



# TMD Newsletter

March 2015

## General Galvanizing Seminar in Russia

More than 40 delegates attended the two day general galvanizing seminar held in Chelyabinsk, Russia in January. Attendees included 26 general galvanizers from all parts of Russia and former republics as well as a number of major domestic and international equipment suppliers. The seminar was organized by the Russian Zinc Development Center (ZDC) and IZA. It consisted of technical sessions followed by a visit to the JSC Chelyabinsk Zinc Plant.



Seminar Participants, Chelyabinsk, January 2015

Dr. Frank Goodwin, IZA Director Technology and Market Development, was the main seminar presenter providing a

## HF Alloy Now Covered by ASTM Standard

ASTM B989-14 Standard Specification for High Fluidity (HF) Zinc-Aluminum Alloy in Ingot Form for Thin Wall Die Castings has been adopted by ASTM International.

The HF Zinc-Aluminum alloy was developed by IZA through a joint effort of the Cast Metals Coalition, an industry consortium including the North American Die Casting Association (NADCA), and the US Department of Energy (DoE). It uses a composition close to the ZAMAK alloys but contains more aluminum (ranging from 4.3-4.7%) which ensures excellent die castability. The alloy has comparable physical, mechanical and corrosion

detailed review of all aspects of the general galvanizing process. Galvanizing alloys including zinc-nickel (Technigalva) and zinc-tin-bismuth (Galvaflow), bath chemistry and management as well as galvanizing defects and cures were also discussed.

Participants were very complimentary on the seminar format and suggested to repeat this event on a more regular basis. The next general galvanizing event of ZDC is planned at the MetalExpo Show in Moscow in November.

Other 2015 ZDC events include a continuous galvanizing seminar in Magnitogorsk, Chelyabinsk Oblast, and a die casting seminar - both planned for June.

properties to Alloy 3 and 7 and is most suitable for casting parts with a section thickness less than 0.45mm.



### **Proposed ASTM Standard for CGR up for Final Ballot**

ASTM WK46112 Specification for Zinc-Coated (Continuous hot-dip Galvanized) Steel Bars for Concrete Reinforcement has successfully passed the subcommittee ballot and has been submitted for the main committee ballot. The specification is expected to become an official ASTM standard at their next general meeting, May 17.

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### **CGR Promoted at TRB Annual Meeting**

IZA promoted Continuous Galvanized Rebar (CGR) at the Transportation Research Board's (TRB) 94th Annual Meeting held in Washington D.C. in January. The Transportation Research Board engages transportation practitioners, researchers, public officials and industry representatives to focus on innovative transportation solutions for the 21st century.

12,000 international delegates attended this year's meeting which featured 5,000 presentations and 800 workshops addressing topics of interest to all attendees.



Continuously galvanizing rebar (CGR) provides:

- superior coating adhesion allowing on-site forming and bending;
- superior corrosion resistance in concrete due to having pure zinc under the passivation layer;
- great production flexibility and;
- significant cost savings

IZA attended the sessions on the use of reinforcing steel in concrete and promoted the optimal solution to corrosion provided by galvanizing. IZA interacted also with delegates at the presentations, poster sessions and in the commercial exhibits.

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### **NADCA Commits \$25,000 to IZA's Global Zinc Die Casting Program**



During their recent R&D Committee meeting the North American Die Casting Association (NADCA) confirmed funding of \$25,000

for IZA's ZCA-15 program - "Zinc Alloy Properties for Market Development and Support". The program develops mechanical property information in computer-readable form which will allow designers and specifiers to use it in computer-aided design. Broad engineering properties' data of zinc alloys are key to further develop the zinc die casting market. Program partners include zinc alloyers and the German die casting industry through the University of Aalen.

compared to other corrosion resistant rebar systems.



### Japan Market Liaison Meeting

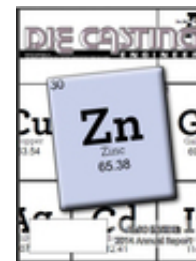
The annual Japan Market Liaison Meeting was held in Tokyo in March and included more than 80 participants from the general galvanizing, zinc die casting and trade press sectors. Topics included the latest results from die casting, general galvanizing, CGR and thermal spraying research and market development programs; an update on environmental research, health and sustainability, the zinc in fertilizers program and global regulatory issues including REACH, the International Maritime Organization (IMO) activities and the Restriction of Hazardous Substances (RoHS). The meeting was organized by the Japan Mining Industry Association and the Japanese Lead Zinc Development Center and supported by IZA.

Fifteen Japanese general galvanizing plants completed a two year certification process for supply of general galvanized rebar required by the Ministry of Construction and started to develop this market in Japan. Market development activities for zinc die casting were also increased.



### Update on CFC Zinc Die Casting Project in India

In 2012 the Common Fund for Commodities (CFC) and IZA launched the third phase of their public private partnership on transferring technology and promoting demand aimed at raising the production standards of the Indian zinc die casting industry. The industry is less than 10% in relative size compared to the zinc die casting industries of other emerging economies such as Brazil and China which have successfully



### DCE March Issue Highlights Zinc

The March 2015 issue of NADCA's magazine "Die Casting Engineer" (DCE) is dedicated to zinc featuring three articles on "our" metal:

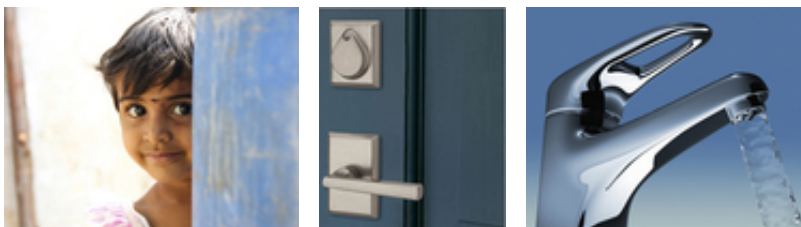
- Online Resources for Die Casting Design, Martin Gagné, IZA Consultant
- Understanding Processing and Ageing Influences on Mechanical Properties of Zinc Alloy ZA-8, Dr. Frank Goodwin, IZA
- EZAC – A Solution to Zinc Die Casting Challenges, Ryan Winter, Eastern Alloys Inc.

The DCE online version can be accessed via <http://www.diecasting.org/dce/>

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adopted technology upgrades.

The India die casting project involved a two-stage audit aimed at reviewing plant operations and benchmarking them against global industry standards; identifying gaps and weaknesses; and recommending corrective measures to improve the industry's competitiveness as well as to promote domestic demand. The project costs amounted to US\$ 270,000 including a US\$ 110,000 grant of the CFC. Other funding partners included the Government of India, the Delhi Institute of Tooling Engineering (DITE) and the India Lead Zinc Development Association (ILZDA).



The Indian zinc die casting industry is made up of many small to medium-size plants with less than 100 employees. Thirteen plants were selected to participate in the first round of audits. The second assessment involved four plants representing a broad cross-section of the Indian zinc die casting industry. This second audit focused on the operation processes including alloy control; mold design; and production; machinery; die casting area layout; casting quality; recycling and waste handling. Each company was assessed against global standards and received specific recommendations on how to improve operating processes. Subsequently, the companies were assisted in implementing these recommendations with IZA providing further technical support. The companies were extremely satisfied with the result and reported significant gains in quality, productivity and cost reduction.

The CFC-funded project also included three workshops in Delhi, Mumbai and Aligarh which shared the outcomes with the rest of the Indian zinc die casting industry. A process overview; audit check lists; best practice case studies and other material that could help other die casters upgrade their production processes were made available on the IZA India website (<http://www.zinc.org.in/cfc-zinc-die-casting-project/>).



## Galvatech 2015

The 10th International Conference on Zinc and Zinc Alloy Coated Steel Sheet (Galvatech 2015) will be held in Toronto, ON, Canada, May 31 – June 4, 2015. It will be held with the 5th International Conference on Hot Sheet Metal Forming of High-Performance Steel (CHS<sup>2</sup> 2015).

Galvatech will feature 175 technical papers including discussions on new and emerging technologies for processing and performance of zinc-coated steel sheet. There will also be special joint sessions on state of the art coated steel dedicated for hot stamping applications. In addition there will be an exhibition.

Galvatech is organized by the Association for Iron and Steel Technology. IZA's Dr. Frank Goodwin is co-chair of this conference. For further information, please go to: <http://www.aist.org/conference-expositions/galvatech-2015>



## India Sheet Steel Building Group

The India Steel Sheet Building Group (ISSBG) was created by IZA with the objective of expanding the market by providing a technical platform and raising the importance of zinc coating for long-term corrosion protection among architects, specifiers and government agencies. The ISSBG Committee represents all steel producers and coil coaters, as well as several major pre-engineered building manufacturers and roofing and cladding roll formers. The Committee discusses Bureau of Indian Standards (BIS) standards under development or revision, conducts a multi-year atmospheric corrosion testing of zinc and zinc alloy coated steels and develops technical publications. The group has also launched an automobile corrosion survey.

A dedicated section on the IZA India website (<http://www.zinc.org.in/issbg/>) has been created to serve the stakeholders and public at large. This website provides a large and growing list of technical publications.



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## Intergalva 2015

The European Galvanizers Association's (EGGA) "Intergalva" will be held in Liverpool, UK, June 7-12, 2015. The conference will cover technical, commercial and environmental topics for the general (batch) hot dip galvanizing industry and will be complemented by an exhibition and optional plant tours. For further information, please go to <http://www.intergalva.com/>



## Increasing the Awareness of CGR in India

IZA recently visited prominent engineering and academic institutions to raise the awareness and benefits of continuous

galvanized rebar. Presentations were given to Engineers India Ltd., a leading design and engineering organization in South Asia providing engineering consultancy to diverse sectors, and to the Central Road Research Institute (CRRI), a national laboratory carrying out research and development projects on the design, construction and maintenance of major road and transportation infrastructure. CRRI is part of the Indian Council of Scientific and Industrial Road Research. A number of potential CGR producers were also visited. One of these firms has planned a trip to China to see the line operating there.

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## Lead-Zinc 2015

The Lead-Zinc Symposium 2015, organized by the German Society of Metallurgists and Miners (GDMB), will take place in Dusseldorf, Germany from June 14-17, 2015. The conference will cover global market factors, environmental practices, health and safety, legal aspects of production, processing fundamentals, innovations and recovery. In addition to the plenary there will be specific sessions on lead and zinc.

On Sunday, June 14 a Short Course on Zinc which will look

## IZA presented at Indian Roads Congress

The Indian Roads Congress (IRC) is the oldest and most important technical forum for sharing of knowledge and pooling of experience on the construction and maintenance of roads and bridges. IRC has more than 13,500 members including engineers from Central and State Governments, the Army, Border Roads Organization, road research institutes, engineering colleges, local bodies and private enterprises.

At IRC's 75th platinum jubilee meeting, held in Bhubaneswar in Eastern India in January, 2015 IZA gave a presentation during the technical sessions on galvanized steel for road construction, emphasizing life cycle cost analysis and the new CGR product. The presentation was extremely well received. Mr. D.P. Gupta, past Director General of the Ministry of Roads, Transportation and Highways [MoRTH], expressed strong support for galvanizing for roads and highways, and steel bridges in the Ministry of Railways.



in greater detail to zinc production, uses, recycling and zinc's importance for health will be held.



The conference will be held in conjunction with the European Metallurgical Conference 2015 and the metallurgical trade fairs GIFA, METEC, THERM Process and NEWCAST.

For further information, please go to: <http://pb-zn.gdmb.de/program/short-course/>



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