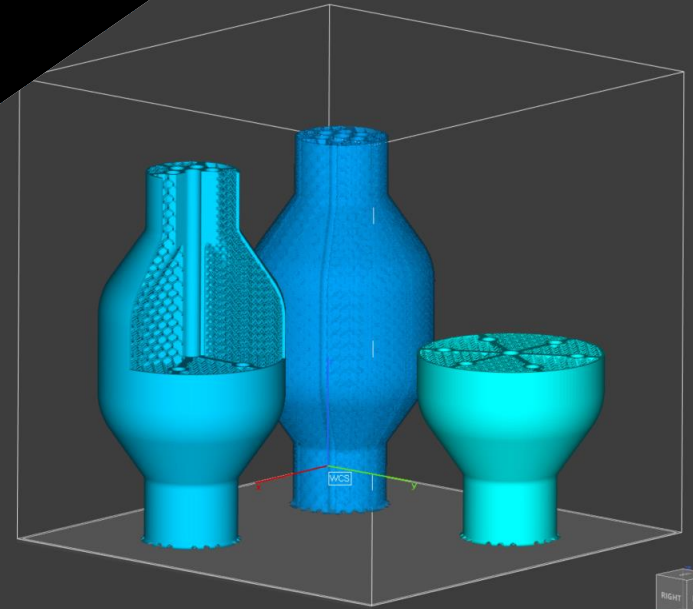
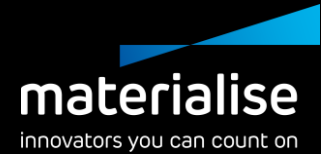


Materialise Magics 28

What's new



Materialise Magics 28 feature highlights



The additive manufacturing industry recognizes Magics as the ideal software for part and build preparation. In this release of Magics, we're providing the following updates:

Usability

- ▶ Work comfortably during all working hours with the *dark theme*.
- ▶ Get started faster with the in-depth guidance in the *release notes*.
- ▶ Enhance your experience with the *improved Nester* and *Import windows*, as well as with the *tool sheet minimization*.

Productivity

- ▶ Get more out of the *Nester* with our new functionality.
- ▶ Optimize your parts with the new *Lattice Module*.
- ▶ *Preserve your support and label planning* when performing other operations.

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➤ General improvements

- Dark theme
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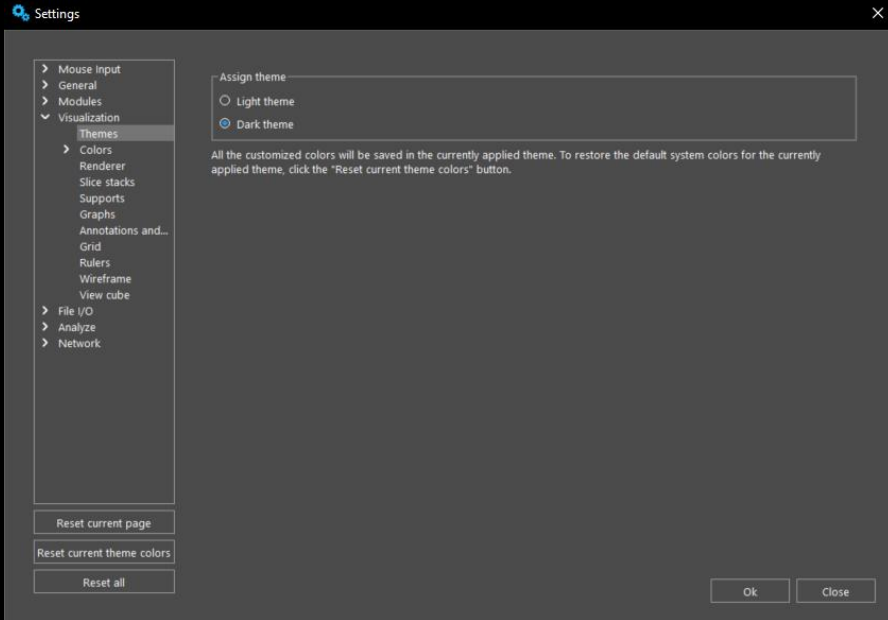
- Organic sinterbox
- Improved window
- Field overlaps
- Custom nesting zones
- Skipping copies

➤ Support generation

- Support improvements
- Tree support improvements
- Contactless support

General Improvements

Dark theme

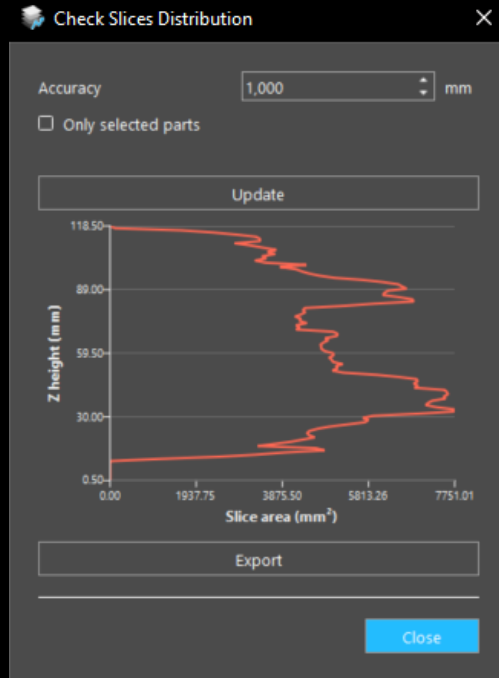


- ▶ Introducing the heavily requested dark theme, giving you Magics with a darker background.
- ▶ Improve visibility in darker working places.
- ▶ Provide more comfort to your eyes when using Magics for a prolonged period.

Release notes

- Use the dedicated release notes document to receive in-depth guidelines on how to use the new functionality.
- Use the What's New presentation to get a look at the bigger features and their benefits.
- You can find the release notes in Magics or [here](#).

Added functionality to the main module

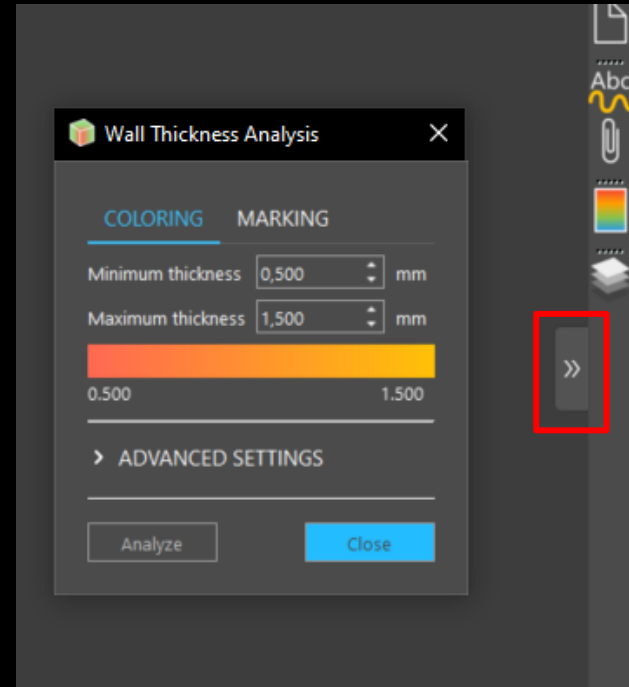


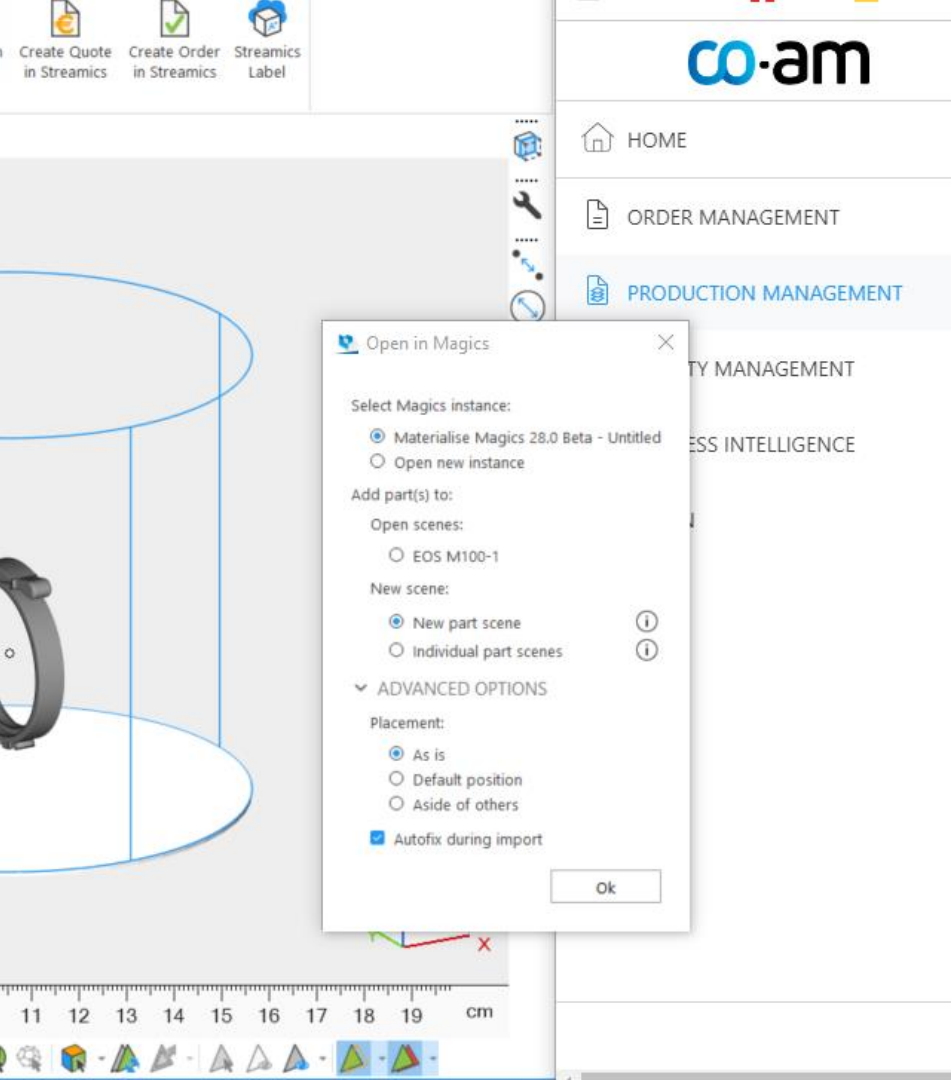
- ▶ Use **FormFit*** to create custom packaging for your parts.
- ▶ Make full use of the **Orientation Optimizer** and **Comparator** with additional options: max XY section, support surface, and support on marked.
- ▶ Let the **Shape Sorter** align the orientation of similar parts.
- ▶ **Detect trapped volumes** to avoid your part being distorted by resin pools.
- ▶ Check the **Slice Distribution Graph** to see heat build-up or material use per slice.

* FormFit was a separate module that is now fully included in the main Magics module

UI/UX optimization

- Get a better overview of your import parameters with our **updated import windows**.
- Use a wider workspace by easily **minimizing your tool sheets**.
- Get a cleaner look with the new **Wall Thickness Analysis** window.
- Quickly familiarize yourself with new Magics version by **importing your shortcuts** from Magics 27.



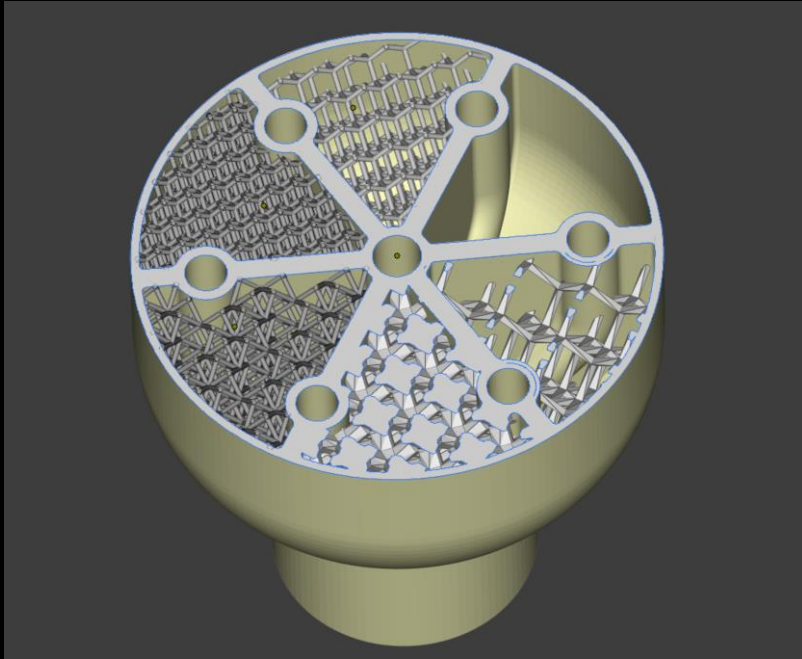


CO-AM integration

- ▶ Get more options when opening your part in Magics from CO-AM
- ▶ Choose which Magics' instance and scene to open your part in
- ▶ Place your parts as you wish during import

Lattice Module

One universal Lattice Module



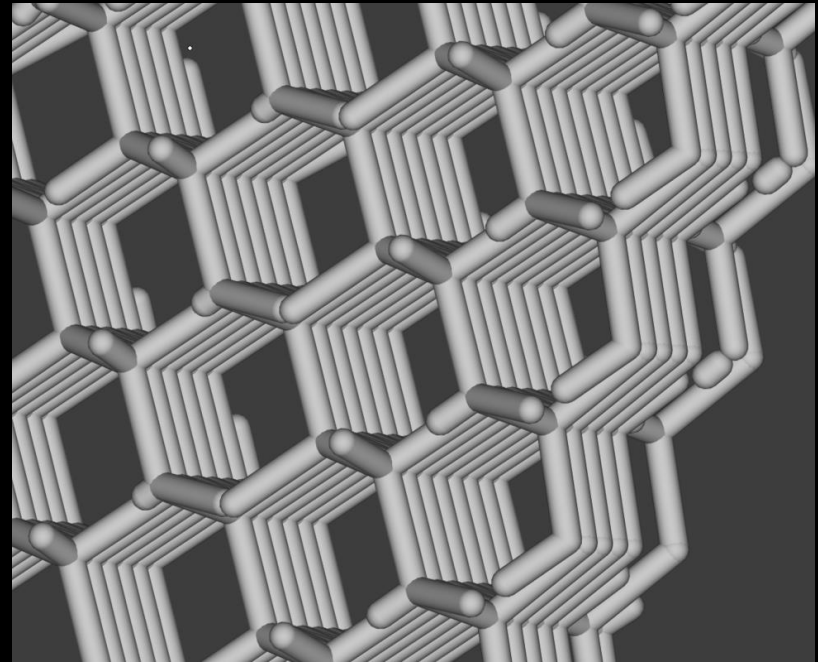
- ▶ The new Lattice Module provides you with all the right tools for your lattice needs in one place, including the following functionality:
 - ▶ Our new beam lattices
 - ▶ (Slice-based) volume mesh* lattices
 - ▶ (Slice-based) tetrahedron** lattices

* Volume mesh lattices were known as Structures in previous versions of Magics

** Tetrahedron lattices were known as DSM Somos® TetraShell™ in previous versions of Magics

Beam Lattices

- ▶ Get complete freedom in choosing the right beam lattices for your application **without the need for other software.**
- ▶ Maintain **control** over your lattices by
 - ▶ Changing the thickness and accuracy
 - ▶ Filtering loose beams after creation.
 - ▶ Marking and/or deleting beams.



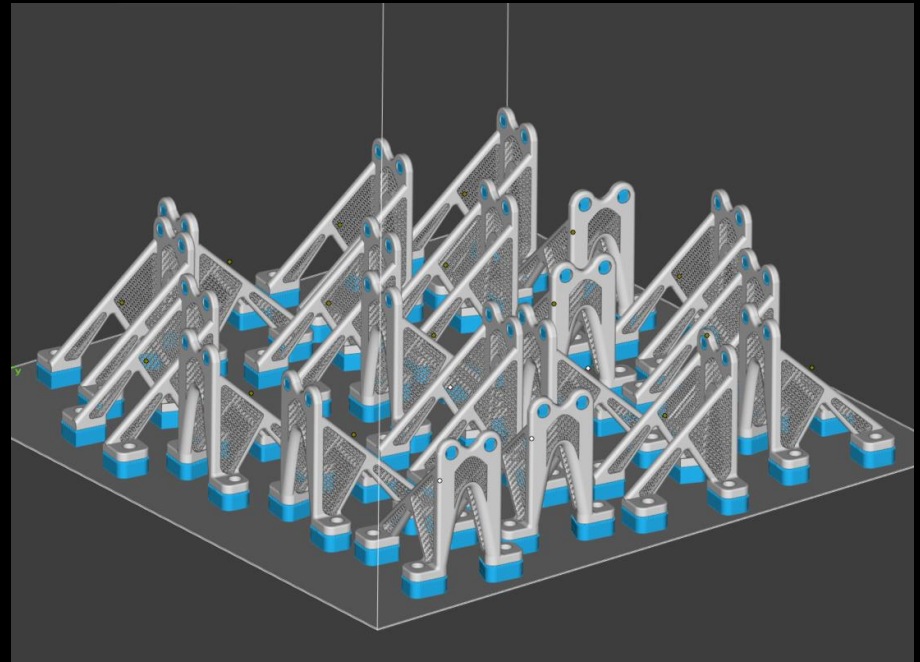
Slice-based lattices



- ▶ All functions in our Lattice Module can be created as slice-based or mesh
- ▶ By keeping your lattices slice-based, you can avoid large files and an intermediate conversion to mesh.
- ▶ Slice-based lattices can be sliced quickly with the Materialise Build Processor as well as the Magics Slice Module.
- ▶ If needed, they can also be exported to other software packages **as mesh**.

End-to-end workflow

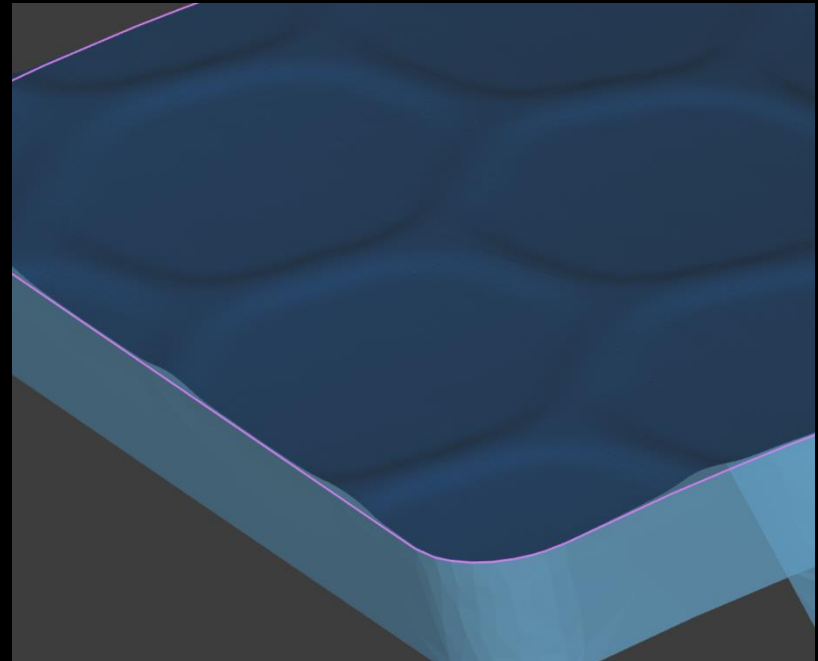
- ▶ You can take beam lattices through the entire Magics workflow
- ▶ During importing (e.g., through 3mf, mxp)
- ▶ Editing (e.g., cutting, Boolean)
- ▶ Build preparation (e.g., orientation, analysis, nesting, supports)
- ▶ And exporting (as mesh, slices, or simply beam lattices)



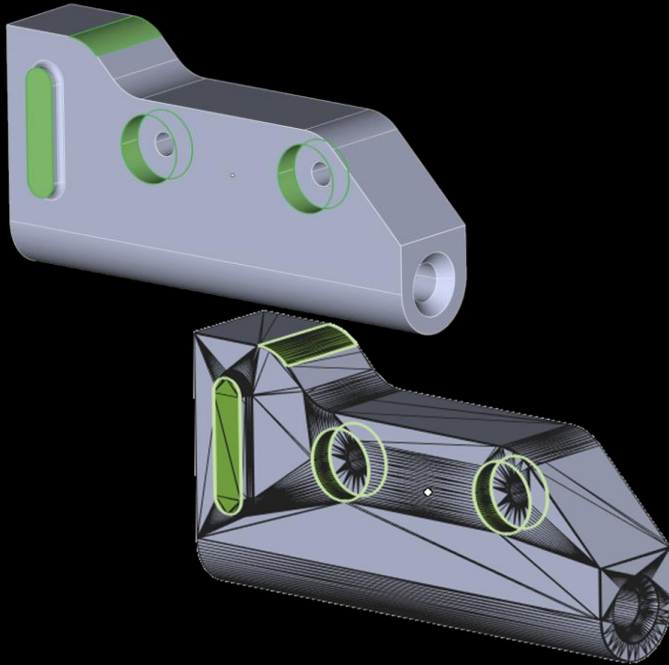
Part Preparation

Slice-based 3D textures

- ▶ Turn textures into slice-based 3D textures in Magics
 - ▶ By keeping 3D textures slice-based, you avoid large mesh files
 - ▶ Slice it quickly with Materialise Build Processors or the Magics Slice Module
 - ▶ Preview the 3D texture to optimize your parameters



Marking improvements

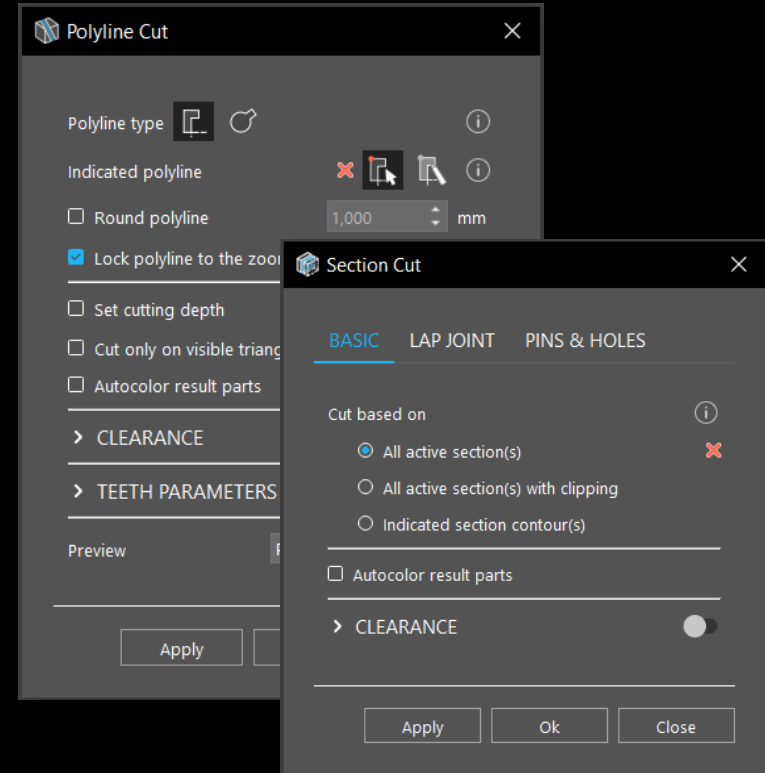


- ▶ Mark the original BREP faces on mesh parts with the new **Mark Face** function when converting the BREP part with Magics.
- ▶ Preserve faces on mesh parts after converting BREP to mesh

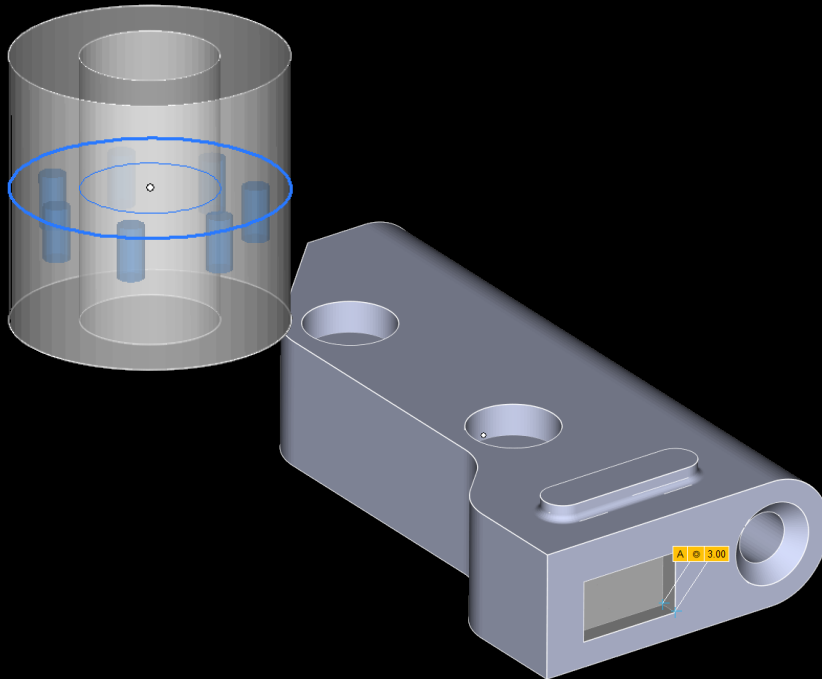
Cutting improvements (1)

UI/UX

- ▶ Modernized dialogs for Polyline and Section Cut with elaborate tooltips replace the Cut or Punch dialog.
- ▶ Constrain polyline direction and snap to mesh points for even more accurate cutting result
- ▶ Explore enhanced mouse modes for quick and easy polyline creation, editing, and deleting.



Cutting improvements (2)



▶ Functionality

- ▶ Minimize the chance of cutting errors by previewing results for pins and holes.
- ▶ Have complete control over cutting depth parameters for the polyline cut type.

Label planning improvements (1)

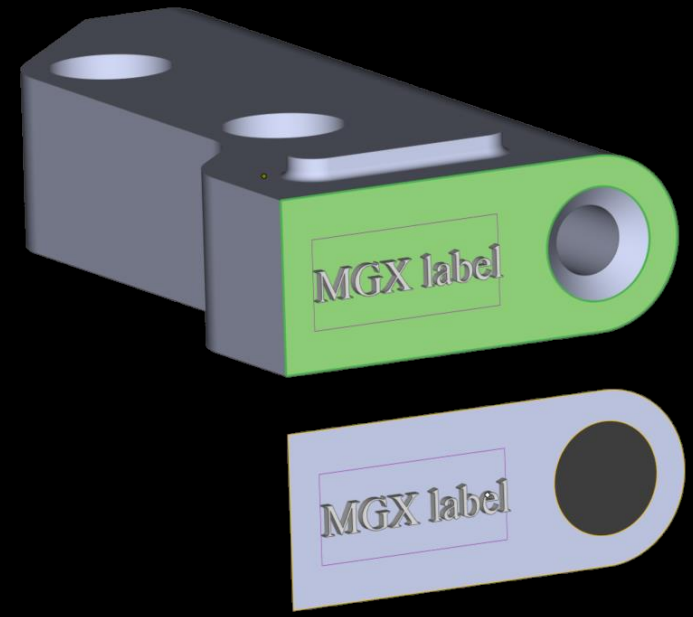
- ▶ Performance improvements*
 - ▶ Reduced execution time of up to 90%
 - ▶ Reduced peak memory usage of up to 45%
 - ▶ More responsive rendering after label planning generation
- ▶ Improved operations:
 - ▶ Adding and resizing Magics' and Streamics' text label planning
 - ▶ Magics Data Matrix label preview
 - ▶ Adding Streamics' data matrix planning

* The observable improvements on large mesh parts >10 million triangles

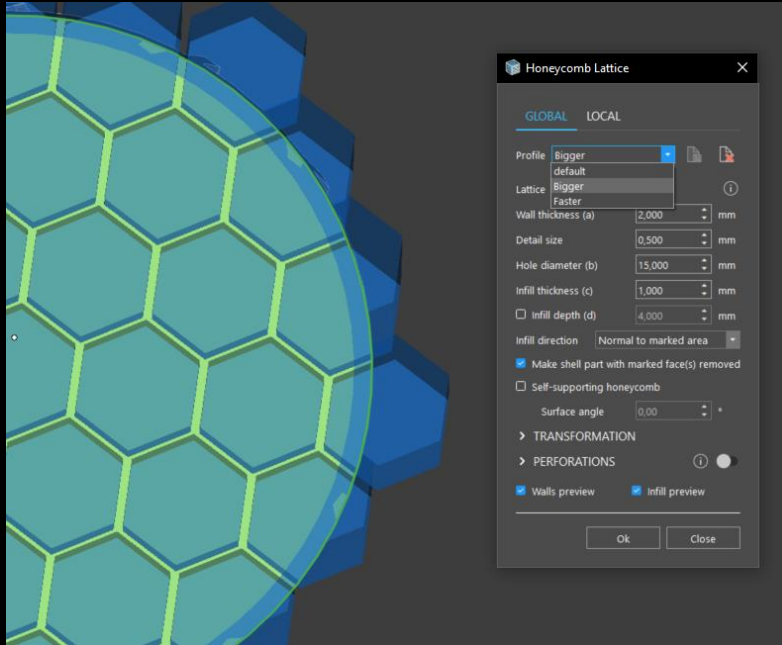


Label planning improvements (2)

- ▶ Preserve label planning on the part to save time after:
 - ▶ Deleting triangles not directly related to label planning
 - ▶ Copying or separating marked triangles from a part with label planning

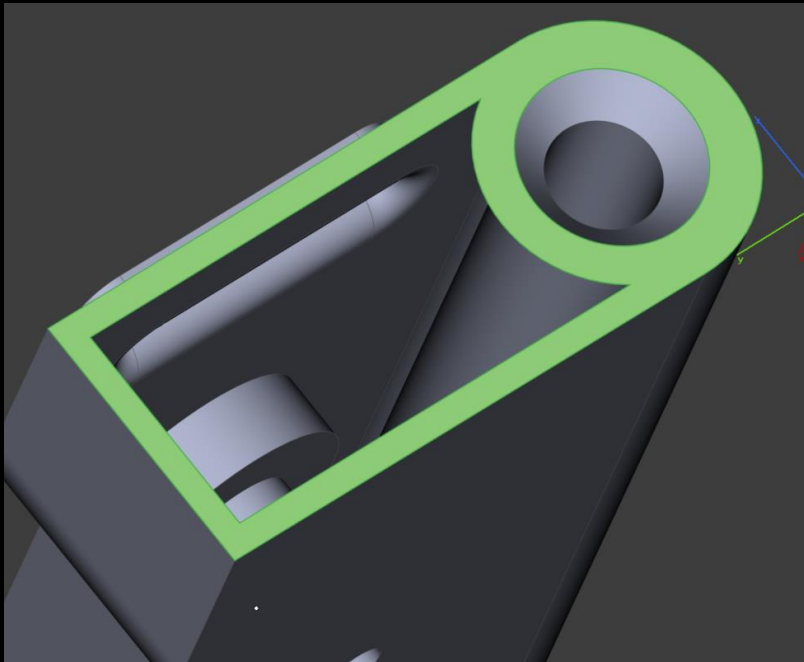


Honeycomb Lattice profiles



- ▶ Save your various commonly used honeycomb lattice parameters as profiles for time saving.
- ▶ Avoid human error by using saved honeycomb lattice profiles.

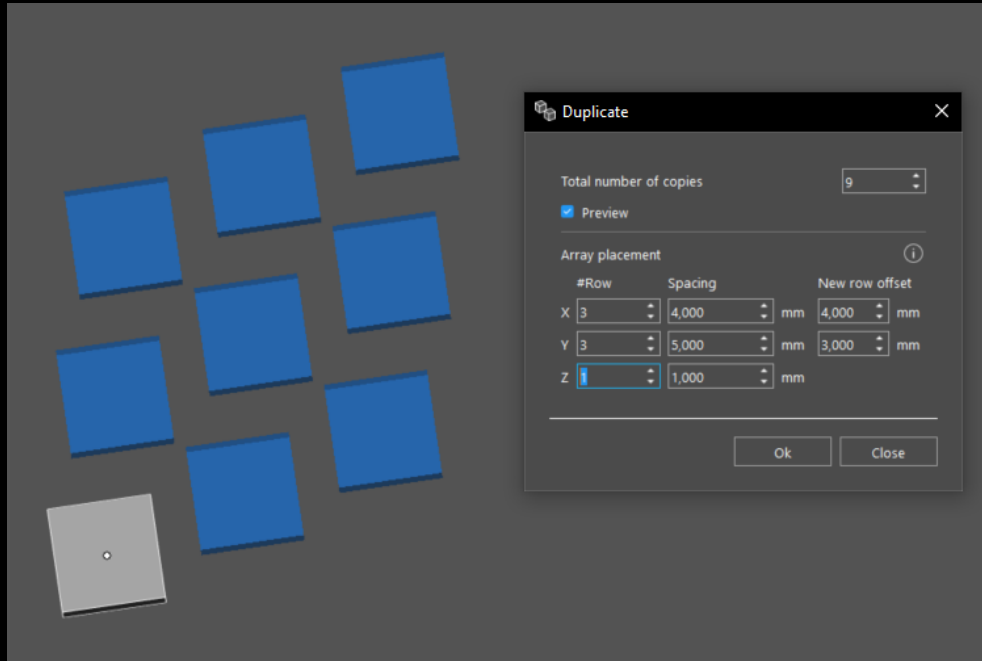
BREP functionality



- ▶ Speed up your workflow by **detecting and resizing holes** for the entire part.
- ▶ Conveniently **re-hollow** your BREP parts for faster processing.
- ▶ Create an **open hollow** for your BREP with the Shell option.

Build Preparation

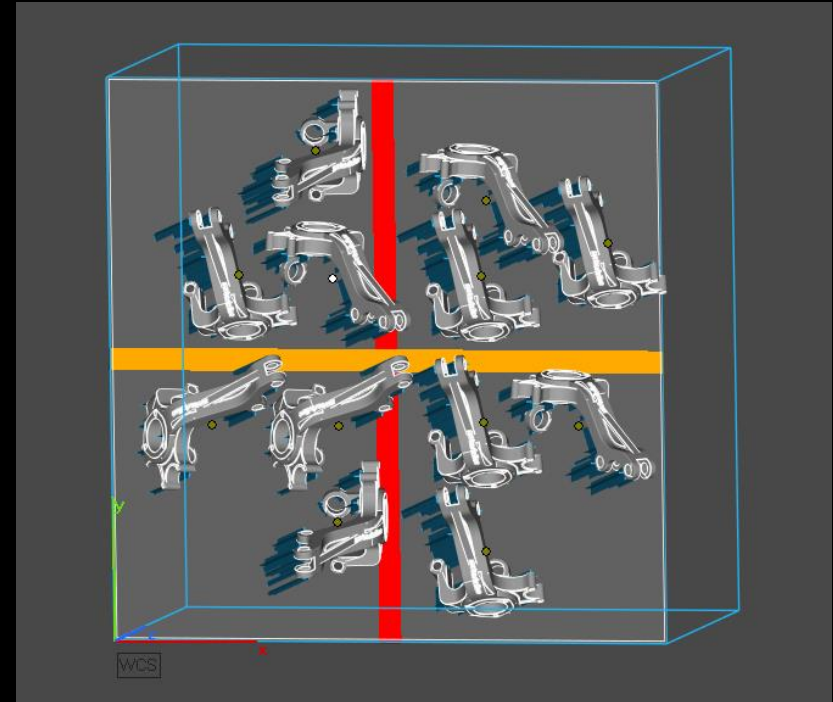
Duplicate with new row offset



- ▶ Include a row offset to your duplicated parts for optimizing against recoater and gas flow.

Automatic Placement

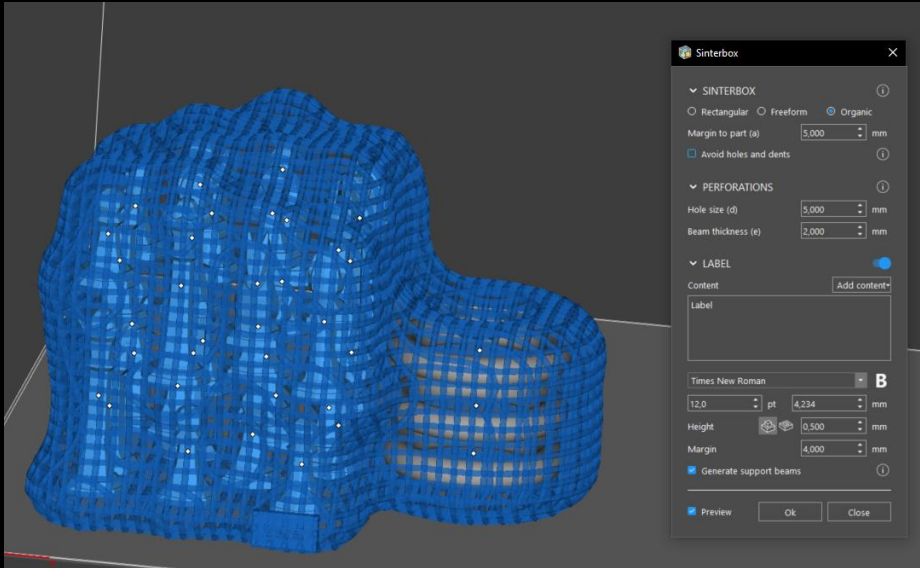
- ▶ Avoid placing a part in multiple scan fields with Automatic Placement to improve part quality.
- ▶ Assign field overlaps in the machine properties.



Nester



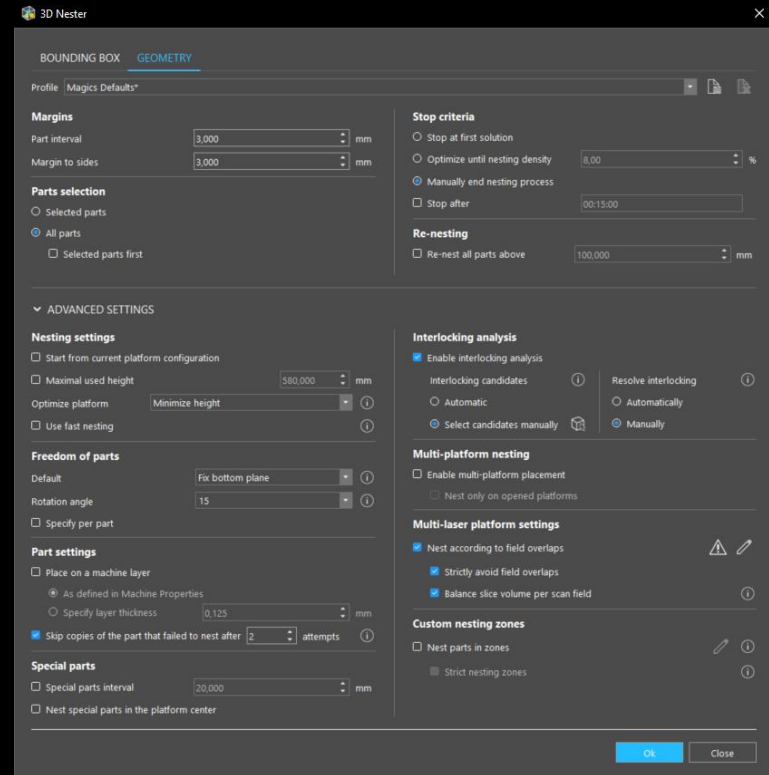
Organic sinter box



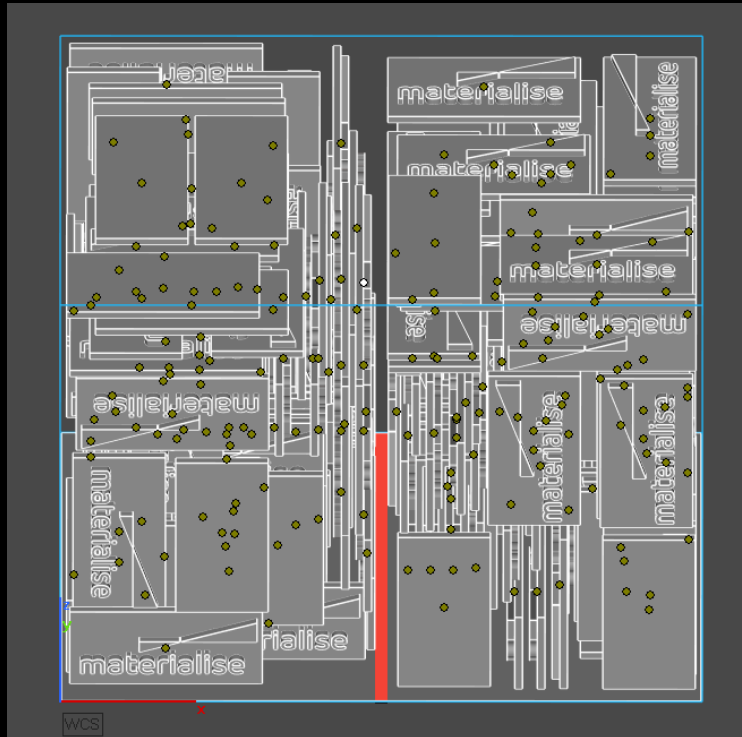
- ▶ Introducing the organic sinter box that wraps tightly around your parts
- ▶ Protect your parts better
- ▶ Use less space
- ▶ Add a label on your organic sinter box to keep track of the customer, batch, order, etc.

New 3D Nester window

- ▶ Get a full overview of all your parameters with the new 3D Nester window.
- ▶ Always have access to the most used parameters.



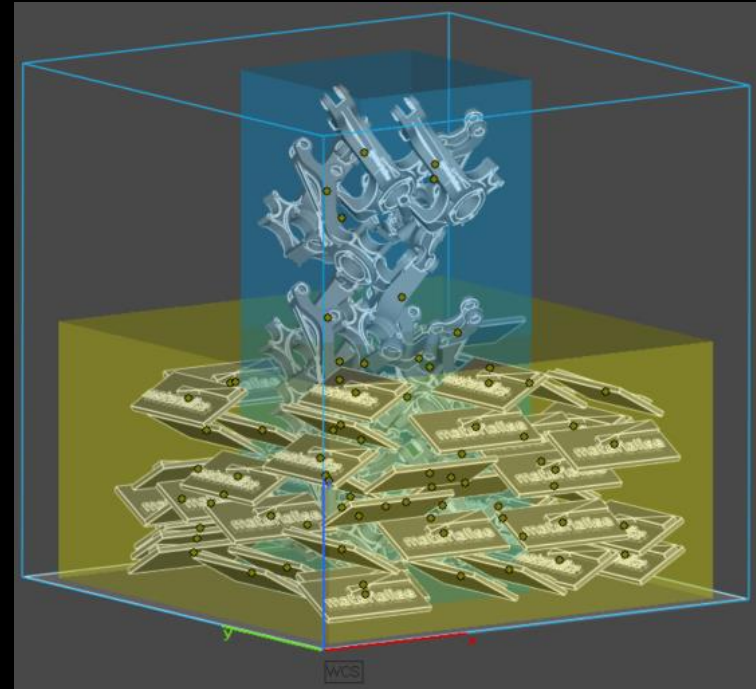
Field overlaps in 3D Nester



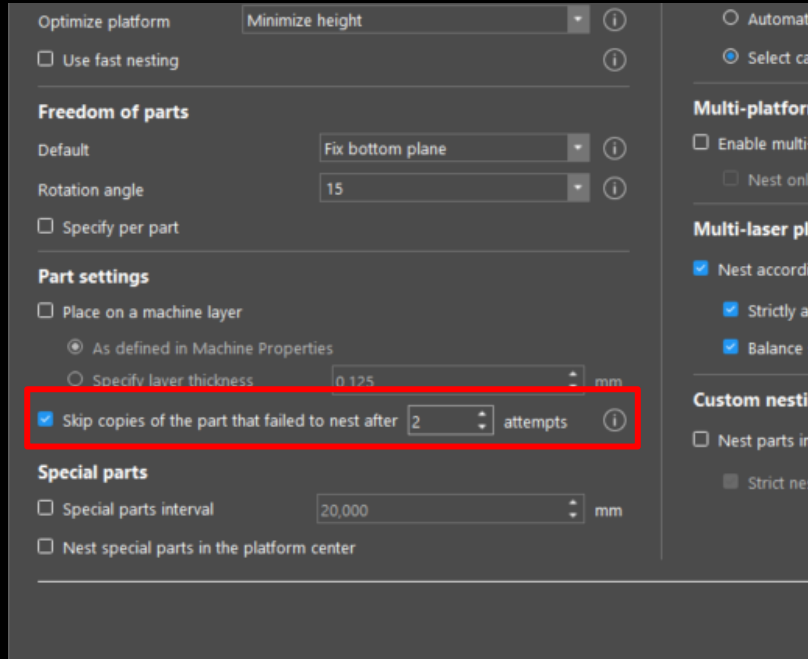
- ▶ Automatically avoid placing a part in multiple scan fields with the 3D Nester to improve part quality.
- ▶ Select parts that must strictly stay out of field overlaps. Parts that can't fit will not be nested.
- ▶ Assign field overlaps in the machine properties.

Custom nesting zones

- Use nesting zones to help with part quality, removability from the build, grouping, etc.
- Create custom nesting zones in the machine properties
- In 3D Nester, you can enable nesting into the zones and assign parts to specific zones (either strict or flexible assignments)



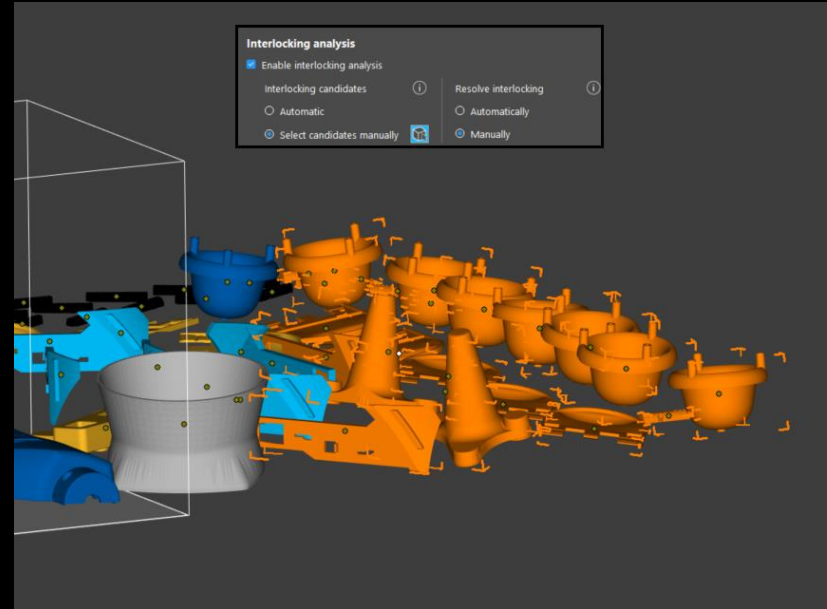
Skipping copies



- ▶ To accelerate nesting, it's now possible to skip copies of the same part. This is especially useful for batches of parts.
- ▶ Choose a lower number of attempts to speed up nesting and choose a higher number to put priority on your nesting density.

Interlocking analysis

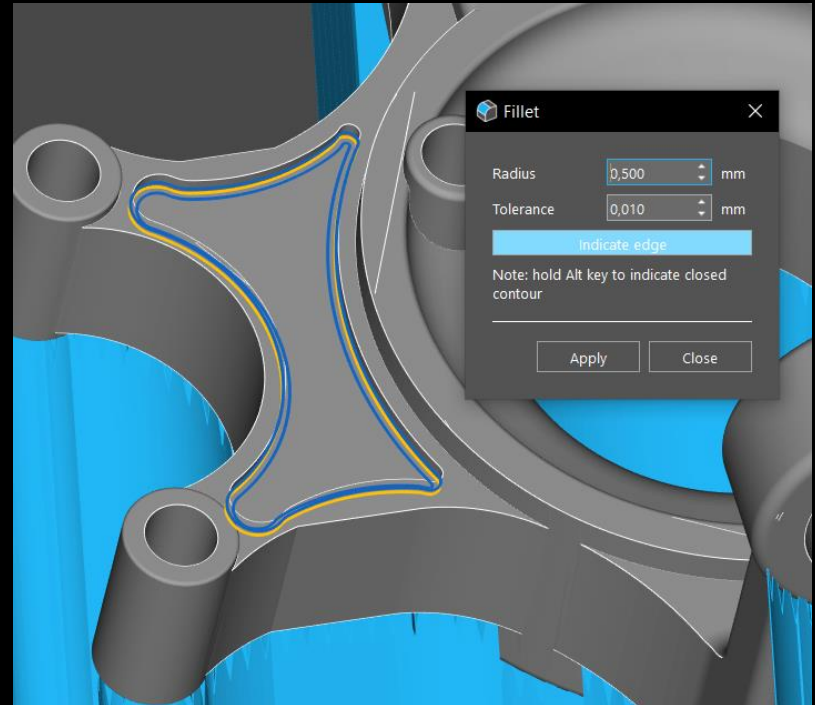
- ▶ Enable or disable the interlocking analysis for specific cases.
- ▶ Automatically resolve interlocking parts after detecting them to speed up your nesting (including multiplatform nesting).
- ▶ Select candidates for the interlocking analysis faster and more easily with an area selection.



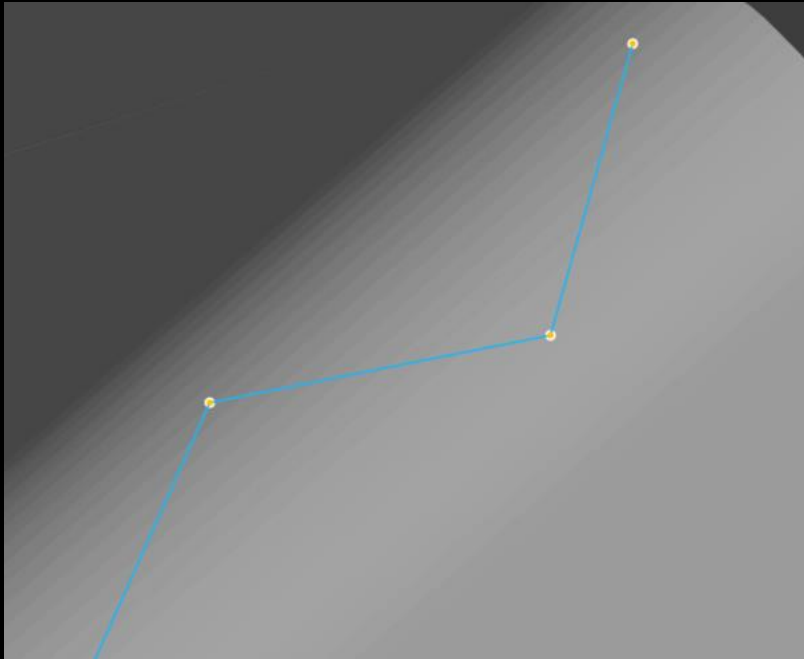
Support Generation

Support generation improvements (1)

- ▶ Preserve supports when performing fillet, chamfer, or labeling operations.
- ▶ Preserve manually created line support after regenerating.
- ▶ Improved thickness for non-solid support.

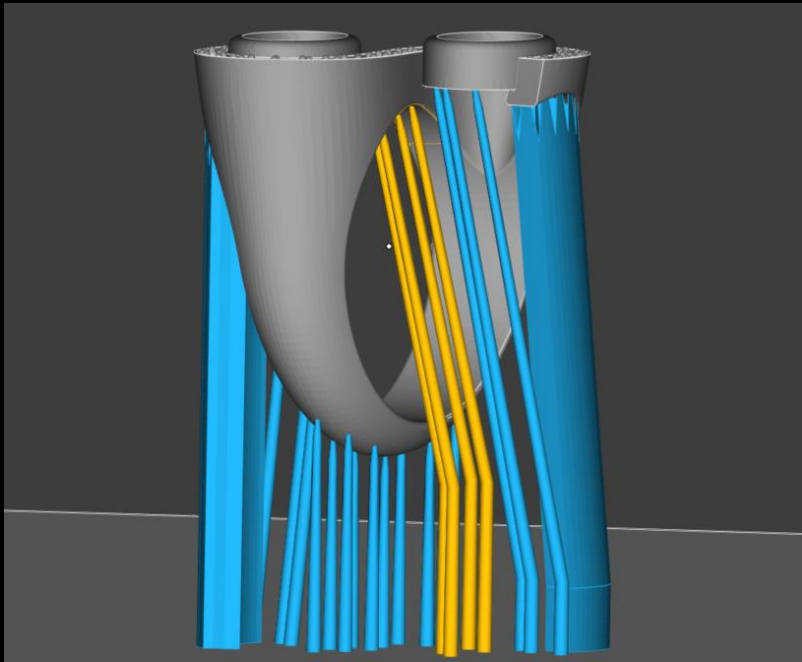


Support generation improvements (2)



- ▶ Manually trim your support on parts and the platform to speed up your workflow.
- ▶ Easily change your manually created line support by moving the nodes.

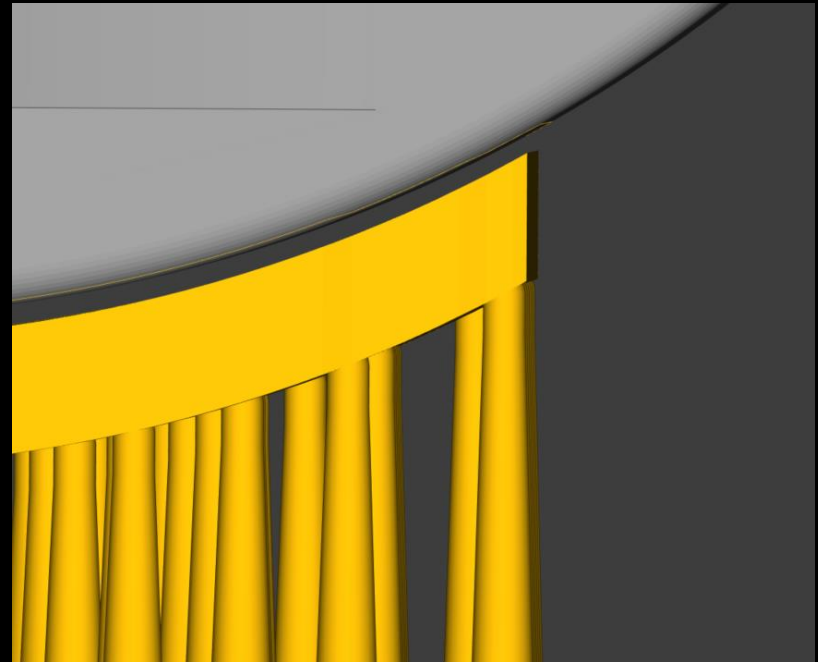
Tree support improvements



- ▶ Angle your single branch tree support with the inline option, allowing branches to align with the trunks.
- ▶ Rescale your tree support to increase its base for stability or to decrease its footprint for a tighter part fit.

Contactless Supports

- ▶ Through our hybrid support, we now provide the option to create contactless supports.
- ▶ For specific, researched applications, these contactless supports can reduce post-processing.





For more information,
contact your local Materialise office.

mtls.me/magics-contact