

27. REPAIR OF GALVANIZED COATINGS

When hot dip galvanized coatings are damaged by cutting or welding, it is recommended that the uncoated areas are repaired. There are a number of repair methods that are available and the galvanizing industry has used and evaluated a wide range of products for over 35 years.

There are a number of factors that have to be considered when repairing hot dip galvanized coatings. These are:

- the size of the area to be repaired
- the ease of use of the repair material
- the performance of the repair method with respect to the required performance of the hot dip galvanized coating.



Blow-out from over lapping area on this fabrication has caused a galvanized coating defect

ZINC RICH PAINT REPAIR

Jotun Protective Coatings products are recommended by the Industrial Galvanizers Australian Galvanizing Division.

For standard duty applications, Jotun Galvanite, a one-pack, air-drying zinc-rich primer can be used. The single pack system has good adhesion to prepared surfaces and can be handled after 2 hours (at 20°C). Coating thickness per coat is typically 45 microns and two coats are required to ensure compatible coating thickness to the hot dip galvanized coatings.

Jotun's Barrier two-pack epoxy zinc rich system is recommended for heavy-duty applications and full coating reinstatement. The two-pack system is touch dry in 15 minutes and hard dry in less than 2 hours at 20°C. Two coats at 45 microns each are recommended to provide equivalent coatings thickness to hot dip galvanizing.

The recommended procedure for touch-up is as follows:

1. Power tool clean to Australian Standard 1627:2 Class 3 to remove all welding scale, slag and corrosion products.
2. Degrease and remove all surface oil, grease or soil. (This step can be omitted on new welds where no organic contamination of the exposed steel has occurred.)
3. Apply two coats of Galvanite or Barrier to a minimum dry film thickness of 85 microns.
4. Observe good painting practice with respect to weather condition and application conditions. Ensure that the steel surface is above Dew Point prior to application. If below the Dew Point, warm area to ensure surface dryness
5. Adhere to coating manufacturers product data sheets for safety, mixing, pot life, application, overcoating and curing information.
6. If a close colour match is essential, apply a light coat of aluminium paint over repair area after drying. Rub over aluminium paint with a soft rag before drying to blend the repair into the surrounding galvanized coating appearance. NOTE: The aluminium paint is NOT an anti-corrosive coating and does not contribute to the performance of the repair.

METALLIC REPAIR COATINGS

There are various types of metallic repair materials available in the form of alloy 'sticks' which are applied by heating the area to be repaired and melting the repair material onto the area. Early repair sticks had a high lead content and did not reflect the characteristics of a galvanized coating.

Cominco of Canada has developed its Galvanguard repair alloy that has a high zinc content and is easier to use than previous repair alloys.

These repair alloys are best used for repairing welds and similar small areas on horizontal surfaces, that can be easily and quickly heated. A higher level of operator skill is required to effect successful repairs using Galvanguard or similar products. Some of these products contain high levels of tin or lead. They are difficult to apply in other than down-hand positions.

Zinc metal spray is an effective repair method for larger areas, as it will apply a zinc coating of any required thickness. However, successful application requires a high quality surface preparation (Class 3) to ensure good adhesion. Specialised equipment and skilled operators are required to apply zinc metal spray coatings, but they provide a high quality repair solution where larger areas of the item have not been galvanized due to design constraints.



Surface to be repaired is cleaned by wire brushing.



Approved epoxy-based zinc-rich paint is applied to the uncoated area to at least equivalent thickness to the galvanized coating.

GALVANIZERS INDUSTRIAL



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01 - SPECIFIERS MANUAL – THIRD EDITION

Industrial Galvanizers Australian Galvanizing Division (IGAG) operates nine galvanizing plants around Australia, ranging in size from large structural galvanizing facilities to specialised small plants designed to process small parts.

The Australian Galvanizing Division has galvanized in excess of 2 million tonnes of steel products in Australia since its first plant was commissioned in 1965 and is recognized for its ability to handle complex and difficult projects, as well as routine contracts.

This experience has been collated in the Specifiers Design Manual, to assist those involved in the design of steel products and projects to better understanding the galvanizing process and allow the most durable and cost-effective solutions to be delivered to these products and projects. All sections of this Third Edition have been completely updated and additional sections have been included to provide additional technical information related to the use of hot dip galvanized steel.

In addition to its Australian Galvanizing operations, Industrial Galvanizers Corporation has a network of manufacturing operations in Australia, as well as galvanizing and manufacturing businesses throughout Asia and in the USA.

The company's staff in all these locations will be pleased to assist with advice on design and performance of hot dip galvanized coatings and products. Contact details for each of these locations are located elsewhere in this manual.

This edition of the Industrial Galvanizers Specifiers Manual has been produced in both html and .pdf formats for ease of access and distribution and all documents in the Manual are in .pdf format and can be printed if paper documents are required.

The Specifiers Manual is also accessible in its entirety on the company's web site at www.ingal.com.au.

Additional copies of the Specifiers Manual are available on CD on request.

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