GALV PRO™

A NuWave Solutions Company

12 YEAR ZINC STUDY

International Lead Zinc Research Organization (ILZRO), Inc. Study on Level of Zinc Required in Zinc-Rich Paints

This 1994 study by the ILZRO, the result of 12 years of testing zinc-rich paints, states that the optimum level of zinc dust (in the dry film) for zinc-rich paints is "60% which is sufficient to provide galvanic protection to scribed areas" of zinc-coated steel. This agrees with the American Society for Testing and Materials (ASTM) revising their own specification for repair of damaged and uncoated areas of hot-dip galvanized coatings (ASTM A 780-93) from 94% metallic zinc to 65% in 1993. Both zinc-rich coatings offered by NuWave-Solutions.com Galv-Match-Plus™ and Prime-Zinc-Plus™, meet and exceed this performance requirement.

The Manager's Summary for ILZRO Project ZC-292 dated February 4, 1994 appears below:

The aim of the work was to expand the market for zinc dust by determining data suitable for use in writing a specification regarding the optimum level of zinc required in paints to provide a higher degree of corrosion resistance in severe environments. The specification is aimed at overcoming the uncertainty felt by paint formulators and specifiers concerning the minimum level of zinc required to give long-term protection.

In this work, 36 types of paint including commercially available products and experimental formulations (i.e., organic, inorganic, solvent reducible, water reducible, post-cured, single pack, and multi-pack systems were exposed on steel panels at different outdoor locations. Each panel was scribed. The level of zinc in the dry film varied between 44 and 92 weight %. Performance evaluation was based on the results of regular visual examinations and restoration of 7 or less was deemed to constitute failure of the paint system. In addition, accelerated salt fog tests and bullet hole (on painted circle) tests were carried out using un-scribed panels.

The principle findings of the 12-year study may be summarized as follows:

Generally, it has been confirmed that a high degree of protection may be provided by a single coat of zinc-rich paint even when exposed in severe environments especially when top coated.

The optimum level of zinc dust in zinc-rich paints for outdoor exposure is approximately 60% which is sufficient to provide galvanic protection to the scribed areas. (Galv-Match-Plus™ & Prime-Zinc-Plus™), both meet this requirement. Continued …

In the absence of topcoats, organic zinc-rich primers perform better than inorganic zinc-rich primers at an industrial location but worse at a coastal location which was found to be the most corrosive environment. (Galv-Match-Plus™ & Prime-Zinc-Plus™ are both organic zinc-rich primers).

The results of bullet hole tests were found to be of little use in predicting the performance of zinc-rich primers without topcoats in outdoor environments.

It was shown that accelerated (salt fog) data correlate well with outdoor exposure data at the coastal location but not at the industrial site.

Source: International Lead Zinc Research Organization "Final Report (No. 13) for ILZRO Project ZC-292 and Manager's Summary" dated 2/4/94