

Velo3D Qualifies New Superalloy for Use in its Sapphire® Family of Printers

New Nickel-based Höganäs Amperprint® 0233 Haynes® 282® Powder Enhances the Capabilities of Velo3D's End-to-End Solution for Customers in Oil and Gas, Aviation, Energy, Space, and Other High-value Applications

CAMPBELL, Calif.--(BUSINESS WIRE)-- [Velo3D](#), Inc. ([NYSE: VLD](#)), a leading metal additive manufacturing technology company for mission-critical parts, has qualified the nickel-based superalloy powder Amperprint® 0233 Haynes® 282® for use in its Sapphire® family of printers. The powder was produced by [Höganäs AB](#)—a world leader in metal powder production—under license from [Haynes International](#), Inc. and is designed for high creep strength, thermal stability, weldability, and fabricability not commonly found in other alloys. The material is ideal for high-temperature structural applications like energy generation, gas turbines, and space launch vehicles to build parts like heat exchangers, combustors, nozzles, combustion liners, rocket engines, and shrouded impellers.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20220106005102/en/>

The first Sapphire® printer utilizing the Amperprint® 0233 Haynes® 282® powder will be operated by Duncan Machine Products (DMP), a contract manufacturer based in Duncan, Oklahoma. The system will be the seventh in DMP's fleet of Velo3D Sapphire® printers.

"Our goal at Velo3D is to enable engineers to build the parts they want without compromising on the design or quality," said [Benny Buller](#), Velo3D CEO and Founder.

"Qualifying new powdered metals, like Amperprint® 0233 Haynes® 282®, for use in our end-to-end solution further expands what's possible with our additive manufacturing technology. Our partners at Höganäs provide materials of the highest quality and I look forward to seeing what our customers build using this amazing alloy."

Powdered nickel-based superalloys, like Amperprint® 0233 Haynes® 282®, are often used to print parts for use in high-temperature applications due to the alloy's resistance to cracking and its ability to operate at near-melting-point temperatures. This tolerance allows parts printed with the alloy to be used in vacuum, plasma, and other demanding applications. Its high weldability makes the powder ideal for parts in larger systems because of its ability to be welded to other components.

Höganäs specializes in creating powders for additive manufacturing, delivering products with consistent spherical shape, tight control on chemistry, and enhanced flowability. The powders are made using the purest materials with very precise compositions of trace elements that give the metals their unique properties.

"It's inspiring to see what engineers have been able to build using metal powders from



A combustor liner made using Amperprint® 0233 Haynes® 282® powder from Höganäs. The part features 23,000 unique holes for optimized air-to-fuel ratios and internal channels for regenerative cooling. The part is shown as printed, with no supports. (Photo: Business Wire)

aluminum F357, Ti 6Al-4V Grade 5, and several other materials.

About Velo3D:

Velo3D is a metal 3D printing technology company. 3D printing—also known as additive manufacturing (AM)—has a unique ability to improve the way high-value metal parts are built. However, legacy metal AM has been greatly limited in its capabilities since its invention almost 30 years ago. This has prevented the technology from being used to create the most valuable and impactful parts, restricting its use to specific niches where the limitations were acceptable.

Velo3D has overcome these limitations so engineers can design and print the parts they want. The company's solution unlocks a wide breadth of design freedom and enables customers in space exploration, aviation, power generation, energy and semiconductor to innovate the future in their respective industries. Using Velo3D, these customers can now build mission-critical metal parts that were previously impossible to manufacture. The end-to-

Höganäs and Velo3D's support-free additive manufacturing process," said Jerome Stanley, Höganäs Director of Global Sales, Customization Technologies. "The first parts printed using our Amperprint® 0233 Haynes® 282® powder are impressive, and I believe customers are only scratching the surface of what is possible with this superalloy. The powder, combined with Velo3D's end-to-end solution metal AM solution, is an extremely effective combination for consolidating parts into monolithic structures to eliminate coefficient of thermal expansion in large, high-performance systems."

Velo3D is one of the first additive manufacturing technology companies to offer Amperprint® 0233 Haynes® 282® powder to its customers. Many of Velo3D's customers use its end-to-end solution to produce parts for use in aviation, energy, oil and gas, space, and other high-performance applications, making the powder a good fit for Velo3D's portfolio. In addition to Amperprint® 0233 Haynes® 282® powder, metal powders qualified to be printed with Velo3D's technology include Hastelloy X®, Inconel 718,

end solution includes the Flow™ print preparation software, the Sapphire® family of printers, and the Assure™ quality control system—all of which are powered by Velo3D’s Intelligent Fusion® manufacturing process. The company delivered its first Sapphire® system in 2018 and has been a strategic partner to innovators such as SpaceX, Honeywell, Honda, Chromalloy, and Lam Research. Velo3D has been named to Fast Company’s prestigious annual list of [the World’s Most Innovative Companies for 2021](#). For more information, please visit [velo3d.com](#), or follow the company on [LinkedIn](#) or [Twitter](#).

Forward-Looking Statements

This press release includes “forward-looking statements” within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1996. The Company’s actual results may differ from its expectations, estimates and projections and consequently, you should not rely on these forward-looking statements as predictions of future events. Words such as “expect,” “estimate,” “project,” “budget,” “forecast,” “anticipate,” “intend,” “plan,” “may,” “will,” “could,” “should,” “believes,” “predicts,” “potential,” “continue,” and similar expressions are intended to identify such forward-looking statements. These forward-looking statements include, without limitation, statements regarding the expected use of new powdered metals and integration in the Company’s printers and the Company’s other expectations, hopes, beliefs, intentions or strategies for the future. These forward-looking statements involve significant risks and uncertainties that could cause the actual results to differ materially from the expected results. You should carefully consider the risks and uncertainties described in the documents filed by the Company from time to time with the SEC. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Most of these factors are outside the Company’s control and are difficult to predict. The Company cautions not to place undue reliance upon any forward-looking statements, including projections, which speak only as of the date made. The Company does not undertake or accept any obligation to release publicly any updates or revisions to any forward-looking statements to reflect any change in its expectations or any change in events, conditions or circumstances on which any such statement is based.

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