

oerlikon

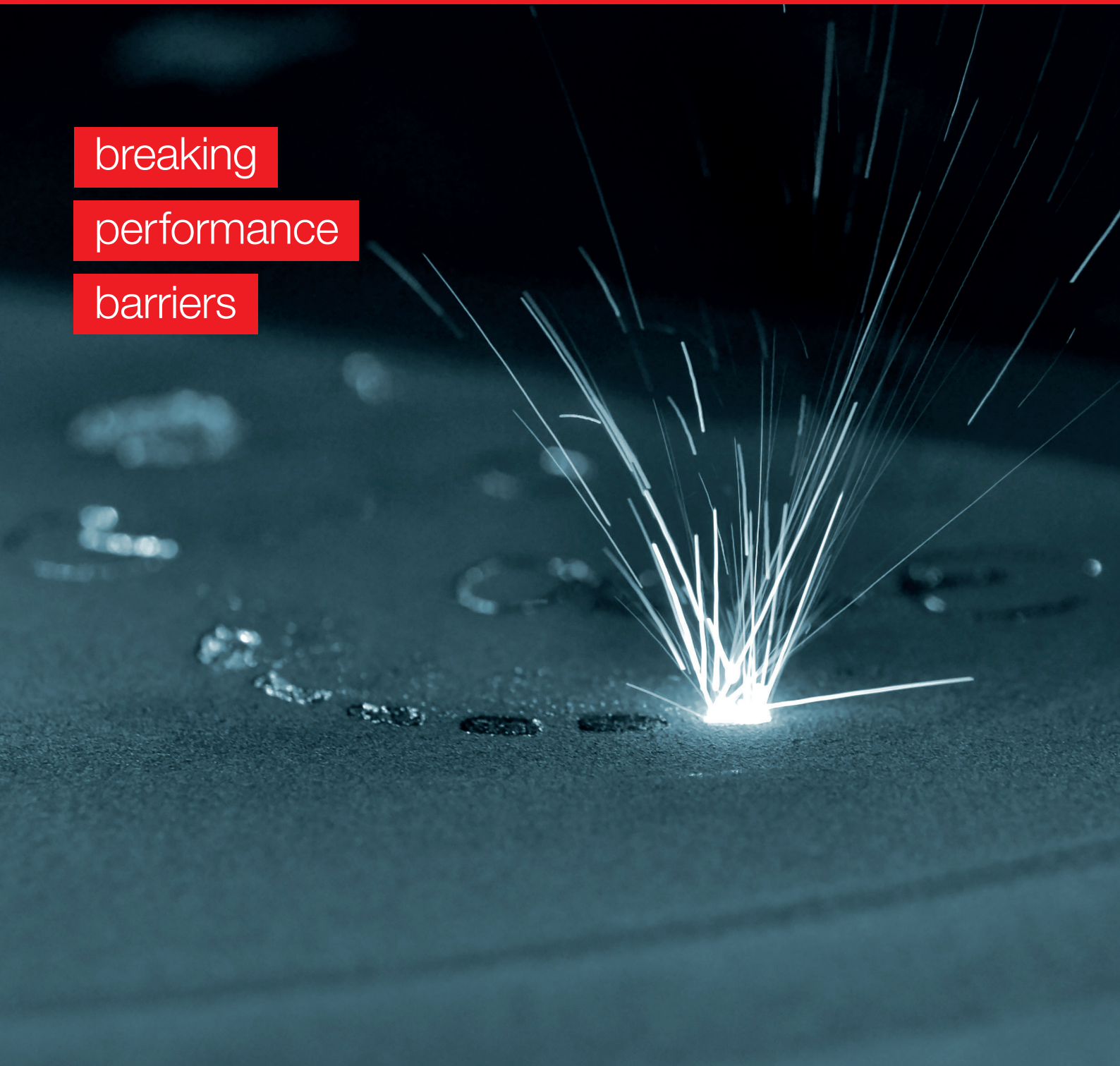
Additive Manufacturing Solutions

Metal Powders | Component Manufacturing | Research and Development

breaking

performance

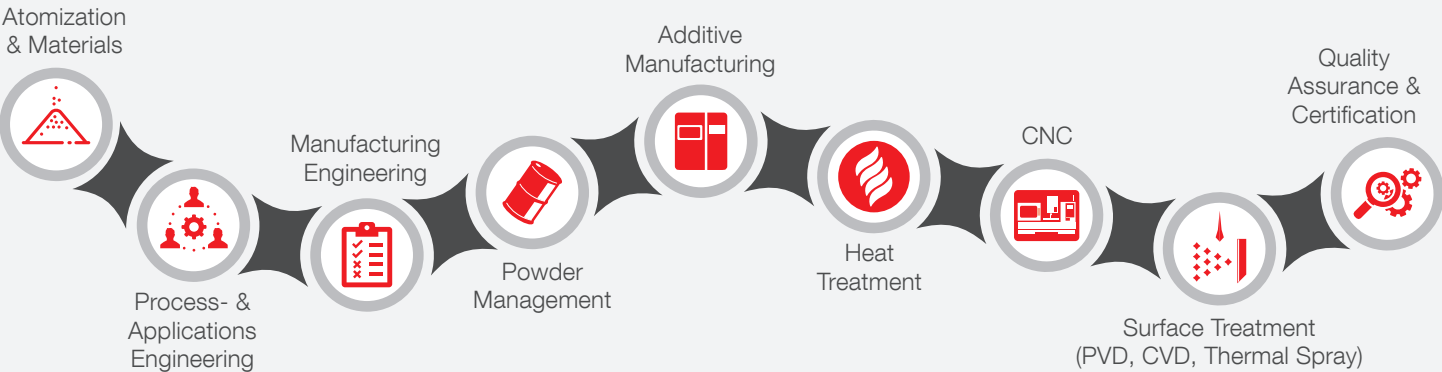
barriers



Industrialized AM is now

At Oerlikon, we integrate and scale the entire Additive Manufacturing value chain to manage your project from start to finish.

Our unique position allows us to drive the industrialization of Metal Additive Manufacturing by offering Metal Powders, Component Manufacturing, and Advanced Surface Treatments including PVD, CVD, and Thermal Spray coatings, along with a cutting-edge Research and Development department.



Research & Development

Our dedicated Research & Development team leads the way in Metal Additive Manufacturing, pioneering advancements in materials, technologies, and processes within our state-of-the-art labs. Additionally, we spearhead multiple US and EU-funded research projects aimed at propelling this technology towards a more sustainable future.

Additive Manufacturing Metal Powders

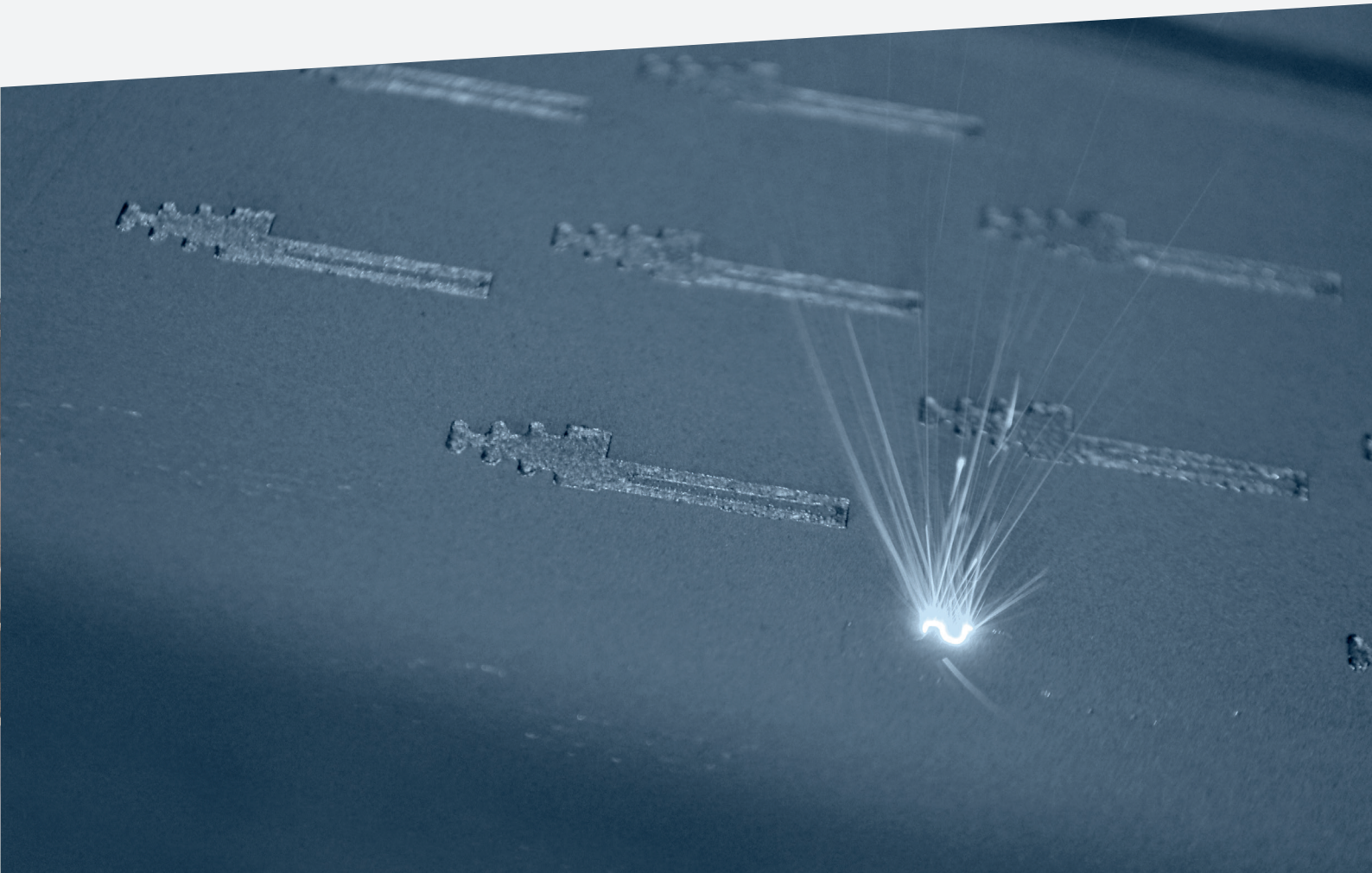
With over 85 years of experience in materials development and production, we introduce a comprehensive metal powder portfolio meticulously crafted, tested, and manufactured specifically for Additive Manufacturing applications. Our range includes alloys based on Nickel, Cobalt, Iron, and Titanium.

Additive Component Manufacturing

Our expertise lies in providing tailored, state-of-the-art Metal Additive Manufacturing solutions designed specifically for the Aerospace, Space, and Semiconductor sectors. Our primary emphasis is on producing Aluminum and Nickel alloy components to meet rigorous standards.

Advanced Surface Treatments

We specialize in PVD, CVD, and Thermal Spray technologies to boost the durability and performance of your additively manufactured components. Our coatings provide essential benefits like improved wear resistance, corrosion protection, and better thermal insulation, ensuring your components last longer and perform better.





Additive Component Manufacturing

Our Huntersville facility offers unparalleled value across industries. With end-to-end engineering, Additive Component Manufacturing, and a range of post-processing services like heat treatment and CNC machining, we provide tailored solutions. Leveraging our expertise in Advanced Surface Treatments, including PVD, CVD, and Thermal Spray coatings, we optimize component durability and performance.

Key Equipment
EOS 6x EOS M290 4x EOS M400 1x EOS M400-4
AMCM 1x AMCM M 4K-4
Trumpf 1x Trumpf TruPrint 1000 2x Trumpf TruPrint 5000
Concept Laser 5x Concept Laser M2
3D Systems + GF 1x DMP Factory 500

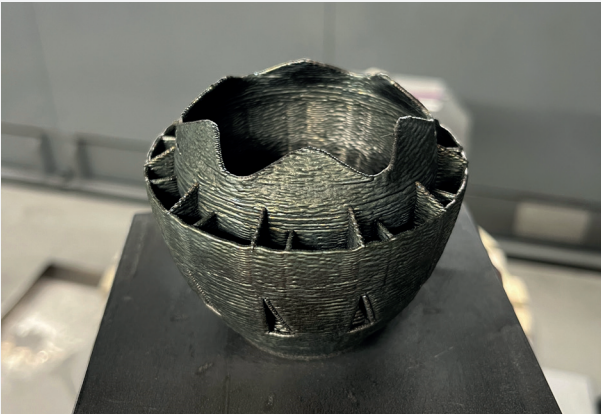
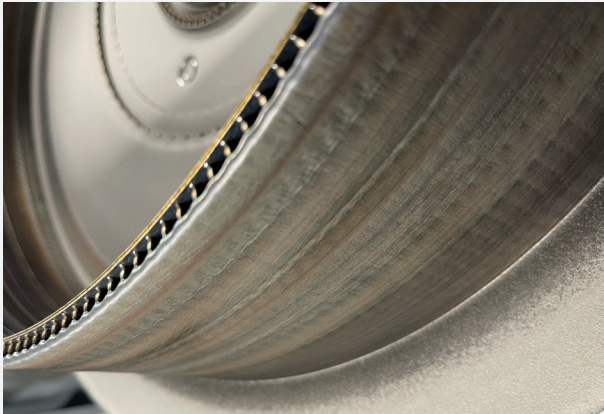
Printing Materials Capabilities
Aluminum AlSi10Mg, CP1, Al7050-RAM2
Nickel Inconel 625, Inconel 718, H188, H282, Alloy23X, HX, C-22, Pure Ni

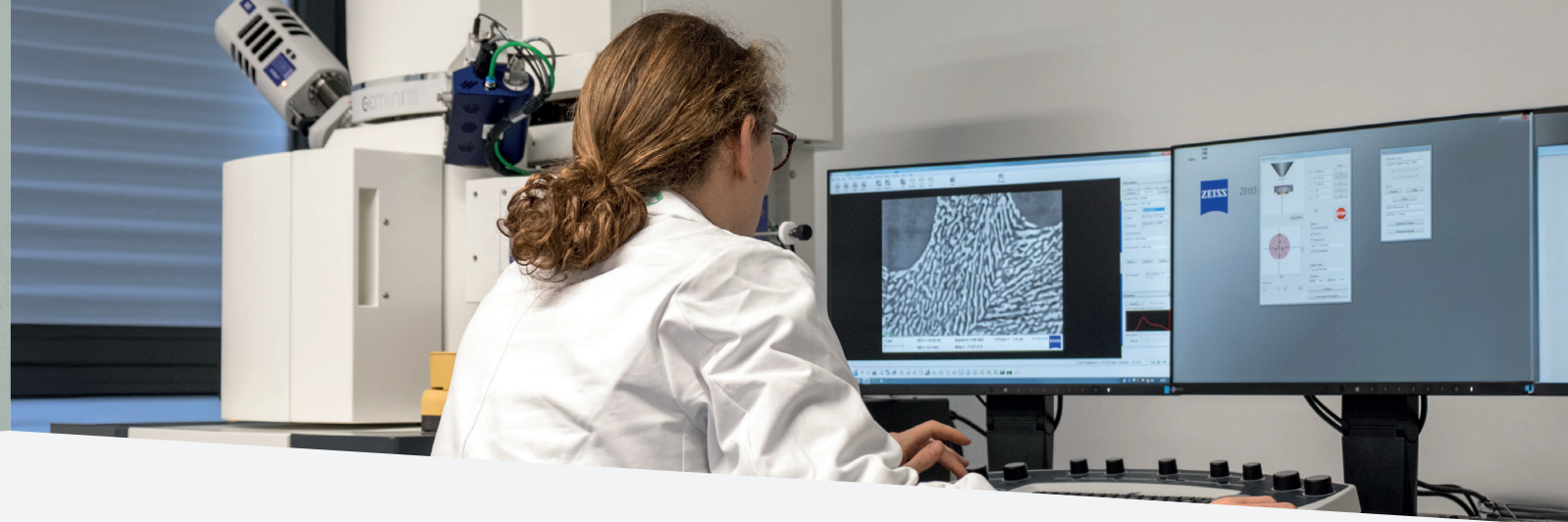
Certifications
We have the AS9100 and ISO 9001certifications; as well as the ITAR registration.

Large Scale Additive Manufacturing

At the Oerlikon Laser Center of Competence in Wohlen, Switzerland, a dedicated team of experts, continuously pushes the boundaries of laser technologies, with a particular focus on Directed Energy Deposition (DED). Utilizing this technology the Center has developed a process for manufacturing complex large-scale components for rocket propulsion systems. These components, with heights exceeding one meter and slim wall thicknesses under one millimetre, incorporate complex structures like cooling channels, resulting in significantly lighter parts.

Over the past few years, the Laser Center of Competence has transformed into one of Europe's leading technology centers for DED. With a cutting-edge machine park, including two advanced large-scale 7-axis 3D CNC Gantry Systems, sophisticated CAD/CAM capabilities, and extensive process expertise, it stands at the forefront of innovation.





Additive Manufacturing Metal Powders

Drawing upon over 85 years of expertise in materials development and production, we present a comprehensive metal powder portfolio meticulously crafted, tested, and manufactured for Additive Manufacturing applications. The MetcoAdd™ powder portfolio includes a variety of alloys, such as Nickel, Cobalt, Iron, and Titanium.

Base	Product	Nominal Chemistry	Nominal Particle Size [µm]	Application
Nickel	MetcoAdd 718C	Ni 18Cr 18Fe 5(Nb+Ta) 3Mo 1Ti 0.6Al	-45 +15	LB-PBF, CSAM
	MetcoAdd 718E		-63 +20	LB-PBF
	MetcoAdd 718F		-106 +45	DED, EB-PBF
	MetcoAdd 718 API C	Ni 18Cr 18Fe 5(Nb+Ta) 3Mo 0.95Ti 0.5Al	-63 +16	LB-PBF
	MetcoAdd 738LC-A	Ni 17Cr 7(Al+Ti) 9Co 0.1C 2Mo 1.5Ta 0.06Zr	-45 +15	LB-PBF
	MetcoAdd 625A	Ni 21Cr 9Mo 4Fe 4(Nb+Ta) 0.4Al 0.4Ti	-45 +15	LB-PBF, EHLA
	MetcoAdd 625E		-63 +20	LB-PBF
	MetcoAdd 6022A	Ni 22Cr 14Mo 3Fe 3W	-53 +20	LB-PBF, CSAM
	MetcoAdd HX-D	Ni 21Cr 18Fe 9Mo	-45 +15	LB-PBF
	MetcoAdd HX-L		-53 +20	LB-PBF
Cobalt	MetcoAdd H23X-A	Ni 22Cr 2Mo 14W 0.35Al 0.03La	-45 +15	LB-PBF
	MetcoAdd NiCP-A	Pure Ni	-53 +15	LB-PBF, CSAM
	MetcoAdd 75A	Co 28Cr 6Mo	-45 +10	LB-PBF
Cobalt	MetcoAdd 76A-1		-45 +15	LB-PBF
	MetcoAdd MM509-A	Co 10Ni 24Cr 7W	-45 +15	LB-PBF
Iron	MetcoAdd 316L-A	Fe 18Cr 12Ni 2Mo 0.02C	-45 +15	LB-PBF, CSAM
	MetcoAdd 316L-D		-106 +45	DED, EB-PBF
	MetcoAdd 415F	Fe 13Cr 4Ni	-45 +15	LB-PBF, CSAM
	MetcoAdd 415G		-106 +45	DED, EB-PBF
	MetcoAdd 15-5PH-A	Fe 15Cr 4.5Ni 3.5Cu 0.3Nb 0.07C	-45 +15	LB-PBF
	MetcoAdd 15-5PH-B		-90 +45	DED, EB-PBF
	MetcoAdd 17-4PH-A	Fe 17Cr 4.5Ni 4Cu 0.3(Nb+Ta) 0.07C	-45 +15	LB-PBF
	MetcoAdd 17-4PH-D		-106 +45	DED, EB-PBF
	MetcoAdd C300-A	Fe 18Ni 9Co 5Mo	-45 +15	LB-PBF
	MetcoAdd H11-A	Fe 5Cr 1Mo 1Si 0.5V 0.4C	-45 +15	LB-PBF
Titanium	MetcoAdd H13-A	Fe 5Cr 1Mo 1Si 1V 0.4C	-45 +15	LB-PBF
	MetcoAdd H13-B		-90 +45	DED, EB-PBF
	MetcoAdd Ti-64 G23-C*	Ti 6Al 4V	-53 +20	LB-PBF
	MetcoAdd Ti-64 G23-E		-106 +45	DED, EB-PBF
	MetcoAdd Ti-64 G5-B		-63 +20	LB-PBF

* available Q1 2025

Innovating Metal Additive Manufacturing

Innovation is at our core, propelling the industrialization of Metal Additive Manufacturing through pioneering materials, processes, and technologies.

Our Research and Development team leads innovation in Advanced Manufacturing by leveraging digitization, nurturing close collaborations with academia, and utilizing our in-house AI-driven materials development technology, Scoperta™.

Moreover, we lead numerous research projects funded by both the US and EU and participate in organizations dedicated to advancing this technology towards a more sustainable future.



Project InShaPe

Teaming up with 10 partners, including the Technical University of Munich and EOS, we're aiming for breakthroughs in laser beam shaping technology with the EU-funded project InShaPe. Overall, we seek to develop a more efficient way of manufacturing, with advantages such as higher production rate, reduced costs, reduced energy consumption, and less waste.



Project DISCO2030

With the EU-funded project DISCO2030, we are aiming to develop a hybrid manufacturing process that effectively combines metal-metal and metal-polymer materials and AM processes (e.g. DED and LPBF) to produce complex and lightweight parts, such as hydrogen tanks, and Marine and rocket engines.



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