

## FEATURING

2014 Fastener Availability Matrix

Use of Hot Dip Galvanizing in Mining - Part 2

2014 Awards Event

2 Eskom Coastal Case Histories

Galvastop - The ideal mask

POLASA - Introduction

Regulars: Bob's BANTER, On The Couch and Members' Corner



# ADDING VALUE TO STEEL





## [ Your galvanizer of choice ]

[ Robor Galvanizers boost demand chain efficiency by partnering with you.

We are well equipped and ideally structured to quickly fulfil your order, from small projects, to high-tonnage contracts that involve large fabricated components. ]

### Newly upgraded!

- ISO 9001: 2008 Certified
- 14001: 2004 Certified
- 6 000m<sup>2</sup>
- ~~5 000m<sup>2</sup>~~ concrete lay down area added to enhance our offering
- Line 2 kettle with a totally matched processing facility
- 4m deep • 2m wide • 10m long
- On-site water treatment facility

### Benefits to you:

- Increased flexibility
- Shorter lead times
- Increased kettle depth with fewer vertical dips
- More comprehensive service offering

### Logistics capabilities include:

- Lay down areas
- Crane capacity
- Transport fleet
- On-site offices available on request

robor



### For more information:

Tel: +27 (0)11 876 2900 • E-mail: [galvanizers@robor.co.za](mailto:galvanizers@robor.co.za) • [www.robor.co.za](http://www.robor.co.za)

## Contents

### 36 Advertisers' Index

#### REGULARS

2 Executive Director's Comment

2 Note from the Editor

#### Case History

13 Eskom coastal sub-stations

31 On the Couch

34 Members' Corner

36 Bob's BANTER

#### FEATURES

##### Conference

4 The use of hot dip galvanizing in mining in Southern Africa: Part 2

##### Fasteners

18 Impala Bolt & Nut stays on top of the fastener market

20 Fastener availability matrix

#### TECHNICAL

32 Galvastop – masking of components prior to hot dip galvanizing for the exclusion of the coating

#### GENERAL

12 Awards – Sponsorship opportunity

10 Introductory Galvanizers Inspection Course

28 POLASA fills dire need

28 The value of a quality management system

30 3-day Galvanizers Inspectors Course

37 Members' List



4



13



20



32

Front Cover: Galvspin – A fully automated spin galvanizing plant and photos of some spin galvanized products.

The Association is an information centre established for the benefit of specifiers, consultants, end users and its members.

#### PUBLISHED BY:

Hot Dip Galvanizers Association Southern Africa

Quality House, Unit U4, St. Christopher Road, St. Andrews, Bedfordview

P.O. Box 2212 Edenvale 1610 Tel: 011 456 7960 Fax: 011 454 6304 Email: [hdgasa@icon.co.za](mailto:hdgasa@icon.co.za) Website: [www.hdgasa.org.za](http://www.hdgasa.org.za)

#### JOHANNESBURG:

Executive Director: Bob Wilmot Cell: 082 325 8840 Email: [bob@hdgasa.org.za](mailto:bob@hdgasa.org.za)

Office Manager: Saskia Salvatori Cell: 082 326 6080 Email: [hdgasa@icon.co.za](mailto:hdgasa@icon.co.za)

#### CAPE TOWN:

Editor and Technical Marketing Director: Terry Smith Tel: 021 797 4735 Fax: 086 612 7284 Cell: 082 893 3911 Email: [terry@hdgasa.org.za](mailto:terry@hdgasa.org.za)

Advertising and Sales: Anne van Vliet Tel: 011 462 5073 Cell: 082 775 0711 Email: [mvvliet@mweb.co.za](mailto:mvvliet@mweb.co.za)

Design and Layout: Sandra Addinall Tel: 011 868 3408 Email: [cbt@adco.co.za](mailto:cbt@adco.co.za)

Reproduction and Printing: Camera Press Tel: 011 334 3815 Fax: 011 334 3912 Email: [cpress@iafrica.com](mailto:cpress@iafrica.com)

Views expressed in articles and advertisements are not necessarily the views of HDGASA. Articles or extracts thereof may be reproduced provided full acknowledgement is given. Should you wish to receive a regular copy of the magazine, kindly contact us

## Executive Director's Comment

When our daily activities allow time to pause and review year to date progress that old cliché certainly appears to hold true. The older we become the faster the years go by. Our Association's year to date activities certainly have elements of confirming the cliché.



Reviewing the immediate past six months we find both positive as well as negative issues that have occupied our daily activities.

Progress in the solar energy field has enabled a number of members to provide work for their operations. Developments aimed at the prevention of subsidized imports of power line equipment and to use local manufacturing facilities has been introduced. Colliery and overland coal conveying equipment, has also been most welcome. In general, it is fair to say that our industry tends to be cyclic and very dependent on larger contacts as well as private sector activities. Continued talk and anticipation of planned infrastructural development projects are keenly awaited, but one wonders how financing is to be achieved?

Concerns certainly involve the continued strife within the labour market and the ability of the mines and industry, as a whole, to meet the demands of labour. The impact on our economy is now measurable and as such puts the country at serious risk of negative growth. I am again reminded of what I was taught, very early on in life. "You cannot get out more than what you are prepared to put in". My personal experience is that you need to put more in than what you can expect to receive.

On a more positive note, I can inform our readers that Mr Shaun Amos has joined the Association with a view to taking over as our Executive Director and allowing me to step back and become a consultant. Shaun and I will work together to ensure a smooth handover period. I welcome Shaun to the Association and believe that he will bring new ideas and be able to enhance our service to the corrosion control industry.

*Bob Wilmot*

## Note from the Editor

In our efforts to ensure that the consulting engineer or architect in different parts of SA, when he specifies correctly, can get hot dip galvanized fasteners with a minimum lead time, a number of fastener manufacturers are now maintaining a stock of already hot dip galvanized oversized nuts. Most of these manufacturers have a select number of branches or agents in remote parts of SA as well as along the coast which should shorten lead times for standard hot dip galvanized fasteners.



While in East London recently I had the occasion to call on a fastener supplier and was extremely impressed with his stock of hot dip galvanized bolts, nuts and flat washers, etc. When questioned as to why he had invested in such a stock, his reply included, "The specifier's of today know the difference between zinc electroplating and hot dip galvanizing, so if one wants the order, one must maintain a stock of the popular sizes."

According to a well-known fastener manufacturer the cost of hot dip galvanized versus a zinc electroplated equivalent for shorter lengths of bolts (say M16X50), is a premium of around 15% for mild steel and hi tensile sets screws. This reduces marginally as the length increases. In respect of hi tensile bolts the premium is around 11%.

So let's say one is paying 15% more for a coating that is likely to last 4 to 5 times as long in most situations. Making use of hot dip galvanized fasteners versus zinc electroplated equivalents in a moderate to aggressive environment is then a good decision!

I have been proactively promoting hot dip galvanizing and duplex coating systems now for about 18 years and each time I plan my country trips, I am amazed at the interest taken by many of the specifiers, in trying to understand the design and fabrication requirements prior to hot dip galvanizing.

We continue with the second part of the paper presented to Latingalva entitled "The roll of the HDGASA in the direct or indirect promotion and use of hot dip galvanizing in various mining applications, including gold, platinum, iron ore and coal and future motivation of its use in the Petro Chemical Industry, in South Africa."

We also include two recent Western Cape case histories, Rietvlei and Plattekloof Substations (built in 1988 [26 years] and 1980 [34 years] respectively). The performance of the hot dip galvanized coating over this time proves its durability and subsequent re-specification by Eskom when required.

Regulars include our single and 3 day hot dip galvanizing course as well as "The Psychology of Health and Safety" in **Bob's BANTER**.

**On the Couch** features Albrecht Herholdt an Architect, Heritage Specialist, Lecturer, Author and hot dip galvanized coating Enthusiast.

We have had some positive comments from a number of our readers on our new face of Hot Dip Galvanizing Today and welcome any other comments on the content from you the reader.

Enjoy the "magazinc".

*Terry Smith*



GIARDINA  
Galvanizing Plants Design & Engineering



## Electric Furnaces

Electric furnaces with sizes and powers tailored to your needs.

## Centrifuge groups

Galvanizing plants with centrifugals for metallic small parts.



## What else Giardina offers to you:

- Hasco furnaces
- Dryers
- Galvanizing kettles
- Tanks for chemical treatments
- Heat recovery systems
- Plants for suction and damping zinc fumes and steam
- Cabins for galvanizing furnaces and pickling areas
- Oil separation plants
- Waters neutralization plants
- Pumps for liquid metals
- Dressing devices
- Fluxing salts treatment equipment

# The use of hot dip galvanizing in mining in Southern Africa PART 2

**The role of the HDGASA in the direct or indirect promotion and use of hot dip galvanizing in various mining applications, including gold, platinum, iron ore and coal and future motivation of its use in the Petro Chemical Industry, in South Africa.**

*Author: Terry Smith Technical Marketing Director – Hot Dip Galvanizers Association Southern Africa.*

## CASE HISTORIES

### Twistdraai Colliery

#### The company

The Twistdraai mine and washing plant is part of Sasol Mining's Secunda Collieries complex. Lying in the Highveld coalfield, east of Johannesburg, the mine was opened in 1980 to produce coal for Sasol's Secunda synthesis plant, and since 1995 has been a three-shaft complex producing low-ash steam coal for the export market as well as a middlings product for Sasol feed.

#### The application

A perception exists that suggests that one cannot apply hot dip galvanizing within a colliery. Hot dip galvanizing has over the years been extensively used for conveyors, both overland and even underground. In the most severe corrosive conditions such

as a coal washing plant, hot dip galvanizing plus a suitable top paint system has been applied with excellent results.

#### Environmental conditions

Corrosive conditions within the Twistdraai coal washing plant would be classified as a C5 environment in terms of ISO 9223. In other words, one of the more extreme corrosive conditions listed in the ISO specification. *Photos 1 and 2* can best illustrate the corrosive conditions encountered at the washing plant.

#### The site

This case study reviews the performance of a duplex system at Sasol's Secunda Twistdraai coal washing plant. Coal is delivered from the mine to the coal washing plant, where after processing it is dispatched to end users.

#### Our findings

During the site inspection, some 53 different overall coating thickness readings were taken on the total coating thickness with the following results: Maximum 888µm, Mean coating thickness 388µm, Minimum 277µm.

In general terms the structural steel together with the duplex system was found to be in excellent condition. It was reported that the coating system has been in operation for approximately 4 years. In addition an annual inspection is conducted aimed at monitoring the coating performance.

#### Conclusion

A duplex coating system uses the strengths of both hot dip galvanizing and selected paint coatings to compile and enhance "synergistic new performance" coating, which is cost effective where "value analysis" and long-term maintenance costs are taken into consideration. The system is designed to provide extended service life in severe corrosive environments. Surface preparation is a critical factor to the success of the coating's performance and as such, must not be overlooked in terms of the specification, as well as at the time of the application (*photos 3 and 4*).



*Photos 1 – 2 show the severity of the environment at the Twistdraai Colliery coal washing plant.*



*Photos 3 – 4 show the total coating thickness of the duplex coating system at 336µm and 378µm respectively.*

### Douglas Colliery

#### The company

Douglas Colliery (*photo 5*) is situated near Van Wyks Drift in Mpumalanga and is now privately owned.

#### The application

As overland conveyors form the lifeblood of the supply of material used in many process plants, their general lack of future coating maintenance due to the dusty conditions at hand and unlikely adequate

*continued on page 6...*

**"LEADING CHEMICAL SOLUTIONS"**



**KROME**

**METAL CHEMICALS (PTY) LTD**

## **Our Specialized Products Include**

**Single, Double, Triple & Nickel Based Flux Salts  
White Rust Remover & Surface Shine-Restorer  
Pickling Inhibitors  
Paint Strippers  
Raw Materials  
Low Temperature Degreasers (30 - 40°C)  
Latest Chrome Free Passivation From Europe**

**Gauteng**  
20 Mount Joy St  
Wilbart  
Bedfordview  
South Africa 

Tel: +27 11 450 2680  
Fax: +27 11 450 3389

**Western Cape**  
Unit 15, Cavi Court  
Killarney Ave  
Killarney Gardens  
South Africa 

Tel: +27 21 556 7552  
Fax: +27 21 556 3113

**KwaZulu-Natal**  
Unit 10, Falcon Mews  
15 Lanner Road  
New Germany  
South Africa 

Tel: +27 31 705 3581  
Fax: +27 31 705 3636



Photo 5 – 6: The Douglas Colliery (above left) and the V3 conveyor exposed to the environment for more than 20 years.



Photos 7 – 8 showing some typical coating thickness readings (298 and 234µm respectively).



Photos 9 – 11 show 3 views of the Douglas Middelburg Optimisation (DMO) expansion project, including the primary crushing station (top left), 26kms of conveyors (top right) and the Schade Circular Stacker and Portal Stacker Reclaimer (above), completed 2010.

surface preparation for maintenance painting, coupled to their often extraordinary length, suggests that a material or coating that can offer extensive years of service free life, be used.

The V3, V4 and V5 overland conveyors at Douglas Colliery, are such a system (photo 6). First reported in the Foreword of our inaugural booklet, "Steel Protection by Hot Dip Galvanizing and Duplex Systems", the original of which was produced in January 1997, these conveyors at inspection were estimated to be in excess of 20 years old. Although the hot dip galvanized coating is still performing admirably, the coatings on both the idler frames, which are painted and the fasteners, which are zinc electroplated, are in the process of failing.

**Environmental conditions**

From a general atmospheric corrosion perspective the conditions at hand are most probably a C2 category – ISO 9223 (Interior – Occasional Condensation; Exterior – Exposed Rural Inland), suggesting that the corrosion rate of zinc is about 0.1 to 0.7µm per year. In addition to the general atmospheric conditions, coal dust and particularly coal ash, coupled with moisture will be corrosive to zinc and therefore the coating may be prone to a more severe attack by way of corrosion.

Conditions at hand at this site indicate that the corrosion of zinc is slow and that the hot dip galvanized coating is likely to carry on performing in a manner that has become the norm, expected from most specifiers, in their use of hot dip galvanized steel.



**Our findings**

Having visited several parts of the V3, V4 and V5 conveyor steelwork we found the hot dip galvanized coating on the horizontal and vertical members to be in excellent condition, with coating thickness readings varying between 117 to 279µm with a mean coating thickness of 140µm. The coating thickness readings are still well in excess of that required by the ISO 1461 standard, for this thickness of steel. All together 108 coating thickness readings were taken on both the horizontal and vertical angle support steelwork.

**Conclusion**

The hot dip galvanized coating on the overland conveyor steelwork has over the 20 year period, performed exceptionally well and if required, based on the residual coating thickness, will provide a further 40 to 60 years of maintenance free life. If necessary, the painted idler frames, which are showing signs of corrosion, may be selectively removed, abrasive blasted to remove the residual paint coating and then hot dip galvanized, providing a durable, predictable coating of extended maintenance

free life. All fasteners if necessary should soon be replaced with hot dip galvanized equivalents. (See photos 7 and 8).

**Douglas Middleburg Optimisation (DMO)**

A BHP Billiton company this turnkey project included 26kms of conveyors, a primary crushing station, Schade Circular Stacker Reclaimer and Portal Stacker Reclaimer, Civils, C&I and substations. Built in 2010 all steelwork was hot dip galvanized (photos 9 – 11).

**Klipspruit Colliery**

A BHP Billiton company, this turnkey project included Primary Crushing Station (ROM tip), Rotary Breaker and 6 Plant conveyors. Built in 2009 all steelwork was hot dip galvanized to ISO 1461 (photo 12).

**Isibonella Colliery**

**Location**

Isibonella Colliery is located approximately 120km due east of Johannesburg, near Secunda, in Mpumalanga.



Photo 12 shows a view of the Primary Crushing Station (ROM tip), Rotary Breaker and Plant conveyors at Klipspruit Colliery completed 2009.

**Brief history**

Anglo Coal and Sasol Mining entered into a contractual agreement in October 2003 to jointly develop the Kriel South Reserve Area. Under the agreement Anglo Coal committed itself to establishing Isibonella

*continued on page 8...*



**FSP'S TO INDUSTRY  
FABRICATED STEEL PRODUCTS**

TEL: +27(0)21-551-2955/6/7

E-mail: info@tesafrica.com

www.tesafrica.com

9 Marconi Road, Montague Gardens  
Cape Town

**PRODUCTS INCLUDE**

- Steel towers and pylons
- Steel palisade fencing
- Mesh fencing (all types)
- Solar support structures
- All types of brackets
- Painting of Towers
- Steel Generator Cages
- Sub Station Components
- Tower Validation
- Lighting Masts





Photos 13 – 17 (from top left clockwise) show views of the conveyors of Isibonella Colliery; the transfer tower; another view of a long conveyor and the transfer tower and hopper.

Colliery, an opencast operation, to supply Sasol's Synthetic Fuel (SSF) plant in Secunda. In November 2003 construction work began and the first coal was supplied to SSF in July 2005.

Isibonella Colliery is designed to supply SSF approximately 5 Mt/y over a 20-year period. (See photos 13 – 17 on page 8).

**Goedehoep Colliery**

*The company*

Goedehoep is an Anglo Coal company situated in the Witbank area in Mpumalanga (photo 18).

*The application*

Goedehoep Colliery has been in existence since the early eighties. In about 1995 the

mine embarked on several extensions, one of them being to the transfer tower (photo 19), the coal washout facility (photo 20), and conveyor material supply system.

It was then suggested to mine management personnel that because of previous paint coating failures that a duplex coating system be used to protect the steel. The suggested sys-



Photo 18: Goedehoep Colliery after 17 years of exposure.



Photo 19: The transfer tower.

tem comprised a single coat high build epoxy coating applied to sweep blasted hot dip galvanized steel in accordance with the Hot Dip Galvanizers Association's Code of Practice HDGASA-01:1990 for surface preparation and application of organic coatings.

*The environmental conditions*

Coal washing facilities are relatively aggressive environments, due to the combination of coal dust and water.

*Our findings*

Although in existence for a number of years the old wash out plant was found to have several coating failures. Coatings in these conditions are extremely difficult to maintain unless the entire operation is shut down.

The duplex coating system on the steelwork in the new area is in exceptional condition, so much so that the organic coating had to be purposely damaged in order to assess the adhesion of the organic coating and overall condition of the hot dip galvanized coating underneath.

*continued on page 10...*



Photo 20: The coal washing plant.



Photo 21: Cross scribed duplex coating.



Photos 22 – 23: Total coating thickness 337µm and the hot dip galvanized coating thickness 123µm. Note the paint had to be removed to measure this.

**HI-TECH ELEMENTS**  
Designers and Manufacturers of  
**CHEMICAL HEATERS AND SYSTEMS** [www.hi-techelements.co.za](http://www.hi-techelements.co.za)

**THE HOT ROD®**

**THE HOT ROD**

**JOHANNESBURG**  
Tel: 011 894 3937  
Fax: 011 894 3954  
sales@hi-techelements.co.za  
www.hi-tech.edz.co.za

**KWAZULU NATAL**  
Tel: 031 701 1053/63  
Fax: 031 701 1062  
ashwan@hi-techelements.co.za

**CAPE AGENT: METALQUIP**  
Tel: 021 510 3264  
Fax: 021 511 5564  
info@metalquip.co.za  
www.metalquip.co.za

**CHEMPLUS**  
Fusing Technology with Planetary Sustainability  
**SUCCESSFULLY SERVING YOUR INDUSTRY FOR OVER 20 YEARS**

We manufacture and supply process chemicals, both nationally and globally, for use in the galvanizing industry.

**Leaders in surface chemistry**

Our new and unique products include:

- Acid-degreaser
- **Reduced tuming and splashing flux**, lowering zinc consumption
- **Environmentally-friendly passivator** for galvanized surfaces
- White rust-remover and surface shine-restorer, for field application.

We also supply:

- Drain aids
- Alkaline degreasers
- Pickling inhibitors
- Low dross and low ash generating fluxes
- Galvanized surface treatment for painting

117 Main Reef Road, Technikon, Roodepoort, South Africa  
Tel: +27 11 760 6000 Fax: +27 11 760 6070 Email: info@chemplus.co.za  
Website: www.chemplus.co.za



Photos 24 – 27 show the Sishen expansion project including some 22 000 tons of hot dip galvanizing in the form of process and conveyor steelwork.

**Conclusion**

The assessment was done after 10 years of service the duplex coating system is in exceptional condition and had to be purposely damaged, in order to assess and

measure the hot dip galvanized coating thickness (photos 21 – 23). In comparison the paint coating on the carbon steel hand rails of the coal washout facility had failed.

**Sishen Iron Ore Beneficiation Plant**

**The company**

Kumba iron ore a successor of Kumba Resources is the fourth largest iron ore producer in the world and owns 74% of Sishen Iron Ore Company.

**The location**

Sishen Iron Ore Company is situated inland in the Northern Cape.

**The plant expansion**

The plant expansion included some 22 000 tons of hot dip galvanized steel in various forms including extensive conveyors. After installation iron oxide dust alters the silvery grey hot dip galvanized coating to a red-dish colour which seems to form a natural duplex coating (photos 24 – 27).

To be continued in magazine no. 59. 

## Introductory Galvanizers Inspection Course

**This one day course has been designed to be more simple and more practical than the 3-day galvanizers inspectors course discussed elsewhere in this magazine.**

Topics to be covered and discussed are:

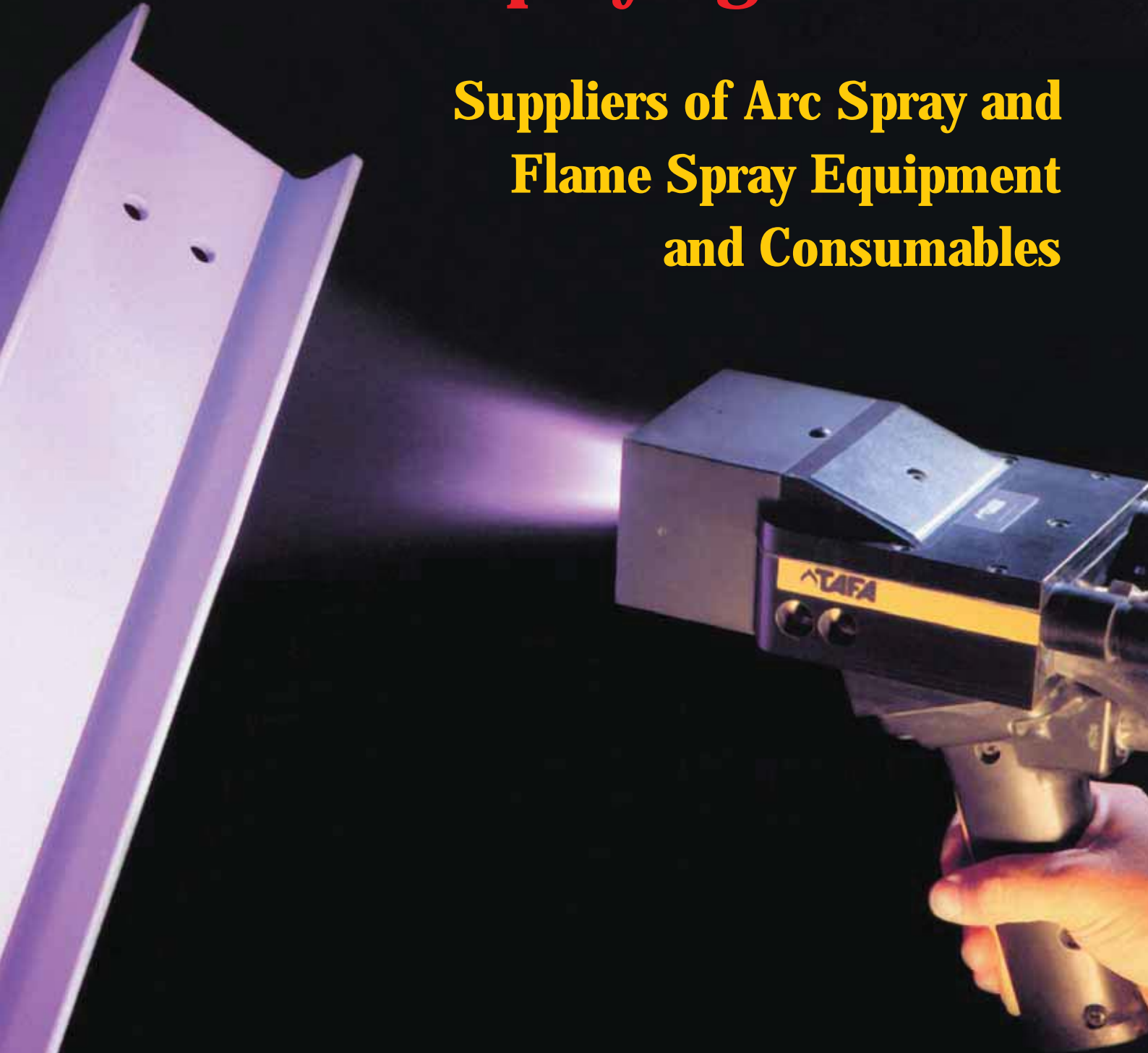
- Brief description about corrosion
  - How zinc protects
- The hot dip galvanizing process
- Inspection before and after hot dip galvanizing
- Multiple choice question test for course effectiveness.

**Should you require some background information on hot dip galvanizing and its acceptance and have a limited formal education, this course is for you!**

Contact our offices for more details.

# Zinc Metal Spraying?

**Suppliers of Arc Spray and  
Flame Spray Equipment  
and Consumables**



**WEARTECH (Pty) Ltd**



**THERMAL SPRAY DIVISION**

187 Galjoen Street, Wadeville  
P.O. Box 14125, Wadeville 1422  
Gauteng, South Africa  
Telephone: (011) 824-6010/2/3/4/5  
Fax: (011) 824-6090  
KZN - Telephone: (031) 466-4461  
CAPE TOWN - Telephone: - (021) 447-4728  
E-mail: [sales@weartech.co.za](mailto:sales@weartech.co.za)  
Website: [www.weartech.co.za](http://www.weartech.co.za)



Hot Dip Galvanizing

# Awards 2014

SPONSORSHIP OPPORTUNITY



The Association has ten Sponsorship packages available for the 2014 Hot Dip Galvanizing Awards.

Each "package" will cost R22 500.00 (excluding Vat) and will provide the following promotional opportunities:

- Your logo will appear on all promotional items relating to the Awards Evening. For example; HDGASA Website (your name will appear as a sponsor, with a link provided to your website or contact details), Menus & Order of Ceremony, Invitations, Electronic Poster Display and the Main Presentation.
- Your logo and/or company name will be featured in our Awards Issue of Hot Dip Galvanizing Today. This magazine is distributed to approximately 5 300 contacts in South Africa, Namibia, Botswana and Internationally.
- Your Company Name will be listed as a sponsor in press releases and publicity material.

We are only able to make TEN of these fantastic opportunities available and these will be awarded on a first-come-first-served basis, **SO DO NOT DELAY IN BOOKING YOUR SLOT!**

Details of the evening itself, which will be held on Friday the 22nd of August in the Ballroom at Montecasino, will be made available soon.



Should you wish to take advantage of this opportunity, please contact  
Saskia at [hdgasa@icon.co.za](mailto:hdgasa@icon.co.za) or (011) 456-7960.

# Eskom coastal sub-stations

## Rietvlei Sub-Station

### Application

The original steelwork for Rietvlei Sub-Station was erected in 1988, to date equalling about 26 years of exposure to moderate marine conditions along the R27 approximately 1.5km from Table Bay.

### The site

Mild marine chlorides are present (see photos). Rietvlei Sub-Station is considered to be about a C3/C4 environment (an envi-

ronment with a zinc corrosion rate of 1 to 4 $\mu$ m/year) in accordance with ISO 9223 or the Association's Information Sheet No 11, Corrosivity of Zinc. Note the corrosion on the painted component.

### Our findings

The hot dip galvanizing is performing above expectation. Judging by the residual coating thickness after removing of the chlorides on the radiators as well as the holding down bolts and nuts, we predict

the galvanizing will provide a further 50 years of service-free life.

## Platteklouf Sub-Station

### Application:

The original steelwork for Platteklouf Sub-Station was erected in 1980, to date equalling about 34 years of exposure to mild marine conditions. The sub-station is situated about seven kilometres from Table Bay (the nearest coast line).

*continued on page 14...*



Rietvlei Sub-Station.



Hot dip galvanized nuts indicating a coating of 137 and 122 $\mu$ m respectively



Coating thickness on the structural steel was well in excess of the required 85 $\mu$ m mean. This reading was 169 $\mu$ m.



Hot dip galvanized radiator surface cleaned of surface contaminants and coating thickness readings of 83.8 and 84.8 $\mu$ m respectively recorded.



Hot dip galvanized coating appearance.



Coating cleaned.



Coating thickness measured 66.5µm.



Painted ring and body showing signs of corrosion in spite of coating thickness of 253µm.



Holding down bolts and nuts.



Holding down bolt coating thickness 73.4µm.



Hot dip galvanized nut 59.8µm.



Electroplated nut 10.4µm.



Coating contaminants removed and residual coating thickness measured 180 and 148µm respectively.



Hot dip galvanized tube cleaned of contaminants and coating thickness readings taken as 106 and 133µm respectively.







Plattekloof Sub-Station.



#### The site

Marine chlorides are absent from the radiators (see photos). Plattekloof Sub-Station is considered to be about a C3 environment (an environment with a zinc corrosion rate of 1 to 2µm/year) in accordance with ISO 9223 or the Association's Information Sheet No 11, Corrosivity of Zinc.

#### Our findings

The hot dip galvanizing is performing to expectation. Judging by the residual coating thickness on the radiators as well as the angle sections on the adjacent pylon structure, we predict the galvanizing will provide a further 30 to 80 years of service-free life.

#### Conclusion on all three Sub-Stations

The coating lives of the hot dip galvanized components in all three sub stations (Duine Sub Station appeared in Magazine No. 57) are living up to expectations of providing a long, service-free life with relatively low maintenance for a cost effective price.

*photos continued on page 16...*

**BULLDOG  
PROJECTS (PTY) LTD**



2010/007276/07

- Abrasive Blasting
- Tank Linings
- Corrosion Protection
- Industrial Painting
- Duplex Coatings
- Shop Coatings
- Site Coatings
- Maintenance Painting
- Epoxy Flooring
- Tape Wrapping

**Mike Book**

Tel: (011) 825 1070

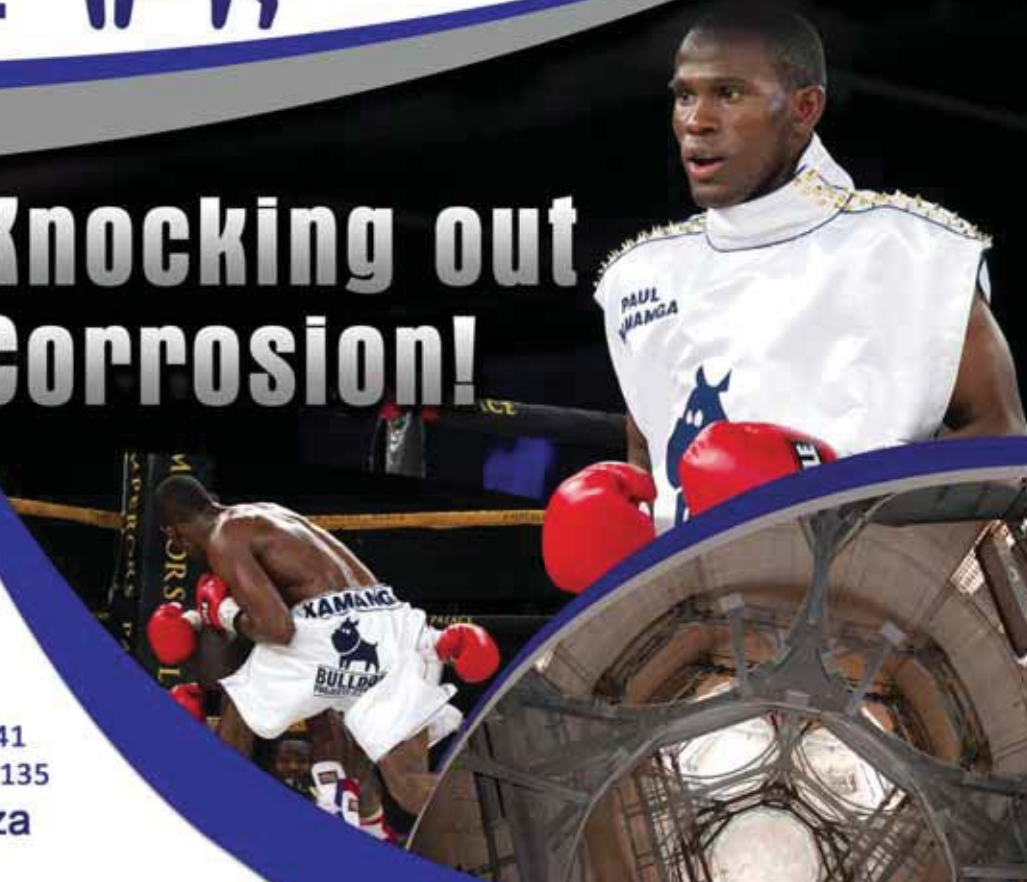
Fax: (011) 825 7832

PO Box 82741

Southdale 2135

[www.bulldogprojects.co.za](http://www.bulldogprojects.co.za)

**Knocking out  
Corrosion!**





Above (left to right) and below (left and centre): Coating thicknesses taken on the transmission pylons of 143, 201, 146, 147 and 173µm respectively.



Hot dip galvanized radiators with coating thicknesses of 69.5 and 65.5µm respectively.



Hot dip galvanized nut on structure and holding down nut 77.3 and 120µm respectively.

Uncoated or failed electroplated clamp.



Discolored hot dip galvanized coating including coating thicknesses of 376 and 338µm respectively.

5 LINCOLN RD, BENONI SOUTH, 1502 | PO BOX 15040, FARRARMERE, 1518

TEL: 011 421 1495 | FAX: 011 421 4737

TEL: 011 420 0912/14



## SMT GALVANIZERS

SMT Galvanizers are specialists in the hot dip galvanizing of all types of fasteners including the treating of embrittlement on site. We do offer a wide variety of services to our clients by creating a comprehensive supply chain for all their galvanizing needs. Our expert services are procured by hand railing, flooring, construction, fabrication, civil and general engineering industries for open dipping.

All work is done according to SABS-ISO 1461/SANS 121 Specifications. SMT Group is SABS and SATAS accredited and BEE compliant.

**SMT Group** offers the following services,

- **Hot dip galvanizing** - spinning and dipping;
- **Electroplating** - Barrel work (Yellow and trivalent blue passivating);
- **Electroplating** - Jigging up to 3.5meters;
- **De-embritteling** on site;
- **Fabrication** workshop with certified welding operators;
- **High Tech engineering workshop** - cnc milling, turning and dynamic balancing;
- **Design and building** of machines to customer requirements;
- **Supply** of electrical spares at the best prices.



**SMT**  
**GALVANIZERS**  
SPINNING &  
DIPPING

SMT Galvanizers (Spinning & Dipping) | [jan@smtgroup.co.za](mailto:jan@smtgroup.co.za)

SMT Electroplaters | [kevin@smtgroup.co.za](mailto:kevin@smtgroup.co.za)

SMT Steel (Engineering) | [bernadette@smtgroup.co.za](mailto:bernadette@smtgroup.co.za)

# Impala Bolt & Nut stays on top of the fastener market

Fastener suppliers Impala Bolt & Nut have gone from strength to strength since implementing their Quality Management System two years ago. The company manufactures and supplies a vast range of fasteners and related products, from commercial to high tensile nuts and bolts, for a diverse range of applications in the engineering, automotive, industrial and mining industries.

"We commenced implementation of an ISO 9001 Quality Management System two years ago", explained Managing Director Derek Cohen, "and achieved full certification via internationally recognized DQS in 2013". This Quality Management System is used throughout the company to manage every aspect of operations including, manufacture, distribution, procurement, quality control, finance, sales and admin. "Having a suitable Quality Management System has opened up new markets, enabling us to design and manufacture specialised products for industries such as automotive, renewable energy and railway", continued Cohen.

Achieving this accreditation has taken the company's high quality standards to another level. The system encourages participation from all members of staff as they strive for improvements in product quality. It's imperative that products meet international standards and specifications such as DIN and ISO, not only for the local market which Impala Bolt & Nut serves but also because some products are exported directly or via customers to overseas markets

The range of products developed and manufactured at Impala Bolt & Nut include

extended thread lengths, high tensile mechanical properties on products normally only available in mild steel, and special corrosion protective coatings designed to withstand arduous environmental conditions. "New product offerings have been well received both locally and internationally", stated Cohen, "with several large million rand orders being received for supply on new projects".

Research and development is an ongoing part of the business, with significant investment in appropriate tooling design and machinery taking place. Some products take several months to develop, as they are subjected to strenuous laboratory testing to ensure they conform to the required standards before full scale manufacture commences. The company has maintained its existing customer base while growing new markets and increasing customer activity by 80% in three years, testimony to the high regard in which their customers hold Impala Bolt & Nut. Recent large projects include energy, mining, infrastructure and port developments in and around Africa.


However, the company is not without challenges. "Many of our skilled staff are between 50 and 60 years old", explained Derek Cohen. "Although we undertake extensive training of our own staff, it's difficult to attract new entrants into the industry who are prepared to spend months and even years learning about the design and manufacture of fasteners".

By world standards, South Africa is still a small market for fasteners, which means

that capital investment in new machinery is difficult to justify. Just as important as manufacturing facilities are ERP systems which enable efficient use of scarce resources to ensure cost effective operations. Most industry players in South Africa use old IT systems that have not kept up with the pace of technology development. Bucking the trend, Impala Bolt & Nut has recently invested in a completely new ERP system which runs everything from enquiry stage through order processing, design, planning and scheduling, manufacture, bills of materials and routings, purchasing, processing and plating, packing and finally delivery and collection of payment. "This system has expanded our capacity to deal with many more complex issues concurrently, while maintaining an efficient facility" said Cohen.

Despite difficult trading conditions and gloomy outlooks in some sectors, there are some encouraging movements in the market that will help the fastener industry. The government has introduced anti-dumping duties from China and increased import duties, which has assisted the local industry by reducing the volume of imports and encouraging local manufacture. "Customers prefer local product with full traceability from raw material stage through to completion, which we are able to provide", Cohen confirms.

While the local industry is still small by world standards, there should be some growth with recent decisions for investment in major expansion projects such as Transnet/Prasa. However it is still vital to ensure that the intended local content targets are adhered to and local manufacturers are given the opportunity to supply product such as fasteners.

Derek Cohen has this to say about supplying the correct fasteners for the required environment. "When supplying fasteners, it is naturally critical to consider all application specific conditions, one of the most important being environment. Many of our projects are in areas of high precipitation and humidity such as on the coast, but also in many mining applications. Hot dip galvanising provides the most cost effective, practical solution, and we try to encourage this type of corrosion protection where possible. We maintain a large inventory of all common sizes so that we can satisfy customer demand quickly". 





## YOUR DIRECT SOURCE OF QUALITY BOLTS, NUTS, WASHERS & SPECIALISED FASTENERS

Impala Bolt & Nut manufactures and supplies a vast range of fasteners and related products for a diverse range of applications in the engineering, automotive, industrial and mining industry. The ability to deliver high quality products with industry-leading customer service is part of the complete package that we provide.

Impala offers access to technical know-how and advice with a direct-to-customer approach, giving you peace of mind that you're getting the right product faster and at the right price.

### Committed to quality

All products are manufactured according to strictly measured processes and to relevant specifications to consistently ensure a high level of quality from design to delivery.

For more information on how we can help you, visit our new website: [www.impalabolt.co.za](http://www.impalabolt.co.za)



### Standard Products

Impala manages a vast warehouse of finished products available ex-stock off the shelf.

METRIC HEXAGON HEAD BOLTS,  
METRIC HEXAGON HEAD  
SCREWS, METRIC ROUND HEAD  
BOLTS, METRIC HEXAGON  
NUTS & WASHERS



### In-house Manufacture

Impala has the flexibility, capacity and expertise to manufacture fully customised fasteners specific to your application.

VIBRATION-PROOF PINS & COLLARS,  
MINING ROOF BOLT COMPONENTS,  
RIVETS, PLOUGH BOLTS,  
GUARD RAIL BOLTS,  
FOUNDATION BOLTS & MORE



### Distribution Chain

No matter where you are based, Impala's fleet of trucks is standing by to deliver your order!

Specialist packaging and labelling is a value-added service for convenience to meet your every need.

# IMPALA BOLT & NUT

Standard bolts, nuts, washers & specialised fasteners for engineering, automotive, industrial & mining

For enquiries call +27 (0)11 824 3925 or email [sales@impalasa.co.za](mailto:sales@impalasa.co.za)



# Fastener availability matrix and participating fastener suppliers

From experience it has been shown that on many occasions at building sites, alternatives to hot dip galvanized such as zinc electroplated fasteners are mistakenly used. In order to provide a similar service life to that of the hot dip galvanized structure, it is important to specify and use hot dip galvanized fasteners to SANS121:2011 (ISO1461:2009) or ISO 10684 as applicable. To this end we provide the following "Fastener Availability Matrix", indicating the feasibility and availability of a range of hot dip galvanized fasteners, etc. Should a particular fastener that you require not be listed, kindly contact one of the participating fastener suppliers at the end of this matrix or the Association.

Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>LOCKING NUTS</b>							
<b>Hard Lock Nuts</b>	Impala Bolt & Nut	MS/HT			M8 – M30	Yes	Yes
	SA Bolt Manufacturers	Gr: 4.8/Gr: 8			M8 – M64	Yes	
	Tel-Screw Products	MS/HT			M8 – M48	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M100	Yes	Yes
<b>Castle Nuts</b>	Tel-Screw Products	MS/Gr: 8			M8 – M100	Yes	
	WLS Fastener Manufacturing Co. cc	MS/Gr: 8			M8 – M100	Yes	
<b>Steel Hex Lock Nuts</b>	SA Bolt Manufacturers	MS			M8 – M64	Yes	
	Tel-Screw Products	MS/HT			M8 – M100	Yes	
	WLS Fastener Manufacturing Co. cc	MS			M8 – M100	Yes	Yes
<b>Crimped Nuts</b>	Impala Bolt & Nut	MS			M8 – M48	Yes	
	Tel-Screw Products	MS			M8 – M48	Yes	
<b>Locking Washers</b>	Tel-Screw Products	MS			M8 – M52	Yes	
	WLS Fastener Manufacturing Co. cc	MS			M8 – M52	Yes	Yes
<b>Nyloc Nuts</b> <small>Most smaller size nyloc nuts are only available in electroplated form. Refer to Cleeve Lock Nuts below.</small>	CBC Fasteners	Gr: 8			M6 – M48		
	Impala Bolt & Nut	Gr: 8			M6 – M48		
	Tel-Screw Products	Gr: 8			M6 – M48		
<b>Cleeve Lock Nuts</b>	Tel-Screw Products	Gr: 8			M8 – M30	Yes	
	WLS Fastener Manufacturing Co. cc	Gr: 8			M8 – M30	Yes	
<b>Prevailing Torque Hex Lock Nuts</b>	Tel-Screw Products	Gr: 8 & 10	DIN 980V		M8 – M30	Yes	
<b>NORMAL NUTS</b>							
<b>Hex OS Nuts</b>	CBC Fasteners	Gr: 8	DIN 934	ISO 4032	M8 – M30	Yes	Yes
	Impala Bolt & Nut	Gr: 8	DIN 934		M8 – M30	Yes	Yes
	SA Bolt Manufacturers	MS/Gr: 8 & 10	DIN 934	ISO 4032	M8 – M64	Yes	Yes
	Tel-Screw Products	Gr: 8; 10 & 12	DIN 934	ISO 4032	M8 – M64	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M100	Yes	Yes
<b>Hex Long OS Nuts</b>	Tel-Screw Products	MS/HT	TSP		M8 – M48	Yes	
	WLS Fastener Manufacturing Co. cc	MS	DIN 934	ISO 4032	M8 – M100	Yes	Yes
<b>Shear Nuts or Anti-vandal Nuts</b>	Impala Bolt & Nut	MS			M8 – M16		Yes
	SA Bolt Manufacturers	MS/HT			M12 – M24	Yes	Yes
	Tel-Screw Products	MS/HT			M8 – M48	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M24	Yes	Yes
<b>Flanged Nuts</b>	SA Bolt Manufacturers	MS HT			M8 – M36	Yes	Yes
	Tel-Screw Products	MS/HT			M8 – M36	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M16	Yes	Yes
<b>WASHERS</b>							
<b>Thru Hardened Washers</b>	CBC Fasteners	Gr: 8			M6 – M48	Yes	
	Impala Bolt & Nut	MS	DIN 6916		M10 – M30	Yes	

continued on page 22...



## Technical Innovation in Steelwork Connections

### The original, the expert

- Inventor of steelwork clamping systems
- Over 75 years experience
- Case studies available on virtually any application on high profile projects from across the globe (*visit [www.lindapter.com](http://www.lindapter.com) for more information*)
- Technical support includes free design from qualified Lindapter Engineers
- R&D department for custom product development

### Only Lindapter offers

- Hollo-Bolt® the only cavity fixing to be recognised for primary structural use by both SCI and BCSCA
- Extreme strength fixings e.g. Type AF Girder Clamp (250kN)
- Huge range of unique products includes:
  - Type CF (High Friction)
  - Type AF (High Tension & Friction)
  - Type LS (Stainless Steel)
  - Hollo-Bolt (for HSS)

**lindapter**®  
Established 1934

### Benefits

- For primary and secondary steelwork
- No on-site drilling or welding
- Fast, cost effective installation
- On-site adjustability
- No weakening/damage to steelwork
- Hot working permits not required
- Only hand tools required
- Independent quality approvals

**STRUTFAST**

Official Distributor of Lindapter in Southern Africa

#### Johannesburg

T: +27 (0) 11 473 1212

E: [sales@strutfast.co.za](mailto:sales@strutfast.co.za)

#### Pretoria

T: +27 (0) 12 804 9393

E: [ptasales@strutfast.co.za](mailto:ptasales@strutfast.co.za)

Alternatively, visit the website: [www.strutfast.co.za](http://www.strutfast.co.za)



Steelwork Fixings



Cavity Fixings



Composite Decking Fixings



Support Fixings



Floor Fixings

Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>WASHERS (continued)</b>							
<b>Thru Hardened Washers (continued)</b>	SA Bolt Manufacturers	Gr: 8			M8 – M64	Yes	
	Tel-Screw Products	MS	DIN 6916		M10 – M64	Yes	
	WLS Fastener Manufacturing Co. cc	MS	DIN 6916		M8 – M64	Yes	Yes
<b>Flat Washers</b>	Impala Bolt & Nut	MS	DIN 120/125		M8 – M30		Yes
	SA Bolt Manufacturers	MS	DIN 120/125		M8 – M64	Yes	
	Tel-Screw Products	MS	DIN 120/125		M8 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS	DIN 120/125		M8 – M100	Yes	Yes
<b>Square Flat Washers</b>	SA Bolt Manufacturers	MS			M8 – M30	Yes	
	Tel-Screw Products	Specially manufactured to order			M6 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M100	Yes	Yes
<b>Square Curved Washers</b>	SA Bolt Manufacturers	Specially manufactured to order			M16 – M30	Yes	
	Tel-Screw Products	Specially manufactured to order			M6 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	Specially manufactured to order			M6 – M100	Yes	Yes
<b>Spring Washers</b>	Impala Bolt & Nut		DIN 127		M8 – M30		Yes
	SA Bolt Manufacturers		DIN 127		M8 – M48	Yes	
	Tel-Screw Products		DIN 127		M8 – M64	Yes	
	WLS Fastener Manufacturing Co. cc				M8 – M36	Yes	Yes
<b>BOLTS AND SCREWS</b>							
<b>Hex Head Screws</b>	CBC Fasteners	MS	DIN 558	ISO 4018	M18 – M30	Yes	Yes
	CBC Fasteners	Gr: 8.8 & 10.9	DIN 933	ISO 4017	M8 – M30	Yes	Yes
	Impala Bolt & Nut	MS	DIN 658		M8 – M24		Yes
	Impala Bolt & Nut	Gr: 8.8	DIN 933		M8 – M30		Yes
	SA Bolt Manufacturers	MS/Gr 8.8; 10.9; 12.9	DIN 933		M8 – M72	Yes	Yes
	Tel-Screw Products	MS/Gr: 8.8			M8 – M39	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT	DIN 558/933	ISO 4016/4017	M8 – M100	Yes	Yes
<b>Hex Head Bolts and OS Nuts</b>	CBC Fasteners	MS	DIN 601	SABS 135	M8 – M30	Yes	Yes
	Impala Bolt & Nut	MS	DIN 931		M8 – M30	Yes	Yes
	SA Bolt Manufacturers	MS	DIN 601		M10 – M64	Yes	Yes
	Tel-Screw Products	MS/HT	DIN 601		M8 – M39	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS	DIN 601		M8 – M100	Yes	Yes
<b>Hex Head Bolts and OS Nuts (High tensile)</b>	CBC Fasteners	Gr: 8.8 & 10.9	DIN 931	ISO 4014	M8 – M30	Yes	Yes
	Impala Bolt & Nut	Gr: 8.8 & 10.9	DIN 931		M8 – M30	Yes	Yes
	SA Bolt Manufacturers	Gr 8.8; 10.9; 12.9	DIN 931		M10 – M64	Yes	Yes
	Tel-Screw Products	Gr 8.8; 10.9; 12.9	DIN 931	ISO 4014	M10 – M64	Yes	Yes
	WLS Fastener Manufacturing Co. cc	HT	DIN 931		M8 – M100	Yes	Yes
<b>Large Dia Bolts and OS Nuts</b>	CBC Fasteners	Gr: 8			M30 – M76	Yes	
	SA Bolt Manufacturers	Gr: 8.8 & 10.9			M27 – M64	Yes	
	Tel-Screw Products	MS/Gr: 8.8			M36 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS HT			M39 – M100	Yes	
<b>Cup Head Square Neck Bolts and OS Nuts</b>	CBC Fasteners	MS	SABS 1143		M8 – M20	Yes	Selected
	Impala Bolt & Nut	MS	DIN 603		M8 – M16	Yes	Certain sizes
	SA Bolt Manufacturers	MS	DIN 603		M8 – M24	Yes	
	Tel-Screw Products	MS	DIN 603	SABS 1143	M8 – M20	Yes	Selected
	Tel-Screw Products	Gr: 8.8	DIN 603	SABS 1143	M8 – M30	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M20	Yes	Certain sizes
<b>C/Sunk Square Neck Bolts and OS Nuts</b>	CBC Fasteners	MS	SABS 1143		M10 – M20	Yes	
	Impala Bolt & Nut	MS	DIN 605		M10 – M16	Yes	
	SA Bolt Manufacturers	MS	DIN 605		M8 – M33	Yes	
	Tel-Screw Products	MS/HT	SABS 1143		M8 – M30	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M10 – M20	Yes	



Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>BOLTS AND SCREWS (continued)</b>							
<b>C/Sunk Nib Bolts and OS Nuts</b>	CBC Fasteners	MS	SABS 1143		M12 – M24	Yes	
	Impala Bolt & Nut	MS	DIN 604		M10 – M20	Yes	
	SA Bolt Manufacturers	MS	DIN 604		M12 – M36	Yes	
	Tel-Screw Products	MS	SABS 1143		M8 – M24	Yes	
	WLS Fastener Manufacturing Co. cc	MS			M12 – M24	Yes	
<b>Friction Grip Bolts and Nuts</b>	CBC Fasteners	Gr: 8.8S & 10.9		EN 14399	M16 – M30	Yes	
	CBC Fasteners	Gr: 8.8S & 10.9S	SABS 1282	ISO 7411	M12 – M30	Yes	
	Impala Bolt & Nut	Gr: 8.8S & 10.9S			M12 – M30		Yes
	SA Bolt Manufacturers	Gr: 8.8 & 10.9S			M12 – M48	Yes	
	Tel-Screw Products	Gr: 8.8 & 10.9S	SABS 1282	ISO 7411	M8 – M48	Yes	
<b>Hex Socket C/Sunk Head Screws</b>	SA Bolt Manufacturers	Gr: 10.9 & 12.9			M8 – M48	Yes	
	Tel-Screw Products	Gr: 10.9 & 12.9			M8 – M48	Yes	
	WLS Fastener Manufacturing Co. cc	HT 10.9 & 12.9			M8 – M48	Yes	
<b>Lockbolts</b>	Impala Bolt & Nut Pins & Collars 1/2" - 7/8"	8.8 Pins/6.8 collars			1/2" – 7/8" (imperial)	Yes	
	SA Bolt Manufacturers	8.8 Pins/6.8 collars			1/2" – 7/8" (imperial)		
<b>Pigtails – 1 &amp; 1 1/2 Turn</b>	Tel-Screw Products	MS			M8 – M72	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M24	Yes	Yes
<b>3m – Threaded Rod</b>	Impala Bolt & Nut	MS/HT	DIN 975		M8 – M24	Yes	
	SA Bolt Manufacturers	MS/HT	DIN 975		M8 – M36	Yes	
	Tel-Screw Products	MS/HT	DIN 975		M10 – M72	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS	DIN 975	ACME	M8 – M100	Yes	Yes

continued on page 24...

# S.A. BOLT MANUFACTURERS

(PTY) LTD

*keeping it together with a name you can trust*

• Commercial mild steel and high tensile bolts and nuts • Fasteners for power transmission and communication towers, mining, railways and heavy engineering • Avlock fastening systems



[www.sabolt.co.za](http://www.sabolt.co.za)

Established in 1966, SA Bolt Manufacturers is a manufacturer and distributor of industrial fasteners, serving local and international markets. Address: 19 First Avenue, Vorsterskroon, Nigel • P.O. Box 1939, Nigel 1490  
Tel: +27 11 814 2240 • Fax: +27 11 814 2249 • e-mail: [info@sabolt.co.za](mailto:info@sabolt.co.za)

Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>BOLTS AND SCREWS (continued)</b>							
<b>1m – Threaded Rod</b>	CBC Fasteners	MS	DIN 975				
	Impala Bolt & Nut	MS/HT	DIN 975		M8 – M24	Yes	Selected
	SA Bolt Manufacturers	MS/HT	DIN 975		M8 – M36	Yes	
	Tel-Screw Products	MS/HT	DIN 975		M8 – M72	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS	DIN 975	ACME	M8 – M100	Yes	Yes
<b>HD Bolts (Foundation Bolts) and OS Nuts</b>	Impala Bolt & Nut	MS/350WA			M8 – M72	Yes	
	SA Bolt Manufacturers	MS/HT			M12 – M72	Yes	Selected sizes
	Tel-Screw Products	MS/HT			M8 – M72	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT	TO DWG		M8 – M100	Yes	Yes
<b>CONCRETE ANCHOR BOLTS</b>							
<b>Rawbolts</b>	WLS Fastener Manufacturing Co. cc				M8 – M24	Yes	
<b>Chemical Anchors with Studs</b>	SA Bolt Manufacturers	EN8			M8 – M30	Yes	
	Tel-Screw Products	MS/HT			M8 – M36	Yes	Yes
	WLS Fastener Manufacturing Co. cc	EN8/8.8			M8 – M76	Yes	Yes
<b>Concrete Anchor Bolts</b>	Tel-Screw Products	MS			M8 – M36	Yes	
	WLS Fastener Manufacturing Co. cc	MS/8.8			M8 – M36	Yes	Yes
<b>Concrete Expansion Bolts</b>	Tel-Screw Products	MS/HT			M8 – M30	Yes	
	WLS Fastener Manufacturing Co. cc	MS/8.8			M8 – M30	Yes	Yes
<b>MISCELLANEOUS</b>							
<b>Type 17 Self Drilling Screws</b>	WLS Fastener Manufacturing Co. cc				#8 – #14	Yes	
<b>Gutter or Veranda Bolts</b>	Tel-Screw Products	MS			M8 – 12 – 100mm	Yes	
<b>Self Drilling Screws</b> <small>SDS can be successfully hot dip galvanized but due to a slight thread softening, a smaller diameter pilot hole must first be drilled</small>	WLS Fastener Manufacturing Co. cc	MS			#12 + 14	Yes	
<b>Cast-In Lifting Sockets</b>	Tel-Screw Products	MS/HT		BBA	M8 – M24	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT		BBA	M6 – M36	Yes	Yes
<b>SPECIAL FASTENERS</b>							
<b>Countersunk Machine Screws</b>	Tel-Screw Products	MS/HT	DIN 963 & 965		M8 – M36	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT	DIN 963 & 965		M8 – M100	Yes	
<b>Round U-Bolts</b>	SA Bolt Manufacturers	MS/HT			M8 – M72	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT			M6 – M100	Yes	Yes
<b>Square U-Bolts</b>	SA Bolt Manufacturers	MS/HT			M8 – M76	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M76	Yes	
<b>TV U- Bolts</b>	Tel-Screw Products	MS/HT			M8 – M76	Yes	Yes
<b>Hook Bolts</b>	SA Bolt Manufacturers	MS/HT			M8 – M76	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M76	Yes	
<b>Channel Bolts</b>	Tel-Screw Products	MS/HT			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M76	Yes	
<b>J-Bolts</b>	SA Bolt Manufacturers	MS/HT			M8 – M76	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M100	Yes	
<b>Eye-Bolts</b>	SA Bolt Manufacturers	MS			M8 – M76	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M76	Yes	
<b>Straining Eye-Bolts</b>	Tel-Screw Products	MS/HT			M8 – M76	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS			M8 – M24	Yes	
<b>Linked Eye-Bolts</b>	Tel-Screw Products	MS/HT			M8 – M76	Yes	

Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>SPECIAL FASTENERS (continued)</b>							
Linked Eye Rods	Tel-Screw Products	MS/HT			M8 – M76	Yes	
Forged Eye-Bolts	SA Bolt Manufacturers	MS/HT			M8 – M30	Yes	
	Tel-Screw Products	MS/HT			M8 – M30	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M72	Yes	
Welded Eye-Bolts	Tel-Screw Products	MS			M8 – M36	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M76	Yes	
Scaffold Rings	Tel-Screw Products	MS			M8 – M16	Yes	
Threaded Studs	SA Bolt Manufacturers	MS/HT			M8 – M76	Yes	
	Tel-Screw Products	MS/HT			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT	ACME	Trapizoidal	M8 – M100	Yes	Yes
Tie Rods	Tel-Screw Products	MS/HT			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT	ACME	Trapizoidal	M8 – M100	Yes	
Other specials	Impala Bolt & Nut	All specials relating to fasteners			M8 – M72	Yes	
	SA Bolt Manufacturers	Any special manufactured fasteners				Yes	
	Tel-Screw Products	Specials manufactured to order			M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT Specials manufactured to order			M8 – M150	Yes	
Domed Head or Cap Nuts	Tel-Screw Products	MS/HT	DIN 1587		M8 – M76	Yes	
	WLS Fastener Manufacturing Co. cc	MS/HT			M8 – M100	Yes	
Hex Coach Screws	SA Bolt Manufacturers	MS			M8 – M20	Yes	
	Tel-Screw Products	MS	DIN 7976		M8 – M12	Yes	Yes
	WLS Fastener Manufacturing Co. cc	MS/HT	DIN 7976		M8 – M36	Yes	

continued on page 26...



**SALES**

Tel: (011) 882-1150/1/2/3/4/5 Cell: 082-443-9213  
 Fax: (011) 882-1043 Web: www.wlsfast.co.za  
 e-mail: wlskerry@telkomsa.net

**FOR ALL YOUR FASTENER REQUIREMENTS**



**FASTENERS MANUFACTURED TO MEET THE NEEDS OF THE SA CONSTRUCTION INDUSTRY TODAY AND TOMORROW**

- General steel fabrication and Hot Dip Galvanizing to SANS 121.
- **BEFORE AND AFTER SALES TECHNICAL ADVISORY SERVICE.**
- Sole Agents and importers of K-A-L-M Fixing Systems, Germany.

- Standard and custom industrial and construction fastening systems to customers' specifications in steel, stainless steel, brass, aluminium and titanium.
- Specialists in customised foundation bolts and cast-in items for major construction projects throughout Africa as a whole.



Type of fastener	Company	Steel grade	Specification	Specification	Available sizes	Hot dip galvanized galvanized to order	Hot dip galvanized ex stock
<b>Lindapter Clamps</b>							
A	Lindapter Strutfast	Malleable Iron			M8 – M24	Yes	Yes: M12, M16 & M20
B	Lindapter Strutfast	Malleable Iron			M8 – M24	Yes	Yes: M12, M16 & M20
AF	Lindapter Strutfast	SG Iron			M12 – M24	Yes	Yes: M12, M16 & M20
CF	Lindapter Strutfast	SG Iron			M12 – M20	Yes	Yes: M12, M16 & M20
LR	Lindapter Strutfast	Malleable Iron			M10 – M24	Yes	
D2	Lindapter Strutfast	Malleable Iron			M10 – M24	Yes	
BR	Lindapter Strutfast	Malleable Iron			M12 – M24	Yes	
RC	Lindapter Strutfast	Forged Steel			M12 – M24	Yes	
HD	Lindapter Strutfast	Malleable Iron			M20 – M24	Yes	
<b>Hollo-Bolts</b>							
HB Standard Hollow-Bolt	Lindapter Strutfast	Steel			M8 – M20	Yes	Yes: M8 – M12
<b>Floor Fixings</b>							
FF Floorfast	Lindapter Strutfast	Malleable Iron			M8 – M12	Yes	Yes: M12
GF Gratefast	Lindapter	Malleable Iron			M8 – M12	Yes	Yes: M10

OS – Over Sized / MS – Mild Steel / HT – High Tensile

THE ABOVE FASTENER AVAILABILITY MATRIX IS NOT NECESSARILY COMPREHENSIVE AND TOTALLY REPRESENTATIVE OF THE FASTENER SUPPLY INDUSTRY BUT INCLUDES PARTICIPATING MANUFACTURERS AND STOCKISTS.

THE ASSOCIATION ASSUMES THAT ALL PARTICIPATING COMPANIES IN THE MATRIX, DO IN FACT STOCK OR ORDER HOT DIP GALVANIZED FASTENERS WHEN REQUESTED TO DO SO. THE ASSOCIATION THEREFORE, EXCLUDES ITSELF FROM THE RESPONSIBILITY OF ENSURING THAT ALL FASTENERS OFFERED WILL IN FACT BE HOT DIP GALVANIZED, BY THESE COMPANIES.

SHOULD ANYONE USING THIS MATRIX FIND INACCURACIES OR ERRORS OR HAVE ADDITIONAL SUGGESTIONS, KINDLY CONTACT THE EDITOR.



## TEL-SCREW PRODUCTS

**Manufacturers of Special Bolts & Nuts to customer specifications SINCE 1970...**

Bolts & Nuts are our Game - Service & Quality our Aim

**U-Eye-J-Foundation & Straining Bolts/Studs**  
**All types of Screw Cutting & Thread Rolling**  
**Hot Forging from M8 to M36 x 1000**  
**Cold Heading, Knurling, Special Nuts,**  
**Forging, Machining from Ø6mm to Ø250 mm**  
**Electric Line Products / Tool Room Facilities**



**SALES HOTLINE: 011 898-3200**  
 25 Lorna Road - Muswelldale - Boksburg North - Gauteng  
 Website: [www.telscrew.co.za](http://www.telscrew.co.za) / E-mail: [info@telscrew.co.za](mailto:info@telscrew.co.za)

Small enough to care – Big enough to perform

Bolts & Nuts are our Game - Service & Quality our Aim

PARTICIPATING FASTENER SUPPLIERS CONTACT DETAILS	
<b>CBC Fasteners</b>	Tel: 011 767 0000 Email: <a href="mailto:tech@cbc.co.za">tech@cbc.co.za</a> Web: <a href="http://www.cbc.co.za">www.cbc.co.za</a>
<b>Impala Bolt &amp; Nut</b>	Tel: 011 824 3925 Email: <a href="mailto:adiamond@impalasa.co.za">adiamond@impalasa.co.za</a> Web: <a href="http://www.impalabolt.co.za">www.impalabolt.co.za</a>
<b>Lindapter</b>	Tel: +44 (0) 1274 521444 Email: <a href="mailto:enquiries@lindapter.com">enquiries@lindapter.com</a> Web: <a href="http://www.lindapter.com">www.lindapter.com</a>
<b>SA Bolt Manufacturers</b>	Tel: 011 814 2240 Email: <a href="mailto:info@sabolt.co.za">info@sabolt.co.za</a> Web: <a href="http://www.sabolt.co.za">www.sabolt.co.za</a>
<b>Strutfast</b>	Tel: 011 473 1212 Email: <a href="mailto:sales@strutfast.co.za">sales@strutfast.co.za</a> Web: <a href="http://www.strutfast.co.za">www.strutfast.co.za</a>
<b>Tel-Screw Products (Pty) Ltd</b>	Tel: 011 898 3200 Email: <a href="mailto:info@telscrew.co.za">info@telscrew.co.za</a> Web: <a href="http://www.telscrew.co.za">www.telscrew.co.za</a>
<b>WLS Fasteners</b>	Tel: 011 882 1150 / 012 541 9105/6 Email: <a href="mailto:wlsandrew@telkomsa.net">wlsandrew@telkomsa.net</a> Web: <a href="http://www.wlsfast.co.za/www.kalm.de">www.wlsfast.co.za/www.kalm.de</a>



QUALITY SPECIALISTS IN SPIN, DIP AND DRAGLINE GALVANISING



## CORROSION PROTECTION FOR CARBON STEEL

BECAUSE SOMETHING AS TOUGH AS STEEL NEEDS PROTECTION TOO

Transvaal Galvanisers are capable of meeting any and all requirements with regards to hot dip galvanising.

With 30 years experience in the galvanising industry, Transvaal Galvanisers ensure the highest quality product, at the most competitive prices.

Having 5 galvanising plants allows for a combined capacity of 10 000 tons per month.

# POLASA fills dire need

Since the launch of the Powerline Association of South Africa (POLASA) in August 2014, it has grown exponentially with more than 30 members of the industry having joined. "This clearly indicates the dire need for this organisation and for its members to have representation in the complex commercial and political environment in which they operate," says POLASA chairman Gary Whalley.

He adds that Eskom too has welcomed the POLASA initiative. "They are grateful to be able to talk to industry without being exposed to selective sharing of information or allowing individual interests to dominate discussions," says Whalley.

According to the Southern African Institute of Steel Construction's (SAISC) Kobus de Beer, one of the main architects of the formation of POLASA, one of POLASA's central concerns was the use by Eskom of World Bank funding for the new Medupi power lines.

"The concern is that in terms of World Bank rules Eskom is not allowed to specify local content and that the "designation" ruling by Minister Rob Davies on power pylons would therefore not apply. After an appeal to the Minister the exception was confirmed and the South African industry is forced to compete head on with the internationals," says de Beer.

He adds, however, that it has been officially confirmed that the 15% import duties on these products from overseas will still apply. "POLASA is making every effort to encourage and assist its members to compete head on for the World Bank funded power line jobs now being issued," says de Beer.

A number of other issues are also being explored such as possibly offering finance on power line projects, participation in the 18 CIPP preparation teams to provide input on South African capabilities, the giving of technical and other comments for Eskom Standards and becoming more actively involved with distribution in South Africa. In addition, efforts continue to get the DTI to formally "designate" all power line hardware, which Eskom says is already in the process of being implemented.


De Beer says that more work needs to be done to inform the DTI and other relevant bodies on the power line industry and its char-

acteristics. "We have developed a detailed "Industry Paper", which sets out the history of the industry and analyses its current status and needs. This will be submitted to the various parties and properly work-shopped in time."

"POLASA will also continue to promote the development, growth and flexibility of its members through, inter alia, training and education initiatives, the development of export markets, adding value to engineering issues applicable to the industry in close co-opera-

tion with the SAISC, adding value to Eskom activities by creating a platform to facilitate bilateral discussions between Eskom and industry on issues not dealt with elsewhere, the publishing of various design and engineering handbooks and the organising of seminars, talks and conferences," de Beer concluded.

*POLASA is a sub-association of SAISC and for more information please go to*

*www.saisc.co.za or call (011)726-6111* 

## The value of a quality management system

There may be a number of ways to increase sales and revenue in any business. However, not all systems are measurable enough to produce substantial return on investment.

Although customer service initiatives and programmes are good for any business and its image, it only provides part of the data investors or stakeholders require to make necessary fiscal and operational decisions.

Fortunately there is an internationally-recognised system that has been introduced to South Africa, the ISO 9001:2008. Owing to this system's focus on quality control management, through a series of processes, it guarantees an increase in three areas of business:

1. Shareholder value
2. Positive consumer response
3. Product / Service quality.

Companies have already noticed this improvement in the overall efficacy of their businesses. One company that has implemented this quality management system is Cabstrut, a cable reticulation management solutions company.


"The ISO 9001 ensures that our employees understand the importance of quality

control," says Theon Steyn, General Manager of Cabstrut.

What makes this system especially useful to Cabstrut is that through its quality management processes it not only ensures efficient running throughout every department, but, as Steyn confirms, "... it helps control product quality so that customers are consistently satisfied and confident with Cabstrut's products."

Moreover, since business objectives are set out before this system is put in place, the monitoring of product quality as outlined by the ISO 9001, the process becomes simpler and more streamlined. This will have an effect, therefore, on customer satisfaction, which will follow to enhance sales and offer a larger share in the market.

"We are pleased that we have made this transition within our business," says Steyn, "because the ISO 9001 system has already contributed significantly to the quality Cabstrut provides."

*For more information on Cabstrut's ISO 9001 certification, please contact Theon Steyn on e-mail [tsteyn@voltex.co.za](mailto:tsteyn@voltex.co.za) or 011 622 8633.* 

# Central Support Systems leading the market



The Central Support Systems sales team led by Mr Faruk Cassim. The company owes much of its success to the dedication and hard work of this team.



**Central Support Systems CC**  
Your Connection to Quality Cable Management

**Suppliers and Distributors of :**  
Power Skirting • Cable Ladder • Cable Tray  
Channel & Trunking • Power Pole • Wire Mesh Tray



**www.centralsupportsystems.com**

Central Support Systems is the top Supplier and Leader of Electrical Strut and Cable Support Systems for the Commercial and Industrial Environment in Southern Africa.

99 Barney Simon Road, Newtown Johannesburg. Tel: +27 11 492 2314 Fax: +27 11 492 2319  
Email: [centralsupports@xsinet.co.za](mailto:centralsupports@xsinet.co.za)

*Over the past 18 years, Central Support Systems cc has built itself into a market leader within the Electrical Strut Industry.*

*Our mission has been to supply our valued customers with the right product at the right price, as efficiently and as courteously as possible.*

*We would like to thank our loyal customers, who have supported us through the years. We will endeavor to continue supporting our customers with the best service we can, and wherever possible, to improve our service.*

*Should you wish to experience service excellence and have not used the services of Central Support Systems previously, please contact any member of our sales team by phone or via email on the information supplied in our advert. Our sales team will be looking forward to your call.*



**3  
CPD POINTS**

## 3-day Galvanizers Inspectors Course

Hot dip galvanizing is one of the most widely used methods of protecting steel from corrosion. During and after fabrication and after hot dip galvanizing the coating is inspected for compliance with the relevant specifications.

The course commences at a selected venue where course material is presented and reviewed, the lecturer encourages discussions between delegates and himself. Each lecture is preceded by a number of pertinent questions on the previous lecture.

Once the delegates have a reasonable knowledge of the coating, including its inspection criteria, the venue moves to a selected galvanizer where a batch of incoming components are discussed en-group and then in teams, preselected hot dip galvanized components are inspected and reports are required to be completed.

If available at the galvanizer or other venue, preparation by sweep blasting and/or chemical treatment is demonstrated and duplex coatings are discussed.

The course will provide delegates with sufficient knowledge to advise on fabrication for successful hot dip galvanizing and also test, inspect and interpret test results after hot dip galvanizing.

### COURSE DURATION AND CONTENTS

Day 1	(08h00 to 16h00)
Lecture 1	Introduction to the Environment, Steel & Corrosion
Lecture 2	Understanding Zinc Coatings (How does Zn protect) ISO 9223 & 12944
Lecture 3	Designs, Fabrication and Inspection before hot dip galvanizing SANS (ISO) 14713:1999
Lecture 4	General Hot Dip Galvanizing Processes SANS 121 (ISO 1461:2009) Batch type galvanizing SANS 32 (EN 10240: 1997) Automatic T & P SANS 10094:2007 HDG of Friction Grip Fasteners
Day 2	(07h00 to 16h00)
	Hot Dip Galvanizing Plant Visit and Inspection
Lecture 5	Duplex Coatings and HDG Reinforcement in Concrete
Day 3	(08h00 to Completion of Exam)
Lecture 6	Inspections after Hot Dip Galvanizing
Lecture 7	Quality Assurances in Coating Applications Application of specifications Control documentation for a QA System Examination on Course Effectiveness

Course schedule may be altered and interesting activities added for the benefit of delegates.

Following the course and successful result in a three part exam, the delegate will be issued with a certificate and if required, registered as an approved HDGSA Galvanizing Inspector. Registration will be confirmed on an annual basis. Successful galvanizing inspectors will become Affiliate Galvanizing Inspector Members of the HDGASA for the year.

### VENUE AND NUMBER OF DELEGATES

The courses are usually run in Johannesburg from the Hot Dip Galvanizers Association in St Andrews, Bedfordview and also from a suitable venue in Cape Town. Bookings are limited to 10 people per course on a first come first serve basis. Courses in other areas are possible, contact HDGASA.

### DATE AND TIME

Courses commence at 08h00 sharp and end at 16h30 (or as otherwise instructed). Lunch and refreshments will be provided. Comprehensive course notes can be collected from our offices two weeks before the course (this is highly recommended).

Johannesburg:  
25 to 27 February; 18 to 20 March; 13 to 15 May; 24 to 26 June; 12 to 14 August; 7 to 9 October; 25 to 27 November.

Cape Town:  
4 to 6 March; 3 to 5 June; 16 to 18 September.

Special courses can be arranged for a minimum of 6 delegates at appropriate venues in South Africa.

### COURSE COST AND PAYMENT TERMS

R4 200.00 per person exclusive of VAT. Should you have two or more delegates from the same company, course costs will be R4 000.00 per person exclusive of VAT. Please note that payment is due on the first day of training. Cheques are to be made out to "Hot Dip Galvanizers Association SA". Members qualify for a discount.

### CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)

By attending the Association's 3 day course Galvanizing Inspectors Course, you will obtain 3 points (accredited by ECSA).



**SHOULD YOU BE INTERESTED, KINDLY CONTACT SASKIA SALVATORI AT THE ASSOCIATION**





# On the Couch.....

By Desere Strydom

## Professor Albrecht Herholdt

I stumbled across a CPD Event hosted by the Eastern Cape Institute for Architecture. Nothing unusual about this, however the subject was Hot Dip Galvanizing and the presenter Professor Albrecht Herholdt – an Eastern Cape ARCHITECT! This fact tickled my curiosity immensely and *On the Couch* caught up with Architect, Heritage Specialist, Lecturer, Author and HDG Enthusiast **Professor Albrecht Herholdt** at his busy practice in P.E., **The Matrix...cc Urban Designers and Architects**.

Albrecht Herholdt qualified from the University of the Free State (cum laude) in 1977 whilst simultaneously studying B Mus through UNISA. In 1987 he completed a Masters of Architecture (research) at the University of Port Elizabeth. Always busy with many things at the same time he has been involved with many of the facets of architecture. This includes teaching, writing, practicing and serving on professional associations.

He lectured at the NMMU (formerly UPE) from 1984 to 2009. His main involvement was with the teaching of design and theory of architecture for the 3rd and 5th years. Under his guidance his students won many national and international competitions. He was also responsible for conservations surveys of Steytlerville, Aberdeen, Nieu Bethesda, Uitenhage and Wellington (Western Cape). He won the Cape Times Centenary Award for his publications on the conservation of small towns in the Eastern Cape. He also published a monograph on the oeuvre of architect William White-Cooper and a book on the eight Gothic Revival Churches of Central, Port Elizabeth.

Albrecht is the director (since 2001) of The Matrix...cc Urban Designers and Architects. The practice has won 14 awards to date,

including regional and national Awards of Merit, many for conservation projects. Their work has been widely published. The practice is known for their innovative work, outstanding detailing and response to context. Albrecht has shown an interest in and has designed some very unusual industrial design objects. The Matrix practices green principles and has recently motivated the 10111 SAPS Call Centre in Port Elizabeth for a four star as-built rating. The practice attracts students from all over the world to work in their offices.

In 2013 he published *Coastal Contemporary* highlighting 55 of the best buildings erected in the Nelson Mandela Bay Municipality in the period 2000 to 2013. His most recent publication *Architectural Conservation in South Africa since 1994: 100+ projects* is a seminal book on the subject and has attracted world-wide attention.

He has already started on the next book: *Architectural Competitions in South Africa since 1994* (working title) and it has already generated international reaction, mostly from the USA.

Albrecht has co-ordinated eight national and international architectural competitions so far. The list include some of the most important competitions held in South Africa to date, including the Transformation of Red Location, The modernisation of Anglo American's Johannesburg campus, Sarah Bartmann Memorial Competition and the Continent-Wide Pan African Parliament Competition.

Twice Albrecht was President of the Eastern Cape Institute of Architects. He investigated and researched procurement procedures for architects. As part of this work, the concept of short regional com-



petitions was developed, already used by many employers. He broadened the base of the local Institute by introducing a Youth League for young qualified architects and Master of Architecture students. Albrecht has served twice on the Board of Directors of SAIA. During his last term he was chosen on the Executive Committee, representing the smaller Institutes. Albrecht was also the National Chairman of the Simon van der Stel Foundation.

**Please tell us about the fascination with hot dip galvanizing?** Why our practice is interested in galvanized steel (unpainted) is because we believe that resources are limited in South Africa and galvanized steel unpainted gives an attractive industrial feel to a building at a reasonable price. I started a policy that we use either unpainted galvanized steel with every project that we do, or a "inspired" stainless steel object. An example of the latter is the large circular stainless steel ring at the Helenvale Resource Centre on which a boy (in resin) balances a kite. It is much loved by the community and has become known as the "little Madiba" and has become "the photographic moment in Helenvale". Many brides are photographed here.

*continued on page 32...*

**Do you think there is a general understanding under architects of the hot dip galvanized coating?**

I believe that many architects are unaware of the possibilities of galvanized steel, unpainted or with its special coats. Intricate steel detailing enhances the use of galvanized steel.

**Are there any projects that stand out as highlights and why?**

Projects that stand out for me is the 10111 SAPS Call Centre (galvanized steel used extensively), Helenvale Multi-Purpose Centre (stainless steel features), the new residences at the NMMU (galvanized steel used extensively), our house at Little Walmer (stainless steel art objects), our Office, an old masonic Lodge located at Richmond Hill, P.E., for which we designed a purpose-made stainless steel light for the boardroom. The light consist of three arches, pivoted from the centre that opens light a flower when switched on and intensifies in light intensity as it unfolds. It is a very dramatic start for any meeting.

**I have noted that your practice has an art collection of note?**

The office has very large open plan spaces which lends itself to open plan offices and exhibiting paintings. The board room is painted in dark blue and purple and we bought eight large Robert Brooks paintings over a period of five years. He is a famous painter from the Eastern Cape, and the paintings were produced during various stages of his life. Other artworks include a Wehrner Lemmer sculpture exhibited in the back courtyard, a Hannes Meiring, and other painting from Eastern Cape artists.

**Please tell us about your family?** I am married with two daughters of which one is an architect and urban designer and the other is into secretarial services.

**Please tell us about your hobbies and passions?** Hobbies include food and wine, competitive bridge, classical music, reading good novels and art.

Also see <http://www.thematrixcc.co.za>

Des Ray for HDG Today 2014 

# Galvstop – masking of components prior to hot dip galvanizing for the exclusion of the coating



High pressure water pipes have close fitting couplings that can successfully clamp to optimally zinc metal sprayed pipe ends. Masking is used to exclude hot dip galvanizing.

## Introduction

Masking or stop of material are products that are applied to steel in specific areas prior to hot dip galvanizing to prevent zinc from reacting and adhering to the steel.

The hot dip galvanizing industries use masking for the following reasons, namely:

- Preference is given primarily to prevent the galvanizing process on large areas, rather than removing the zinc coating later. Additionally masking products are applied to threads where the precise fit is necessary and the additional width incurred by galvanizing would cause fitment issues.
- The ability to mask specific areas prior to galvanizing allows the galvanizing process to be more flexible and therefore, open to a wider range of applications.

ChemSystems (Pty) Ltd have offered this product to the galvanizing industry for many years and have received positive responses on the product quality and fitness for use. For enquiries please contact sales manager, Louise Peplar, tel 011 922 1600. We look forward to assisting you.

## Mechanism

The paste is applied to the designated areas and hardens with the heat of the galvanizing process and prevents zinc ingress. After the galvanizing process, this residue must be removed by brushing.



This hole inside has been coated with Galvstop and after hot dip galvanizing has been cleaned out, showing a purposely uncoated area.



Photo below shows male threads coated with Galvstop and above where Galvstop has been removed after hot dip galvanizing in this female thread, showing purposely uncoated threads.



**Process Sequence**

- Surfaces must be cleaned prior to applying Galvastop.
- Once the component is dry apply Galvastop by brush or sponge.
- Make sure the desired stop off area is completely covered – avoid bare spots.
- Galvastop must dry before further processing: leave approximately 3 – 4 hours

before processing of parts.

**Product preparation**


- Product comes ready to use.
- Stir and shake well and apply to surface.

**Conclusion**

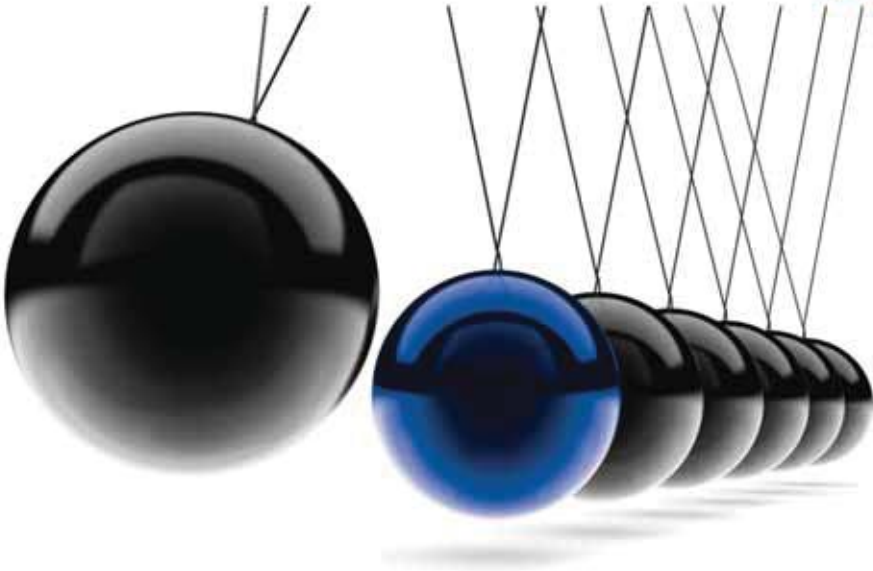
Masking of steel to be galvanized is never 100%, but by careful preparation, the effec-

tiveness of the product can be increased for successful masking purposes.

**References**


- (1) Galvanising Note: American Galvanising Association 2010. Processing and design notes.
- (2) Ask Dr Galv, <http://www.galvanizeit.org>. images.uploads. 

# Ensuring Metal Finishing Runs Smoothly





Our world class product technologies and advanced laboratory instrumentation ensures the finishing industry runs like clockwork.


Whether you are in the metal working, anodising, phosphating or wire drawing industries, a large government institution or small business, speak to ChemSystems Status Industrial Solutions to see how our exceptional technical service and product solutions can help you too.





Johannesburg (011) 922 1600 Cape Town (021) 534 5231 Durban (031) 914 0336













A Business of ChemSystems (Pty) Ltd





# The benefits of choosing zinc for corrosion protection seen from an unexpected source

A while ago my family was given an old wire and rod garden furniture set which used to be very popular a good few years ago. These used to be painted according to the owners requirements and paint colour used to change very often resulting in very thick, unsightly and very uneven surfaces. In many cases the old paint layers were removed obviously involving huge effort and money for paint stripper.

I simply had to renovate my set and was not looking forward to paint stripping exercise but, being from the galvanizing industry; I managed to convince the family to go the hot dip galvanizing route.

The furniture was sand blasted but after careful consideration, I made the decision not to hot dip galvanize but to go for thermal zinc spray. This change in thinking was brought about by the fact that the wire mesh used on the seating and back rest areas, may distort when subjected to temperatures of



450°C. The metal spraying was done and the set is now proudly serving its purpose in my garden. It should be noted that this exercise was not done to any sort of specification but merely for aesthetics and obviously for corro-

sion protection, BUT, this almost insignificant project has highlighted some of the many positive advantages in using zinc as the preferred substance for corrosion protection. These advantages are listed below:

- Although thermal zinc spray was used, the zinc has oxidized naturally and a stable darker carbonate layer has now formed with not a speck of rust to be noted.
- The stable carbonate layer combined with proper air circulation has become the ultimate defense against white rust formation even if permanently exposed to the elements
- Frequent and daily exposure to bird droppings have NO effect as if the zinc is saying 'bring it on'
- The colour after aging blends in very well with the surrounds. (even the family likes the appearance). If this is possible from simple garden chairs, imagine the effect of a big galvanized industrial structure.
- The zinc is not affected by temperature changes.
- Thermal zinc spray has its place in corrosion prevention and still remains the ultimate repair method.
- To date, no repairs or renovations were necessary

I am confident that the furniture will outlast me and that my kids will possibly inherit them in exactly the same condition.

Altus Feenstra, Robor Galvanizers 

## Leaf Litter Damage

Leaf litter is commonly deposited onto roofs, where it affects the local environmental conditions that control the degradation of roof sheeting and gutters. This study investigated the chemical nature and corrosivity of electrolytes resulting from the infusion of deionised water with leaf litter. Leaf litter specimens were collected from a variety of tree species commonly found in southern Australian suburbs, and from gutters in which the leaf litter had accumulated. After infusion for approximately three weeks, leaf litter suspensions were filtered and the electrolytes present in the filtrates were analysed to determine their chemical composition and pH levels. The filtrates from leaf litter obtained directly from trees tended to contain higher concentrations of salts and increased acidity compared to the suspensions from leaf litter sampled from gutters. The corrosivity of the electrolytes was explored electrochemically by potentiodynamic analysis of rolled zinc coupons immersed into the filtrates. Leaf litter was found to influence corrosion rates by increasing the acidity of solutions, and through the release of chloride ions during organic matter decomposition. Soluble products of leaf litter decomposition (i.e. fulvic acids) appeared to provide limited protection against corrosion. Over time, the aggressiveness of electrolytes in gutters should decrease as rain events leach salts from leaf litter, and pH should be buffered through the adsorption of carbon dioxide and possibly through the deposition of airborne dust such as mineralogical particles. In addition to the chemical impacts of leaf litter on corrosion, it can also result in gutters being exposed to longer periods of wetness. Data from wetness sensors installed in both clean and dirty gutters showed that, once wet, gutters containing leaf litter can take over twenty-five times longer to dry than clean gutters. Although there are many variables involved, it has been shown that leaf litter can influence long term zinc corrosion rates by a factor of over 2.

Source: *Corrosion Engineering, Science and Technology, Volume 45, Number 4, August 2010, pp. 268-276*

The Association wish to thank the following authors for this extract: Bradbury, A.; Muster, T. H.; Ganther, W. D.; Cole, I. S.; Corrigan, P. A. 

# Steel industry related app launched!

Robor is proud and excited to be the first South African steel tube and pipe manufacturer to announce the launch of an industry related "app" compatible with Android and iOS smartphones. The app (short for application) can be downloaded for free and offers users readily available information regarding the full Robor offering, as well as other useful information and tools applicable to steel products and services.

This app enables people out in the field, to have easy access, through a mobile device, to Robor's steel products and services, as well as other useful industry related offerings, such as Steel Calculations, Steel Specifications and Smart Tools.


The app will undergo continuous improvements and updates to remain the leading app in the industry.


Established in 1922, Robor is a world-class manufacturer and supplier of welded steel tube and pipe, cold formed steel profiles and associated value added products. We also



supply, distribute and add value to carbon steel coil, sheet and plate and structural profiles. As one of the largest steel tube and pipe manufacturers in Southern Africa, Robor is active in most industries, including mining, transport – rail and road, construction, engineering, manufacturing, agriculture, energy,

water and automotive. We also have the capability to manufacture specialised items suited to the unique requirements of these markets.

For more information: contact Robor Group Marketing +27 (0)11 971 1600 or [info@robor.co.za](mailto:info@robor.co.za) 



**Supergalv**  
(Pty) Ltd

**Specialists in  
hot dip galvanizing  
with quick turnaround times**

**HOT DIP GALVANIZING  
TO APPROVED QUALITY  
STANDARDS**

20 Dekenah Street  
Alrode 1449  
P.O. Box 124581  
Alrode 1451

Tel.: (011) 908-3411  
(011) 908-3418  
(011) 908-3420  
Fax: (011) 908-3329



**GALVANISING  
TECHNIQUES (PTY) LTD.**  
Co. Reg. No. 98/12149/07

**CORROSION PREVENTION TECHNOLOGY AND SERVICES**

*For hot dip galvanizing with  
service excellence*

- 12 400 long x 1 400 wide x 2 600 deep kettle
- Shot blasting
- Technical assistance
- Collection and delivery service
- Open Saturdays
- SABS ISO 1461 accredited

52 Burman Road, Deal Party, Port Elizabeth  
Tel.: 041-486-1432 Fax: 041-486-1439

# Bob's

# BANTER!



## The psychology of health and safety



Occupational Health Psychology (OHP) is a relatively new branch of Occupational Health and Safety. This field is concerned with behavioural psychology as it affects the implementation and sustainability of work-place health and safety regulations. In its broadest form, OHP is involved in the recognition, measurement and alleviation of worker stress, which has often been seen as a key factor in the cause of accidents.

A key figure in the development of a more focused view of psychology in health and safety is Emeritus Professor Gerald Wilde at Queen's University in Canada, who has gained fame (some might say notoriety) with his Risk Homeostasis theory, which is elucidated in his book 'Target Risk 2: A New Psychology of Safety and Health'.

Risk Homeostasis, also called Risk Compensation, argues that traditional health and safety campaigns tend to 'move accidents around' rather than eliminate or reduce their incidence. This is because these traditional approaches fail to motivate individuals to change their 'target level' of risk, which is defined as the amount of risk that they are willing to accept in their

everyday lives. Individuals tend to adapt their behaviour to more stringent regulations, but increase their level of risk-taking in other areas. It's as if we have a built-in risk-taking thermostat, a subconscious sense of our personal risk-taking behaviour; our own individual 'target risk'. We set a risk target and adjust our behavior accordingly.

An example of risk homeostasis is the effect of automatic antilock braking systems (ABS) on automobile accident rates. While the technology of ABS is sound and the systems work, evidence has shown that drivers with ABS-equipped vehicles tend to drive faster and rely more on their brakes than drivers of vehicles with no ABS. The U.S. Highway Loss Data Institute has reported that the introduction of mandatory ABS in motor vehicles has not reduced either the frequency or the cost of accidents.

Wilde's theory is controversial because it flies in the face of traditional health and safety policies, such as 'technological fixes' to make equipment safer or the imposition of more and more stringent accident prevention regulations on the lines of 'more accidents, more regulations'. Wilde believes that safety 'comes from within' and an individual's target risk will be established more by personal expectations than by enforcement. Attitudes towards safety can only be improved by improving people's expectations of their future. Examples cited by Wilde include a study of motorists that found that individuals who valued their future highly had fewer accidents, and generally had better attitudes towards safety. Another study showed that American students with a strong future orientation were less likely to smoke or smoked less. High expectations for the

future can have a powerful effect on health and safety behavior.

Although controversial, the ideas suggested by Wilde could have important implications for anyone who must manage and control health and safety risks.

*The Association wishes to thank Bob Andrew who is a consulting value engineer and honorary member of the Association for his article. He can be contacted on [anneve@iafrica.com](mailto:anneve@iafrica.com) or [boband@mweb.co.za](mailto:boband@mweb.co.za).* 

### The Association would like to acknowledge the advertisers and thank them for their support

Armco Superlite .....	Outside Back Cover
Bulldog Projects (Pty) Ltd .....	page 15
Central Support Systems cc.....	page 29
Chemplus .....	page 9
Chemsystems (Pty) Ltd .....	page 33
Galvanising Techniques (Pty) Ltd ....	page 35
Giardina .....	page 3
Hi-Tech Elements.....	page 9
Impala Bolt & Nut .....	page 19
Krome Metal Chemicals (Pty) Ltd ..	page 5
Robor Galvanizers.....	Inside Front Cover
S.A. Bolt Manufacturers (Pty) Ltd....	page 23
SMT Galvanizers .....	page 17
Strutfast .....	page 21
Supergalv (Pty) Ltd .....	page 35
Tel-Screw Products .....	page 26
TESA Africa .....	page 7
Transvaal Galvanisers (Pty) Ltd.....	page 27
Weartech (Pty) Ltd.....	page 11
WLS Fastener Manufacturing .....	page 25

# HOT DIP GALVANIZING MEMBERS

GALVANIZER	LOCATION	TEL. NO	SPIN	NO. OF LINES	BATH SIZES (L x W x D) (m)
<b>GAUTENG</b>					
ArcelorMittal South Africa	Vanderbijlpark	016 889 9111		3	Sheet galvanizer
Armco Galvanizers	Isando	011 974 8511		1	13.2 x 1.5 x 2.2
Armco Galvanizers - Dunswart	Dunswart	011 914 3512		3	5.2 x 1.20 x 2.0 3.0 x 1.0 x 1.5 2.0 x 1.0 x 1.5
Armco Galvanizers - Randfontein	Randfontein	011 693 5825		1	6.5 x 1.3 x 2.0
Babcock Ntuthuko Powerlines (Pty) Ltd	Nigel	011 739 8200		1	12.0 x 1.4 x 1.8
Galferro Galvanisers	Springs	011 817 3667		4	13.5 x 1.65 x 2.5 6.8 x 0.9 x 1.4 6.5 x 0.9 x 1.5 6.45 x 0.755 x 0.9
Galvadip (Pty) Ltd	Silverton	012 843 8000		1	7.0 x 1.7 x 2.0
Galvaglow	Factoria	011 955 5200		1	4.0 x 1.5 x 2.5
Galvspin Galvanizers cc	Boksburg North	011 918 6177	• robotic	1	3.0 x 0.9 x 1.5
GEA Air Cooled Systems	Germiston	011 861 1571		In-Line	11.5 x 1.0 x 1.0
Lianru Galvanisers cc	Nigel	011 814 8658		2	7.2 x 1.3 x 1.6 4.5 x 1.3 x 1.6
Macsteel Tube and Pipe	Boksburg	011 897 2194		1	13.5 x 1.6 x 2.4
Pro-Tech Galvanizers (Pty) Ltd	Nigel	011 814 4292	•	2	3.2 x 1.1 x 1.5 3.0 x 1.1 x 1.2
Robor Galvanizers (Pty) Ltd	Germiston	011 876 2900		3	14.0 x 1.35 x 2.5 10.0 x 2.0 x 4.0
Robor Tube	Elandsfontein	011 971 1600		1	Dia 42mm to 114mm max tube length 6.7m
SMT Galvanizers	Benoni South	011 421 1495	•	2	Tube & Pipe Galvanizer 2.6 x 1.0 x 1.5 2.0 x 1.0 x 1.5
Supergalv	Alrode	011 908 3411		1	6.5 x 1.3 x 2.5
Transvaal Galvanisers	Nigel	011 814 1113		4 In-line & general	9.0 x 1.0 x 1.0 8.0 x 1.2 x 1.5 6.0 x 1.3 x 1.3 12.5 x 1.2 x 1.8
<b>NORTH WEST</b>					
Andrag Agrico	Lichtenburg	018 632 7260		#	In-line galvanizer
<b>WESTERN CAPE</b>					
Advanced Galvanising (Pty) Ltd	Bellville	021 951 6242		1	14.0 x 1.4 x 3.0
Cape Galvanising (Pty) Ltd	Parowvalley	021 931 7224		1	14.0 x 1.6 x 2.6
Galvatech (Pty) Ltd	Bellville	021 951 1211		1	7.5 x 1.5 x 2.6
Helderberg Galvanizing	Strand	021 845 4500		1	5.5 x 0.8 x 2.4
Pro-Galv cc	Stikland	021 945 1803		1	7.2 x 1.3 x 2.6
South Cape Galvanizing (Pty) Ltd (NB: big line is not in operation)	George Industria	044 884 0882		2	3.7 x 0.94 x 2.3 (5.5 x 1.0 x 2.6)
<b>EASTERN CAPE</b>					
Galvanising Techniques cc	Port Elizabeth	041 486 1432		1	12.0 x 1.3 x 2.3
Galvspin (Pty) Ltd	Port Elizabeth	041 451 1947	•	1	3.0 x 1.2 x 1.8
Morhot (Pty) Ltd	East London	043 763 1143		1	7.0 x 2.5 x 1.5
<b>KWAZULU/NATAL</b>					
A&A Galvanisers	Pietermaritzburg	033 387 5783	•	1	3.3 x 0.9 x 1.9
Bay Galvanisers	Richards Bay	035 751 1942		1	5.0 x 1.2 x 2.5
Phoenix Galvanizing (Pty) Ltd	Phoenix	031 500 1607	•	2	14.0 x 1.4 x 2.5 3.0 x 1.2 x 1.2
Pinetown Galvanizing	Pinetown	031 700 5599		1	9.0 x 1.2 x 3.0
Voigt & Willecke (Pty) Ltd	Durban	031 902 2248		1	14.0 x 1.3 x 2.5
<b>MOZAMBIQUE</b>					
F&F Services	Beleuane	+258 823021260		1	4.0 x 0.8 x 1.5
<b>MAURITIUS</b>					
Galvanising Co Ltd	Port Louis	+230 234 5118		1	7.0 x 0.75 x 1.68
<b>ZIMBABWE</b>					
Essar Tubes	Graniteside	+263772833477		1	10.0 x 1.1 x 1.0

# Sheet, wire, pipe and other in line galvanizing members dedicate their plants to the galvanizing of their own products.

**Note:**

- Where more than one galvanizing line is available, the number of lines and the significant bath dimensions are listed, ie. widest, longest and deepest.
- For specific contact names (e.g. sales or production personnel) and mobile telephone numbers, contact company receptionist.
- The bath sizes are inside dimensions and not maximum component size (length, width and depth). Kindly take note of the expansion of the component when dipped into molten zinc, or discuss with relevant galvanizer.



## Consistently delivering superior quality galvanized products to all our customers

**Armco Galvanizers Isando** has been operating since 1989. Geared up to accommodate heavy structural steel up and till 13m in length. Isando has an average output of plus minus 2000 tons per month. With an improved lay down area and increased loading capacity by addition of a tower crane we strive to give "A" class service to all our customers big or small.

**Armco Galvanizers Dunswart** is a second facility based in the Boksburg area. Dunswart has an average output of plus minus 900 tons per month. This branch specializes in small structural components and is geared up to accommodate items up and till 5m length.

**Armco Galvanizers Randfontein** is a third facility based in the Randfontein area. Randfontein has an average output of plus minus 800 tons per month and is geared up to handle light to medium structural steel up and till 6.2 m in length.

The company has it's own SANS 121 2000 ISO 1461 accredited Hot Dip Galvanizing plants. And is listed under the SABS ISO 9001 scheme.

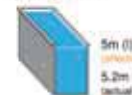
### GALVANIZING BATH SIZE

#### ISANDO



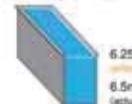
13m (l) x 1.45m (w) x 2m (d)  
*(reference size)*  
13.2m (l) x 1.5m (w) x 2.2m (d)  
*(actual size)*

#### DUNSWART



5m (l) x 1.18m (w) x 1.8m (d)  
*(reference size)*  
5.2m (l) x 1.2m (w) x 2m (d)  
*(actual size)*

#### RANDFONTEIN



6.25m (l) x 1.25m (w) x 1.8m (d)  
*(reference size)*  
6.5m (l) x 1.3m (w) x 2m (d)  
*(actual size)*

**Isando** +27 11 974 8511

**Dunswart** +27 11 914 3512

**Randfontein** +27 11 693 5825

**Web.** [www.armco.co.za](http://www.armco.co.za)

