

BRIGHT IDEAS



GALVANIZING ASSOCIATION

THE OFFICIAL NEWSLETTER OF THE GALVANIZING ASSOCIATION OF NEW ZEALAND

Welcome to our first GANZ (Galvanizing Association of New Zealand) Newsletter!

- We hope you find it both informative and enjoyable and with sufficient information for you to consider it worthwhile.

Who are we?

We are a group of the best Galvanizers in New Zealand and meet regularly to discuss technology and product improvements to ensure a quality finish. United in trying to enhance the product and productivity of our industry we support our Building and Engineering Industries as a whole.

GANZ is 23 years young and is based on a technology that is effectively 150 years old.

At GANZ our motto is "Galvanizing makes sense and saves dollars". This play on words is at the heart of our Galvanizing offer - Galvanizing is often cheaper and faster to apply than most other coatings, and even if it does cost a few cents more up front, the long-term saving in maintenance, replacement or repair, the ease of installation



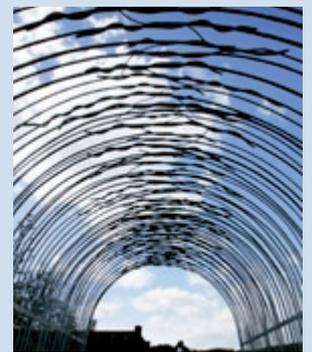
and the lowering of environmental impact ultimately saves many, many dollars down the line.

Why galvanize?

The benefits of the galvanizing process are compelling and wide ranging. It is a tough coating which increases the life of your product, is environmentally sustainable and more economical than most other systems. Your first cost is your last cost.

In this issue of Bright Ideas, we will explain some of the myths about the environmental aspects of galvanizing. Hot Dip Galvanizing is one of a few industries that has a recyclable solution that reduces the energy demands of structures. At GANZ we are fond of the saying, "Galvanizing might look silver, but it is actually green"

Zinc is a non-ferrous metal that can be recycled indefinitely without any loss of its physical or chemical properties. This is a major advantage for the hot dip galvanizing process ensuring its environmental sustainability and its cost effectiveness.



Galvanizing - It's An Art

*Unusual? Yes.
Beautiful? Absolutely.*

CASE STUDY - THINKING BRIDGES? THINK GALVANIZING

In Asia corrosion prevention is the essential factor in the economic utilization of steel where the application of an appropriate protective coating can influence initial and whole of life costs, eliminate maintenance and lost service time, and defer the replacement date of structures. Two fine examples are shown – Taiwan's Chung Cheng overpass, and the Linkou Bridge in Taipei.



Taipei – Linkou Bridge

This 8-lane girder type overpass bridge, 22.6 metres in width and 1065 metres in length, utilized 7300 tonnes of galvanized 2 metre girders as well as 3030 tonnes of galvanized steel reinforcement to provide long-term corrosion protection in the salt-laden atmosphere of the Taiwan Strait.



Taiwan – Chung Cheng Overpass Bridge

This 6 lane 24.9 metres wide, 1672 metres in length bridge, opened 12 year's ago and utilized 7000 tonnes of hot dip galvanized steel girders. Heavy vehicular usage across the bridge, roads beneath, and the confined nature of the location, made bridge maintenance a major logistical problem. Thankfully hot dip galvanizing solved this by lessening the frequency of such maintenance.



Why Galvanize?

We give 10 great reasons why you should

FREE LECTURE SERIES

SEE INSIDE FOR DETAILS

SO WHAT DOES A GALVANIZING ASSOCIATION DO?

It's simple - we're here for you. GANZ represents all the major Galvanizers so that you, our clients, get the best technical advice and news of the latest advances in this traditional art. We were founded 23 years ago by a group of dedicated galvanizers passionate about the galvanizing industry and excited about its potential.

When it was founded the purpose of the Association was to market galvanizing as the premier protection system and to provide an impartial non-profit forum for any enquiries in regards to the products and standards encompassed by the galvanizing industry within New Zealand.

Today GANZ is a non-profit Association dedicated to serving the needs of after-fabrication galvanizers, fabricators, architects, specifiers, and engineers, providing technical support on today's innovative applications and state-of-the-art technological developments in hot-dip galvanizing for corrosion control. Getting it right, and achieving a high-quality surface finish for our clients, will always be our main goal.

One of the latest advances in our field has been the work done by noted structural engineer Dr Charles Clifton for the Heavy Engineering Research Association on environmental corrosion throughout New Zealand. GANZ has obtained access to the Corrosion Maps from NIWA and with them we can tell you how corrosive any particular geography is and the amount of degradation you can expect in one year. The research and maps have been reviewed and tests prove they are very, very accurate. This sort of information should be used when stakeholders consider what type of protection to use when designing, whether a commercial building or even just a shed.

We can also provide technical assistance from the Galvanizers Association of Australia (GAA) which comprises many of the leading galvanizing companies throughout Australia, New Zealand and Asia. Through them we can provide free technical publications and practical assistance on all aspects of design, application, process, bolting, welding and painting of galvanized steel.

Corrosion – an environmental killer

In the US, research has shown that the cost of corrosion is conservatively estimated at 2.5% of GDP. In NZ, we would have to expect the percentage to be higher because of the



fact that we have more coastline than the US and the fact that we have several geothermal areas. Using 3% as a conservative estimate, this would equate to over \$1 billion dollars per annum. The effects of this corrosion include higher raw material production, higher costs and building pollutants and increased heavy industry pollutants.

If you consider environmental goals such as the efficient protection of the environment and the prudent use of natural resources, hot dip galvanizing stands up to scrutiny and can be considered as a major contributor towards sustainable construction. Did you know that 1 tonne of galvanized steel installed saves seven tones of replacement steel being made?

And don't forget, zinc itself is 100% natural, and 100% recyclable.

Next Issue

We'll be covering such issues such as; Life Cycle Costing, the myths around Thermal Zinc Spraying and The Impact of Galvanizing on Reinforcing Bar.

Till then, look on the Bright side!



TECHNICAL - 10 GREAT REASONS



1. Lowest first cost.

Galvanizing is lower in first cost than many other commonly specified protective coatings for steel. (The labour component of finished paint coatings averages about 60%, compared to about 30% for galvanizing.)

2. Less maintenance/Lowest long term cost.

Even where the initial cost of galvanizing is higher, galvanizing is almost invariably cheapest in the long term because it lasts longer and needs less maintenance, especially when structures are located in remote areas, and when plant shutdown or disruption to production is involved.

3. Long life.

The life expectancy of galvanized coatings on typical structural members is far in excess of 50 years in most rural environments, and up to 25 years plus in severe urban and coastal exposure.



Nothing is more precious than the work we produce - and no-one more precious to work with than artists.

Wainoni Park Archway, Wainoni, Albany

When Auckland's North Shore City Council wanted to create a 'labyrinth', an intricate feature that would provide a striking entrance for Wainoni Park's Children's Playground area, designers Bellvue Iron Furniture turned to GANZ member, CSP Coatings Limited, with whom they had a long working relationship.



"We have been using CSP for 20 odd years, so it was the natural choice for us" said Bellvue's Tony Hopping "We find their work good, and galvanizing a great finish to work with."

The structure was constructed from textured and twisted

steel pipe work to achieve a very detailed final look and feel. As it was an exterior structure, it was essential that all the steel was galvanized to guard against the elements and thus maximise the structure's longevity. A coating of pewter effect paint over the galvanized steel completed the work.

With the dimensions of the completed structure measuring approximately 6.0 x 3.0 x 2.5 metres, the work had to be produced and hot dip galvanized in sections before being fitted together. The size of the work was accommodated by 'double dipping' the larger sections end-for-end.

REASONS TO GALVANIZE

4. Reliability.

Galvanizing is carried out to Australian / New Zealand Standard 4680, and standard, minimum coating thicknesses are applied. Coating life and performance are reliable and predictable.

5. Toughest coating.

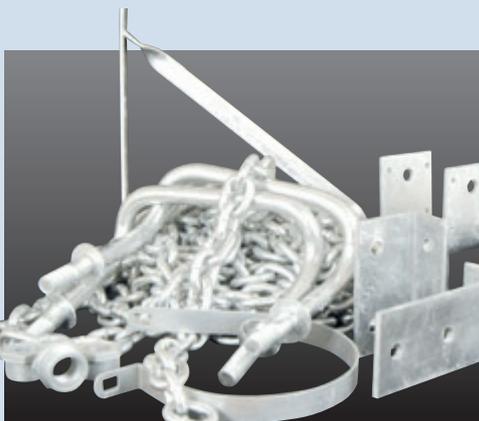
A galvanized coating has a unique metallurgical structure which gives outstanding resistance to mechanical damage in transport, erection and service.

6. Automatic protection for damaged areas.

Galvanized coatings corrode preferentially to steel, providing cathodic or sacrificial protection to small areas of steel exposed through damage. Unlike organic coatings, small damaged areas need no touch up.

7. Complete protection.

Every part of a galvanized article is protected, even recesses, sharp corners and inaccessible areas. No other coating applied after completion can provide the same protection.



8. Ease of inspection.

Galvanized coatings are assessed readily by eye, and simple non-destructive thickness testing methods can be used. The galvanizing process is such that if coatings appear sound and continuous, they are sound and continuous.

9. Faster erection time.

As galvanized steel sections are received they are ready for use. No time is lost on-site in surface preparation, painting and inspection. When assembly of the structure is complete, it is immediately ready for use, or for the next construction stage.

10. A full protective coating can be applied in minutes.

A 4-coat paint system requires a week. The galvanizing process is not dependent on weather conditions.

FREE LECTURE SERIES



GANZ are proud to be co-sponsors of a lecture tour by the Technical Manager of the Galvanizing Association of Australia (GAA), Emmanuel (Manny) Pimental. He will be in New Zealand to present a series of seminars on the galvanizing process and how it can positively impact on all aspects of design, construction, and achieving long-term reductions in maintenance and extending whole-of-life material performance. Manny is a well respected speaker with a vast knowledge of most coating systems, and has a unique style that is both humorous and educational.

Topics he will cover include

- **Introduction to galvanizing and the galvanizing process**
- **Composition and performance characteristics of galvanized steel**
- **General information on preparation of steel for galvanizing and design hints for good corrosion prevention practice**
- **Life cycles and economic considerations of corrosion protection selection**
- **Galvanizing and sustainability**
- **Overview of relevant standards**
- **Corrosion zones and what they mean**
- **Case studies** and there will be significant Q & A time depending on audience members interests.

Please email us today at inquiry@galvanizing.org.nz for your **FREE DVD** technical guide to Galvanizing and to book your place for this **FREE** lecture.

- Auckland - Monday 14th April**
- Hamilton - Wednesday 16th April**
- Christchurch - Tuesday 22nd April**

Venting Your Work

INTERNAL VENT AND DRAIN GUIDE RULES



The success of the galvanizing process, and the safety of all involved in the procedure, depends on the proper venting of all components to be immersed. Items must be either drilled or have lugs welded on, to facilitate lifting by crane. Items must hang at the correct angle to ensure they fit within the bath to enable easy drainage.

Components must be able to be lowered into the bath without trapping any air, and then raised without trapping any solutions. The zinc baths operate at around 450°C and this temperature can instantly turn any trapped fluids into explosive superheated steam (around 3800 psi). This explosive pressure can blow out steel components and send tonnes of molten Zinc from the bath and becomes a lethal combination.

That being said it is not too difficult if a few rules for venting and draining are followed.

A full guide to venting and draining and preparation of your steel for galvanizing is included in our free Bright Ideas DVD.

GALVANIZING AND SUSTAINABLE CONSTRUCTION

“Galvanizing is a recyclable solution that reduces the energy demand of structures”

In respect of efficient protection of the environment and prudent use of natural resources, the hot dip galvanizing process stands up to scrutiny and can be considered as a major contributor towards sustainable construction.

Galvanizing, the coating of iron or steel with zinc, is probably the most environmentally friendly process available to prevent corrosion. It is estimated that corrosion costs around 2.5% of GDP in the USA.

Effective corrosion protection is a vital means of reducing the energy demands of buildings and structures.

Every 90 seconds, across the world, one tonne of steel turns to rust; of every two tonnes of steel made, one is to replace rust.

Use of hot dip galvanizing to prevent rust means that for every one tonne of steel protected we conserve enough energy to satisfy an average family’s energy needs for several weeks.

Galvanizing is efficient in its use of zinc to protect steel for very extensive periods – saving energy and resources

with minimal impact on the environment. Galvanizing will protect steel structures for decades and minimises maintenance.

Recycling

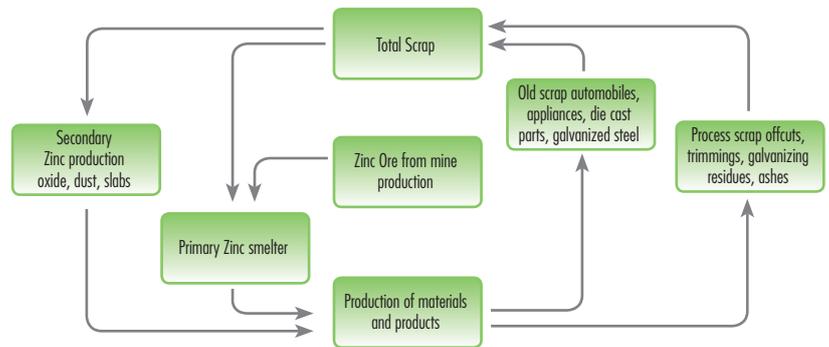
Zinc is the principal raw material in galvanizing.

Zinc is an inherently recyclable non-ferrous metal. It can be recycled indefinitely without any loss of physical or chemical properties.

This is a major advantage for the hot dip galvanizing process ensuring its environmental sustainability and its cost effectiveness.

About 30% (2 million tonnes) of the worlds zinc consumption is from recycled resources. A figure that is rising with increased environmental awareness and improvements in recycling technology.

Estimates suggest that 80% of zinc available for recycling is in fact recycled. This means that much of the zinc in use today has probably been used before.



NEED HELP?

CALL FOR AN EXPERT CONSULTATION

For free advice and expert consultation on any query you may have on galvanizing - simply call your nearest member of GANZ and ask for the GANZ Technical Advisor

Avon Industries	Richard Fisher	(09) 435 1033
CSP Coating Systems Auckland	Ash Arya	(09) 579 0063
East Tamaki Galvanizing	Bob Hamilton	(09) 274 0524
Gallagher Group Franklin Division	Ian Richards	(09) 238 9289
Galvanising Services	Andrew Lonsdale-Cooper	(09) 636 6003
Perry Metal Protection Ltd	Dave Bayliss	(09) 820 8471
Perry Metal Protection Ltd Hamilton	Russell Dewey	(07) 850 0120
Perry Metal Protection Ltd Tauranga	Ken Tynan	(07) 541 1344
Kibby’s Metal Pressings	Marsh Kibby	(06) 758 2210
Taranaki Galvanizers Ltd	Wayne O’Neill	(06) 765 7166
Galvanising Hawkes Bay	Dave Bickerstaff	(06) 835 4499
Webforge (NZ) Ltd	Chris James	(06) 3561246
Perry Metal Protection Ltd Wellington	Graham Black	(04) 568 4139
CSP Coating Systems Christchurch	Wayne Scott	(03) 348 8522
Perry Metal Protection Ltd Christchurch	John Notley	(03) 349 0290



EMAIL TODAY FOR YOUR FREE DVD

We are in the process of producing a DVD Technical Guide covering all aspects of the galvanizing process for your information and assistance.

To receive this free DVD simply register on www.galvanizing.org.nz or email enquiry@galvanizing.org.nz

FOR MORE INFORMATION GO TO www.galvanizing.org.nz or email inquiry@galvanizing.org.nz

GALVANIZING MAKES SENSE AND SAVES DOLLARS