introduction

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 increased due to resistant mortar stains and/or inaccurate dosage control on the pressure cleaning units. This 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® aluminium/zinc/magnesium alloy-coated steel and COLORBOND® prepainted steel. The forming of these items will lead to some cracking of the coating at the tension bends. This can result in the penetration of the acid to the substrate leading to a vigorous corrosive reaction.

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

In normal conditions, the sacrificial ability of the metallic coating is capable of controlling corrosion at these coating defects and negligible corrosion of the material will occur. 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 lead to deposits of sand from the mortar and residual acid within the roof gutters. Corrosion of the guttering rapidly follows.

BlueScope recommends that, wherever possible, acid cleaning should not be conducted following the installation 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 exists, 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, poor practice during brick cleaning will result in complete degradation of the metallic components associated with the project.