

BRIGHT IDEAS



**GALVANIZING
ASSOCIATION**

THE OFFICIAL NEWSLETTER OF THE GALVANIZING ASSOCIATION OF NEW ZEALAND

Internal Venting to be banned as from 1st Dec 2008

I would like to take this opportunity to inform you of a significant change that needs to occur in the galvanizing industry. As you are probably aware, the Galvanizing Association of New Zealand (GANZ) is a non profit industry body whose aim is to enhance the galvanizing product and productivity of our industry. We have a number of stakeholders including business owners, our customers and employees.

Following a recent catastrophic event in Australia, GANZ has had to review its policy around internal venting. The incident in Melbourne where an incorrectly internally vented item exploded was a serious issue and was investigated by Workplace Safety (the Australian equivalent of OSH). **The explosion resulted in 60 metric tonnes of molten zinc being showered around the factory.** Fortunately due to a number of factors, no one was injured, but it highlighted a risk which is too great and cannot be ignored.

As employers, our responsibilities under current health and safety legislation are clearly defined. If a hazard is identified in the workplace, we have a responsibility

to eliminate it. The hazard identified in question is the potential explosion that could occur if internally vented items are not vented according to AS/NZ 4680.

As a result of the "chain of responsibility" investigation process, whereby the cause of an incident or accident is traced to the person responsible for non-conformance, we believe it is in everyone's interest to ban internally vented items that cannot be visually inspected. We understand the issues that this will likely cause to our customers, but the risk of injury is too great to ignore. For more information on what internally vented items are and what practices we do allow, refer to our website, www.galvanizing.org.nz.

This ban will come into effect on the 1st of December 2008. We are delaying the introduction of the ban to allow our customers and specifiers time to incorporate the design changes required. If you have any questions, please contact your galvanizing supplier.

Jonathan White
G.A.N.Z Chairman

What's Inside?



Anchors Away!
*Recycle your chains
and anchors by
galvanizing*



Huntly Happenings
*What's it got
galvanize-wise?*

CASE STUDY - SPACE SAVING WITH ORAMS MARINE

PLAIN SAILING

With the scarcity of affordable land in downtown Auckland, Orams Marine headed for the skies, expanding its boatpark with an ingenious stacking system.

This unique dry marine storage facility can house 370 vessels, up to 40 feet long, securely supported on beams hot dip galvanized by Perry Metal Protection.

The ground-breaking project, in conjunction with Grayson Engineering, took 32 men ten weeks to complete. Specified in Australia, the framing's structural sections were up to 11



metres long, each precision dipped in Perry Metal Protection's Hamilton plant.

The proven hot dip galvanizing process provided Orams with a trusted coating known to perform well in this challenging marine environment.

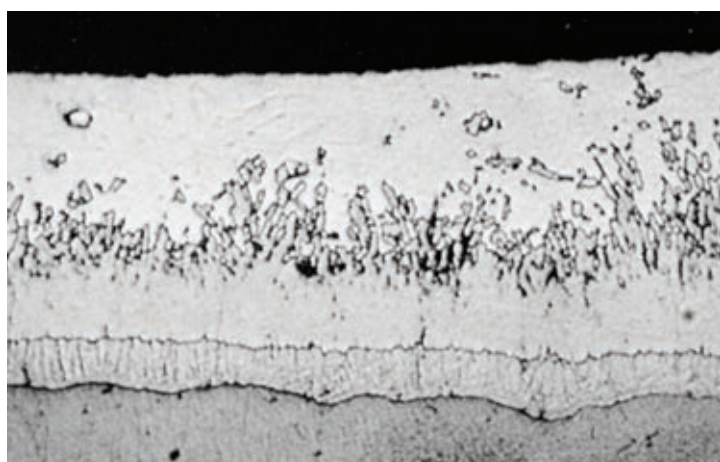
With little or no touch up required during transit or erection and its low maintenance requirement, hot dip galvanizing was the coating of choice to cradle millions of dollars worth of pleasure craft.

**FREE
DVD ON
ITS WAY**

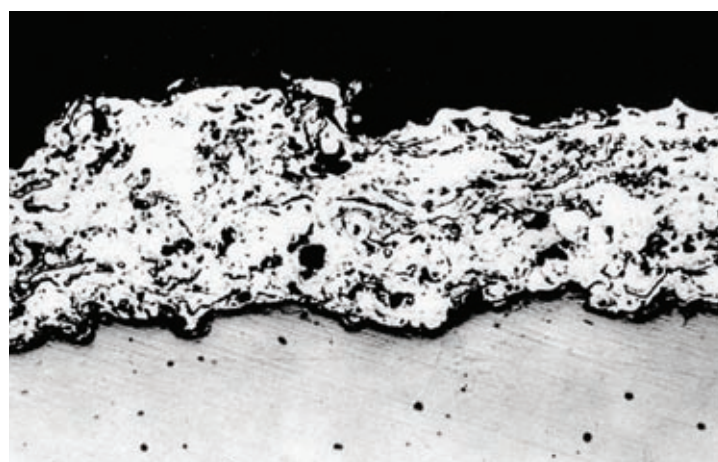
SEE BACK PAGE FOR DETAILS

Hot Dip Versus Zinc Thermal Spray: FACT vs SPIN

Hot Dip Galvanizing (HDG)	Zinc Thermal Spray (ZTS)
AS/NZS 4660 - Hot dip galvanized coatings on fabricated ferrous articles.	AS/NZS 2313 (ISO 2063) – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.
Metallurgical Bond with iron/zinc alloy layers. Incorrect preparation: zinc won't react with substrate(uncoated areas).	Mechanically bonding: relies on surface preparation, "key" coating to steel. Poor preparation can be hidden. Zinc coating, no alloy layers, surface rough if not brushed after application.
Corrosion control: 30% improvement in "barrier protection" over pure zinc.	Pure zinc coating, possible entrapped contaminants. No iron/zinc alloy layer.
Metallurgical laws - result relatively uniform, quality coating, independent of operator skill.	Quality of coating dependent on operator skill. Coating thicknesses vary due to operator skill and hard to access areas. Thickness and uniformity of coating affects service life.
Costs primarily: zinc. Coating thickness a function of steel chemistry, zinc temperature, metal thickness, immersion time, angle and speed of withdrawal. Can all be predetermined and measured accurately.	Coating thickness, finish and uniformity of coating is function of operator. Thinner coatings decrease cost (less zinc used). Due to roughness, normal methods of measurement often inaccurate.
Product size limited to zinc bath size unless "double dipping". NZ maximum 13m.	Product size limited due to handling.
Coats all surfaces , including inside, hidden, difficult to access areas (venting req).	Only coats surfaces with easy access.
Coating thicknesses on sharp corners similar/ greater than flat surfaces.	Coating thicknesses on sharp corners minimal due to process. Additional effort req. to achieve coating thickness equal to flat surfaces.
ISO 1461: When using ZTS for repair of HDG, an extra 30µm req.	Additional thickness of zinc req. for repairs. Impt - zinc rich paints.
Iron/zinc alloys of coating harder than base steel - excellent abrasion resistance. Normal coating difficult to damage.	Softer than HDG , easily damaged. Care req. during transport and loading.
Most generic paint systems compatible, except Alkyd enamel.	Most generic paint systems compatible, except Alkyd enamel. ZTS is porous: care must be exercised in paint selection so segregation of paint constituents does not occur, resulting in possible early paint failure.



Cross-section through zinc coating on aluminium killed steel.



Section through zinc metal spraying.

**NEXT
ISSUE**

- Galvanizing extends the life of children's playground equipment
- How galvanizing overcame all the ocean could throw at it in Taranaki
- Vital instructions on preparing your products for galvanizing

**... 'til then look on
the Bright side!**

CASE STUDY - MILLERS MECHANICAL



Galvanized pallet shelving before fitting of corrugated iron.

CSP Coating Systems Christchurch recently had the privilege of working alongside one of their regular customers, Miller Mechanical of Dunedin in a cutting-edge multi-national project. The job: the construction and installation of two major new systems, commissioned by Dawn Meats, a pig processing company in Waterford, Ireland.

The prestigious job was won by Realcold (RE), the sister company of Millers Mechanical, who was handed the task of engineering the complex components for both systems.

The first, a Single Retention Tunnel (SRT), was a fully automated carton handling system capable of freezing cartons down to minus 35 degrees Celsius before delivering them back to the packing area for storage and containerisation.

The second, a Storage and Retrieval System (SARS), was a prototype machine for RE. Capable of operating at minus 18 degrees Celsius, this system was designed to automatically recognise, handle, store & retrieve up to 2000 individual cartons.

It was a considerable undertaking. The SRT system alone was made up of 62 pallet shelves, each section consisting of eleven shelves designed to hold twelve 30kg cartons apiece. With each pallet having an unloaded mass of



The fifth 40-foot container being packed, bound for Ireland.

1450kg, the job equated to 90 tonnes of steel, all requiring hot dip galvanizing.

CSP Christchurch also galvanized many of the SARS prototype components.

However, due to critically low stock levels in NZ, Millers were forced to source steel from Australia. Difficulties with the contract rates and delayed delivery of raw material almost put the whole project in jeopardy and made it very difficult for Millers to meet deadlines. A 20% increase in the price of raw materials, rocketing fuel and freight costs and the unfavourable exchange rate all added to the complexities of the work.

Throughout this time, CSP worked closely with Millers Mechanical to efficiently manage the throughput of such high volumes of steel within the increasing time constraints. "CSP worked around the clock to assist us in regaining some lost hours on this job," said Paul Black, Special Project Engineer for Millers Mechanical. "We really appreciated this, and it helped us get back on track."

Ultimately, the job was completed successfully with one 20-foot and seven 40-foot containers being required to ship both systems in component form to the site in Ireland for installation.

ANCHORS AWAY!

Boating on the sea, rivers or lakes plays a major part in the commercial and leisure activities of Kiwis. The chains and anchors that boaties carry and use, play an important role in the enjoyment and safety of this activity.



Anchors come in a variety of forms from Plough and Ray to Supreme or Kewen. Unfortunately chains and anchors are subject to deterioration through abrasion and corrosion and therefore require refurbishment.



Galvanizers throughout the country are able to strip and re-galvanize old chains and anchors. The zinc coating applied to the old chains and anchors will provide the same corrosion and abrasion resistance as the original.

GENESIS HUNTLY POWER STATION 26 YEARS ON



The Genesis Huntly Power Station is located on the banks of the Waikato River, 70kms south of Auckland - the largest load centre for electricity in the country.

Construction on the Station commenced in 1973 and was commissioned in 1982. Huntly Power Station accounts for 17% of New Zealand generation capacity and consists of three plants using coal, gas fired steam and gas turbine (e3p) generation.

There is a large amount of Galvanized Steel throughout

the Power Station - from applications such as fire fighting pumps, walkways and handrails, water and gas pipes to cooling water screens. These are located internally and externally within the boundaries of the Plant and exposed to climatic and temperature variations. Recently, representatives of GANZ performed tests on the galvanized steel. We were pleased to see that the steelwork in both external and internal environments were in excellent condition and all the thickness measurements were above what would be required by New Zealand Standards for a new installation (AS/NZS 4680).

GALVANIZING SETS NEW BOUNDARIES



Hot dip galvanizing was specified to protect Virgin Concrete's new high-tech boundary fence in Whangarei. The purpose-designed steel fence encloses the company's new batching plant currently under construction.

GALVANIZING AND INDUSTRY STANDARDS

EXITO is one of 43 industry training organisations (ITOs) in New Zealand, funded by the Tertiary Education Commission (TEC). Galvanising is one of the seven industry sectors EXITO covers.

“Our primary role as an ITO is to work with the galvanizing industry to develop their unit standards and qualifications structure - a framework that’s designed to be achieved in a workplace environment,” says Wendy Devine, Industry Training Advisor Team Leader.

The relationship with EXITO came from realising that the competency of staff should be recognised in the workplace. So, a working group of industry representatives conducted a needs analysis and came up with the unit standards content specific to the requirements of the galvanizing industry.

EXITO provides support, developing this content into a unit standards package, signing staff into the agreement and creating and subsidising a budget for each company’s training needs. The unit standards are based on the National Qualifications Framework (NQF).

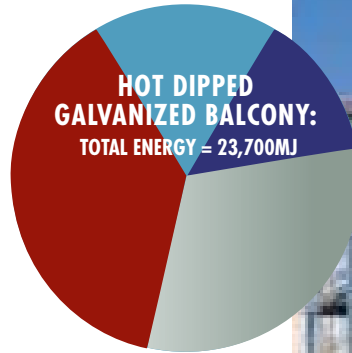
EXITO’s other function with the galvanizing industry is to train and register existing staff to be workplace assessors.

“There has been a huge investment by the companies and key people that have worked with us,” says Devine. “From having no formal qualifications, the galvanizing industry has worked hard to put together a package and make changes to achieve a competency based system. It’s still early days, but the galvanizing industry is showing a real ongoing commitment to staff.”

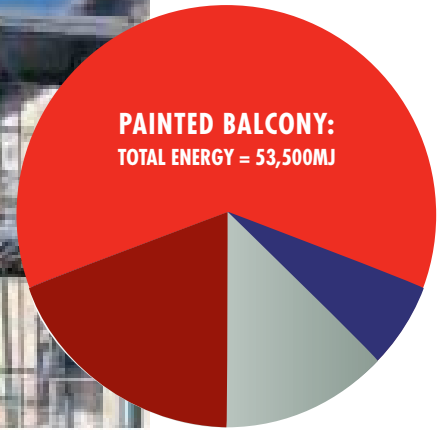
GALVANIZING MAKES SENSE AND SAVES DOLLARS

GALV IS GREEN

This galvanized balcony has half the embodied energy of its painted counterpart



HDGALV
STEEL SHEET
STEEL SECTIONS
OTHER



PAINTED
STEEL SHEET
STEEL SECTIONS
OTHER

Engineers Logic

To the optimist the glass is half full. To the pessimist the glass is half empty. To the engineer - the glass is twice as big as it needs to be!



EMAIL TODAY FOR YOUR FREE DVD

We are in the process of completing a very detailed Technical Guide covering all aspects of the galvanizing process for your information and assistance.

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

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	Jim Burns	(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	David Middleton	(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

FOR MORE INFORMATION GO TO

www.galvanizing.org.nz or email inquiry@galvanizing.org.nz