

## 5 steps to succesful 3D printing

1

### Clean print surface.

Use recommended detergent like methylated spirit, acetone or alcohol.

2

### Clean exterior of nozzle.

Remove remainders of filament with tweezer or cloth before starting each print

3

### Use filament accessories.

The use of supplied accessories ensures proper guiding, cleaning of filament and optimal machine performance.

4

### Wait for first layer to finish.

The succes of a print is mostly depending on the first layer. Make sure first layer is finished properly Before leaving your printer unattended.

5

### Let print heads cool down.

Below 100 °C before turning off the printer, to prevent clogging of print heads.

## General 3D printing tips



### Make sure build plate is leveled.

Leveling is required when another build plate is placed or when leveling wheels underneath the build plate are rotated.



### Never leave print heads at elevated temperatures.

Leaving the heaters on for elongated periods of time without extruding could cause clogged print heads.



### Flush out old material first.

Extrude approx. 200 mm of new material to ensure old material is fully removed to prevent clogs when switching to different filament.



### Use SD card for +5hr long prints.

Standalone printing (instead of via USB cable) improves reliability. Unexpected computer updates can ruin your print.



### Use latest slicing profiles and firmware

Make sure to check for updates regularly. Using the latest profiles and settings improves performance.



### Use a wipe tower when printing dual head prints

Using a wipe tower results in 'clean' prints. The wiper tower is standard enabled but be sure to always double check before printing.

# 3D printing Tips & Tricks

Useful tips and tricks to achieve the best 3D print results.



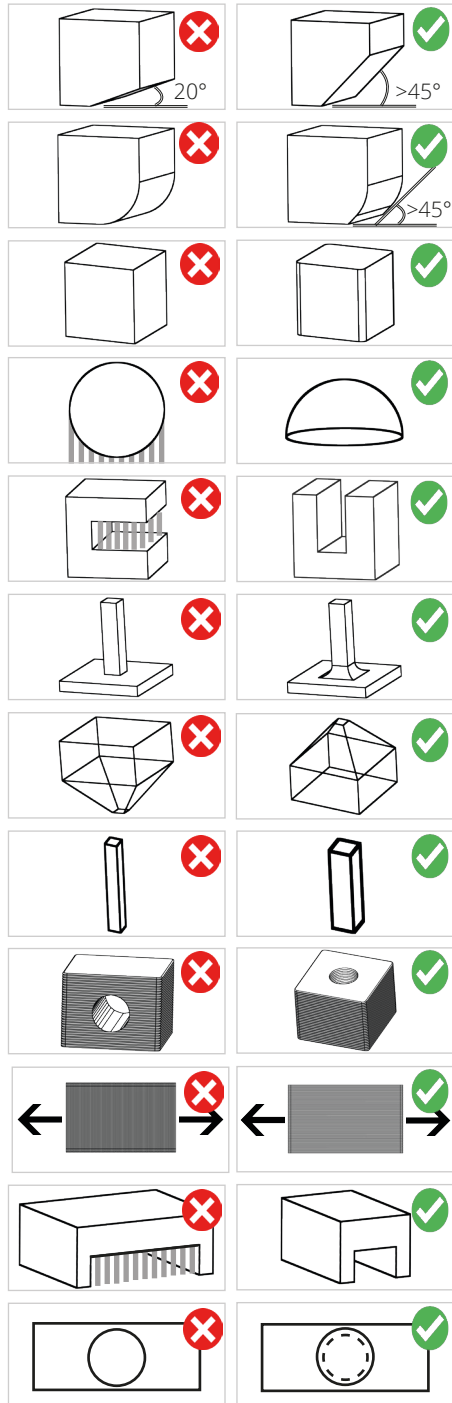
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2017 - V1



## Design tips for 3D printing



Create overhangs greater than 45° with respect to the print surface.

Avoid rounded corners touching the buildplate, create a chamfer to have at least an angle of 45°.

Make small fillets to improve print results.

Divide objects in parts, to prevent support material and reduce print time.

Reorient part to prevent support material to save material, time and post-processing time.

Apply fillets to reduce stress and increase strength on small pillars and features.

Reorient model, for largest adhesive surface to build plate. Reduce chance of tipping over objects.

Avoid small surface to volume ratio  
Minimum surface area 5x5mm  
Ratio (length or width)/height < 1:5

Orient model for maximum strength. Holes are stronger when printed in plane.

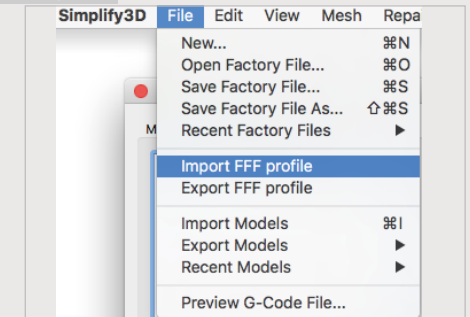
Tension in plane of layer is much stronger than tension in direction of layer.

Bridges can be unsupported when bridge is larger than 10 mm, support material is recommended.

For holes with a diameter up to 10 mm correct size in design by an increase of about 2 to 4 %.

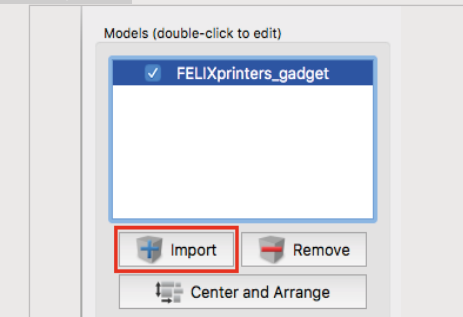
## Simplify3D instructions for 3D printing

### Step 1



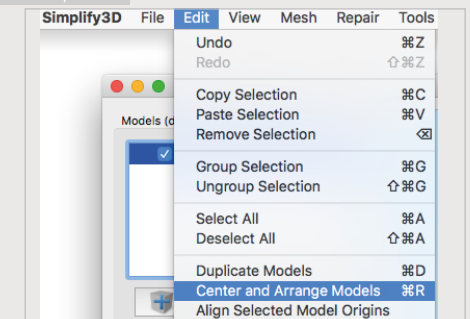
Skip the 'Configuration Assistant' after installation. Manually load the latest FFF profiles\*

### Step 2



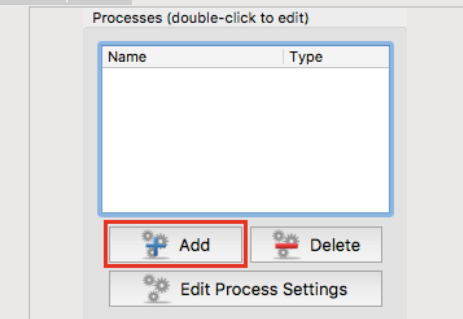
Import the FELIXprinters Gadget or your .STL model into the software.

### Step 3



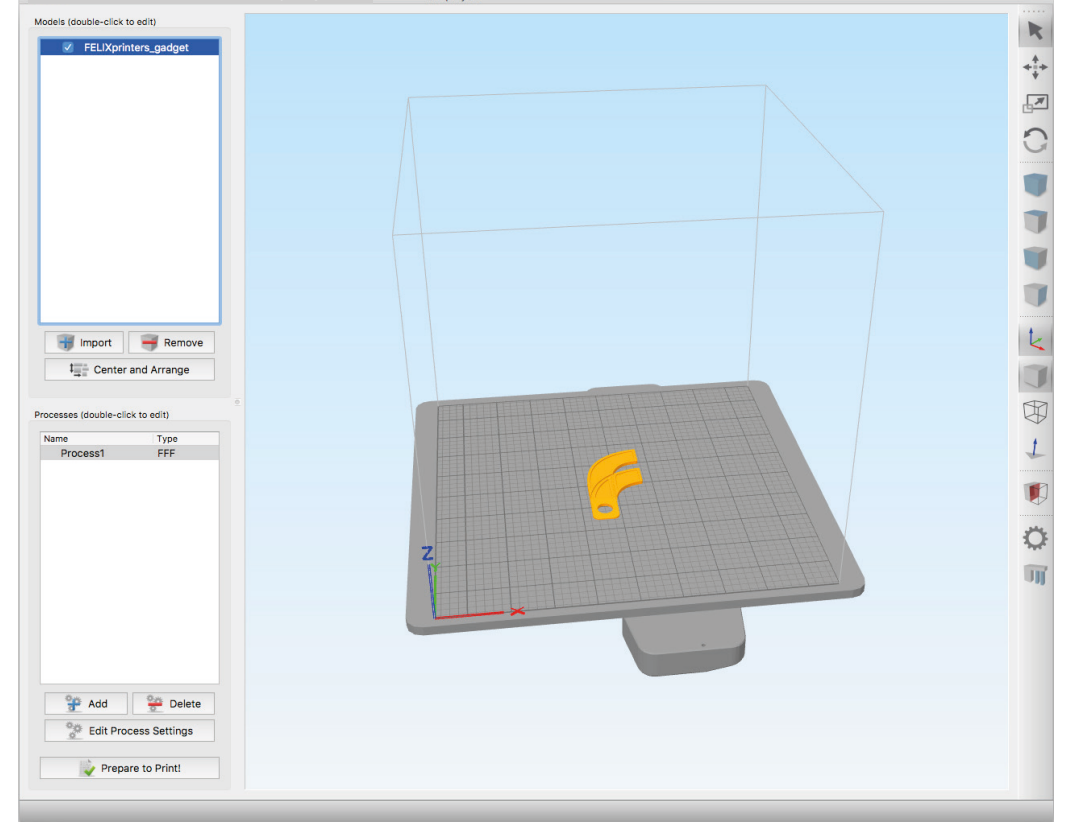
Make sure the model is placed in the centre of the build plate for the best print results.

### Step 4



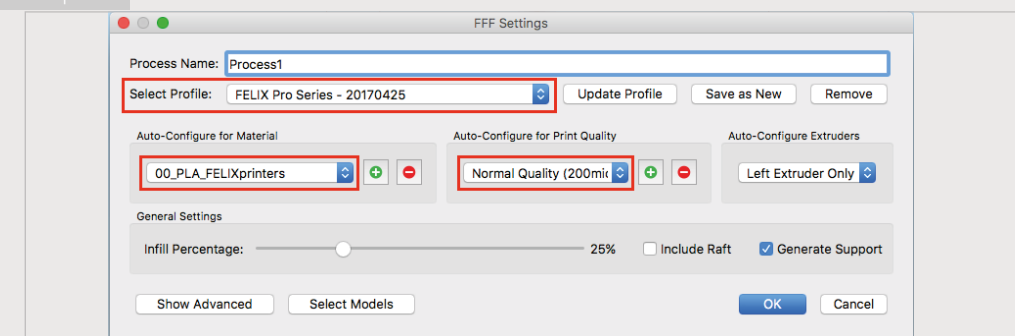
Click on 'Add' in the processes' tab. A pop-up will appear.

### Main window of Simplify3D



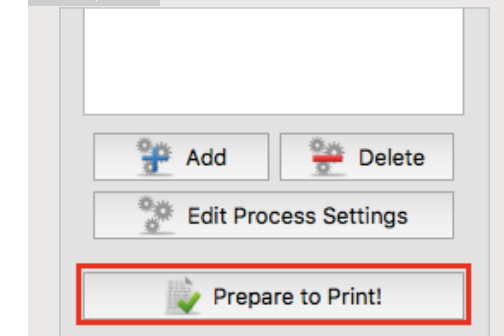
\*Manuals and FFF Profiles can be downloaded from [www.felixprinters.com/downloads](http://www.felixprinters.com/downloads)

### Step 5



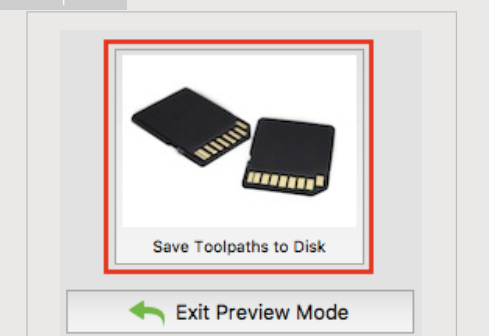
Make sure the correct profile (depending on your printer) is selected. Select the material you want to print with. Select Normal Quality. Click on 'OK'.

### Step 6



Click on 'Prepare to Print!'. A preview of your print will be shown. Inspect if preview is shown correctly.

### Step 7



Save your print file onto your computer, USB stick or micro-SD card or click on 'Exit Preview Mode' to change your model or update print settings.