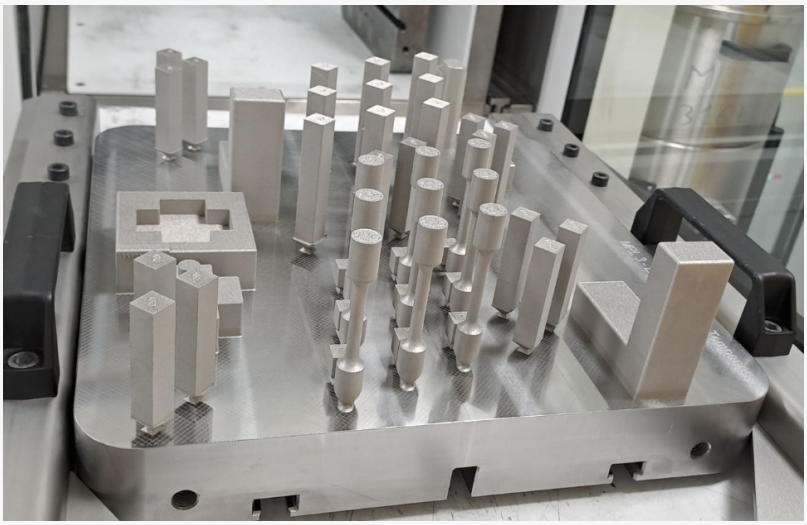
AddUp and the Swiss Steel Group Introduce a New Material Optimized for Injection Molding in Additive Manufacturing

Printdur HCT is in the final stages of development and is expected to be a game changer for injection molding applications in additive manufacturing.



A test plate produced with Printdur HCT material

AACHEN, GERMANY, January 22, 2024 /EINPresswire.com/ -- AddUp will soon be releasing a unique tool steel optimized for injection molding that meets all customer requirements. Printdur HCT has what it takes to be a game changer, as it has the required corrosion resistance, hardness and wear resistance for injection molding applications.

The newly developed Printdur HCT was developed by Swiss Steel Group based on the conventional standard tool steel 1.2083 / AISI420 tailored for additive manufacturing with focus on Powder Bed Fusion machines like the AddUp's FormUp 350. Following strict internal manufacturing readiness level protocols AddUp's engineers were able to achieve up to 50% improvement in build speed without cracks and extremely low porosity, ensuring over 99.90% material density when compared to the standard material. In addition, surfaces can be built up in excellent quality and without any smoke residue. The Printdur HCT material was designed for the requirements of injection molding and can massively reduce, by double-digits, production cycles using conformal cooling channels. Most of the internal cooling channels can be optimally built to a sufficiently good quality, without any support structures.

> We are committed to taking tooling molds to the next level using the FormUp 350. Through our experience and expertise in this industry, we continue to push the possibilities of additive manufacturing."
>
> *Julien Marcilly, AddUp CEO*

AddUp is committed to developing new materials for the tooling market and was excited to partner with Swiss Steel Group (SSG), one of the world's leading producers of special steel long products, to collaborate on the development of Printdur HCT. Dr. Horst Hill, Head of Special Materials Division at SSG, says "Our goal is to use our decades of experience in the atomization and materials technology to design new materials for additive manufacturing. The Printdur HCT utilizes the advantages of additive manufacturing to achieve the best material properties. We are very pleased that we have found a strong partner in the tooling sector in AddUp to establish new materials on the market."

Thanks to an enhanced hardness range of 53-57 HRC, and high wear resistance Printdur HCT offers an improved and longer service life of the mold inserts. With simple one-step heat treatment at 540°C, Printdur HCT achieves ~53HRC hardness and is ready to be used for injection molding applications because the material can withstand high temperatures without losing hardness. Since the Printdur HCT is produced without nickel and cobalt, significant damage to the environment and the operator could be avoided. The Swiss Steel Group, this year`s winner of the German Sustainability Award, consciously focuses on high sustainability standards with its fully comprehensive powder recycling system. The Swiss Steel Group is also one of the few companies that can already supply almost all products with a significantly reduced CO2 footprint as Green Steel. This has a particularly positive effect on the CO2 impact of its customers in Scope 3.

AddUp's goal is to revolutionize injection molding applications and improve the efficiency of molds using additive manufacturing. They expect the development of Printdur HCT and other tooling specific materials in their portfolio to support this mission. "At AddUp, we are committed to taking tooling molds to the next level using the FormUp 350. Our company's history is deeply rooted in tooling applications thanks to our founding partners Michelin and Fives. It is through our experience and expertise in this industry that we continue to push the possibilities of additive manufacturing, proving it a more efficient and productive way to manufacture on an industrial scale." Said Julien Marcilly, CEO at AddUp.

Printdur HCT's manufacturing readiness level 3 has been achieved which makes it ready for producing high quality proof of concepts. Currently being used on the FormUp 350 machine located at AddUp's Tooling Competence Centre in Aachen, Germany, Printdur HCT is immediately available for prototyping and once fully developed will be available for end-use production parts. To learn more or to submit your tooling application for development on the FormUp 350, please visit: www.addupsolutions.com/company/news-press/addup-ssg-printdur-hct-material.

About Swiss Steel Group (SSG):
Swiss Steel Group, with headquarters in Lucerne Switzerland, is one of the world's leading producers of special steel long products. Thanks to the exclusive use of steel scrap in electric arc furnaces, the Group is one of the most relevant companies in Europe in the circular economy and is among the market leaders in the field of sustainably produced steel - Green Steel. Swiss Steel Group has its own production and distribution entities in over 30 countries and, through its

strong local presence, offers a wide range of individual solutions in the fields of engineering steel, stainless steel, and tool steel. Swiss Steel Group is listed on the SIX Swiss Exchange and generated a revenue of over EUR 4 billion in 2022 with approximately 10,000 employees.

About AddUp:
AddUp, a joint venture created by Michelin and Fives, is a global metal additive manufacturing OEM offering multi-technology production systems, including the FormUp® range of robust and open-architecture Powder Bed Fusion (PBF) machines, as well as the BeAM Modulo and Magic lines of industrial Directed Energy Deposition (DED) machines. The combination of these processes allows AddUp customers the flexibility to choose the technology best suited for their specific application while also offering a unique ability to meet technical challenges, such as manufacturing parts combining these complementary technologies.

AddUp's FormUp 350 PBF range is modular and scalable to provide the highest productivity while ensuring user safety. The DED machines are designed for industrial production and equipped with in-house designed and developed nozzles to provide maximum precision and very high productivity. To provide customers with a true Industry 4.0 solution, AddUp also provides a complete monitoring solution providing quality assurances after each and every build.

AddUp is headquartered in Cébazat, France, with a North American subsidiary based out of Cincinnati, Ohio and a German subsidiary based in Aachen, Germany. In addition to the machine design and manufacturing, the AddUp group also offers part production, POC production, metal AM consulting services, AM training, and design for AM, making AddUp your one-stop for metal AM. To learn more visit: www.addupsolutions.com

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