

Work Instruction – Scaffold printing (Bolt, Bolt pro)

Model	Bolt/ Bolt pro	Date	18-01-2018
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Short title	Change Simplify settings for printing with scaffold			
Classification	Troubleshooting	Firmware	Version control	
	X Software	Part information	Action required	
	Mechanical	Electrical	Service manual revision	
	Filament path	Transmit / receive	Retrofit information	
	Product safety	Other ()	Packaging	

Prerequisites

- Spool Scaffold

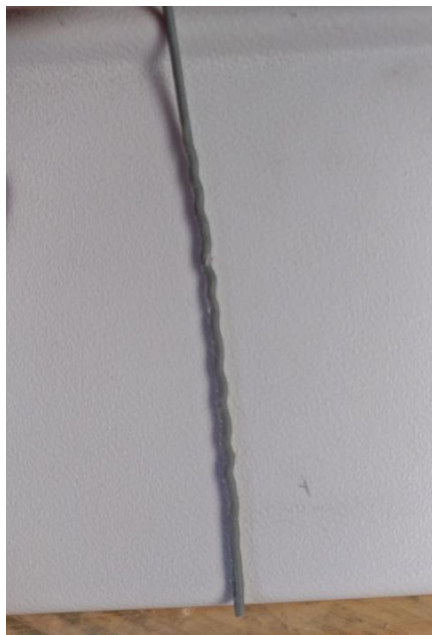
General information

Scaffold is a solvable material that can be used for printing support structures. The scaffold support structures can be dissolved in water after printing. Submerge the printed object in water for a couple of hours. For the faster results peel of as much support material before submerging the object in water.

Scaffold wants to attract water and moist from the air. We recommended to store it in a dry and dark environment. The best option is to store the filament in a resealable container with a larger amount of water absorbing material, like silica.

When Scaffold is dry and in good condition the filament is quite hard. The stiffness is most comparable with ABS.

The more moister the filament absorbs the softer it becomes. When the filament has collected to much moist it cannot be used for printing anymore. Printing with water saturated Scaffold can result in clogged hot-ends or filament that zigzags inside the extruder and stops extruding. When printing with partially saturated filament, bubbles start to form when extruded. A cracking sound can be observed. Scaffold does not like to be in hot environments, it will become softer. The higher the ambient temperature the more chance of a failed print.



Overheated or-/ and wet Scaffold filament in extruder

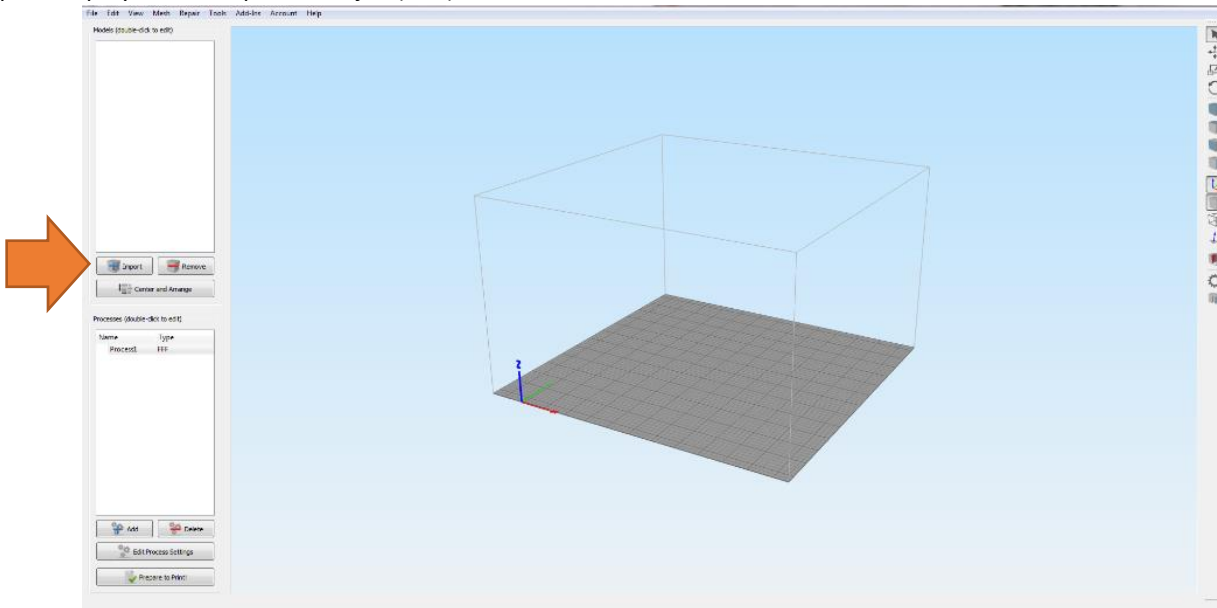
Always work with the latest profiles from <https://bolt.lpfrg.com/>, go to “Print settings” and download the profiles for the Bolt or Bolt Pro.

Do not:

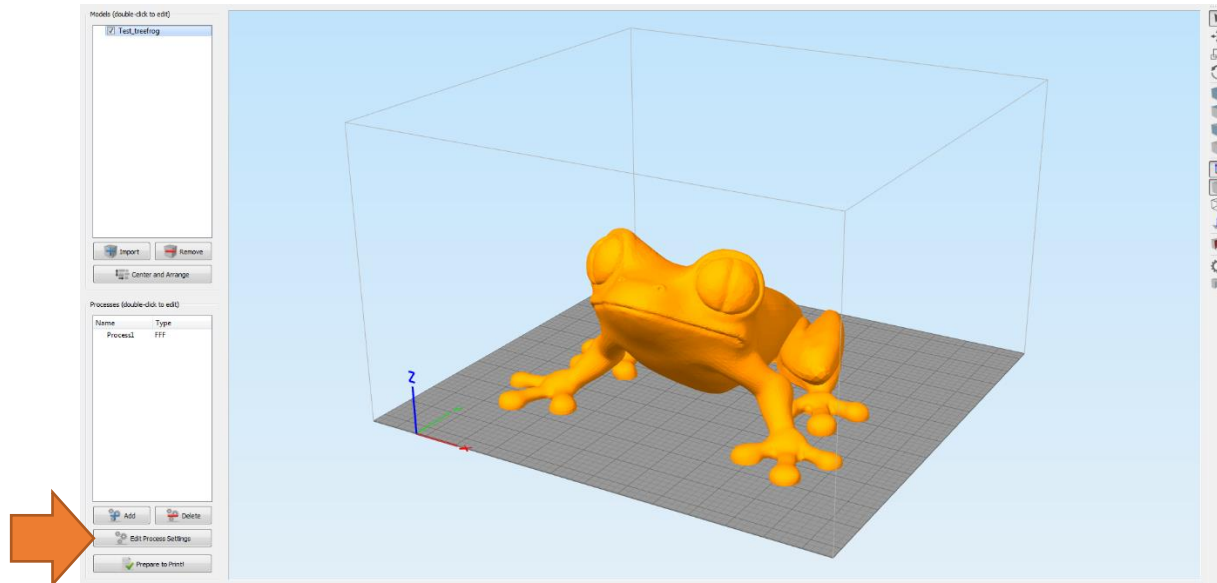
- Print Scaffold with a bed temperature higher than 60 degrees
- Use extrusion temperature higher than **210 Bolt, 220 Bolt pro**
- Print Scaffold in a hot and-/ or humid room

Instruction Steps

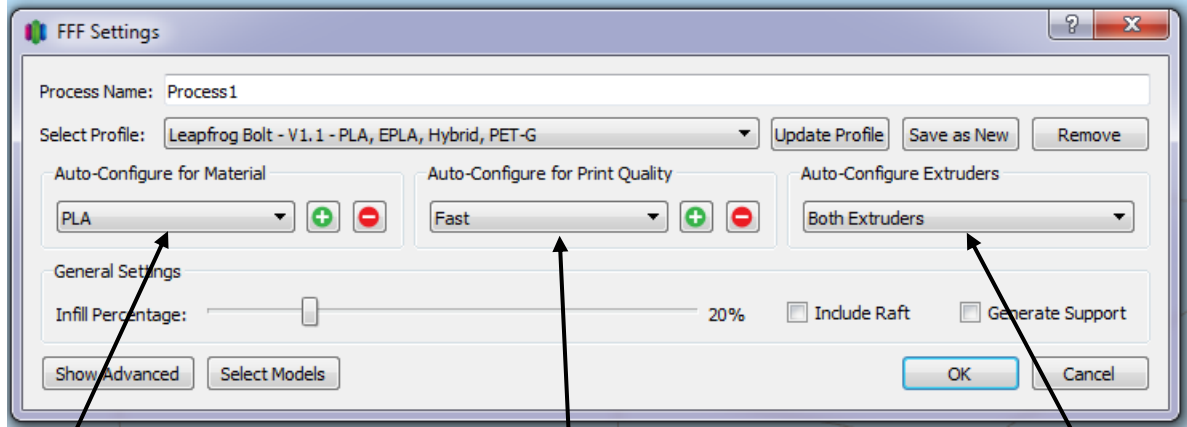
1. Open Simplify3D and import an object(.STL)



2. Open a process, click on “Edit process settings”



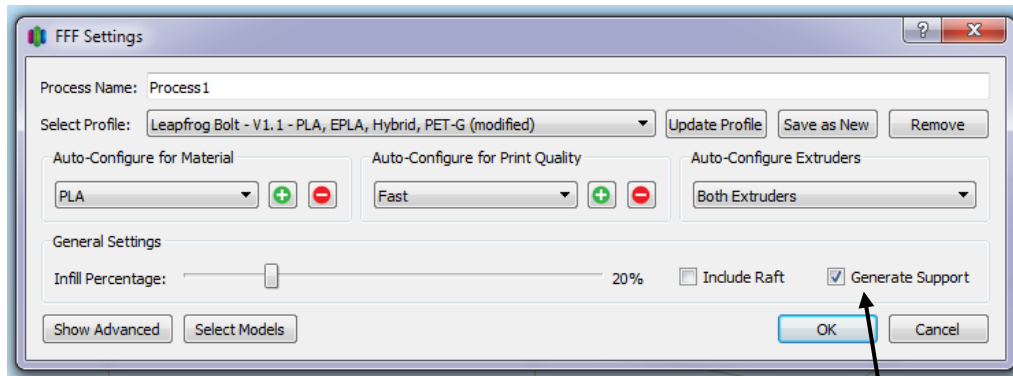
3. Auto-configure process settings and enable “Generate Support”



Set the loaded object material in “Auto-Configure for Material”

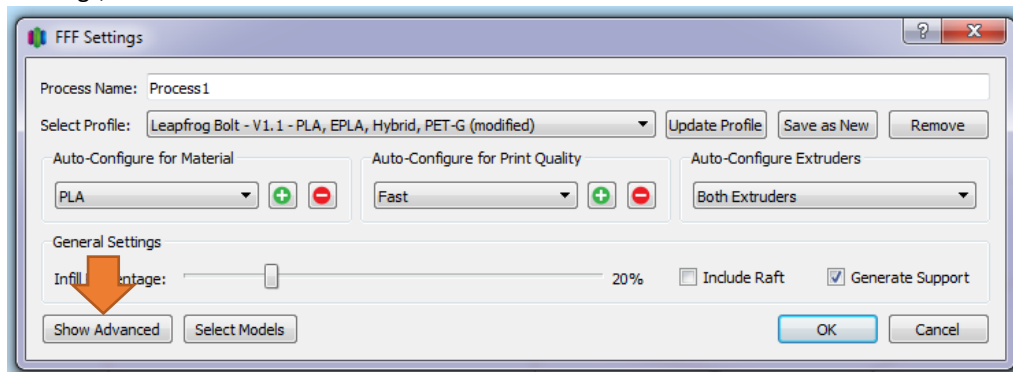
Choose layer height in “Auto-Configure for Print Quality”

Set “Auto configure Extruders” to “Both Extruders”



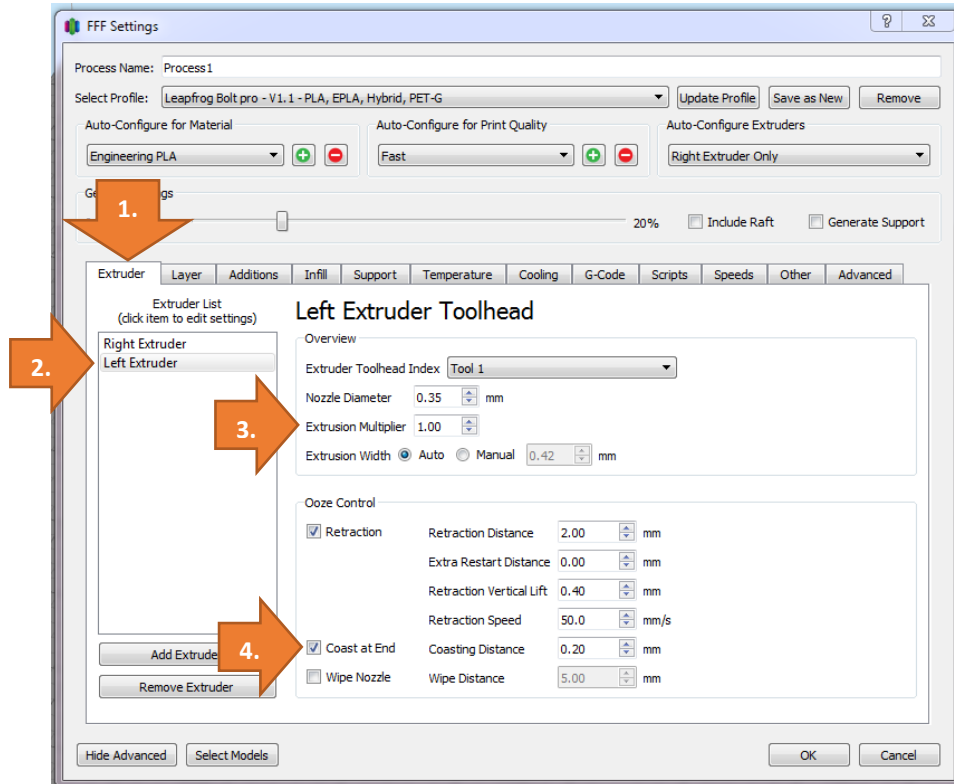
Enable “Generate Support” box

4. Change advanced settings, Press “Show Advanced”



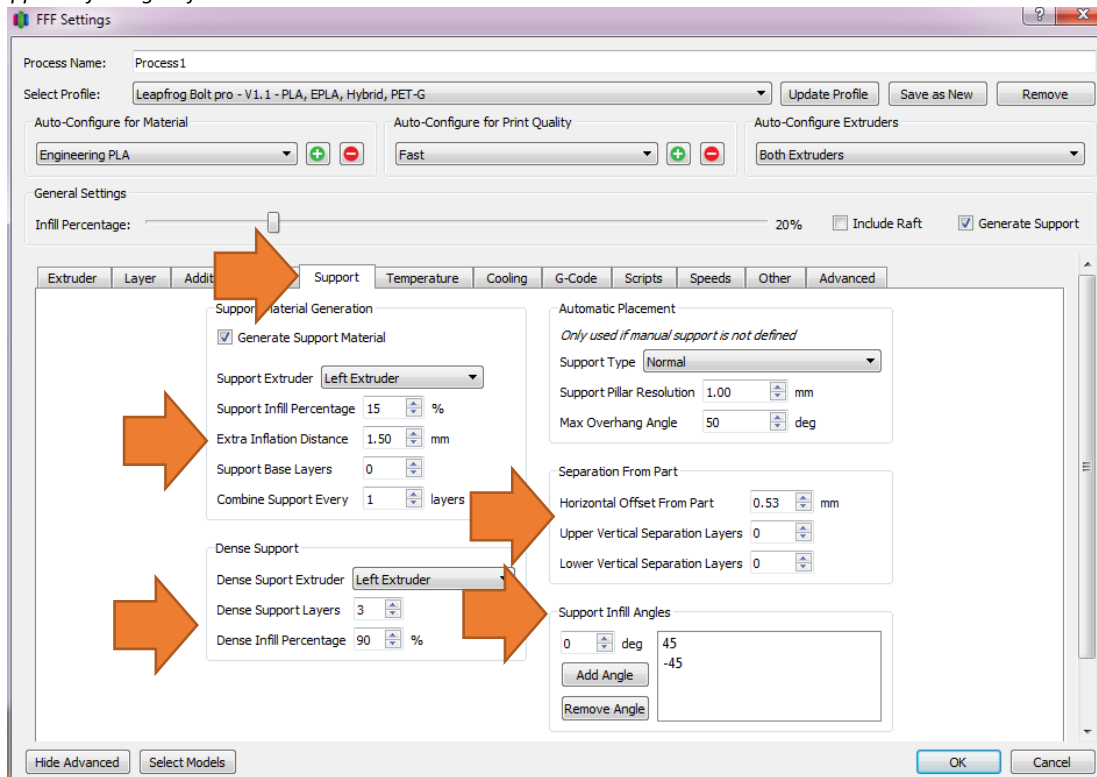
5. Go to the “Extruder” tab and change the following:

- select the “Left Extruder”
- set “Extrusion multiplier” to **1.00**
- disable “Coast at end”

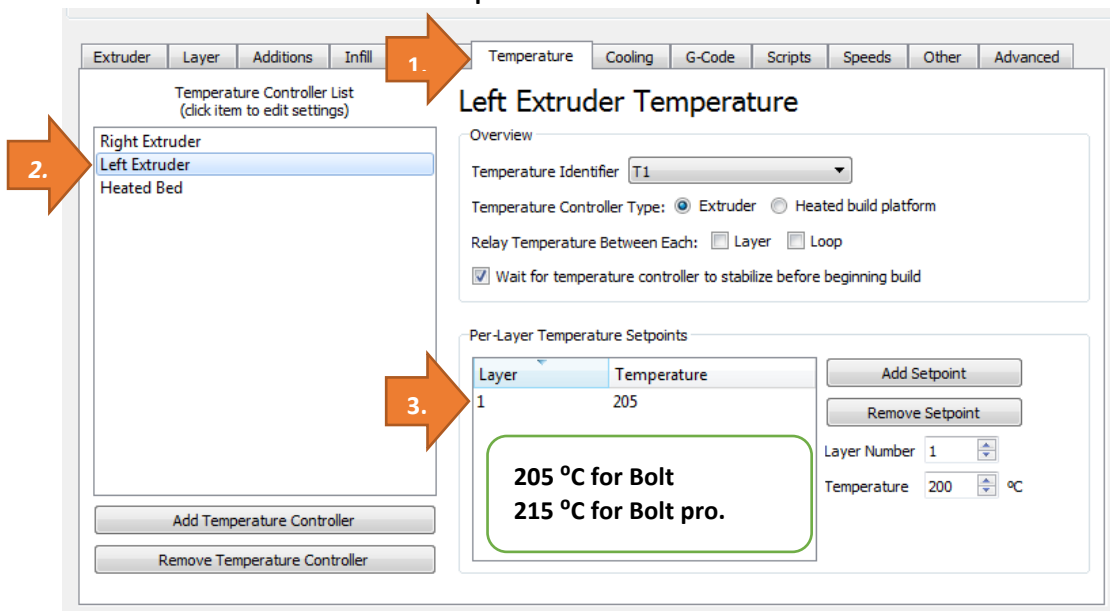


6. Go to the “support” tab and change the following parameters:

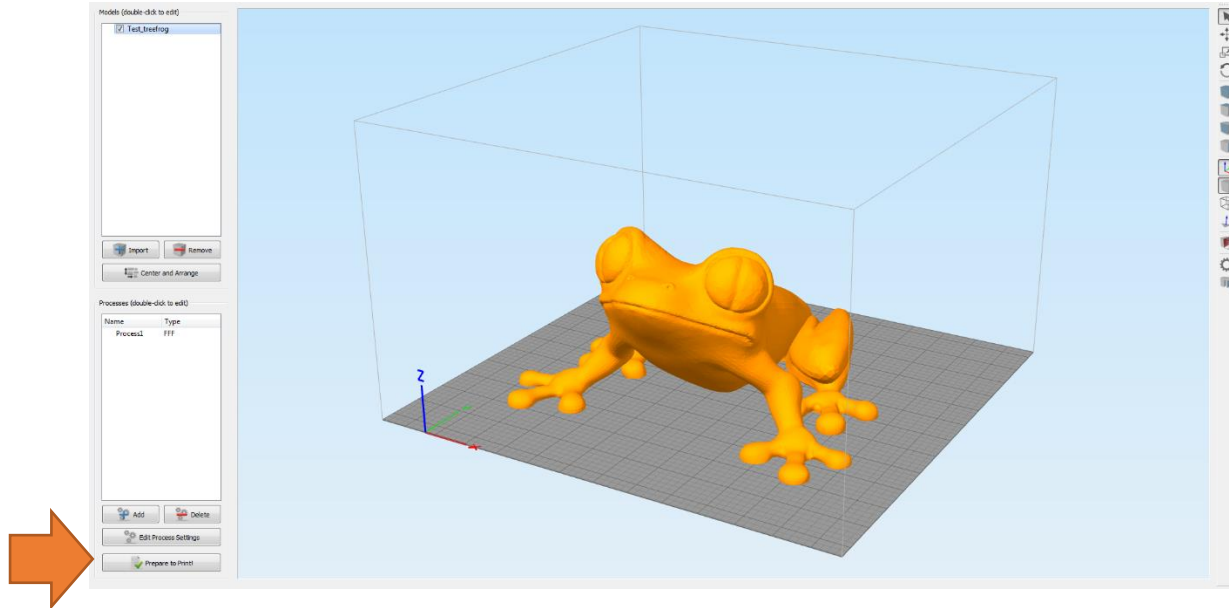
- Set “Extra inflation distance” to **1.5mm**
- Set “Dense Support Layers” to **3**
- Set “Dense Infill Percentage” to **90%**
- Set “Horizontal Offset From Part” to **0.53mm**
- Set “Upper vertical Separation Layers” to **0**
- Add a support infill angle of **-45**



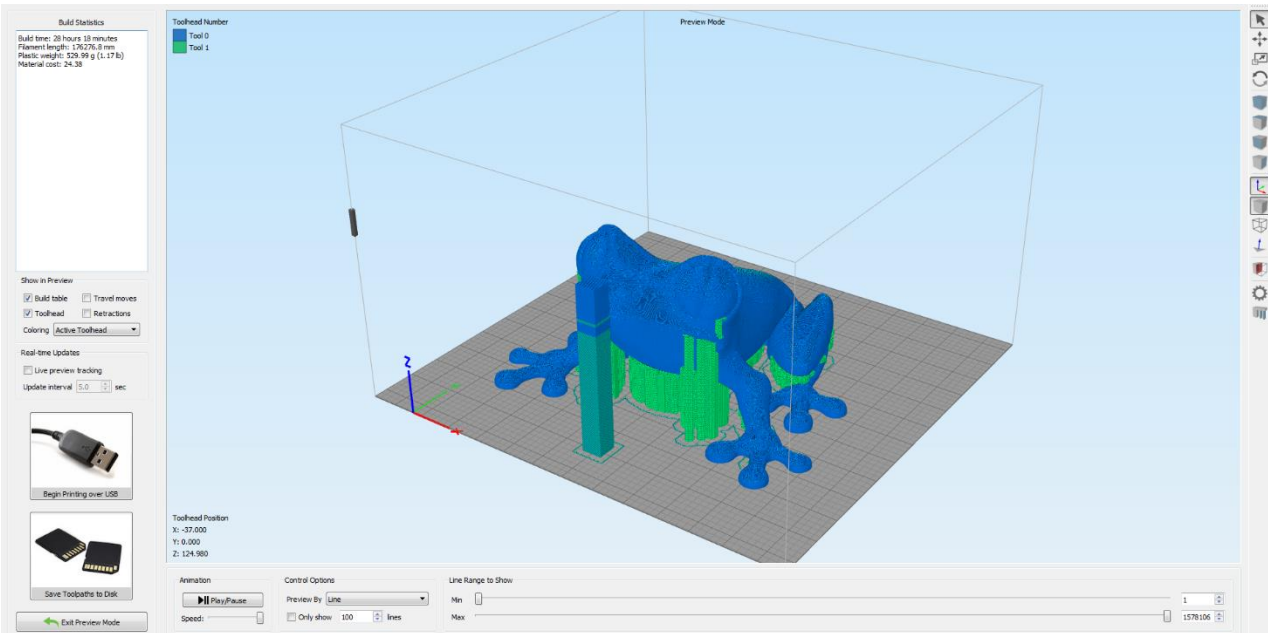
7. Change the temperature for the left extruder. Go to the “Temperature” tab, select the left extruder and change the temperature to **205 °C for Bolt** and **215 °C for Bolt pro**.



8. Close the FFF Settings window by clicking OK, and create the .GCODE by clicking on “Prepare print”.



9. Save the .GCODE on the computer or USB stick.



10. Prepare the printer by loading the Scaffold material in the left extruder and the desired object material in the right extruder.
11. Now upload the GCODE to the printer.
12. Start GCODE after making sure:
- Extruders are calibrated vertically(Manually) and horizontally(Extruder calibration wizard)
 - Calibrate bed
 - Bed is cleaned and sprayed with 3DLAC