**PRESS RELEASE**

Zinc thermal spray ideal for steel repair on land and sea

**23 November 2021:** Engineering and technical staff often get confused by the various terms bandied about in the coating industry such as ‘galvanized’, ‘cold galvanizing’ or ‘zinc-rich paints’. Technical staff and corrosion protection firms often mix up these various terms and the incorrect selection of a zinc based anti-corrosion coating then happens, with considerably shortened life for the steel structure.

“Engineers do not realise the potential value that zinc thermal spray holds for repair and maintenance of exposed steel structures, repairing rusted rebar as well as for coating ship hulls and superstructures,” comments **Simon Norton** from the Africa Desk of the [International Zinc Association](http://www.zinc.org).

Marine engineers, in particular, need to realise how effective zinc thermal spraying of trawler hulls and vessel superstructure steel can be in preventing premature corrosion, extending the life of the organic top coats and saving the vessel owner a lot of money.

It is metallic zinc in hot dip galvanizing that affords cathodic protection and barrier protection to galvanized steel. The extent of protection offered is directly proportional to the zinc coating thickness. The zinc in zinc-rich paint also provides cathodic protection by means of fine zinc powder dispersed in a dry film of paint resins. However, organic zinc-rich paints need a high film build to provide adequate protection for steel, together with good surface preparation and excellent application technique.

A further factor to be considered is the environment to which organic zinc-rich coatings are exposed. Superb application and care to ensure that pinholes are repair-coated ensures that organic coatings last long. Hot dip galvanizing of steel avoids the problem of pinholes, but not all steel can be galvanized, and that’s where zinc thermal spray and zinc-rich paints come in.

The key difference is that hot dip galvanizing results in the zinc coating forming a metallurgical bond with the underlying steel, whereas zinc-rich paints (cold galvanizing) only mechanically adhere to the steel surface and can be damaged and scratched, thus exposing the underlying steel. A zinc or zinc/aluminium thermal spray coat under the organic coating makes for a very good coating system if galvanizing is not possible.

Zinc thermal spray is a powerful tool for the engineer, and is applied by melting zinc wire or zinc/aluminium alloy wire and spraying the surface of the steel using special thermal spray guns. Provided the steel surface is properly prepared and in combination with a zinc rich primer paint and a top coat, a thermally sprayed steel item can last for years. For example, wind turbine towers are zinc thermal sprayed and then overcoated with multiple organic coatings to provide long exposure life.

***Ends***

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**Notes to the Editor**To download hi-res images for this release, please visit [http://media.ngage.co.za](http://media.ngage.co.za/) and click the International Zinc Association link to view the company’s press office.

**About the International Zinc Association**

The IZA is the only global industry association dedicated exclusively to the interests of zinc and its users. Operating internationally and locally through its regional affiliates, the IZA helps sustain the long-term global demand for zinc and its markets by promoting such key end uses as corrosion protection for steel and zinc as being essential in human health and crop nutrition. IZA’s main programmes are Sustainability & Environment, Technology & Market Development and Communications.

In South Africa, the IZA plays a vital role in establishing the basis for the successful revitalisation of the zinc industry by increasing awareness of zinc and its applications and benefits in key sectors and markets, which will ultimately translate into the increased uptake of zinc.

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