

**Simulate before you create.**



**Simulation-based software solutions  
for Additive Manufacturing**

**ABOUT**

Additive Works was founded by a team of four interdisciplinary co-founders in 2015. Following the mission to turn laser beam melting into a fully automated one-click-solution, the highly skilled team keeps growing, while partnerships with the majority of industrial scale laser beam melting hardware manufacturers and market-leading software vendors were formed.

Embedded in this disruptive ecosystem, Additive Works focusses on developing cutting edge technologies and forging intelligent software tools utilizing these.

**CONTACT**

**Mail** info@additive.works  
**Phone** +49 421 331 0012 0  
**Web** www.additive.works



Additive Works GmbH  
Fahrenheitstr. 1  
28359 Bremen

**Technology and product overview**

Software for Laser Beam Melting



## Reduce cost per part and increase part quality to boost your AM business case!

Easy-to-use simulation-based process preparation tools aiming at one-click Laser Beam Melting...

### ABOUT OUR TECHNOLOGY



#### Examiner Module

- Determine the ideal orientation for your additive process
- Calculate indicators for you're the impact of orientations on various criteria (e.g. build time, part distortion, post processing effort)
- Get fast feedback on printability of designs



#### Support Module

- Ensure process stability by avoiding support delamination
- Determine optimized regional support densities in order to reduce support volume
- Automatically generate support walls according to optimization results



#### Predeformation Module

- Compensate part distortion by using simulation results
- Automatically generate preformed or deformed geometries
- Automatic refinement of generated STL files
- Export as STL or CLI file



#### Mechanical Process Simulation Module

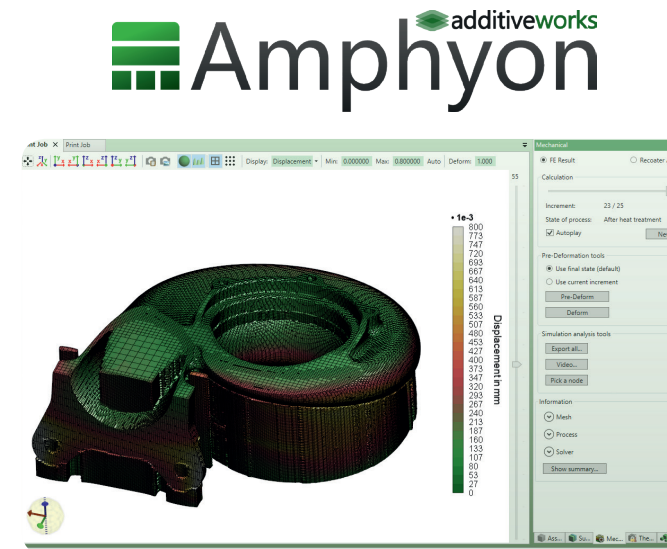
- Enhanced inherent strain based, best in class simulation engine
- Automatic calibration based on an experimental specimen
- Recoater interference detection
- Reliable prediction of process-induced strains, stresses and residual deformations



#### Thermal Process Simulation Module

- Derive strategies to achieve thermal stability for your build jobs
- Evaluate the impact of job setups and layer times on build rates and temperature evolution
- Optimize build jobs in order to avoid heterogenous material properties, shrinkage etc.

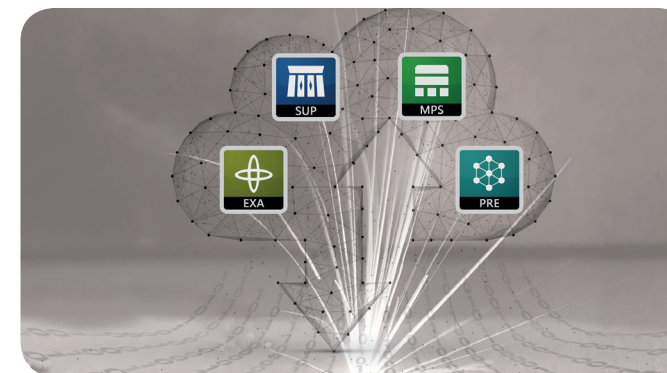
### PRODUCT OVERVIEW



#### AMPHYON

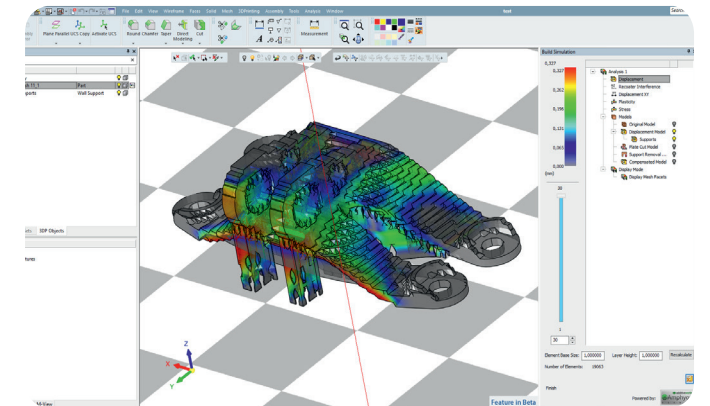
Amphyon is the standalone simulation-based job preparation software tool, incorporating all of Additive Works' technology modules in an easy and user-friendly multi-window GUI. It can be used in addition to other CAD/CAM software via STL and slice data interfaces.

### AMPHYON CLOUD



#### AMPHYON CLOUD

Additive Works' technologies can be included in automated workflows, while intensive calculations are performed in the cloud. In direct collaboration with Additive Works, your requirements in terms of cost per part, part quality and lead times are determined and a customized solution based on your requirements is tailored by Additive Works.



#### AMPHYON KERNEL

Utilizing Amphyon Kernel, Additive Works' technology modules can be integrated as libraries into third party software products. Thereby, closed software workflows and novel, cutting edge software products can be created.



#### CONSULTING

Additive Works' experts will use their profound knowledge of metal AM processes to identify issues with your part design and determine build job set ups that will give you optimal results in terms of part quality and machine utilization.