INTERGALVA

The magazine of the world's premier event for the galvanizing industry | Issue 1 Summer 2015

INSIDE Guide to Exhibitors



Shree Tech International is a market leader in manufacturing high quality speciality chemicals used in various metal treatment industries. With over 30 years of experience, we manufacture products that are exported to over 35 countries across the globe. Our expertise spans across various metal treatment industries like galvanizing, phosphating, colour coating, wire drawing, water treatment, shipbuilding and radiator manufacturing. Our customer service goes beyond the supply of chemicals; our experienced technical team assists in the implementation of our products on existing lines / new setup. Shree Tech International is proud to be associated with the Galvanizers Association of Australia, Hot Dip Galvanizing Association - Southern Africa and the Galvanizers Association of UK. All of our products are REACH compliant and are distributed to various countries in the European Union by Norkem Ltd.

OUR PRODUCT RANGE FOR THE GALVANIZING INDUSTRY INCLUDES:

- **Degreasing Agents:** Our product offerings include both acidic and alkaline degreasants directed at removing strong adherent grease, oil, dirt and similar fats.
- Inhibitors: In order to maintain a healthy working environment in a galvanizing plant, we supply acid inhibitor and anti-vapour compounds. This product helps suppress strong acid fumes and prevent over pickling of steel thus avoiding metal loss.
- Fluxes: Our variety of fluxes help prepare the steel surface by removing the remnant oxides before galvanizing. The wetting agents along with the proprietary additives will enhance the surface properties during galvanizing, resulting in brighter and superior finishes to the final product.
- **Passivation:** Taking into account the problems of white rust so prevalent in the industry, we have developed products based on chrome and non-chrome agents.
- Iron Removal Compounds: Our product ensures quick settling of iron in the treatment tank, enabling it to be disposed later, thus extending the life and utility of the flux solution.



Office Address: 521/522, 2nd Floor, Solitaire Corporate Park, Bldg No:5, Andheri Ghatkopar Link Road, Chakala, Andheri (East), Mumbai - 400093, India. Tel: +91 22 42144545 | Fax: +91 22 28302612

Email: info@shreetechinternational.com | Website: www.shreetechinternational.com

International Associated Members Of

Issue 1 Summer 2015



Lord Digby Jones Key note speaker



INGENIA chain hoists give any galvaniser a lift



Twister by Scheffer





Guide to Exhibitors Stand by stand, all the exhibitors at

FGGA

Executive Director Murray Cook Communications & Events Ewelina Trzeciak

GLW Media

Editor Harriet Subramanian Design Elliot Banks

Advertising

If you would like to advertise in future issues of Intergalva Journal please contact Ewelina Trzeciak by email ewelina@egga.com



Published by GLW Media Ltd on behalf of the European General Galvanizers Association. Copyright © EGGA 2015

19 Nassau Street London W1W 7AF United Kingdom | www.glw.media

When you have finished with this magazine please pass it on or recycle it

Inside Welcome

elcome to the first edition of Intergalva Journal, incorporating the Exhibition Guide for Intergalva 2015. This magazine is being launched at Intergalva 2015 and will continue to provide industry insights, news and other information on a regular basis between successive Intergalva events. We hope it will be a success and a useful addition to intra-industry communications.

In this issue you will find articles of interest that have been provided by leading suppliers to the industry – most of whom are Associate Members of EGGA. My thanks to all of them for providing this content for the launch edition against a short publication deadline!

In the centre of this issue, you will find the Guide to Exhibitors for the Intergalva 2015 exhibition. I think we can say that this is the largest ever exhibition of plant, equipment, process chemicals and other services for our industry that has ever been staged.

The exhibitors have invested a large amount of time and resources for their exhibits so we hope that delegates will take the time to visit all of them during the conference. Lunches and coffee



breaks will all be served in the exhibition hall and this is also the location for the newly-launched 'Intergalva Workshops' that are being held in six different slots during Intergalva 2015.

I hope that readers of the magazine that are attending Intergalva will take time to read about Liverpool and the history of the Albert Dock area in which the Arena and Convention Centre are located (see pages 36-38). It is a wonderful story of urban regeneration that has transformed the area from derelict dockside to a vibrant leisure and conference location.

It is our intention to publish the magazine two times each year - both in print and online. More details of how to subscribe will be issued after Intergalva 2015. Meanwhile, enjoy Intergalva 2015, Liverpool and your interactions with colleagues from all corners of the world. We are very proud to host the industry's global meeting.

Murray Cook **Executive Director**

European General Galvanizers Association

🔁 www.egga.com www.intergalva.com

Cover Photo

East Anglian Galvanizing Ltd was opened in 2009. The plant will be visited by Group 7 during the optional plant visits for Intergalva 2015. Photo credit: Galvanizers Association

News Your hosts

Going back in time

EGGA is offering copies of the Edited Proceedings of the series of International Galvanizing Conferences for purchase. These detailed reports on the Intergalva events contain a wealth of valuable scientific and commercial information on the batch hot dip galvanizing process and its applications. EGGA has stocks of original copies of most the reports – even dating back to the 1960s. For an order form and price list – email Ewelina Trzeciak – ewelina@egga.com.

Slip resistant connections

Ten European organisations and academic partners involved in steel construction have embarked on a 3 year project to improve the viability and reliability of slipresistant connections in steel structures. The wider use of bolted structural designs (instead of large welded designs) has clear market benefits for hot dip galvanizing. EGGA is established as a partner in the project and is at the forefront of a dedicated work package to identify slip factors for galvanized surfaces in a variety of surface conditions. The project is labelled 'SIROCO' (Execution and reliability of slip-resistant connections for steel structures using Carbon Steel and Stainless Steel) and is funded by the EC Research Fund for Coal and Steel (RFCS). The project leader is Prof. Dr.-Ing Natalie Stranghöner of the Institute for Metal and Lightweight Structures at University of Duisburg-Essen.

Intergalva 2015 Hosts – Galvanizers Association

Intergalva is organized by the European General Galvanizers Association in conjunction with this year's host association – Galvanizers Association.

Galvanizers Association is the representative body for the hot dip galvanizing industry in the UK and the Republic of Ireland. Hot dip galvanizing makes a vital contribution to the sustainable growth of the economy, protecting the huge investment provided by manufacturing industry across a wide range of sectors year on year.

Their mission is to develop the market for hot dip galvanizing, providing high quality support to its members in a timely and cost-effective manner. Galvanizers Association also has a vibrant, prosperous and growing membership of international affiliate members – galvanizers operating outside the UK and the Republic of Ireland.

Based in the heart of the UK, they have experienced staff to deal with questions from, users, potential users and members in a fast and effective way. Members may be located anywhere in the world - but will always get a rapid response or advice whenever it is needed.

International Affiliate Membership of Galvanizers Association includes a wide and growing range of free or discounted services, designed to save members money and help them operate their business more efficiently.

Galvanizers Association will be explaining their services, including those for International Members, at stand J6/J8 at Intergalva 2015.

Services available from Galvanizers Association

Access to a telephone helpline with highly qualified staff able to respond quickly to queries on:

- Technical process issues
- Environmental or health and safety aspects of galvanizing.
- The use and performance of hot dip galvanized articles.

The technical support team can be contacted by phone, email or fax. For more complex advice, internet meetings can be organised via Skype. Other member benefits:

- Support with international standards
- Regular updates on industry developments
- Training courses
- Health and safety resources
- Literature
- Certificate of membership
- Use of the GA logo
- Hot dip galvanizing magazine
- Networking opportunities

Lord Digby Jones Key Note Speaker Intergalva 2015

pening this year's conference is Lord Digby Jones. As a champion of the manufacturing industry and with his strong links to Birmingham Lord Jones is a familiar face to many Intergalva visitors from the UK. For delegates from further afield Lord Jones brings a wealth of knowledge and experience to Intergalva as well as enthusiasm for business in general.

After a three-year stint in the navy and graduating from University College London, Lord Digby spent 20 years with Edge & Ellison, a Birmingham-based firm of lawyers, where he worked his way up from Articled Clerk to Senior Partner. During these years he was



Lord Digby Jones Key note speaker at Intergalva 2015

In 2005 he was knighted for his services to business and became Sir Digby Jones in the Queen's New Years Honours List.

When he left the CBI in 2006 he spent the next 12 months in the private sector as adviser to Deloitte and Barclays Capital, held a variety of non-executive board roles, and was the unpaid UK Skills Envoy. In July 2007 he was appointed Minister of State for UK Trade & Investment and became a life peer taking the title, Digby, Lord Jones of Birmingham Kb.

Now, in addition to his role as an active crossbencher in the House of Lords he serves as Chairman of Triumph Motorcycles Limited,

ess and itNon-Executive Deputy Chairman of the Unipartsiness andExpert Practices (UEP) Division and Chairman of Grovemly inIndustries. He is Corporate Adviser to JCB, Adviser toBP plc, Senior Adviser to Harvey Nash plc, CorporateAmbassador to Aon Risk Solutions, and BusinessitishAdviser to Barberry Developments Limited. Digby isf theseSenior Adviser of Babcock International Group plc. Heyears asis Corporate Ambassador for Jaguar Cars, a memberof the Advisory Board of Monitise plc, Chairman ofthe Advisory Board of Argentex LLP, non-executive

the Advisory Board of Argentex LLP, non-executive director of Cell Therapy Ltd, non-executive director of Leicester Tigers plc and chairman of ShP Limited.

He advises in a number of other paid and unpaid roles, fulfilling his vision of promoting socially inclusive wealth creation. Digby travels regularly across the UK and overseas, runs his own business and his fulfilment is complete when Leicester Tigers and Aston Villa win their matches. He has many plans for the decades to come.

intimately involved in all aspects of business and it was here that he developed a vision of business and its role in society, and began to believe firmly in socially inclusive wealth creation.

In 2000 he joined the Confederation of British Industry (CBI) and was able to put some of these ideas into action. During his six and a half years as Director General he became known in the public arena especially for his candid, forthright attitude in his many media appearances.

He campaigned relentlessly on a range of issues including the move from traditional manufacturing of commodities to value-added, innovative products and services. He also lobbied against protectionism protesting that "it is a scourge which may well find short term popularity but inhibits growth, reduces wealth and oppresses the weak".

This key note speech will be on Monday 8 June www.digbylordjones.com

Intergalva People

Our first modern Intergalva without Frances Holmes

One familiar face will be missing at Intergalva 2015. Frances Holmes retired from the European General Galvanizers Association (EGGA) at the end of April 2015 and, although she has been working hard on the organisation of Intergalva 2015 Frances will not be present in Liverpool. Frances spent over 40 years in various roles in the Zinc Development Association and the EGGA, and has been a pillar of organisational strength for many Intergalva events over that time. We all wish Frances well in her retirement!

A new face at EGGA

The retirement of Frances Holmes has led to some changes to EGGA's staff structure and the recent appointment of Ewelina Trzeciak as Communications and Events Executive. Ewelina is Polish and has been working in the UK for nearly 10 years. She will focus on EGGA's event management and internal/ external communications. Her experience in events and exhibitions will be a great basis for the future development and evolution of Intergalva events and EGGA Annual Assemblies. Welcome on board to Ewelina!

A helping hand from Sweden

EGGA and GA are delighted that Annette Hjelmare from the staff of the Nordic Galvanizers association has joined the organisation team for Intergalva 2015. Annette has experience of organising various events for Nordic Galvanizers and will be helping to ensure everything runs smoothly around the conference room.

Galvanizers Association Meet the team

The GA staff team is led by William Smith. During his previous 21 years as the Technical Manager at the Association, William has been chairman of many International (ISO) and European (CEN) Standards development committees for hot dip galvanizing, including the most important committee for the industry's international standards – ISO TC107 SC4.

Pictured from left to right are: Nicky Smith, Desmond Makepeace, Susan Smith, William Smith, Carla Stanton, Iqbal Johal, Jo Harrison and Nurul Amin.

www.galvanizing.org.uk



Twister by Scheffer

A retrofitable over-bath spinning technology

Scheffer's new Twister is an easy option for galvanizers to extend their existing processes with spinning of small galvanized parts. The Twister can be picked up by normal transport systems – such as overhead cranes or drive units - and moved with them through the galvanizing process.

The pre-treatment of the small parts has to be done, for example, in baskets, drums or open bottom containers which will be mounted on the normal jigs. After pretreatment, the material will be placed into the galvanizing baskets (different versions – depending on size and form of the material, filled with up to 60 kg each). These baskets can then be picked up by the Twister with its gripping function. Because of this gripping function, the Twister has no down time, e.g., when pre-filling the galvanizing baskets. After picking up, the Twister will be moved above the zinc bath and the dipping process begins.

The process is done with slow rotation to ensure a movement

of the material while dipping. Also the dipped basket can be moved through the bath. After the "cooking" process the basket will be pulled out and the splash guard of the Twister will be moved down around the basket. The splash guard is made to dip a bit into the zinc to ensure maximum user safety while spinning. The splash guard is also equipped with a vibration unit to ensure that almost no waste zinc will stick on it during the subsequent spinning process.

With the closed splash guard the spinning process can be started (for safety reasons it is not possible to spin while the splash guard is open). The material will be rotated with a speed of 400-500 revolutions per minute with an

acceleration speed up to maximum of below 2 seconds. The excess zinc on the material will be thrown against the splash guard and will be immediately redirected into the zinc bath. After the spinning process the splash quard can be opened and the Twister will be moved above the discharge station. The galvanizing basket will be placed on this station. Now the emptying process of the basket can begin after the Twister has been moved away. Meanwhile, the Twister can start the galvanizing process with the next, already prefilled, galvanizing basket.

An easy system with a maximum of efficiency. Come and see a demonstration on stand D6 at Intergalva 2015.

INGENIA chain hoists give any galvanizer a lift

For nearly 15 years, INGENIA GmbH from Linz in Upper Austria has been building hot dip galvanizing plants. The company has also established a leading position in the field of supplementary material logistics - especially for lifting gear.

"Rope or chain hoist?" This is a question with which Philipp Roth, INGENIA's Senior Sales Manager, is frequently confronted. His answer, from long-term experience: "This depends upon where the hoist is to be used. There is no general answer." However, what both types of lifting gear do have in common is the shared task of transporting heavy loads, in extreme cases on a 24-7 basis. In really tough conditions, INGENIA always recommends chain hoists. Why? Because it develops and builds such systems and employs chains produced to its own specifications. But let us begin at the beginning.

Quality from the outset

When Rudolf Geiersberger founded INGENIA GmbH during 2001 through a management buyout, his team already had over 10 years of experience in transport technology, plant building and the construction of hot dip galvanising plants. To date, INGENIA has successfully realised 56 plants throughout Europe - a role that extends from the supply of components to general contracting for complete, customised plants with closed process cycles for both bulk goods and small parts. As a life cycle partner, INGENIA accompanies clients from the idea, which can be simulated in 3D, via planning, supply



and installation, training and start-up. Such relationships are based on trust and continue well after plant commissioning - as INGENIA also offers its customers an extensive range of services and maintenance and a 24-7-365-hotline.

Company founder, Rudolf Geiersberger, puts one of his criteria for success in a nutshell: "When it comes to quality, we are uncompromising. And for us, quality also means first class, after-sales performance." He goes on to add that this full service not only applies to customers purchasing a new plant, but also those completing a retrofit which can involve the overhaul of their galvanising plant by the Upper Austrians or the installation of individual modules or components.

INGENIA chain and chain wheel / Chain hoists for galvanizers



INGENIA lifting gear/chain hoists

12 years of development work for a key component

INGENIA chain hoists were developed explicitly for galvanising plants and the reasons are easily explained. Normally, chain hoists are either found with a traverse on the route from pre-treatment or in the zinc line, mounted on rails or a bridge crane. Consequently, even when zinc kettles are equipped with flue gas extraction and exhaust gas scrubbers are located in the pre-treatment area the hoists are subject to extremely tough requirements. This was reason enough to consider ways of extending the service life of both the chain hoists and the chains themselves.

Depending on their size, INGENIA chain hoists in the top category can operate around the clock with loads of 1 to 10 tonnes. The hoists are designed for multiple shift operation and offer a far longer service life than standard equipment. A further advantage is their infinitely adjustable, load-dependent speed control, which offers minimum lifting speeds. This guarantees optimum withdrawal from the zinc bath. The hoists are controlled manually, via radio remote control, or fully automatically via WLAN.

Value added chain

Chains form a decisive link between the crane and the goods. Their reliability is essential. But INGENIA does not employ standard chains. Instead, they are manufactured for INGENIA by a respected German producer in line with its own ideas and specifications and using special surface hardening. The chain links are permanently lubricated by an automatic lubricating unit which operates directly on the contact point between two chain links.



Chain design features: number of cycles (lifting & lowering)

Chain wheel

Unlike standard chain wheels, INGENIA products have at least seven chain pockets - for the simple reason that this provides extended service life. Smoother chain slippage is guaranteed and jerking caused by the so-called 'polygon effect' is minimised. The chain wheel is therefore an important component and in order that these can function safely and over a long period in an aggressive atmosphere, all the bearings have multiple sealings and cast elements.

Design features – chain drive



Energy efficiency through intelligent management

Hot dip galvanising plants are generally regarded as being energy intensive. However, thanks to an intelligent management system, INGENIA's builds some of the cleanest and most energy-efficient plants in the world.

A plant can be designed for maximum efficiency by using an advanced energy management system during the planning phase. The electricity requirement of all the consumers in the production area is evaluated, controlled and regulated. In practice, this means that the computerised control system knows in advance when and what loads the hoists have to raise and guides them in such a way that lifting is evenly distributed. This ensures that the maximum capacity of the plant is never exceeded and costly power consumption peaks are avoided. As a consequence, the cable and copper cross-sections (including earthing) are reduced and can be provided with an optimum layout, which also has a positive effect on investment costs.

This energy management system can already be installed in the "BASIC" plant type and electricity costs are further reduced because the motors used in INGENIA lifting gear offer high efficiency in tandem with low power consumption. The brake energy generated during load lowering is no longer lost. The motor acts as a generator - to recycle it back into the power system. This is Class IE2 international efficiency, in line with the global IEC-Norm (Code 60034-30) standard and quality directive.

Increasing demands

The demand and complexity with regard to both material logistics and the construction of galvanising plants are steadily increasing. In INGENIA's 1,400m² in-house Technology Centre, prototype and component test runs are permanently in progress in order to achieve continual progress.

Visit us at Intergalva Booth F18 and see more www.ingenia.at

Intergalva Heads to Germany

Delegates to Intergalva 2015 will be asking 'Where Next?'. Intergalva veterans will know that next on the rotation of host countries is Germany. The Industrieverband Feuerverzinken (German Galvanizers Association) is very much looking forward to hosting Intergalva in June 2018.

EGGA is currently working with colleagues in Germany to identify the exact city and venue. Germany has excellent conference and exhibition facilities – so there will be some difficult choices to make. A high priority will be placed on



the exhibition facilities that will be needed to showcase the best of Germany's 'Made in Germany' technology and services for the world's galvanizing industry.

With Germany at the heart of Europe's galvanizing industry and its leading position in technological development within the industry, we can expect it to be as popular as an Intergalva location as it was for Berlin in 2000. At that time, Berlin was at the start of its regeneration after reunification. Much has happened since then. Who knows – we may go back and see how the city has moved on! But there are other options also. Expect an announcement before the end of 2015 and probably much sooner than that.

Meanwhile – mark your diary for June 2018 in Germany, join our Intergalva LinkedIn Group and watch www.intergalva.com for more information.



设计 制造 安裝 调试 培训 Design Manufacturing Installation Commissioning Training www.bonantechnology.com





SHANGHAI BONAN TECHNOLOGY CO., LTD.

Villa 159, No.819 Fanglin Road, Nanxiang Town, Jiading District, Shanghai, 201802 P. R. China TEL: 0086-21-59920053/64874033, FAX:0086-21-64874033 Web: http://www.bonantechnology.com E-mail:haojiantang@163.com,haojiantang@bonantechnology.com



Part of B E Wedge Holdings, Hasco-Thermic Ltd has established an enviable reputation for reliable, efficient and durable galvanizing plant equipment with nearly 200 references in 34 countries Worldwide.

Customer service starts from the very first enquiry and continues through the life of the equipment.

Our range of services include:

- Plant Design with a view to optimising production.
- Equipment that complies with current European Legislation.
- Assistance in sourcing a wide ancillary product range.
- Skilled Engineers with support available 24hrs a day 365 days a year.
- Performance guarantees which reflect our confidence in our systems.
- Furnaces to suit kettles up to 21 meters in length and longer

Hasco Thermic 134 Birchfield Lane, Oldbury, West Midlands, B69 2AY Tel: +44 (0) 121 552 4911 Fax: +44 (0) 121 544 8143 Email: mail@hasco.co.uk Web: www.hasco.co.uk



Excellence in Galvanizing WEDGE

B. E. WEDGE HOLDINGS LTD

businesses in the UK, Continental Europe and the USA. The company has consistently followed a successful policy of

for further business development as well as expansion through acquisitions and collaborations around the globe.

B. E. Wedge Holdings Ltd Tel: +44 (0) 1902 630311

Stafford Street, Willenhall, West Midlands, WV13 1RZ Fax: +44 (0)1902 366353 Email: info@wedge-galv.co.uk Web: www.wedge-galv.co.uk

Zinco UK

GALVANISING KETTLE INSPECTIONS

- Accurate, instant results at inspection
- Minimal downtime No loss of production
- Flexible system
- Measure up To 3 metres deep
- We have inspected over 150 kettles

GALVANISING KETTLE CHANGES

- Molten storage allows for faster kettle changes; getting you back in production sooner
- Transportable furnaces with high volume capacity
- Any project size undertaken from full turnkey to simple pump out into our bespoke zinc moulds
- Operate in any sized factory



www.zincouk.com

Kettle Inspections // Pump outs // Holding Vessels // Engineering Support



IZA has taken a global lead in advocating programs aimed at addressing zinc deficiency through its flagship initiative "Zinc Saves Kids" in support of UNICEF.

"This effort has had a huge impact on millions of children in Peru and Nepal and I would like to take this opportunity to thank the Galvanizing Industry for their generous and enthusiastic support of this worthwhile cause. Together, we have truly made a difference."

phen Rallkinion

Stephen Wilkinson Executive Director International Zinc Association

Key Facts on Impacts in Peru

- Close to one million children aged 6-36 months treated with 5 mg of zinc as part of multiple micronutrient pack to combat chronic malnutrition.
- The prevalence of under-five stunting is reduced by almost 2 percentage-points every year.
- The number of health centers incorporating zinc for diarrhea treatment almost tripled, leading to an average reduction of 25% in diarrhea episodes and 40% less in duration and severity.
- The prevalence of acute diarrheal diseases shows a constant downward trend since 2010.
- The Government of Peru approved a national plan to reduce chronic malnutrition and anemia to 10% and 20% respectively by 2016 and allocated a multimillion dollar fund for a comprehensive health care and nutrition package including zinc.

"I would like to express our gratitude for the valuable support of IZA through the "Zinc Saves Kids" campaign. Since 2010, the alliance of UNICEF and IZA has contributed to significantly improve the nutritional status of children under five in Peru."

Paul Martin Representative UNICEF

About Zinc Saves Kids

Zinc Saves Kids provides hope to children in Peru by supporting UNICEF in providing zinc supplements as an adjunct therapy for severe diarrhea and as part of a comprehensive multiple micronutrient health care package to reduce chronic malnutrition and stunting. Zinc is essential for growth and development, cognitive learning and the proper functioning of the immune system. Early childhood malnutrition causes irreversible damage with lifelong repercussions in terms of frequent illness, lower performance at school and lower income potential. It also increases the risk of death from diarrhea.

While the Zinc Saves Kidssupported zinc supplementation program for diarrhea treatment is designed for children under five years of age the MNP intervention focuses on the first 1000 days in the life of a child, from conception to two years, which provide a unique window of opportunity.

www.zincsaveskids.org



Top: Peru stunting prevalance in children under five (2007-2013) Bottom: Trends in ADDs prevelence in children under five

Micronutrient packages combat stunting/malnutrition - Betsy's story

When Betsy was three, she was diagnosed with micronutrient deficiency. This diagnosis worried her parents greatly but the staff at the local health center in Huamanguilla included her in the UNICEF/Zinc Saves Kids micronutrient pack (MNP) program. Betsy's mother was given sachets of MNP including zinc and was asked to sprinkle one per day on her daughter's meal for six months, with a six month break in between. After a few months there was a noticeable difference in Betsy and her health tests showed that her micronutrient levels had

Zinc for diarrhea treatment -Pedro's story

Two and a half year old Pedro Gabriel lives with his parents in Ventanilla, a poor district just outside of Lima. One day after his bottle of milk, he experienced stomachaches, diarrhea, vomiting and a fever. As symptoms worsened, his mother Santa took him to the local health center where Pedro was diagnosed with severe diarrhea and was given a zinc tablet dissolved in water. His mother was instructed to give him one zinc tablet per day for nine days. During this period Pedro was visited three times by a community



improved. She now eats all her meal and reminds her mother every day, "Mommy, put the vitamins in my food." Her mother Vicenta is extremely happy about Betsy's development and wants to learn more about the importance of vitamins and minerals to help other mothers in her community.

health worker who checked that the therapy was followed properly and who also educated the mother on some basic health care practices, including frequent hand-washing. After a few days, the diarrhea stopped and Pedro began to eat normally whereas before he never finished his meal. His mother was very happy and proud and said with a beaming smile, "If your son or daughter suffers from diarrhea I recommend giving them zinc tablets. Not only will zinc tablets cure them, it will also improve their appetite. *I believe that zinc strengthens the* child. It is like a vitamin, now my son eats all his meal."





On the horizon

Gimeco Group at the Forefront of European Research

n April 2015, the European Commission announced that a project, proposed by Zinco and Gimeco, had been awarded one of the top 10 rankings in Europe.

The project is aimed at developing the most efficient hot dip galvanizing furnace prototype, in full scale, by the end of 2017. Approval from the European Commission has come as part of its Horizon 2020 Programme, which focuses on supporting industrial research and development based on strong knowledge skills. As a result, the EU has granted €1.2 million to the Gimeco Group, who will carry out a number of complex work packages starting in June 2015.

"It's great challenge, as well as a quite unique expression of trust on the part of the EU Commission" says Mario Ubiali, CEO of Zinco and New Trends Manager of the Gimeco Group. "We truly believe this is an opportunity to refine our solid R&D capacity whilst coming up with the next great product."

The new generation furnace will be centered around energy efficiency and prolonged kettle life thanks to in-depth work on heat flow dynamics. The National Research Council of Canada, a traditional ally of Zinco, is in the picture, carrying out some of the most up to date simulations on the functioning of high velocity furnaces. Results of these simulations are going to be presented for the first time at Intergalva 2015 in Liverpool.

"Customers need the best results with the simplest form of interface", explains Ermes Moroni, founder of Gimeco. "We want to make our next generation furnace a true statement and a new standard for the industry."

Big data is another key aspect in the project. Developing and

mounting advanced sensors in the furnace, the Gimeco Group aims at giving customised control software a self-learning capacity that would constantly optimise energy efficiency and send detailed reports and alerts to the user, opening the door to a new era in mobile and remote control.

"Whatever the exact final result is going to be, the entire project will constitute one of the most robust and complex research projects ever carried out in the hot dip galvanizing industry on the topic of furnaces and kettle management", adds Mr Ubiali.

With such a starting point, it is likely that interesting technical results will be made available to the industry in the next couple of years.

Learn more about Gimeco and Zinco's technological advances at stand F6 at Intergalva 2015.

Technology breakthroughs in galvanizing

A modern approach to supply, design and manufacturing of galvanizing plants.

Hasco-Thermic Ltd, a front runner in the supply, design and manufacture of hotdip galvanizing plants with over 40 years' experience, will be showcasing highlights of its recent innovations, research and development programme at Intergalva 2015. As part of B.E. Wedge Holdings Ltd, the holding company for leading galvanizing businesses in the UK, Europe and the USA, Hasco-Thermic offers a flexible approach to meeting the needs of customers with the galvanizing industry.

Capitalising on a solid investment programme, Hasco-Thermic is able to retain its key market position, as a premier supplier, by keeping abreast of advancements in new technology, research and development. The company has, for example, completed two Knowledge Transfer Partnerships (KTP) projects with Sheffield University, both related to combustion engineering. One of them was awarded the highest possible accreditation of 'Outstanding' by the independent KTP assessment panel.

A third KTP is underway with a focus on advanced technology in the specialised field of galvanizing furnace design. Angela Curtis, Managing Director at Hasco-Thermic explains, "The results of the investigations undertaken in partnership with the University, which is a world leader in this field, have been instrumental in advancing our thinking on improving the performance and energy efficiency of the company's products. In addition to the KTP's direct benefit to us," she added, *"we perceive great value in the opportunity"* to work closely with the experts in Sheffield because it encourages us to think even more widely and perceive further possibilities of advancement. We are great supporters of KTPs."



Angela Curtis explains recent innovations from Hasco-Thermic

Inverters

Look out for the paper by Warren Bulger, Director of Engineering for Wedge Group Galvanizing Ltd at Intergalva 2015 on Wedge's experience of using inverters or variable speed drives on galvanizing plant equipment. He demonstrates savings in electrical power consumption of around 52%. We have installed over 60 inverters now, either to new equipment or retrofitted to existing equipment. Other advantages include; improved gas consumption, limitation of wear and tear of the fans and reduction in noise pollution.

Remote Monitoring...safely

Visit our stand to see our remote monitoring solution and what our engineers would see when offering technical support remotely. Our remote solution also features a customised webpage built by our engineer which will allow you to remotely browse your system via the internet on your laptop, iPad or smart phone, allowing the furnace status and production data to be remotely monitored for management and maintenance purposes without disturbing panel operation on site. Our system allows safe access for monitoring purposes only and not control. The advantages of this include improved safety and increased independence.

Thermal Measurement Solution

Benefiting from the latest contactless temperature measurement technology, our contactless thermal measurement solution has been used for Hasco service and design engineers to diagnose thermal problems in furnace operation and galvanizing production, hence improve the design accordingly. This solution also provides a useful tool to help Hasco R&D team in our investigation into heat transfer and fluid dynamics in furnaces in terms of difference combustion schemes and furnace layout designs.

Computer Aided Engineering

Computer Aided engineering (CAE) has been utilised to assist our engineers in galvanizing combustion system design and guide galvanizers to make wellinformed decisions on managing their production.

Thanks to the increasing computational resources from our R&D partner, the University of Sheffield, and also the advance in fluid dynamic simulation techniques, our effort in computer simulation has paid off in our furnace design. The results also enable us to achieve a more indepth understanding on the physics in a furnace. We also developed a novel method to simulate the dynamic kettle wear process over the service life a kettle using FEA (finite element analysis).

The conference session on Wednesday afternoon at Intergalva 2015 includes more details on this topic to be presented by Dr Xinyi Liu. Meanwhile, our in-house galvanizing equipment design software has been developed and is under continuous update to assist our design engineers to achieve customized furnace combustion system design as well as optimised plant thermal efficiency.

On a final note, customer service starts from the very first enquiry and continues through the life of the equipment. Our range of services include:

- Plant Design with a view to Optimising Production.
- High-velocity furnaces
- 'W. Pilling' kettles, kettle inspections and pump-overs
- Fume Extraction Systems
- Pre-Heaters/Driers
- Heat Recovery & Tank Heating Systems
- Equipment that complies with current European Legislation
- Assistance in sourcing a wide ancillary product range
- Skilled and experienced engineers; support is available 24hrs and day, 365 days of the year
- Performance guarantees which reflect our confidence in our systems
- Flexibility in our approach where we design to meet the customer's requirements.

For further information see www.hasco.co.uk. To speak to a member of the team please contact Hasco Thermic at stand E18 at Intergalva 2015.

Inverter System for Combustion Air Fan







Estimation of Maximum Production Rate of End-Fired Galvanizing Furnaces

Technical feature

Chris Mason of Western Technologies dispels some myths around the topic.

Westech uses a computer simulation to calculate the maximum production rate of their galvanizing furnaces. There are much simpler approaches, but how meaningful are they?

For example this kind of formula has been used:

 $p = \frac{(q_w (heated wall area) - q_s (surface area))}{h}$

p = maximum production rate

 q_w = average rate of heat transfer to the kettle wall

 q_s = average rate of heat transfer to zinc surface

h = heat input to metal per unit production

 q_s and h may vary between furnaces depending on the extent of enclosure and ventilation rates, % of solid zinc addition during dipping and degree of steel preheat. No case heat loss is included.

However when assessing such a formula, the factor of most interest is q_w .

A typical value given for q_w is around 30 kW/m².

But the decisive factor in determining the balance between production rate and kettle lifetime is not average heat transfer rate but *maximum* heat transfer rate at any point on the kettle wall, q_z - usually at a point a short distance downstream of the burners for an end-fired furnace.

And wall heat transfer factors must also be given with reference to a particular molten zinc temperature - higher zinc temperatures require lower values of *q*.

A guide for q_z is approx. 40 kW/m² when molten zinc is at 450°C.

We can consider q_w relative to q_z in terms of a ratio r of maximum to average heat transfer, ie: $r = q_z / q_w$

How does *r* vary between kettles and furnaces?

Comparative studies of galvanizing furnaces can be complicated by the large number of variables, which make it difficult to compare the production rates of kettles of different sizes. Westech has taken a new approach in a recent study.

We have carried out a theoretical study where q_z is held constant at 40 kW/m² while variations in the ratio *r* are explored as changes are made to the kettle dimensions and the size of burners. The molten zinc temperature was taken to be 450°C.

For the standard burner heat output used in Westech furnace design, we found that *r* is in a surprisingly narrow range of 1.35 to 1.45 for a wide variety of kettle sizes covering almost the entire range of the 150+ furnaces supplied by Westech to date. This corresponds to a range of values of q_w from 27.6 to 29.6 kW/m².

However, less surprisingly, using fewer, larger burners with the same total heat output gives a higher value of r. For example based on a kettle 12.5 m long x 1.5 m wide x 2.6 m deep, moving from 6 to 4 burners increases r from 1.38 to 1.57. This corresponds to a 15 % decrease in maximum production rate under typical conditions.

This is because using fewer more powerful burners causes more intense local heating, and the output of each burner has to be scaled down to meet the target value of q_z .

Perhaps the key shortcoming of many simple formulas is that they do not take into account the way in which heat is added to the furnace, and in particular the output per burner.

So the type of formula cited above could overestimate maximum production, or justify a high maximum production at the expense of kettle lifetime.

An approach based on a fixed q_z may also facilitate comparison to be made between different types of furnace, for example, end-fired and side-fired (flat-flame burners).

More detailed findings on the relationship between average and maximum heat transfer rates in end-fired furnaces will soon be published in a paper on the subject.

In the meantime, for more information on this and many other aspects of design for galvanizing please visit the Westech stand during the exhibition at Intergalva 2015 or www.westechgalv.com.



iverpool is well known for being the home of The Beatles, yet the city is much more than that. Steeped in history the waterfront region is a World Heritage Site and is recognised for its role in the development of world trade. Liverpool's architecture is varied and delegates will enjoy some of the city's key sites during their stay including Liverpool Cathedral, the Albert Dock and the ACC.

Liverpool Cathedral

Built by its people for its people, Liverpool Cathedral is the city's spiritual heartbeat and at the heart of city life.

Adjectives like awesome and spectacular are overused and never quite convey the sense of wonder you feel when entering or standing in the middle of Liverpool Cathedral. The world's highest and widest gothic arches seem to open up an immense cavernous space of which its genius young architect Sir Giles Gilbert Scott said "don't look at my arches, look at my spaces". It's Britain's biggest Cathedral and most pioneering. Yes, this is sacred space but with no fixed furniture so its daily pattern of services give a spiritual rhythm to a place that is alive with vibrant possibilities and the Cathedral turns itself around constantly to embrace a myriad different activities – often in the same week the Cathedral is as vital and vibrant as ever. It forms partnerships across the city in joint venture, be it in running community initiatives like the Food Bank or in educational projects.

Liverpool Cathedral Enterprises Ltd is the wholly owned subsidiary of Liverpool Cathedral. It generates income and activity that benefits the quality of experience of those visiting the Cathedral and the city, as well as helping to preserve free entrance. By enterprise, we mean the Cathedral's own retail activity, which is integral to the mission of the Cathedral and not merely preliminary to it. It is part of that mission to generate vital revenue harnessing its capacity to attract key cultural and commercial partnerships, plus a high profile in the visitor economy of the city and region. The development of enterprise within the Cathedral has produced many things that are now a given within the city's culture and tourism portfolio including being a key venue for private and corporate events.

Delegates to Intergalva 2015 will experience the wonders of the Liverpool Cathedral - as it is the venue for the conference Gala Dinner on the evening of Tuesday 9 June. The evening is sponsored by BE Wedge Holdings and W Pilling Riepe GmbH & Co KG.

Scott was only 22 years old when he won the competition to build Liverpool Cathedral, so the Cathedral prides itself in capturing the essence of youth, vigour and the big ideas of a young man. In the 21st century it finds itself in a regenerating city and one in which the work and mission of

36 Intergalva Journal | Issue 1







Facts at a Glance Liverpool Cathedral

Did you know that:

- Liverpool Cathedral is the largest Cathedral in Britain, with the highest and widest Gothic arches in the world
- It has the heaviest and highest peal of bells in the world
- It has the largest pipe organ in Britain, with 10,268 pipes over 250 more than its nearest 'rival' at London's Royal Albert Hall
- The foundation stone was laid in 1904; it was completed in 1978 – the two world wars reduced the workers to a skeleton force. Some tradesmen spent all their working lives building the Cathedral. All the stones are marked with the mason's mark of that individual stonemason. The sandstone was quarried from a local Liverpool quarry.
- Most people think that this is an older Cathedral than it is because of its neo-gothic style – probably the last one that will ever be built – but a hint to its modernity is the diversity and scale of its activity, the brave vision (including a café overlooking the main space which indicates a warmth of hospitality) and art, like the Tracey Emin neon under the Benedicite window *I felt you and I knew you loved me.*



Albert Dock - UNESCO World Heritage site

The Albert Dock Liverpool provides visitors with a taste of British heritage at its best. Situated on the banks of the River Mersey, the dock is part of UNESCO World Heritage site. It is also home to a variety of attractions including the Merseyside Maritime Museum, Tate Liverpool, and the Beatles Story. Cafes, bars and restaurants are also an integral feature of the Albert Dock and lend it some of its popular atmosphere.

Designed by Jesse Hartley, it opened in 1846 and remained a fully working dock until closing in 1972. It later underwent a huge restoration programme and was reopened as a visitor attraction in 1988 by HRH Prince Charles. It remains the UK's largest group of Grade I listed buildings.

World Trade – Building links with China

Liverpool is home to Europe's oldest Chinese community, stretching back to 1834 – when the first direct vessel from China arrived in Liverpool to trade goods such as silk and cotton wool. This grew rapidly over the next couple of decades, due to strong trading links between Liverpool, Shanghai and Hong Kong. Liverpool has been twinned with Shanghai since 1999, and enjoys trade and cultural links with its sister city. In 2010, Liverpool was the only UK city to exhibit at the Shanghai Expo.

Liverpool's traditional Chinatown is located around Berry Street and Nelson Street, where street names are given in both English and Mandarin.

ACC Liverpool welcomes you

Our space is designed for successful events like Intergalva 2015 and is home to the BT Convention Centre, Echo Arena and, from September this year, Exhibition Centre Liverpool. ACC Liverpool is a world class venue located on the banks of the River Mersey in Liverpool - one of the most exciting conference destinations in the UK.

Purpose built, unique, flexible and one of the largest in the UK, ACC Liverpool combines state of the art technology with cutting edge design. The cleverly designed auditorium, for example, provides seating for 1350 delegates and two rotating drums can subdivide this space into three separate, self-contained areas of 250 x two and 850.

Banqueting and exhibitions are easily accommodated in the versatile Multi-Purpose Hall (3725m²) – which, when combined with the adjoining Echo Arena, provides 7125m² of exhibition space. Plenary sessions can be built into the D-End of Echo Arena for up to 4,000 delegates while this area can also be utilised for large congresses of 10,000 delegates.

In September, ACC Liverpool will open the doors to a new exhibition centre. At an investment of £66m, Exhibition Centre Liverpool will consist of 8,100m² of event space and will be sub-dividable into three interlinked pillar free exhibition halls, each 2,700m² in size. These halls can be used separately or in combination. At the heart of the development is an upscale four star, 216-room Pullman hotel which will take bookings from January 2016. Highlights of ACC Liverpool's conference calendar since opening in 2008 include, Gordon Brown's first UK Cabinet Meeting, the NHS Confederation Conference and Exhibition, the Royal College of Nursing Congress and the Liberal Democrats Spring and Annual Conferences. The Labour Party Annual Conference 2011 was the biggest conference ever hosted at ACC Liverpool to date, generating £15m for the city's local economy and hosting more than 11,000 delegates. In 2012, BBC Worldwide Showcase, the world's largest international television market hosted by a single distributor, came to ACC Liverpool for the first time in the event's 36 year history as part of a five-year agreement to host the event at ACC Liverpool until 2017.

2015 events include Intergalva, Swinton, NHS Confederation, the National Cancer Research Institute, the National Institute for Health and Care Excellence (NICE), the UK Space Conference and the World Association for the Advancement of Veterinary Parasitology.

For further information and bookings contact ACC Liverpool on Tel: +44 (0)151 475 8888.

The ACC Liverpool Delegate Card is packed with fantastic offers, discounts and privileges for some of the city's best restaurants, bars, shops, hotels and attractions.



29 Internalize Journal Lines of

65 Years of Intergalva

It is 65 years since the first International Conference on Hot Dip Galvanizing (later known as 'Intergalva') was held at the Institution of Danish Civil Engineers in Copenhagen from 17-21 July 1950. That first conference was organised by the British Hot Dip Galvanizers Association, which at that time was affiliated to the Oxford-based Zinc Development Association. The 80 experts that gathered in Copenhagen debated many of the topics that still feature in today's Intergalva conference sessions. Technical sessions included papers and discussions on the role of aluminium additions to the galvanizing bath, influences on dross formation, inhibition of white rust and methods of drossing. The session on 'The Future of General Galvanizing' and discussions on 'Rivals to Galvanizing' make fascinating reading 65 years on and looking back on how the industry did flourish much as was predicted at the time!

Another notable feature of the first conference was the presence of Dr Heinz Bablik (pictured). Generally accepted as the 'father' of the industrialisation galvanizing



process, Heinz Bablik combined being a lecturer in the Technical University of Vienna with managing the family galvanizing factory in Brun (a plant that still operates today as part of the Zinkpower Group). This combination of theory and practice resulted in his classic book on galvanizing first published in 1926. By 1950, it was in its third edition and also translated into English. He attended the 1950 event and delivered a keynote speech on 'The Relative Merits of Flux Galvanizing and Dry Galvanizing'. Of course, this is one debate that we will not be holding at Intergalva 2015.

Also present at the first conference in 1950 was C.P.H. (Peter) Wedge, of BE Wedge Ltd that since evolved to create Wedge Group Galvanizing whose plants will be visited by many delegates during Intergalva 2015.

To celebrate the 65th Anniversary of the series of International Galvanizing Conferences, a digital version of the full 160-page Proceedings of the International Conference on Hot Dip Galvanizing 1950 has been published at www.intergalva.com. It is free to download and read more of those first discussions and collaborations that gave birth to today's spirit of Intergalva.

By 1955, three international conferences had stimulated demand for a European Galvanizers Federation but the sheet, wire and tube galvanizing industries were largely served through the steel industry and it was left to the general galvanizers to form their own association in November 1955. By ballot, Heinz Bablik was first choice for President and EGGA was born. EGGA took over the organisation of the conferences, which were then held in Milan (1956) and Belgium (1958). That started the pattern of conferences every 3 years with the host country nominating the EGGA President. From then on, Intergalva has never looked back as the leading international forum for the industry.

The Intergalva Series

1950 Copenhagen 1952 Düsseldorf 1954 Oxford 1956 Milan 1958 Belgium 1961 Interlaken 1964 Paris 1967 London 1970 Düsseldorf 1973 Stresa 1976 Madrid 1979 Paris 1982 London 1985 Munich 1988 Rome 1991 Barcelona 1994 Paris 1997 Birmingham 2000 Berlin 2003 Amsterdam 2006 Naples 2009 Madrid 2012 Paris 2015 Liverpool 2018 Germany



-ZINC RECYCLING.

Zinc skimmings • Zinc sheets • Bottom dross Remelted Zinc metal • Zinc alloys



www.rezinal.be • info@rezinal.be

Dellestraat 17 • 3550 Heusden-Zolder • Belgium

T: +32 13 539 630 • F: +32 13 521 674