Press Release

New EOS CopperAlloy CuNi30 Material Successfully Developed with Phillips Federal for U.S. Navy Submarine Industrial Base

Developed with the U.S. Navy for its supply base in mere months, EOS CopperAlloy CuNi30 for laser powder bed fusion (LPBF) industrial 3D printing delivers a superior combination of strength and corrosion resistance

- **Innovative copper-nickel (CuNi) alloy meets UNS C96400 specifications**
- **Ideal for marine, energy, and chemical industries**
- **For use with EOS metal and other OEM technologies**

Pflugerville, Texas, February 16, 2024 – EOS, a leading supplier of additive manufacturing (AM) solutions for industrial 3D printing, today announced the successful development and commercial availability of its new **EOS CopperAlloy CuNi30** material, a copper-nickel alloy engineered specifically for laser powder bed fusion additive manufacturing.

Specifications

EOS CopperAlloy CuNi30 delivers excellent performance and material properties with a combination of high strength and ductility, around 510 MPa UTS and more than 20% elongation. The material achieves excellent corrosion resistance in salt water and sustained performance in low temperatures. With these mechanical properties, EOS has successfully met UNS C96400 specifications as mentioned in ASTM B369-09 for mechanical performance.

In partnership with Phillips Federal and Austal USA for the submarine industrial base (SIB), EOS CopperAlloy CuNi30 was developed and tested to alleviate the supply pressure of traditional castings and meet the goal of "2+1 Columbia and Virginia Class submarine platforms" for the U.S. Navy. Phillips Federal has noted that the material's exceptional performance combined with the competitive cost-per-part (CPP) has created a strong business case for production implementation.

"EOS was provided with a strategic objective to deliver a CuNi30 product to the U.S. Navy submarine industrial base to mitigate casting delays; a material holding unique to the naval construction industry and not widely available for AM technology use," said Dr. Ankit Saharan, senior manager of metals technology at EOS. "We acted with priority to support the submarine program schedule, and we are pleased to share our successful product release within a few months of the project start. It is a

privilege to contribute to projects of such strategic importance to our national interests."

Supply Chain Efficiencies, Accelerated Lead Times, and Reduced Inventories

Traditionally, manufacturing of CuNi alloy applications is done by casting and can be costly due to testing and quality requirements. There is also a lack of suppliers who can meet the application requirements. With the combination of EOS CopperAlloy CuNi30 and the quality and productivity of EOS platforms, these applications can now meet both requirements, while also opening new design and production capabilities industrial 3D printing affords manufacturers. Additionally, parts can now be produced regionally, locally and on-demand – another advantage of AM.

"We are grateful for the response from EOS and the Additive Minds team to develop EOS CopperAlloy CuNi30 so quickly," said John Harrison, senior vice president of global additive at Phillips Federal. "This alloy is critical in many marine applications and will be important in our efforts to support the U.S. Navy Center of Excellence."

EOS CopperAlloy CuNi30 is now commercially available for the mid-frame EOS M 290 and the large frame EOS M 400, followed by the four laser EOS M 400-4 later in 2024.

About EOS
EOS provides additive manufacturing solutions via industrial 3D printing technology to manufacturers around the world. Connecting high quality production efficiency with its pioneering innovation and sustainable practices, the independent company formed in 1989 will shape the future of manufacturing. Powered by its platform-driven digital value network of machines and a holistic portfolio of services, materials and processes, EOS is deeply committed to fulfilling its customers' needs and acting responsibly for our planet.

About Phillips Federal
Phillips Corporation, Federal Division is the leading manufacturing service provider to the United States Federal Government. Phillips Federal understands that the process and procurement of suppliers for Federal applications is critical for readiness and continued success. To learn more about EOS CuNi30, please contact FederalLifeCycle@phillipscorp.com.

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