



**materialise**

innovators you can count on

# Materialise Magics

26.0 – Release Notes

May 2022

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This document lists the main changes and fixes compared to the Magics 25.02 Web Release.

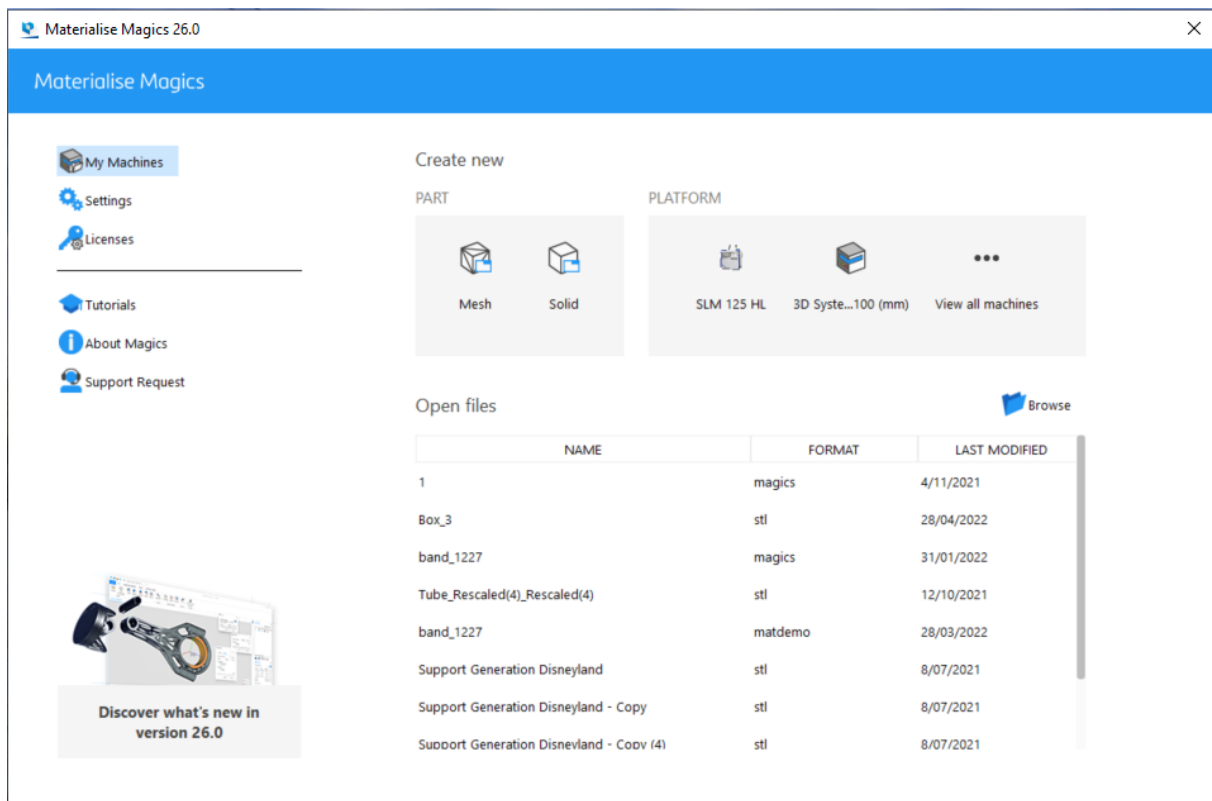
## 1 Getting started with Magics 26

Magics 26 introduces some new concepts such as part scenes, a home screen which are described further in this chapter, but also comes with a revamped tree support concept (see next chapter). Last but not least a Boundary Representation for CAD parts is available, together with CAD functionality to edit your parts on BREP level.

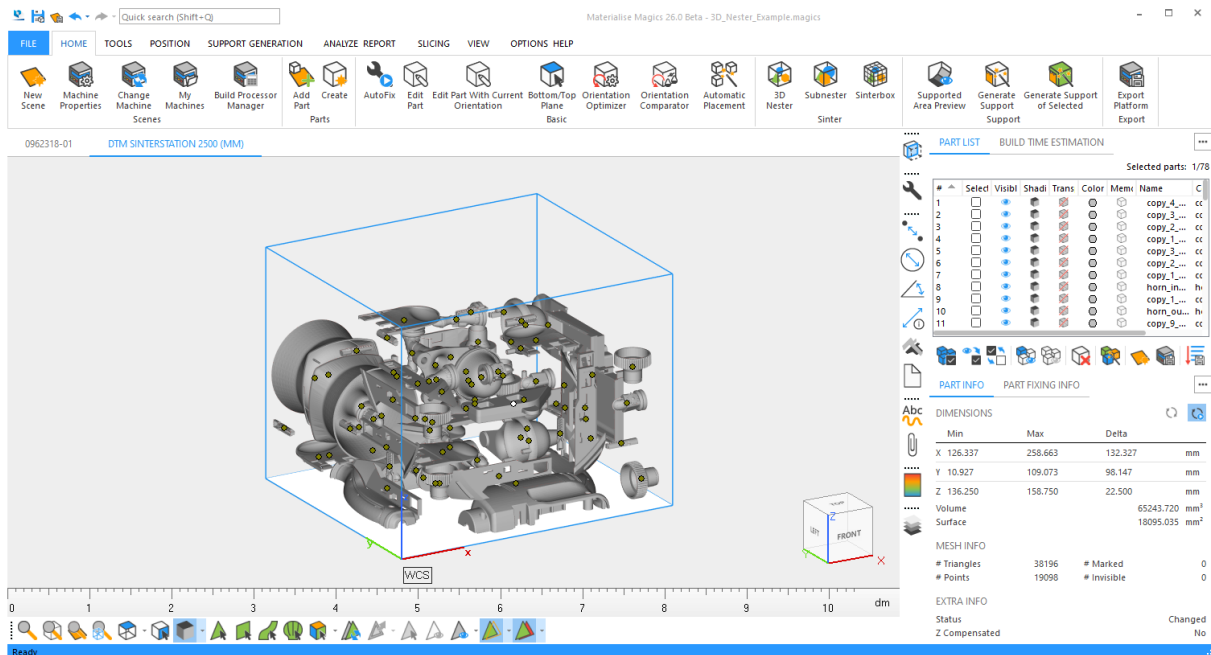
NOTE: Because of all these changes, Magics 26 is not able to import former UI profiles.

### 1.1 Home screen and scenes

Magics 26 comes with the brand-new concept of the Home screen allowing users to get started with their workflows in fast and efficient way by either opening existing files or creating empty part/platform scenes from there. Besides that, Magics Settings, Licensing information or the Machine library can be accessed directly from the Home screen.



Furthermore, Magics is now divided in Part and Platform Scenes. On part scenes, only features related to part preparation are available, while on the Platform Scene, the features are geared towards build preparation. This approach offers more focused workflows to users who work either on (single) part preparation, or platform preparation.



It is nevertheless very straightforward to switch from data preparation (using part scenes) to build preparation (using platform scenes) and back:

- From Part Scenes, it is possible to place parts on a Platform Scene by using the “Add Part to Platform” function.
- On Platform Scenes, the “Edit part” command is available, which opens the part in a Part scene.

When geometrical changes are made to a part in the Part Scene, these changes will be applied to all its copies on the Platform Scene(s). The Part and Platform Scenes will appear as separate tabs in Magics, so it remains easy to switch between different steps in the workflow or projects, and users can immediately see the result of their part changes on the Platform Scene(s).

## 1.2 Opening files

When opening files, Magics 26 will open all the platform scenes and/or part scenes of that file as it was saved.

There are few ways to open files in Magics

- with “Browse” button from the Home screen
- via File menu -> Open

If part or platform scenes are already present in the active Magics session, the files will be opened in the new part/platform scenes next to existing.

NOTE – In Magics 25.x and older, parts could be present on the modeler scene as well. Since the modeler scene is not present any longer on Magics 26, opening projects saved in M25.x and older will result in:

- Loading the platform scene(s), when these are present in the file (if parts were present only on the modeler scene but not in any of the platform scene(s), these will be loaded in the separate part scene);
- Loading all parts in the same part scene when only the modeler scene is present in the file.

## 1.3 Adding components

The “Add component” command (available from the Part scene) will add the selected parts to the active part scene.

## 1.4 Adding parts

The “Add part” command (available from the Platform scene) will add the selected parts to the active platform scene.

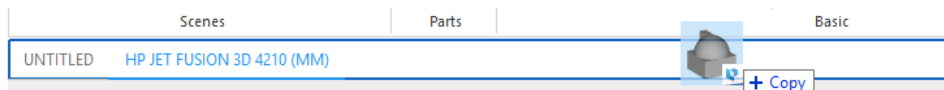
## 1.5 Drag & Drop

### 1.5.1 On Home Screen

When the Home screen is displayed, the user can drag & drop files anywhere on the Home screen to quickly open them: the parts or platforms will be opened in new tabs following the same rules as if user would open the files via "Open" command.

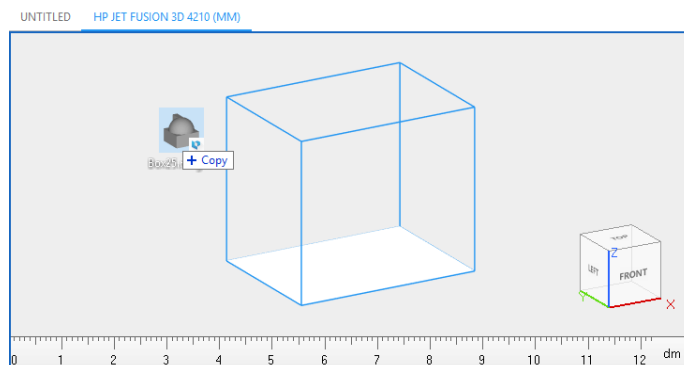
### 1.5.2 On scene tab-bar

When any kind of scene(s) (part and/or platform) is open, the user can drag & drop files on the scene tab-bar (all bar, both existing tabs and empty space in the bar) to quickly open them: the parts or platforms will be opened in new tabs following the same rules as if user would open the files via "Open" command.



### 1.5.3 On Platform Scene

When the Platform scene is active, the user can drag and drop files directly on the view port to quickly open them: the parts will be opened in the active platform scene following the same rules as if user would open them via “Add part” command.



## 2 Magics 26 introduces CAD workflows

Next to our classic mesh representation, Magics 26 now introduces a Boundary Representation (BREP) for your geometries. This opens up an entire new set of CAD native possibilities in using Magics for data preparation, which are described in the next paragraphs.

Please note that the former 'STEP workflow' (that came with the 'all imports' module) has been removed from Magics 26, as this entire workflow is now covered by the new functionality.

### 2.1 Opening CAD files

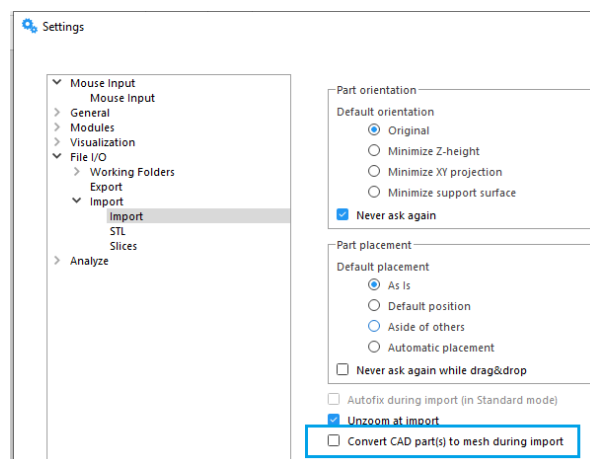
Magics 26 will by default load CAD files into this new BREP. This functionality is available for all the CAD formats (except VDA) that are supported by the 'All imports' module: CATIA5, CATIA6, SOLIDWORKS, INVENTOR, REVIT, SOLIDEDGE, JT, IGES, PROE, UG, Sat.

Moreover, the STEP import is now by default available in Magics 26 for every user of Magics RP, even without having the above 'All imports' module.

In certain cases however, the BREP will not be available, and Magics 26 will still convert the CAD file to mesh, just like in Magics 25 and before:

- BREP is not available on platform scenes, so in case you are loading CAD parts directly to a platform scene (via Home > Add Part), they will be converted to mesh
- In case you are loading a part to an existing part scene that already contains a mesh part, your new part will be converted to mesh as well. A part scene cannot contain a mix of mesh and BREP parts

**NOTE:** If you are not keen on working with BREP representation in Magics 26, you can turn OFF this new behaviour in the settings, by checking ON the 'Convert CAD part(s) to mesh during import' setting.

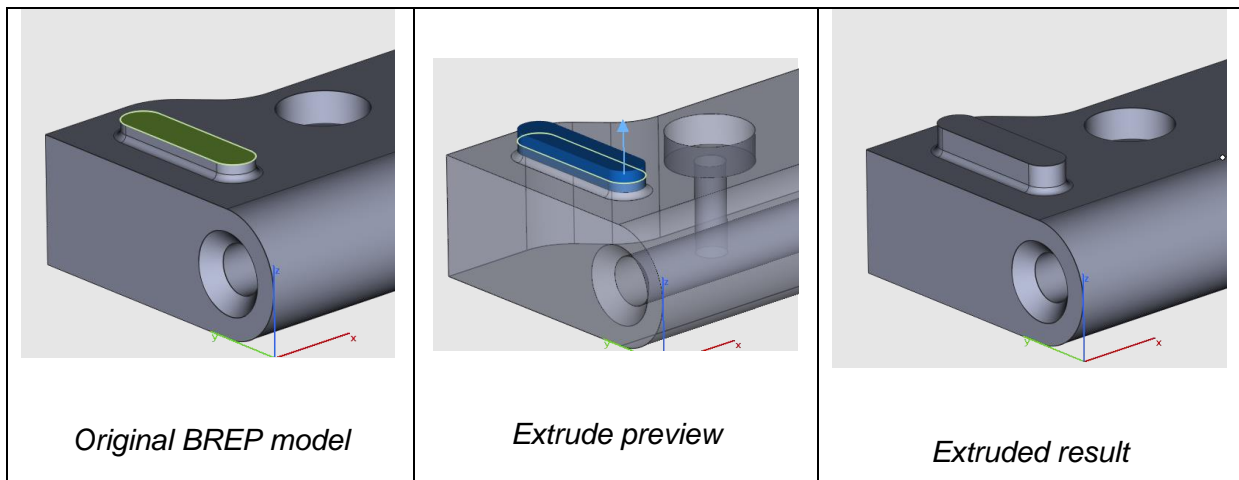


## 2.2 CAD tools for BREP models

With Magics 26 the first CAD functions have been introduced allowing users to prepare BREP models for 3D printing with high level of control and accuracy. These functions become available from Part Scene interface upon import of CAD files as BREP models. Besides that, existing transformation tools such as 'Translate', 'Rotate', 'Rescale' and 'Duplicate' are enabled for BREP models as well.

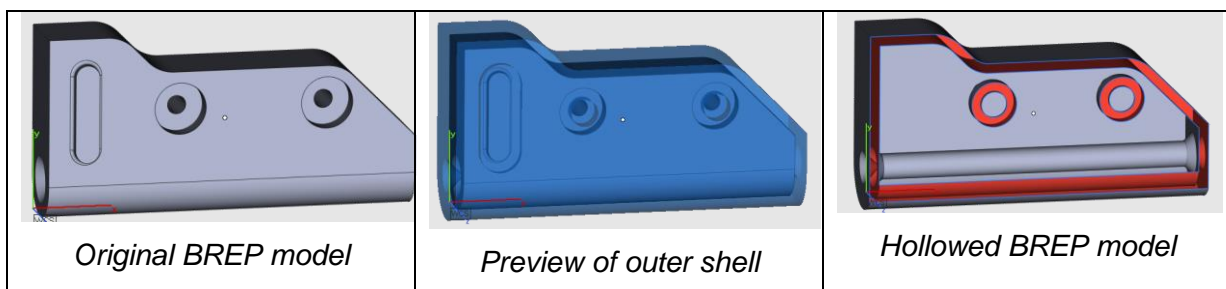
### 2.2.1 Extrude

Extrude function allows users to extend/move selected face(s) of a BREP model by a specified distance, in a specified direction enhanced by a real time preview.



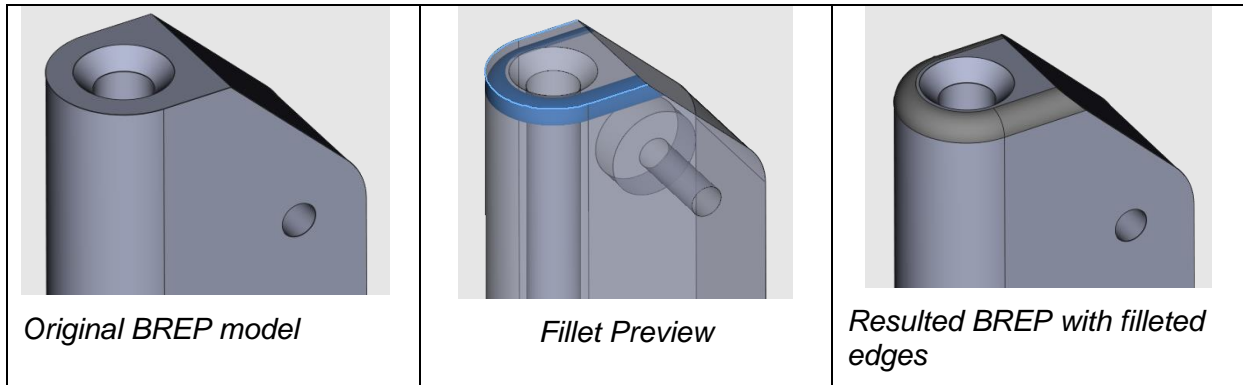
### 2.2.2 Hollow

Hollow tool is intended to create an inner or an outer shell on a BREP model. It comes with the instant preview allowing users to access result before applying the operation.



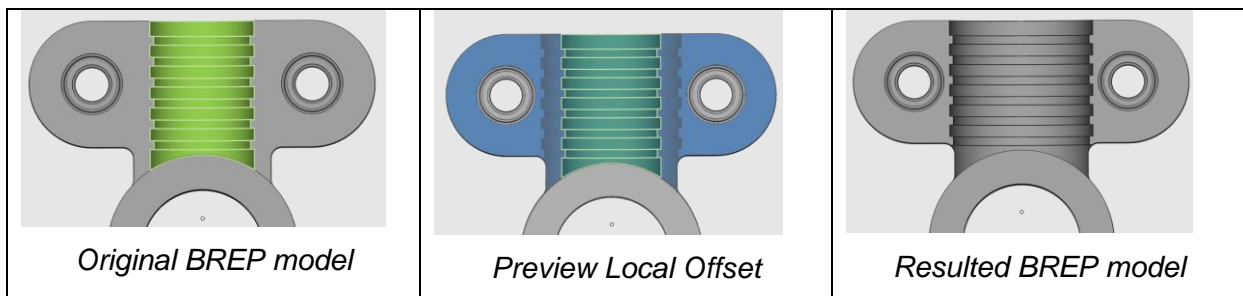
### 2.2.3 Fillet

Magics 26 introduces the Fillet tool for BREP models allowing users to round a single or multiple edges and thus avoid sharp angles during printing.



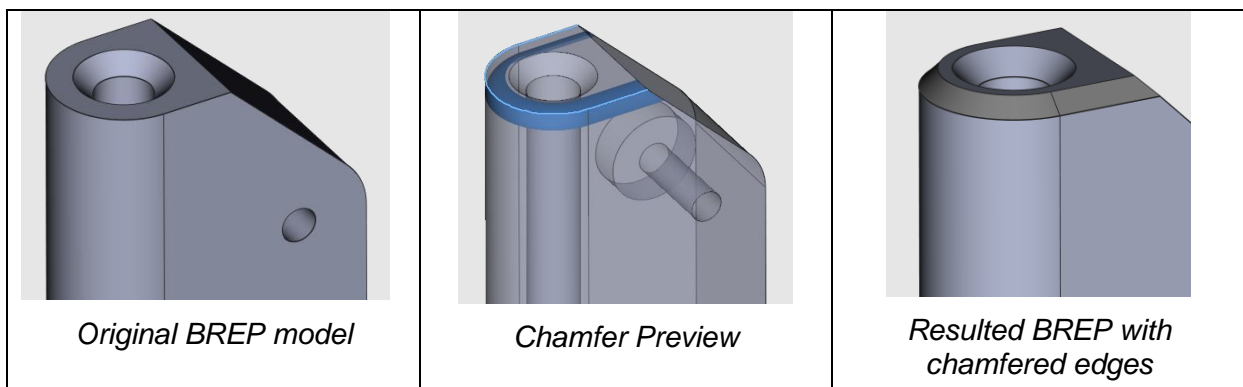
### 2.2.4 Offset

Magics 26 introduces Global and Local Offset functions allowing to offset either a whole BREP model or only specific faces in outside or inside direction.



### 2.2.5 Chamfer

Magics 26 comes with the Chamfer tool allowing users to create a slanted edge between two faces of a BREP.



### 2.2.6 Boolean

From Magics 26 onwards, it's possible to apply Boolean operations such as unite, subtract or intersect directly on BREP models.



### 2.2.7 Convert Scene to Mesh

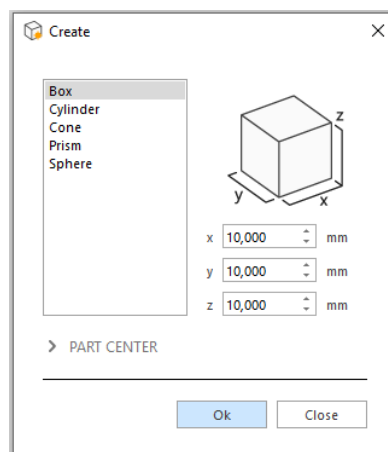
The tool is intended to convert the BREP Part Scene to the mesh Part Scene in one simple click. Once applied, all the BREP models present in the BREP Part Scene will be converted to mesh parts in the most optimal way and placed in the separate Part Scene next to the original one. Conversion parameters for this function are hardcoded for the best result on average models.

### 2.2.8 Measurement Distance Point to Point for BREP model(s)

Measurement Distance Point to Point function is available for BREP model(s) and can be found under the Analyze&Report ribbon.

### 2.2.9 Create BREP primitives

'Create' function was extended with possibility to create BREP primitives inside Magics. The tool is available from the Home screen as well as from the BREP Part Scene directly.



### 2.2.10 Wall thickness analysis for BREP model(s)

The tool allows users to analyze thickness of the walls by visualizing the gradient color mask on selected models within the specified parameters range.

## 2.3 Exporting BREP models

A new STEP export is available for all users of Magics RP, allowing to export your BREP models and open them in another CAD package.

## 3 Revamped Support Generation in Magics 26

Magics 26 comes with a complete revamp of the tree support functionality that gives the user a whole new experience in terms of usability and performance. Along with this revamp, the former cone support functionality has also been fully absorbed by the new tree support. In Magics 26 there is no more cone support available thus, but you will find back all the former functionality (and more) by using tree support. A cone is now simply a tree without additional branches.

NOTE: Due to these changes, cones and their profiles will be converted to tree (and tree profile) when loading such a project in Magics 26. Cones generated in Magics 23 or earlier will be converted to STL. This ensures a smooth transition to using tree supports. In Magics 25, Converted Tree supports cannot be accessed back from Cone profile after the project was saved.

### 3.1 New support generation functionality

#### 3.1.1 Manual and automatic adding of braces to Tree supports

Tree supports can be connected by adding braces between the trunks of individual tree supports. These braces can be added both automatically and manually. Braces can also be modified manually by moving the connection points with the trunk and can be removed manually.

#### 3.1.2 Thickness for stabilization wall

The possibility to have a stabilization wall with a thickness is now available.

### 3.2 Changed support generation functionality

#### 3.2.1 Support parameters pages

The support parameter pages are restructured for a more logic grouping of the parameters. On top of that, a search functionality is available to easily find back a parameter

#### 3.2.2 New default mouse mode in SG mode.

The 'go to surface' mode is now the default mouse mode when entering SG mode instead of the 'part selection' mode.

#### 3.2.3 Select and delete commands

The select and delete commands are updated in order to work in a more consistent way across different support types.

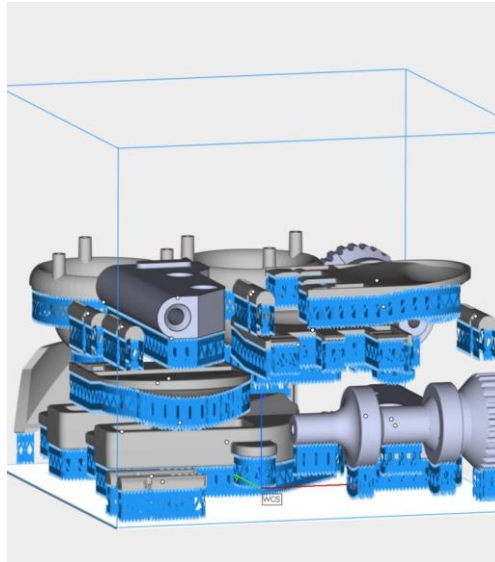
#### 3.2.4 Tree support generation

The 'Create preview', 'Create support', and 'Post-process' buttons for the tree support (previously cone supports) generation have been replaced with a single 'Regenerate' button and two checkboxes. One checkbox, when checked, blocks all the parameters that will change the support structure, so that manual edits are maintained. The other checkbox is only shown when enabling post-processing, and controls whether to visualize post-processing results or not within SG mode. This allows for a more user-friendly workflow for creating tree supports.

## 4 Other new features of Magics 26

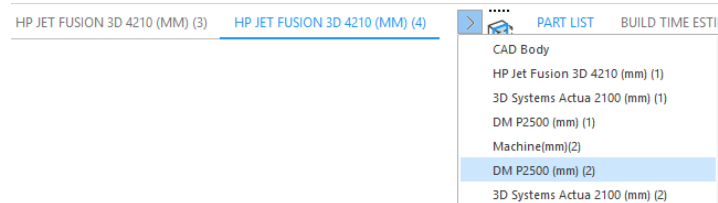
### 4.1 Nesting with supports

To enable EBM and metal binder jetting users to benefit from the 3D Nester functionality, you can now use the 3D Nester with supports with a fixed height.



### 4.2 General UI/UX improvements

4.2.1 Magics 26 comes with the drop-down menu allowing users to navigate through the tabs that are not visible

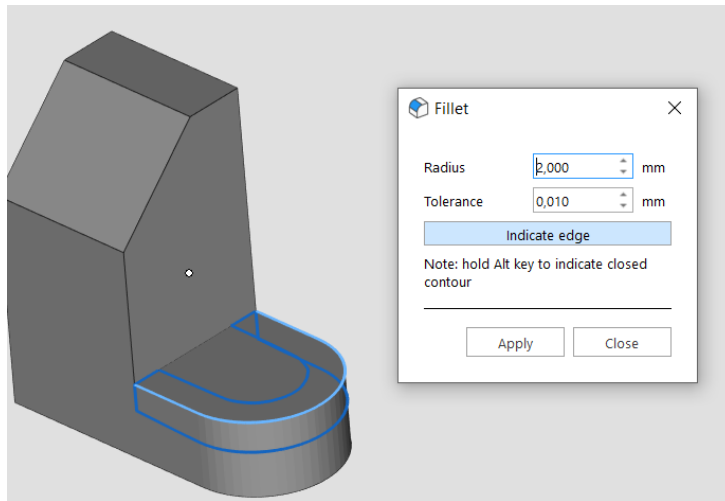


4.2.2 Triggering behaviour for the circular context menus was improved by detecting the exact place where the click was made and giving only relevant options to the user.

### 4.3 Other

4.3.1 The 'Wall thickness analysis' tool was improved and is now preserving the original mesh of the inspected part even if the 'Refine triangles' option is ON.

4.3.2 A preview is shown for the Fillet operation before applying it.



## 5 Known Issues

### 5.1 Import & Export

- In certain cases, no warning is shown asking the user to save a part/scene/project.
- Select orientation: when clicking close, all subsequent part loading is cancelled regardless of "Apply to all" state.
- When switching to a previous Magics version, the list of recently used machines on the Home screen gets emptied.
- Saving files in mgx format with Self Extracting option is not possible.
- In specific cases, BREP parts from the magics files opened via 'Add component' command might be placed on the separate part scene instead of active one.

### 5.2 CAD-based workflow

- Import /Export
  - Unicode characters are not supported when exporting a BREP model to STEP
- CAD functions for BREPs
  - 'Indicate Line' and 'Point' options for Translate and Rotate functions are not working for BREP models
  - Enable 'Match measurement mode' of Rescale is not enabled yet for BREP parts
  - In specific cases, some edges causing failure of Fillet operation are not rendered in error state
  - For specific BREP models, when trying to change offset parameter for multiple entities in one go, Magics can stop working.
- Concept of colors for BREP models is not fully supported yet, only face colors are being preserved during import.
- Preview of Magics files containing BREP models is not shown.

### 5.3 Data Preparation

- Translate dialog randomly closes while moving point under Points toolpage.

### 5.4 Build preparation

- UI
  - Minimized Magics window border has visual artifacts. This does not affect any flows or operations.
  - When the Dental plugin is installed, then commands order in the UI ribbons doesn't stay the same in different Magics instances opened at the same time.
  - Materialise Software ribbon and Streamics commands can take 10-20s to load after launching Magics.
- Streamics
  - When Home screen is open, and a user chooses to open a Streamics part in an "Active scene", then a Modeler scene is opened.

- Automatic Placement
  - 'Range by part Z-height' option doesn't work with slice stacks when the 'Translate to default part Z position' is TRUE in "Automatic placement"

## 5.5 Support Generation

- Disabling the showing of perforations in supports can lead to supports overlapping with a part.
- Situations where a part that has a surface that is (partially) closer than 1mm to the platform and that is supported by trees with angling applied, can lead to incorrect tree supports being generated.
- The 'Trim supports on other parts' functionality might not work as expected when:
  - used in combination with post-processing.
  - used with tree supports and a part intersecting the tree supports is moved.
- When the creation of manual tree support is interrupted before the tree support is generated, an empty support surface can remain. This support surface can be removed manually.
- In the new default mouse mode in SG mode, i.e., 'go to surface', there is no context menu. When going to the 'select part' mode, a context menu is available.
- Panning and rotating parts with e-Stage supports in SG mode might be slower compared to outside of SG mode.
- In some cases where block support is used, the state of the parameter 'GENERAL > Critical points > Local minima support > Adjust hatching' can influence the state of the parameter 'Add point support > Align with hatching'.
- Modifying a support surface (e.g., adding or removing triangles) with Tree supports and using 'regenerate' button will not update the Tree supports with the modified surface. Changing to and from another support type or modifying a parameter will update the Tree supports with the modified surface.

## 5.6 Other

- Installer
  - Magics launches in English after the installation even if the Operating system language is non-English. The language should be changed manually in settings after which it persists in the future sessions.
  - Command prompt appears when launching setup from a network folder. Click Enter to skip and proceed with the installation.
  - Documentation is corrupted when installing through silent installation.
  - Warning is shown if uninstall Magics after silent installation.
- Titles of items in History are all called Database.
- UI profiles
  - Import/Export Magics Profile commands don't allow to transfer GUI settings of Magics 26 automatically. However, as a work around, there is a way to do it manually by replacing the **profile.magics.json** file (stored in



C:\Users\[username]\AppData\Roaming\Materialise\Magics\GuiProfiles\26.0.0.x) at corresponding locations of other users.

## 6 Compatibility with other Materialise product releases

Product		Versions
Streamics		8.3
Robot		8.3
3-matic		17.0
Simulation module		3.0
e-Stage		7.3.0.176
Build Processor System		3.2
Build processors	SLM BP	3.2.7
	HP	2.2.1
	Renishaw	1.3.1
	DLP	2.0
	SLx	5.1.40.0
	EOS	3.1
	Arcam	2.4.5.0
	Trumpf	7.0
Concept Laser		1.2.2

## 7 Bundled components and their licensing components

Product	Licensing component	Versions
<b>Magics 26.0.0.999 or .1000(*)</b>	MatLicense	7.3.6.0
	Local License Server	7.3.1.9
<b>RegWizard 1.1.0.21</b>	MatLicense	7.3.1.9
<b>MatConvert 10.0.0.28</b>	MatLicense	7.0.6.0
	Local License Server	7.3.2.2

(\*) The only difference between Magics 26.0.0.999 and 26.0.0.1000 is a minor update in documentation, which does not affect nor influence the functionality of the product itself. Both build versions are approved and validated.



## 8 System Requirements

Hardware*	Software
<p><b>CPU</b></p> <ul style="list-style-type: none"> <li>Intel Core i7</li> <li>AMD Phenom II X4/ X6 at 3.0 GHz or higher with SSE2 technology</li> </ul>	<p><b>Materialise Magics 26 is only supported on Windows 64-bit**:</b></p> <ul style="list-style-type: none"> <li>Windows 11</li> <li>Windows 10 version 21H1 or later</li> </ul>
<p><b>Memory</b></p> <ul style="list-style-type: none"> <li>16 GB RAM or higher</li> </ul>	<p><b>Materialise Magics 26 is recommended on:</b></p> <ul style="list-style-type: none"> <li>Windows Pro edition</li> <li>Windows Enterprise edition</li> </ul>
<p><b>Free Disk Space</b></p> <ul style="list-style-type: none"> <li>Win 64-bit system</li> <li>2GB of free disk space</li> </ul>	<p><b>Materialise Magics 26 is not supported on:</b></p> <ul style="list-style-type: none"> <li>Windows 8.1 or earlier</li> <li>Windows Server Editions</li> <li>Virtualization systems such as VMWare</li> </ul>
<p><b>Display</b></p> <ul style="list-style-type: none"> <li>1920 x 1080 resolution or higher</li> <li>32-bit color depth (True color)</li> <li>4K monitors are not actively supported</li> </ul>	<p><b>Materialise Magics does not run natively on Mac OS X, Linux, or any other operating system</b> not listed above.</p>
<p><b>Video Card</b></p> <ul style="list-style-type: none"> <li>NVIDIA GeForce GTX 1060<sup>1</sup> or AMD Radeon RX 480 or better</li> <li>DirectX 11 compatible video card</li> <li>At least 4 GB of memory</li> <li>At least a memory interface width of 192-bit (256-bit is recommended)</li> </ul>	<p>.NET 4.6 or later or a working internet connection during the installation is required.</p>

\*These hardware requirements are considered minimal for professional usage, but depending on the expected use cases (mainly influenced by project size, amount of triangles and number of parts) it is recommended to invest in appropriate hardware (more memory, larger disk size, ... ). More info can also be found on: <https://help.materialise.com/93151-tips-and-tricks/magics:-performance>

\*\* Materialise Software will discontinue supporting an operating system, or a specific version of an operating system, from the moment that the OS vendor discontinues support.

## 9 Contact Information

For more information, check out our website: [materialise.com/software/magics/](https://materialise.com/software/magics/)

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