Magics Ansys Simulation Module

materialise
innovators you can count on

Do you face challenges in assessing the economic feasibility of 3D printed parts? Are you grappling with an excessive number of print failures, which result in wasted time and resources?

The **Magics Ansys Simulation Module** enables you to simulate the entire 3D printing process, predict deformation and build risks, and optimize your print preparation.

By using this tool, you can improve your knowledge and significantly reduce your print error rate while improving part quality by recognizing potential problems in advance.
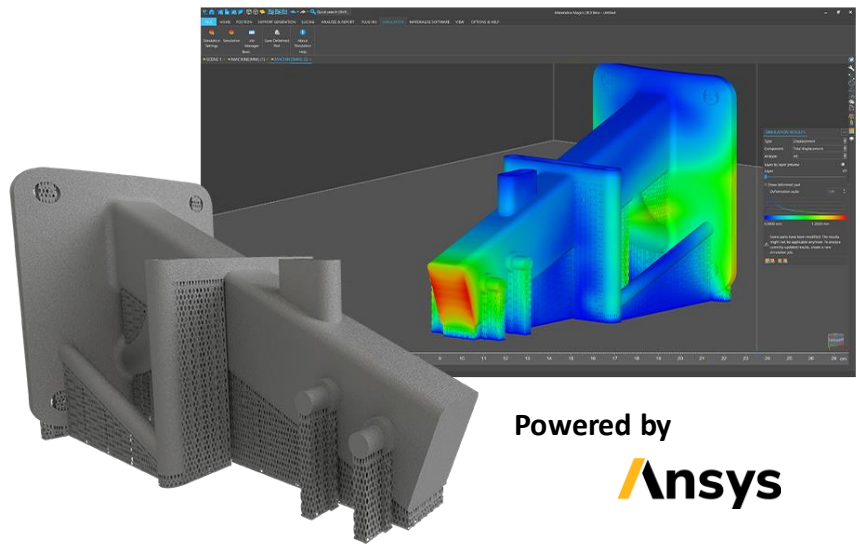
Powered by

Ansys

Benefits of simulating your AM parts in advance

Improve the rate of manufacturing AM parts right the first time with the Magics Ansys Simulation Module – minimizing time-to-market by accelerating your product development lifecycle.
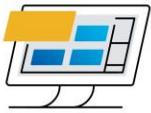
Validate data preparation
Use simulation to assess suitable part orientation for the AM process. Add supports where needed. Use simulation results to make profound decisions on the part preparation.

Reduce scrap rate
Predict build risks of large parts prone to residual stresses and distortion. Identify build failure using robust AM process simulations.

Improve product quality and accuracy
Avoid overheating and achieve better surface quality. Generate compensated part geometry to improve geometrical accuracy.

Minimize time-to-market and development costs
Assess part distortion to effectively position and adapt support structures to counteract such issues. This minimizes the number of expensive test builds, speeds up time-to-market, and reduces development costs.

Print first time right and Improve part economics
Minimize time-to-market and development while improving part quality and lifespan.

Trial before you upgrade

All Magics RP module users have access to our complementary Basic offering, where they can visualize deformations. Easily upgrade to visualize more deformations, build failure criteria, inherent-strain calibration, part compensation, and pre-deformation and temperature history. Get started today!

	Basic included in Magics RP	*Premium* Ansys Simulation module	Best used to assist/identify
Visualize deformation	✔	✔	Overall out-of-tolerances, adapting support
Displacements after build and support removal	✔	✔	Evaluate process with and without heat treatment
Displacement components and layer by layer evolution		✔	Direction of support placement and time point/height of critical evolution
Risk of shrink lines		✔	Part surface quality, adapting support
Build failure criteria		✔	Support delamination, reinforce support
Risk of re-coater contact		✔	Process cancelation, reinforce support
Stress, strain		✔	Part material strength, reinforce support
Inherent-strain calibration		✔	Fit simulation to individual production parameter
Part compensation/pre-deformation		✔	Near net shape part geometry, alternative measure to additional support
Temperature history		✔	Part quality: material properties, discoloring, process stability
Risk of overheating		✔	
Anisotropic inherent strains		✔	Consider anisotropic machine effects to increase simulation accuracy
CPU cores	4	6	Faster simulation results

Our new and improved simulation module is:

Up to 2x faster
for mechanical simulation

Up to 20x faster
for thermal simulation

Enjoy our improved workflow for part compensation. The part is now compensated with matching supports, so you don't need to redo the supports.

Get started today

✓ **No expert knowledge required** – Flat learning curve, easy to use, fast generation of results

✓ **No need to switch between software systems** – Prevent operating and transfer errors

✓ **Seamless integration into the Magics workflow** – Evaluate AM relevant results and optimize your Magics data prep results

✓ **Powered by Ansys solver** – Make use of market proven high-end AM simulation technology

✓ **Benefit from a very competitive price**

Interested to learn more?