



Steel Detailing

Advisory Note

GEN/18/1

December 2001

Recent enquiries have brought to our attention that there has been a premature failure of a galvanized coating in a Tropical area of Australia.

The reason for this unusual breakdown is as follows.

- When received for galvanizing, vent holes had been incorrectly placed on top of the fabrication, not on the side or bottom as required by the galvanizing and steel industry detailing instructions, where natural drainage could occur.
- Frames were galvanized and installed and holes were then blocked with an Epoxy product which shrank when drying and in some case fell out allowing Rainwater (distilled water) to enter and trap in the lower part of the fabrications.
- The entrapped water was subject to significant thermal influence in the Tropical Climate, creating conditions, which would cause standard coatings or a steel substrate to deteriorate unacceptably.
- The effect of distilled water on organic coatings can be severe and the influence of hot fresh water on zinc can reverse the normal protective polarity at between 30⁰C and 60⁰C
- The internal environment has perforated both galvanizing and steel in several places from the inside out. Remaining external surfaces are sound and will provide long life.
- This illustrates the importance of correct specification, ensuring steel detailing for corrosion prevention and the relevance of Tropical environments.
- We strongly recommend that if any doubt exists regarding the venting of hollow sections that you contact the specifying professional body Galvanizers Association of Australia or the local Hot Dip Galvanizer for current specific advice on the job at hand. Either of these parties will liaise with the specifying authority to determine the correct location for vent holes to facilitate the galvanizing process and for best appearance of steel members.

Publications of Reference:

Galvanizers Association of Australia - A Practical Guide for Designers and Specifiers.
Australian Institute of Steel Construction - Design detailing for After Fabrication Galvanized Structure

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