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ZED Yields Impressive Results in Housing

Using zinc to build a single home prevents more than 50 tonnes in carbon emissions, and if just 10% of new homes in North America were built using zinc, more than 40 million tonnes in carbon emissions would be prevented. These impressive numbers demonstrating zinc's success story as an agent of decarbonization are the first results of the International Zinc Association's new Zinc Enables Decarbonization (ZED) initiative, a partnership between the International Zinc Association and Environmental Economist Benjamin Cox, Program Director of the Bradshaw Research Institute for Minerals and Mining at the University of British Columbia.

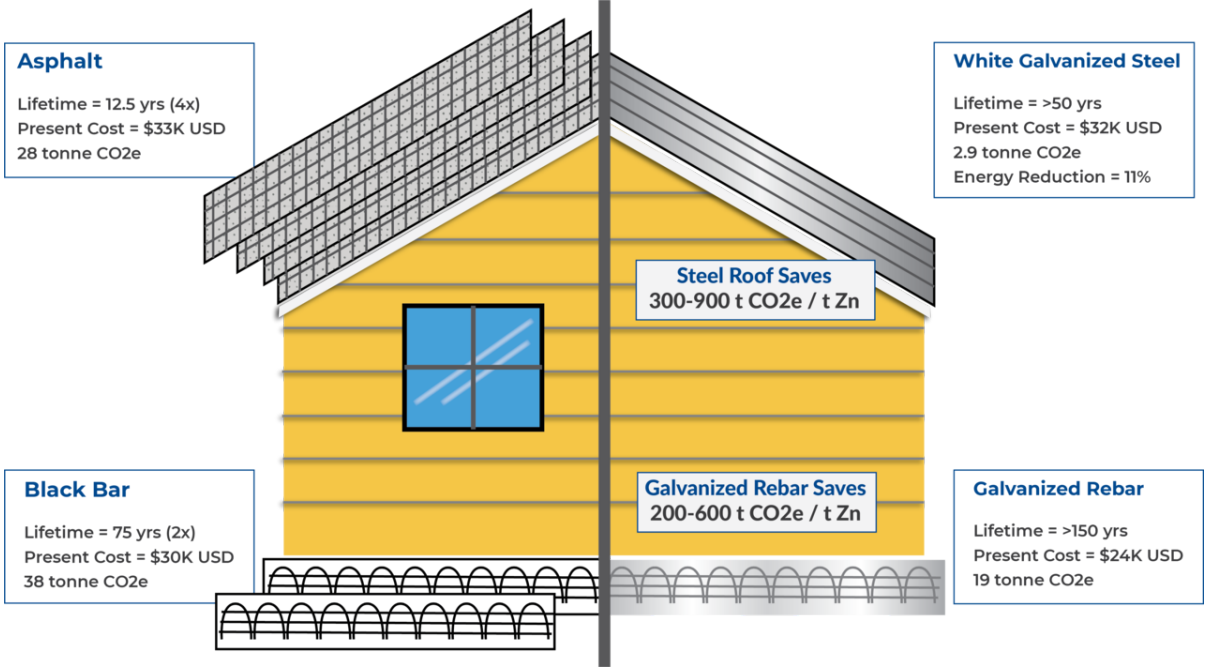
The ZED program quantifies zinc's impact with steel on decreasing life-time costs, decreasing carbon emissions, and increasing safety in housing, infrastructure, energy, and transportation. The first phase has assessed the value in residential construction, where zinc is used to coat and protect the rebar used in the reinforced concrete of a home's foundation and in the sheeting of a metal roof. A zinc coating prevents corrosion and ensures longevity.

"Zinc plays a transformative role in building stronger, more sustainable communities, particularly in the decarbonization of residential buildings," said Andrew Green, Executive Director of the International Zinc Association. "From the foundation to the rooftop, zinc enables long-lasting, low-maintenance solutions that enhance a home's durability and environmental performance."

In a typical U.S. home, a traditional foundation may last 75 years and an asphalt roof as long as 25 years, but a home using galvanized steel in concrete reinforcement and in roofing materials can double the service life and avert future costs and emissions associated with repair and replacement, according to ZED research. The selection of galvanized steel for new roofs in Europe also can prevent more than ten tonnes of carbon emissions per home and provide substantial economic savings over using tile roofing materials.

"Our research finds that zinc provides long-term savings by preventing repeated repair and replacement of a home's roof and foundation," said ZED Economist Benjamin Cox. "But in addition to economic savings, we've also accounted for the extraordinary environmental benefit provided by zinc – preventing hundreds of millions of tonnes in carbon emissions."

The financial and environmental benefits are detailed in this graphic, showing the extended service life, lowered utility bill, and avoided environmental impact of a house built using zinc.



"Zinc's impact in housing increases with each year of service life, adding substantial economic and environmental value to every home and providing a bright outlook for zinc and the homes it enhances," said ZED Director Eric Van Genderen. "With these results, we can make the case to policy makers, investors, engineers, and builders to make zinc a permanent part of residential construction planning."

The first report from the ZED program focuses on zinc's impact on residential construction, particularly in the United States. ZED also will release reports quantifying zinc's impact in transportation infrastructure, energy infrastructure, and the automotive industry. For more information, please visit the ZED webpage.

Ana Paula Domingos Cardoso presents new material trends at the International Chinese Lightweight Conference.

IZA Team Visits China, Japan, and South Korea

IZA Director of Technology & Market Development Martin van Leeuwen and Galvanized Autobody Partnership (GAP) Manager Ana Paula Domingos Cardoso met with leaders of the zinc and steel industries during a visit to South Korea, Japan, and China, in addition to presenting on the advantages of zinc coatings during meetings and at a conference.

Starting in South Korea, Martin and Ana provided updates on GAP research to sponsors, including Hyundai Steel and Posco. In Tokyo, Martin and Ana presented for the Japan Mining Industry Association on zinc markets, including the automotive, battery, die casting, and construction sectors for representatives from MMS, Sumitomo Metal Mining Company, Hakusui Trading Company, the Japan Galvanizers Association, the Japan Die Casting Association, Dowa Electronics Materials Company, JFE Steel Corporation, and YKK. Participants asked numerous questions about circularity, decarbonization, and life cycle assessments related to zinc.

In Shanghai, Ana and Martin joined IZA colleague Annette Huang to hold the Chinese GAP Meeting, which was hosted by Baosteel Research Center for galvanizing research experts and representatives from Chinese steel producers Baosteel, Shougang, AngSteel, MaSteel, and TangSteel. For many years, these companies have relied upon research generated by the Galvanized Autobody Partnership to make design and manufacturing decisions related to automotive steels.

Team IZA wrapped up its visit by participating in the International Chinese Lightweight Conference in the Changqing District, where more than 1000 participants learned about new trends in lightweight materials for automotive and airspace applications from Ana's keynote lecture. She touched on the importance of selecting the proper lightweight solution for automotive parts based on cost, life service, and engineering properties and pointed to galvanized Advanced High Strength Steel as a valuable choice for lightweight material providing extended life service through corrosion protection.

A trip highlight for Martin and Ana was visiting a manufacturing facility at the Changan Automobile Company, one of the most successful carmakers in China. Changan and other Chinese auto manufacturers increasingly are adopting galvanized steel, particularly in their electric vehicles.

Life Cycle Assessment Group Holds First Meeting

IZA launched its new Life Cycle Assessment (LCA) Working Group with a virtual meeting last month. The group is comprised primarily of members and focuses on identifying key pressures along the zinc value chain to shape LCA activities, confirming that IZA represents the zinc industry’s sustainability position, and aligning stances on LCA methodologies to ensure credibility and transparency across the sector.

As part of the kickoff, a live survey was conducted via Mentimeter to gauge the relevance of LCA for participating companies. Key insights were collected from the 81 respondents representing the full zinc value chain, including mining, smelting, waelzing, remelting, and downstream users.

Top findings include that customer requests serve as the primary driver for LCAs, followed by adopting best practices, following regulatory requirements, improving processes, and taking advantage of marketing opportunities. Among customer-driven demands, corporate carbon footprint assessments are most requested, followed by LCAs aligned with various standards.

If you are interested in joining the LCA Working Group or would like more information, please contact LCA Manager Hemant Sharma at hsharma@zinc.org.

Speaking and Writing of Zinc

Executive Director Andrew Green was honored to speak at the American Galvanizers Association's annual meeting, where he highlighted top IZA programs, including Zinc Enables Decarbonization and the Zinc Battery Initiative.

Zinc coatings build better bridges, Kevin Irving told participants at the AMPP: Association for Materials Protection and Performance Annual Conference and Expo in Nashville. Kevin’s presentation focused on thermal spray, zinc alloy case studies and applications, and how zinc prevents corrosion and ensures long service life for steel and concrete bridges. In addition, Martin Gagné moderated and presented at a panel on Coatings and Case Studies for Asset Protection in Corrosive Atmospheric Conditions. The session also included Carboline's Kristen Blankenship, the American Galvanizers Association's Alana Fossa, and CMC's Thomas Russo.

In battery news, IZA officially joined RECHARGE as an Associate Member. RECHARGE is Europe’s leading industry association for advanced rechargeable batteries, and IZA will benefit from RECHARGE's work on many relevant EU policies and raise the profile of zinc-based rechargeable battery solutions on behalf of Zinc Battery Initiative (ZBI) members. In addition, European Affairs Director Howard Winbow and European Affairs Manager Mik Gilles participated in the 3rd Exchange & Capacity-building Group on Battery Materials (ECaBaM) Workshop, where they joined important supply chain participants in a collaboration with the European Chemicals Agency (ECHA) and the European Commission to review the extensive list of substances used in batteries and to discuss the correct and appropriate risk managements in place or required to ensure continued and successful license to operate.

Howard Winbow, Regulatory Toxicology Senior Manager Noömi Lombaert, and Chemical Management Officer Emilia Hoste enjoyed their visit to member Befesa's facility in Duisburg, Germany, where they discussed issues related to circularity and sustainability following an impressive tour of the recycling plant. Meanwhile, Environment Senior Manager Chris Cooper appreciated the

opportunity to meet with the Shropshire and Hereford Galvanisers in addition to seeing a galvanizing plant in action and discussing risk assessment.

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