



Press Release

Sandviken, Sweden, April 20, 2021

Sandvik and BEAMIT launch 3D printed super duplex to the market – Osprey® 2507 components outperforming several traditional counterparts

Sandvik and part subsidiary BEAMIT Group announce a unique capability to additively manufacture components in super-duplex stainless steel. The components printed in Osprey® 2507 metal powder – known and trusted for its excellent corrosion resistance and durability – are near fully dense (>99.9%) and crack-free, even before post processing.

The use of iron-based and highly corrosion resistant materials in additive manufacturing (AM) have seen significant growth in interest during the past few years. This is largely due to the needs of demanding industries such as the offshore- and marine segments – where challenging environments call not only for advanced materials, but for on-demand production of spare parts, to minimize stock while also decreasing material waste.

In terms of withstanding harsh elements, there is one material family that unarguably stands out. Produced and optimized for additive manufacturing in-house by the leading materials experts at Sandvik Additive Manufacturing, Osprey® 2507 is a super duplex alloy that has excellent corrosion resistance and outstanding mechanical strength. For decades, Sandvik has been leading the materials evolution for duplex stainless steels – continuously launching new duplex and super duplex materials that, with their improved properties, are an undisputable part of Sandvik’s DNA. Sandvik’s super-duplex stainless steels are already successfully used in highly corrosive environments such as the seawater exposed offshore energy sector, and in demanding chemical processing. Predominantly used in the shape of seamless tubes, plates, and bars, super-duplex steel has proved a challenge in additive manufacturing – up until now.

“By leveraging nearly two centuries of materials expertise and industry leading know-how along the additive value chain, we are proud to say Sandvik is the first to offer 3D printed super duplex components to the market”, says Mikael Schuisky, VP and Business Unit Manager at Sandvik Additive Manufacturing. “While many have tried and failed, we are very pleased to have seen components printed to a standard that doesn’t just meet, but outperform that of several conventionally manufactured counterparts.”

Since 2019, Sandvik owns a significant stake in the BEAMIT Group – Europe’s leading AM service provider that support the most demanding industries with high-end metal components. Adding the capabilities of the BEAMIT Group – including one of the most

extensive AM machine parks in the industry – makes for an even stronger offering, specifically for customers looking to produce larger scale components.

“We are very excited to co-launch this potent combination of a superior material and the disruptive benefits of additive manufacturing to the market”, says Michele Antolotti, Engineering and R&D Manager at the BEAMIT Group. “Having already developed print parameters for single-laser machines, we are now progressing to expand our joint offering to include even larger applications. With the profound materials expertise within Sandvik, and BEAMIT Group’s market-leading abilities throughout the additive value chain, we are truly in a unique position to supply the offshore industries with an array of business-critical benefits, in terms of component performance and timely production alike.”

Sandvik already presented an “impeller reinvented” – a lighter, faster, and more efficiently manufactured offshore essential, developed in collaboration with energy giant Equinor and Norwegian Eureka Pumps. Now projects across various marine segments – where super-duplex stainless steel is the material of choice – are on-going, all according to Sandvik’s “Plan it, Print it, Perfect it” approach, stating that printing is just one of the seven steps you need to master to succeed with the industrialization of AM.

Johan Wallin, Product Manager for super duplex at Sandvik Additive Manufacturing, comments: “Sandvik has been driving the materials evolution since 1862, with duplex stainless steels – including super duplex and hyper duplex – being one of our flagship material families. By our joint forces with BEAMIT, and by combining the inherited applicational benefits of additive manufacturing with the superior characteristics of Osprey® 2507 – we are set up to drive the implementation of AM across a number of industries where the impact of optimized, corrosion resistant components, as well as on-demand production of spare parts is potentially enormous.”

On May 18th, 2021, the next episode of interactive webinar series “Additive By Sandvik: Material Matters” airs. Guided by Sandvik’s leading experts in metal powder and additive manufacturing, the episode offers a deep-dive into the game-changing combination of super duplex stainless steel and 3D printing. Just as in the well-received series launch in December, participants are invited to actively help shape the session agenda through pre-registering questions and topics of particular interest. To register and learn more about the event, visit additive.sandvik/webinar.

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ABOUT SANDVIK ADDITIVE MANUFACTURING

Sandvik Additive Manufacturing has a world-leading position in metal powder with the widest range of AM-alloys on the market. The company has also made sizeable investments into a wide range of AM printing technologies since 2013. Adding 158 years of leading expertise in materials technology, 75 years in post processing methods like metal cutting, sintering and heat treatment, Sandvik has well established and leading competence across the entire AM-value chain. In 2019, Sandvik acquired a significant stake in BEAMIT, a leading European-based AM service provider, and in 2020 and 2021, the BEAMIT Group acquired 100% of ZARE in Italy and 3T Additive Manufacturing in the UK, bringing together three leading AM service bureaus in Europe – to create one of the largest independent AM service providers in the world, serving the most demanding industries.

Sandvik AB is a high-tech and global engineering group with approximately 37,000 employees and sales of approximately 86 billion SEK in more than 160 countries (2020). The company was founded in Sweden in 1862 and is listed on the Stockholm stock exchange since 1901.

ABOUT BEAMIT GROUP

BEAMIT Group is one of the most integrated and advanced additive manufacturing service providers in the world to serve the most demanding industries. Based in Fornovo di Taro (Parma, Italy), BEAMIT has been operating in the field of additive manufacturing (AM) with metal powders for 24 years. With 48 (and growing) dedicated additive manufacturing systems distributed in over 6 facilities between Italy and UK today the Group counts over 140 employees.

BEAMIT Group specializes in high-end metal AM components for demanding industries like aerospace, automotive, energy, racing and industrial engineering, and holds many relevant quality certifications, including AS/EN 9100:2018 for aerospace, NADCAP approval (National Aerospace and Defense Contractors Accreditation Program), and IATF Automotive.

In 2019, Sandvik Group acquired a significant stake in BEAMIT, and in 2020, BEAMIT acquired a significant stake in PRES-X, an innovative start-up in the field of special post-production processes for 3D printing. BEAMIT then acquired 100% of AM service bureau ZARE, hence creating Europe's largest global additive manufacturing hub with a fully integrated value chain. In 2021 BEAMIT Group has acquired 3T Additive Manufacturing (Newbury, UK). 3T Additive Manufacturing holds some of the highest quality certifications for deliveries to Aerospace and Medical and is an approved supplier for serial production by many leading OEMs across the UK, Europe, US and Japan.

FOR FURTHER INFORMATION

<https://www.additive.sandvik>

<https://www.metalpowder.sandvik>

<https://www.beam-it.eu>

<https://www.additive.sandvik/webinar>

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