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Alcoa announces innovations in alloy development and deployment

- *New high-strength, 6000 series alloy, A210 ExtruStrong™ debuts, offering thinner, stronger extrusions for a variety of applications*
- *Existing alloy, C611 EZCast™, recognized with international award for its use in one-piece megacastings for automotive applications*

PITTSBURGH – September 13, 2022 – Alcoa Corporation (NYSE: AA) today announced new innovations in alloy development and deployment, further strengthening its position as a supplier of advanced aluminum alloys.

The Company's innovations include the introduction of a new high-strength, 6000 series alloy, A210 ExtruStrong™, that delivers benefits across a wide range of extruded applications, including transport, construction, industrial, and consumer goods.

Alcoa also announced today that its C611 EZCast™ alloy, a high-performance alloy that does not require a dedicated heat treatment is being recognized this week with an international award at the 2022 International Die Casting Competition in Lexington, hosted by the North American Die Casting Association.

The alloy has won top recognition for excellence in structural die casting due to its application in megacasting, where large components of a vehicle are high pressure diecast as one piece, cutting manufacturing costs and enabling more efficiency.

"Aluminum is a material of choice for the low-carbon future, and alloy innovations such as A210 ExtruStrong and C611 EZCast are key to providing fit-for-purpose solutions that help automotive and industrial customers drive down costs and achieve their sustainability ambitions," said Kelly Thomas, Alcoa's Executive Vice President and Chief Commercial Officer. "Innovating new aluminum alloy technologies that can be used in sustainable applications like electric vehicles aligns with our vision to reinvent the aluminum industry for a sustainable future."

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C611 EZCast: Helping Electric Vehicle Car Manufacturer NIO Megacast At Scale
C611 EZCast is a proven alloy that can be used in large die casting machines – it is particularly well suited for megacastings in automotive applications.

Electric vehicle manufacturer NIO is the latest to successfully qualify the alloy for megacasting for vehicles. NIO, which has experts around the world supporting its line of all-electric vehicles, converted to the C611 EZCast alloy after extensive testing that proved out positive benefits, which include gains in productivity and efficiency while ensuring reliability and safety.

“Alcoa’s C611 alloy is the first great step in NIO’s future casting development,” said Gary Hughes, NIO’s Director of New Product Introduction, Engineering. “We reduced energy consumption and carbon emission by using C611.”

The C611 EZCast alloy has been used to create, among other parts, front and rear longitudinal beams and floor frames.

The alloy also does not require any dedicated heat treatment, achieving final properties simply from the normal paint-baking process that is part of every automotive manufacturer’s assembly line process. Eliminating the need for dedicated heat treatment, saves energy, lowers carbon dioxide emissions, and reduces the complexity in a vehicle’s manufacturing process.

Alcoa has licensed to CSMet New Material Group Co, based in Shanghai, the exclusive right to produce and sell Alcoa’s C611 EZCast alloy in China. CSMet is developing the megacasting application and supplying the alloy to NIO and other top-tier Chinese automotive OEMs. Through its partnership with CSMet, Alcoa’s alloy was qualified for NIO’s megacasting components, including a rear floor design that is 20 percent lighter than a previous design that used numerous parts.

A210 ExtruStrong: A New Generation of High Strength Alloys for a Wide Range of Sectors
First introduced as part of crash protection components, the A210 ExtruStrong alloy is more than 40 percent stronger than competitive alloys, while also boasting lighter weight and reduced thickness.

It delivers best-in-class corrosion and aging performance, particularly for thin-wall structures. Extruded profiles created with A210 ExtruStrong can be thinner than other competing 6000 and some 7000 series alloys. Tensile and yield strength are improved, including the percentage of elongation. Furthermore, anodizing results are also improved, and it provides a nearly 30 percent gain in fatigue resistance versus its competitors.

Beyond automotive applications, other uses include highly demanding structural applications in the construction industry, including new bridges, and for various lightweight and strong products, such as bicycles.

The A210 ExtruStrong and C611 EZCast alloys build on Alcoa’s history of alloy development and innovation. Most of the world’s aluminum alloys were first developed by Alcoa, including more than 44 different wrought alloys and 40 casting alloys. Alcoa’s Technical Center and its Centers of Excellence bring decades of metallurgy and engineering leadership to help customers solve challenges, including developing light-weighting solutions for electric vehicles.

To learn more about some of Alcoa’s advanced aluminum alloys, please visit here.

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About Alcoa Corporation
Alcoa (NYSE: AA) is a global industry leader in bauxite, alumina and aluminum products with a vision to reinvent the aluminum industry for a sustainable future. With a values-based approach that encompasses integrity, operating excellence, care for people and courageous leadership, our purpose is to Turn Raw Potential into Real Progress. Since developing the process that made aluminum an affordable and vital part of modern life, our talented Alcoans have developed breakthrough innovations and best practices that have led to greater efficiency, safety, sustainability and stronger communities wherever we operate.

Forward-Looking Statements
This press release contains statements that relate to future events and expectations, and as such constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as “aim,” “ambition,” “anticipates,” “believes,” “could,” “develop,” “endeavors,” “estimates,” “expects,” “forecasts,” “goal,” “intends,” “may,” “outlook,” “plans,” “potential,” “projects,” “reach,” “seeks,” “sees,” “should,” “targets,” “will,” “working,” “would,” or other words of similar meaning. All statements by Alcoa Corporation that reflect expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements. Forward-looking statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and changes in circumstances that are difficult to predict. Although Alcoa Corporation believes that the expectations reflected in any forward-looking statements are based on reasonable assumptions, it can give no assurance that these expectations will be attained, and it is possible that actual results may differ materially from those indicated by these forward-looking statements due to a variety of risks and uncertainties. Additional information concerning factors that could cause actual results to differ materially from those projected in the forward-looking statements is contained in Alcoa Corporation’s filings with the Securities and Exchange Commission. Alcoa Corporation disclaims any obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law.

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