Customer Story

EROFIO Group 3D prints first part on GE Additive Concept Laser M Line

- *From machine shipment to first printed part in less than three months*
- *Mold Core successfully additively manufactured on first attempt, using hot work tool steel, in a six-day test build*
- *GE Additive Concept Laser M Line scheduled to be commercially available later in 2021*

Lichtenfels, Germany, June 3, 2021 – EROFIO Group – an industrial molding sector company and long-standing user of GE Additive's DMLM laser technology, was selected to test and put the GE Additive Concept Laser M Line through its paces ahead of its commercial readiness later this year.

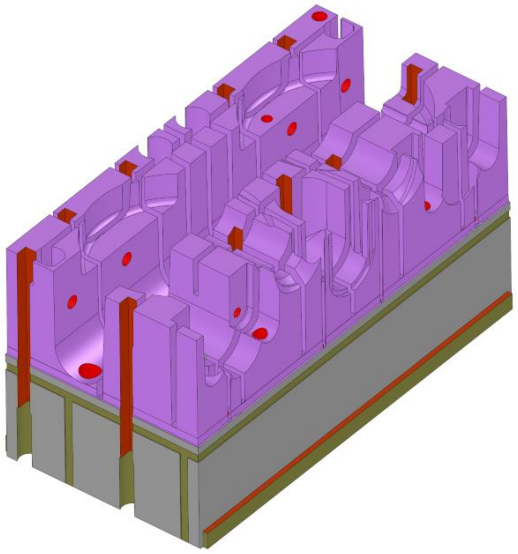
Less than three months since receiving and installing an M Line system at its 6,500m^2 mold making facility in Batalha, central Portugal, a team led by EROFIO Group's metal additive manufacturing leader, Luís Santos has successfully 3D-printed its first Mold Core.

The Core was manufactured using M300 hot work tool steel – a material often used for the production of injection molding and die-casting tool inserts with conformal cooling, as well as functional components. The Core contains more than eight independent, internal conformal cooling channels, stretching over eight meters in length and between five to eight-millimeter in diameter.

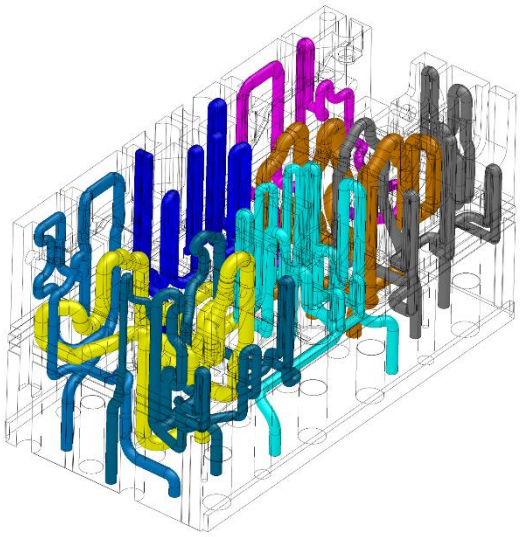
Additively manufacturing the part affords the team the design freedom to enable conformal cooling to create a more efficient heat exchange. This improved cooling will increase the overall plastic injection process productivity through decreased cooling cycle time and warpage, and the improvement of the injected plastic part aesthetics.

In addition to the benefits of geometric freedom on the design of inner channels, using additive manufacturing has reduced finishing requirements by 90%.

Another advantage identified, when compared with conventional manufacturing processes, was a reduction in the total manufacturing time -- from powder to mold assembly -- by 30%.



Caption: 3D CAD drawing of the final geometry.



Caption: Internal 3D view of the Core to be printed with the eight independent conformal cooling channels.

Three months from installation to first print

Santos and his team, already experienced users of GE Additive's Concept Laser M2 system, opted for an existing parameter – already developed for the Concept Laser M2 Series 5 – and made only very minimal changes in order to adapt it for the M Line system.

Following remote optimization support from the GE Additive team in Lichtenfels, the part was successfully printed on its first attempt, over a six-day period in May 2021.

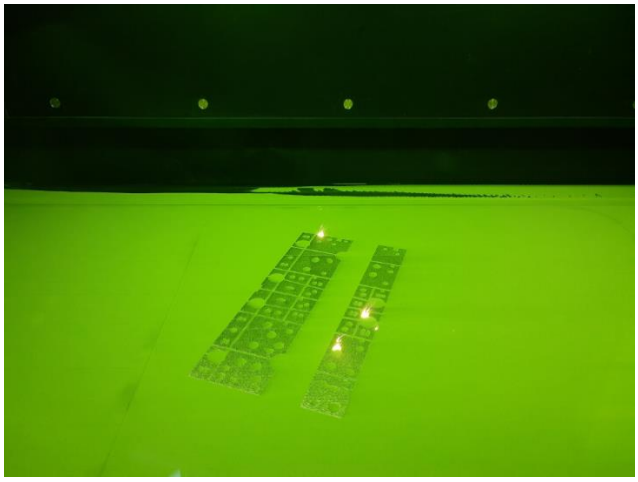
"We are honored to be part of GE Additive's thorough commercial readiness process. We're learning a lot from them and I think it's safe to say they are learning a lot from us and our first impressions working with the M Line. Having the first part come off our system is a great milestone and we're looking forward to supporting the wider team as the solution comes to market and beyond," said Luís Santos, EROFIO Group.

"We have a solid working relationship with the team at EROFIO that goes back well over a decade. As we near a critical phase in commercializing the M LINE system, we specifically sought out a trusted partner to gain early installation experience, data and honest customer feedback," said Wolfgang Lauer, Concept Laser M Line Product Manager, GE Additive."

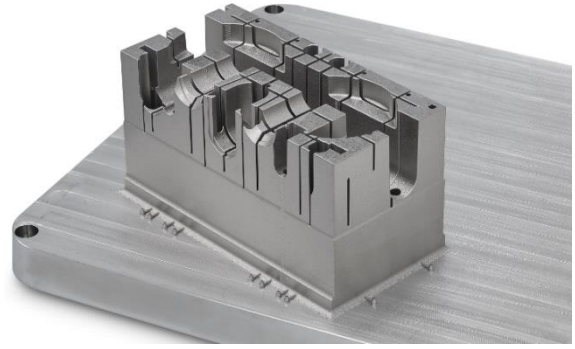
Caption: Lichtenfels, Germany. February 22, 2021 the MLINE team ships an M Line system to the first external customer, EROFIO Group in Portugal.

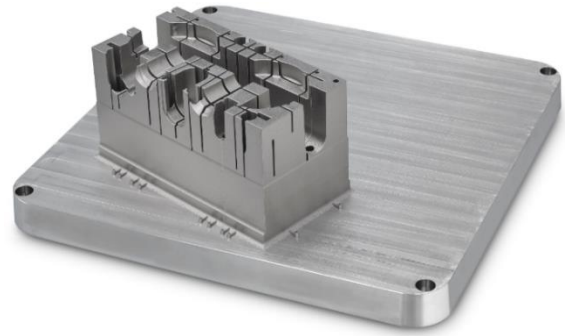
Caption: Batalha, Portugal. March 2021 the EROFIO team starts to uncrate the M Line system.

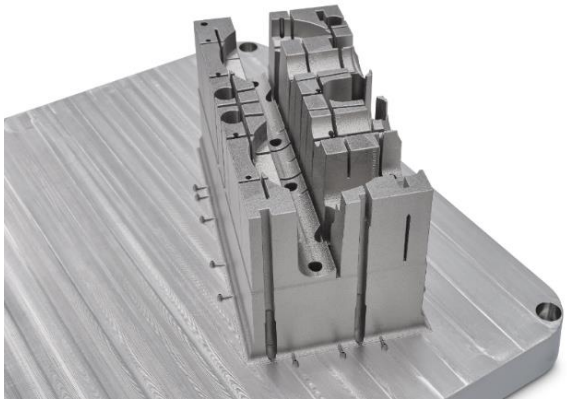
Caption: Batalha, Portugal. May 2021. GE Additive Concept Laser M Line system installed at EROFIO Group's facility next to a GE Additive Concept Laser M2.



Caption: Batalha, Portugal. May 2021. Detail of the M-Line working on a layer of the Core.







Caption: Batalha, Portugal. May 15, 2021. Additively manufactured Mold Core using hot-work tool steel, printed on a GE Additive Concept Laser M LINE system.

"We fully expected the first part to be printed on the M Line to go well. And when it did there was a rush of excitement felt across the entire team here in Lichtenfels. Work continues here in Germany on the M Line, ahead of the launch, and we will factor in additional feedback from the team at EROFIO," said Jan Siebert, General Manager, laser technologies, GE Additive.

"It is critically important that when GE Additive brings new solutions to market, it can tangibly and immediately demonstrate business impact. Our M Line system operates at higher levels of reliability and repeatability, meeting customers' needs from day one. This is not a science experiment and we are not developing laboratory equipment. Overly ambitious claims and incomplete specifications in other vendors' product launch announcements only serve to undermine the trust that our wider industry has collectively built in metal additive technology in recent years," he added.

About GE Additive
GE Additive – part of GE (NYSE: GE) is a world leader in metal additive design and manufacturing, a pioneering process that has the power and potential to transform businesses. Through our integrated offering of additive experts, advanced machines, and quality powders, we empower our customers to build innovative new products. Products that solve manufacturing challenges, improve business outcomes, and help change the world for the better. GE Additive includes additive machine brands Concept Laser and Arcam EBM, along with additive powder supplier AP&C.

Media Relations Contact
Shaun Wootton, GE Additive
+44 7557 489113
shaun.wootton@ge.com

Press Contact
Siria Nielsen – EMG for GE Additive
+31 164 317 036
snielsen@emg-marcom.com

This customer story and relevant photography can be downloaded from www.PressReleaseFinder.com. Alternatively for very high resolution pictures please contact
Siria Nielsen (snielsen@emg-marcom.com, +31 164 317 036).