



technology and market development

TMD Newsletter

August 2016

2016 GAP achievements

The objective of the Galvanized Autobody Partnership (GAP) is to grow and protect the market for galvanized sheet in automobile bodies and structures through technical innovation and market acceptance. The focus is to develop the knowledge required to galvanize the emerging sheet steel products that will ensure steel's competitiveness with aluminum and composite materials as vehicle emissions and fuel economy rules become more challenging. GAP has 19 steel companies, 7 coating company suppliers and 1 auto manufacturer as members.

IZA manages the US\$1.25 million annual GAP budget that includes US\$490,000 from the steel industry and its suppliers and US\$617,000 from governments and other co-contributors to projects. The most recent new funding received by the GAP program was US\$91,000 from the Austrian government's COMET program for improvement of galvanizing bath hardware and US\$90,000 from National Science and Engineering Research Council Canada. Both of these are multi-year contributions that will continue at equal levels for several years.



Recent accomplishments of GAP include the achievement of USA Department of Energy (DoE) goals for third generation galvanized advanced auto body steels; performance of hot press formed ultra-high strength steels with a zinc-rich coating; a new approach to reducing noise near the zinc bath with redesigned gas coating control jets; and ways of reducing dross in

Three Die casting seminars held in North America

IZA presented three design seminars in April, 2016, in Bloomington (Minnesota); Madison (Wisconsin); and Rolling Meadows (Illinois).

OEM engineers, designers and specifiers, were presented with the latest innovations in zinc to improve product performance and reduce manufacturing costs. Presentations covered selecting the right zinc alloy to match the performance requirements of products, understanding the suitability of various casting process options, evaluating different finishing techniques to enhance overall product image, and reviewing design strategies for more cost efficient components.

Galvanizing seminars held in South East Asia

A series of galvanizing

the zinc bath by tailoring of strip entry temperature to zinc bath temperature. The results of these developments such as the ability to coat lighter and thinner steels will strengthen the competitiveness of zinc-coated steels in the automotive industry.

Future directions for galvanized advanced auto steel developments, given by IZA's Frank Goodwin and Prof. Joe McDermid of McMaster University, were presented in a keynote address at the Association for Iron and Steel Technology's (AIST) annual conference held in Pittsburgh, Pennsylvania in May. Six other presentations were given on results of GAP projects.

AISTech is one of the largest steel technical conferences in the world, attracting more than 8000 participants.

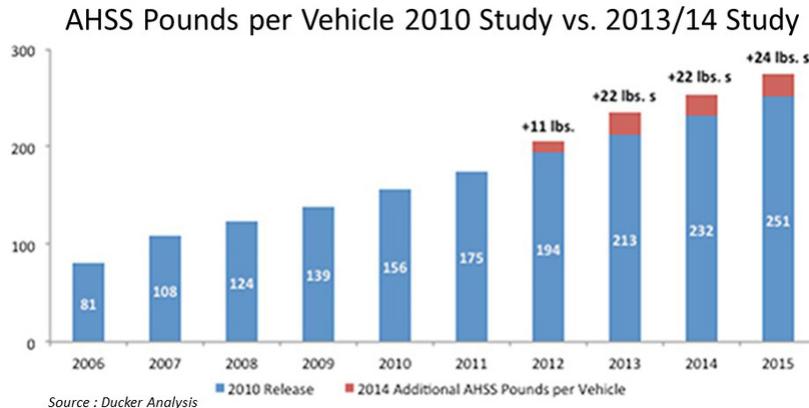
At the recent GAP Program Review meetings in Pittsburgh and Paris, delegates from the zinc, steel and auto industries defined the 2017-2019 program. After recommendations received at the Paris meeting, Opel, a division of General Motors, proceeded with painting trials on new ZnAlMg coatings and reported excellent results.

The estimated market for zinc in automotive steel applications is about 600,000tpy.

Growth of auto-steel exceeds forecast by 10%

According to a study conducted by Ducker Worldwide the use of advanced high-strength steels (AHSS) has been 10% higher than forecasted for the past three years while the use of aluminum remained far behind expectations.

The use of AHSS per vehicle amounted to approx. 275 pounds in 2015 - 24 pounds more than forecasted.



"The trend toward higher than expected use of AHSS is one indicator of the high value of steel," said Lawrence W. Kavanagh, president of the Steel Market Development Institute (SMDI). "Another is the lower-than-forecasted

awareness seminars were held in South-East Asia during the first quarter of 2016. In Malaysia attendees included specifiers and consulting bodies involved in the nation's future expansion plans for its Mass Rapid Transit rail system, involving an investment of US\$ 3 billion by government and private enterprise over the next 5 years.



In addition, seminars were conducted at leading technical educational centers to build galvanizing awareness amongst future professionals in engineering and industrial technology fields. Seminar events were conducted in both Malaysia at the Kuala Lumpur University of Technology and in Thailand at Suranaree University of Technology.



IZA Conferences

European Zinc Die Casting

adoption of aluminum, noted by aluminum companies in late 2015." (Source: SMDI Press Release, 20/04/2016)

In 2014 Ford announced a switch to an aluminum body with its high-volume F-150 pick-up truck to reduce weight to meet the stringent fuel economy goals set by the US government. Other automakers were expected to follow and analysts predicted high growth rates for aluminum. Although initially alarming news for the steel and zinc industries, a successful counter was enabled by the development of the 3rd generation of high strength steels that are now using a GAP breakthrough to ensure galvanizability. These new steels offer excellent possibilities for weight reductions without incurring higher costs associated with aluminum and other competing materials. As a result steel-based vehicles continue to dominate the automotive market and forecasts for galvanized AHSS in automotive use continue to be positive.

GAP expertise helps create new automotive zinc demand in Mexico

Galvanized Autobody Partnership (GAP)- sponsor Ternium, Latin America's largest steel producer, recently announced that a new automotive galvanizing line, Tenigal 2, will be built, increasing their capacity from 400,000 to 830,000 annual tons. Together, these lines will consume around 16,000 annual tons of zinc. These lines will supply the Mexican auto industry, which is forecast to grow from 3.4 million cars to 5 million cars in 2020. IZA provided a technical seminar at the Tenigal 1 facility last December to share expertise in galvanizing automotive sheet developed by the GAP program.



IZA seminar at Tenigal 1, Dec. 2015

IZA promotes metalizing of ships

Following the successful metalizing program for offshore wind energy installations, IZA has initiated a market development project for zinc thermal spraying for corrosion prevention on ships. As part of the project IZA is conducting a field study with a thermal sprayer and a ship in Sweden. After one year the ship will be inspected to compare the performance of the

Competition

Zinc Die Casting Conference, Brescia, Italy, September 21-23, 2016

International Galvanizing Technology Symposium & Exhibition, Shanghai, China, October 19-22, 2016

2nd International Galvanizing Conference & Exhibition, New Delhi, India, October 20-21, 2016

TMD & ESD Committee Meetings, Lisbon, Portugal, October 24-25, 2016

GAP North American Program Review Meeting, Pittsburgh, PA, USA, October 26-27, 2016

GAP European Program Review Meeting, Maizières-les-Metz, France, November 8-9, 2016

Sheet Galvanizing Seminar, Buenos Aires, Argentina, November 14, 2016

LATINGALVA, Buenos Aires, Argentina, November 14-17, 2016

Hot-Dip Galvanized Sheet Course (Galvinfo Center), Atlanta, GA, USA, December 6-8, 2016

For further information, please contact us

Other Industry Events

North American Die Casting Association Congress,

duplex zinc + paint coating to the paint-only coating on exposed parts above the water line.

The use of zinc thermal spraying for corrosion protection in the shipping industry, for maintenance and new construction, offers significant market potential. It is estimated that an additional 100,000 tons of zinc could be consumed if 10% of the global commercial fleet of merchant and passenger ships were zinc thermal sprayed.



deck of incoming ship
showing corrosion



ship used in field
study



thermal spraying of
ramp of ship

Columbus, OH, September 25-28, 2016

American Galvanizers Assn.
Tech Forum, New Orleans,
USA, October 4-6, 2016

9th International Cadmium
Conference, Lisbon, Portugal,
October 26-27, 2016



International Zinc Association - www.zinc.org - contact@zinc.org

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