AEROSPACE VEHICLES DIVISION STRUCTURES TECHNOLOGY



Metal Additive Manufacturing



Towards 3d printing of metal components for aerospace and high-end industry

NLR is the 3D metal printing centre in the Netherlands. We established our Metal Additive Manufacturing Technology Centre (MAMTeC) in 2013. MAMTeC supports your company and increases your competitiveness by technology development and product innovation





WHAT YOU NEED:

- One-off products, prototypes or small series
- Development and optimisation of Metal-AM applications
- Determination of mechanical properties and microstructure of your Metal-AM product compared to the conventionally made original
- Support in making your Metal-AM business case
- Trade-off studies to compare Metal-AM with conventional processes
- Certification of your Metal-AM products
- Support with implementation of Metal-AM technology in your organisation

WHAT WE DELIVER:

Advanced Metal-AM knowledge of design rules, build preparation, production process and post-treatments enable us to deliver what you need. Extensive experience in aerospace certification and qualification processes are now applied for certification of your Metal-AM products.

CAPABILITIES AT THE MAMTeC

The core of the MAMTeC is our enthusiastic multidisciplinary team. We work in an environment with expertise and facilities that are essential for building up advanced Metal Additive Manufacturing knowledge and skills.

More than 45 years of materials experience in aerospace applications is applied to establish optimised process parameters and post-processing methods. Design tools are developed, including topology optimisation for the design to meet specific strength and stiffness requirements. NLR applies the available computational mechanics expertise to predict residual stresses and deformations during the production process. These applications are used to better understand and further optimise the Metal-AM design and manufacturing process. The development of Metal-AM materials and components is supported by making use of advanced inspections, analysis techniques and testing facilities.

NEXT STEPS:

MAMTeC continues to expand Additive Manufacturing capabilities to new technologies and new materials in support of your innovations.

Examples are:

- New materials: Metal Matrix Composites for high performance in extreme environments
- Additive manufacturing of large structures

We challenge you to share your future needs for successful implementation of your Additive Manufacturing innovations.



BOOST YOUR PRODUCT PERFORMANCE WITH:

- Large freedom of design
- Complex internal structures
- Reduction of weight
- Application of high performance materials

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