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Novelis Creates First Aluminum Sheet Battery Enclosure Solution

Flat-rolled, cost-effective design meets growing needs of electric vehicle market

ATLANTA, April 30, 2019 /PRNewswire/ -- Novelis Inc., the world leader in aluminum rolling and recycling, today announced it has developed the first aluminum sheet battery enclosure solution to address customers' needs in the rapidly growing electric vehicle and battery markets. Available globally, this innovative design for next-generation automobiles provides a more sustainable mobility solution in battery electric vehicles, a market that is expected to more than triple globally by 2025.



Built with Novelis Advanz™ aluminum products and part of the Novelis Alumineering® Solution portfolio, a collection of design solutions for the automotive industry, the enclosure is up to 50 percent lighter than an equivalent steel design. As a result, it matches the best energy density in the industry by enabling more than 160 watt-hours per kilogram, an extremely efficient design for OEMs and Tier 1 battery pack manufacturers. It also can accommodate all battery cell types and is designed particularly for battery electric vehicles with larger power packs such as pick-up trucks, sport utility vehicles and crossovers. For mass production electric vehicles, Novelis' aluminum sheet design is the most cost-effective solution when compared to aluminum extrusion and casting-intensive designs and has low \$/kg saved premiums compared to equivalent steel designs at substantially lower weight.

By utilizing Novelis' highly-formable alloys, the battery enclosure provides automakers the ability to achieve deep drawn, complex shapes tailored to specific vehicle design requirements. The lightweight, high-strength material can help extend range, allowing vehicles to go 6-10 percent further on a single charge. With safety as a top priority, Novelis conducted extensive testing simulations to ensure its innovative, high-strength materials will protect batteries from road debris and vehicle crashes.

"This is the first project resulting from Novelis' recently launched Customer Solution Center network, which brings research and technical platforms, operations and commercial development together to increase collaboration and innovation with our partners," said Pierre Labat, Vice President, Global Automotive, Novelis Inc. "With our investment in design, joining and crash management capabilities, we were able to create a stronger, more efficient, and more cost-effective enclosure that can be fully customized to meet our customers' needs."

The design incorporates direct feedback from industry partners as well as automotive design engineers. It also leverages the inherent benefits of aluminum being more corrosion-resistant, easily recyclable and having better thermal conductivity, which helps keep battery cells cool and increases its lifespan as compared to steel designs.

"Novelis' approach to the battery enclosure opportunity focuses on smartly balancing lightweighting with production cost, structural and thermal efficiency, and crash management, which we believe are the key drivers for adopting an aluminum-intensive solution for the marketplace," said Kai-Uwe Salzmann, Vice President and CTO, EDAG Inc.

As automakers continue investing in sustainable mobility solutions, aluminum is increasingly the material of choice for reducing vehicle emissions. The introduction of this solution aligns with Novelis' purpose to shape a sustainable world together.

About Novelis

Novelis Inc. is driven by its purpose to shape a sustainable world together. As a global leader in innovative products and services and the world's largest recycler of aluminum, we partner with customers in the automotive, beverage can and specialties industries to deliver solutions that maximize the benefits of sustainable lightweight aluminum throughout North America, Europe, Asia and South America. The company is headquartered in Atlanta, Georgia, operates in 10 countries, has approximately 11,000 employees and recorded \$11.5 billion in revenue for its 2018 fiscal year. Novelis is a subsidiary of Hindalco Industries Limited, an industry leader in aluminum and copper, and metals flagship company of the Aditya Birla Group, a multinational conglomerate based in Mumbai, India. For more information, visit novelis.com and follow us on Facebook at facebook.com/Novelis and Twitter at twitter.com/Novelis.

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