

Report 9: Instruction for PLA/PVA Printing

PAN, March 12, 2021

Source Instructions by Felix Support Joffrey, March 12, 2021, thank you!

1. Edit Process Settings, Profile Felix Tec Series

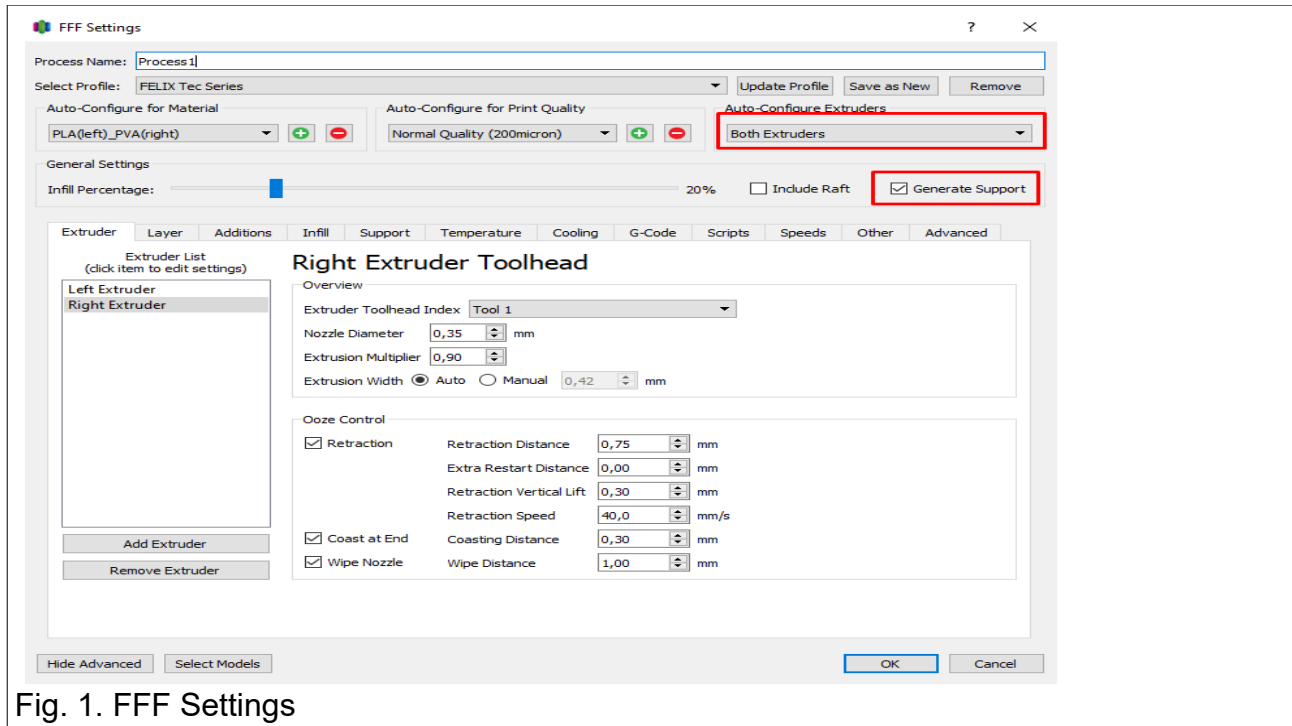


Fig. 1. FFF Settings

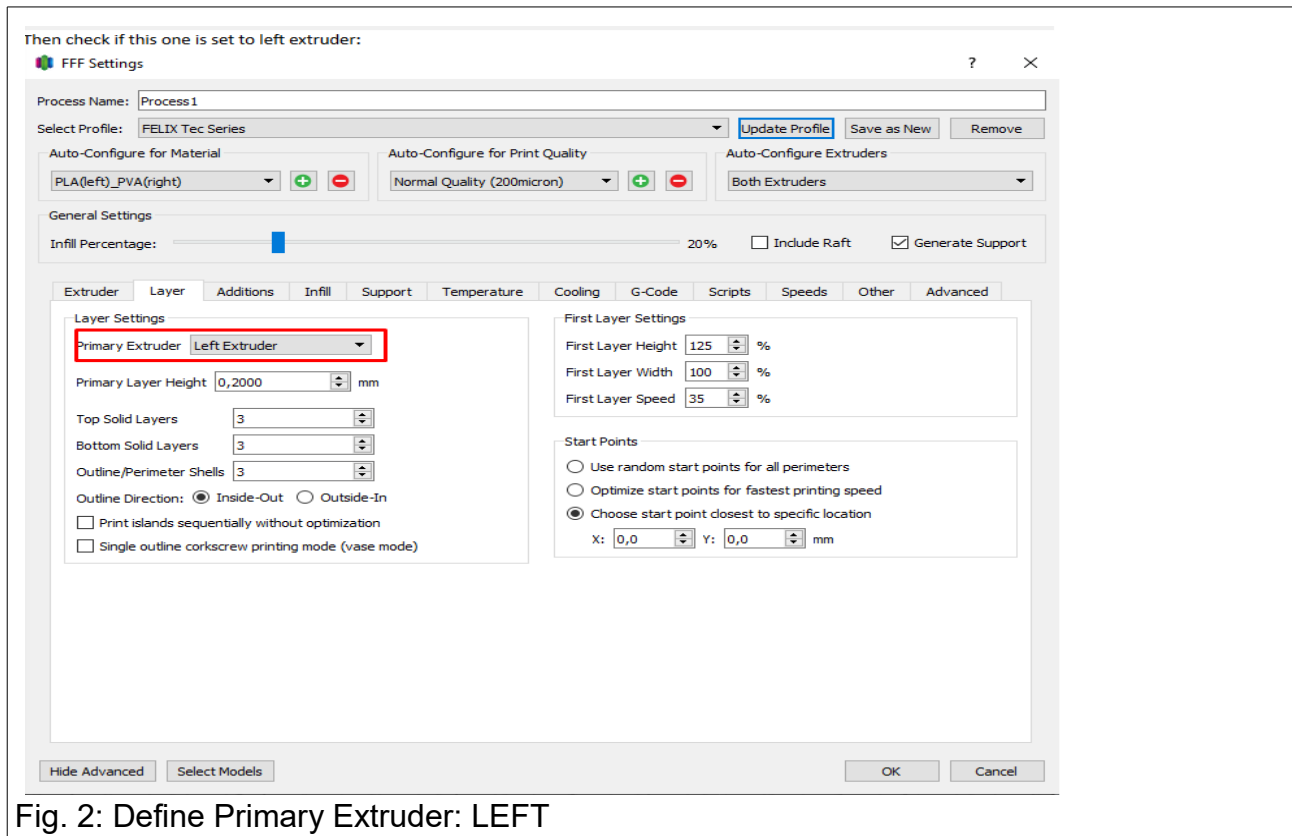


Fig. 2: Define Primary Extruder: LEFT

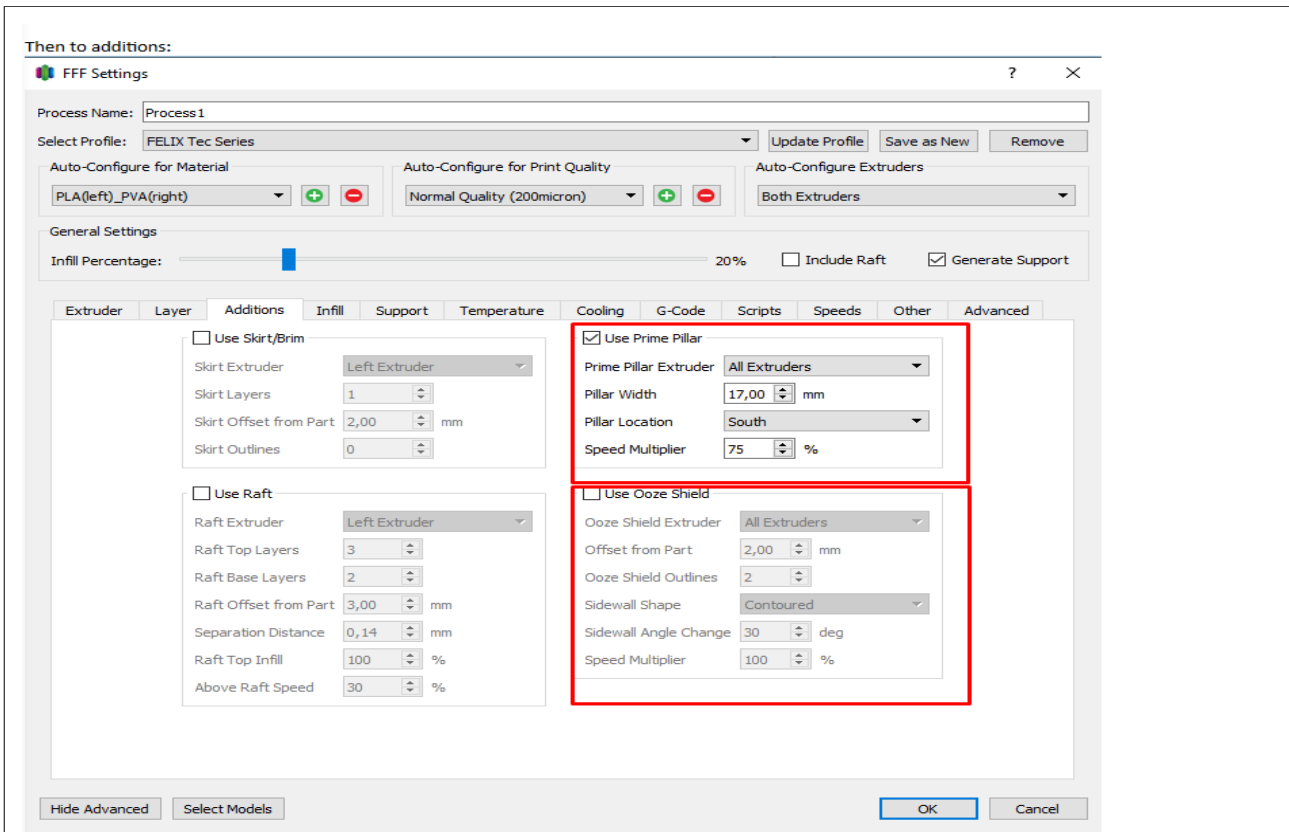


Fig. 3: Use Primary Pillar: Increases the printing time, but sometimes recommended

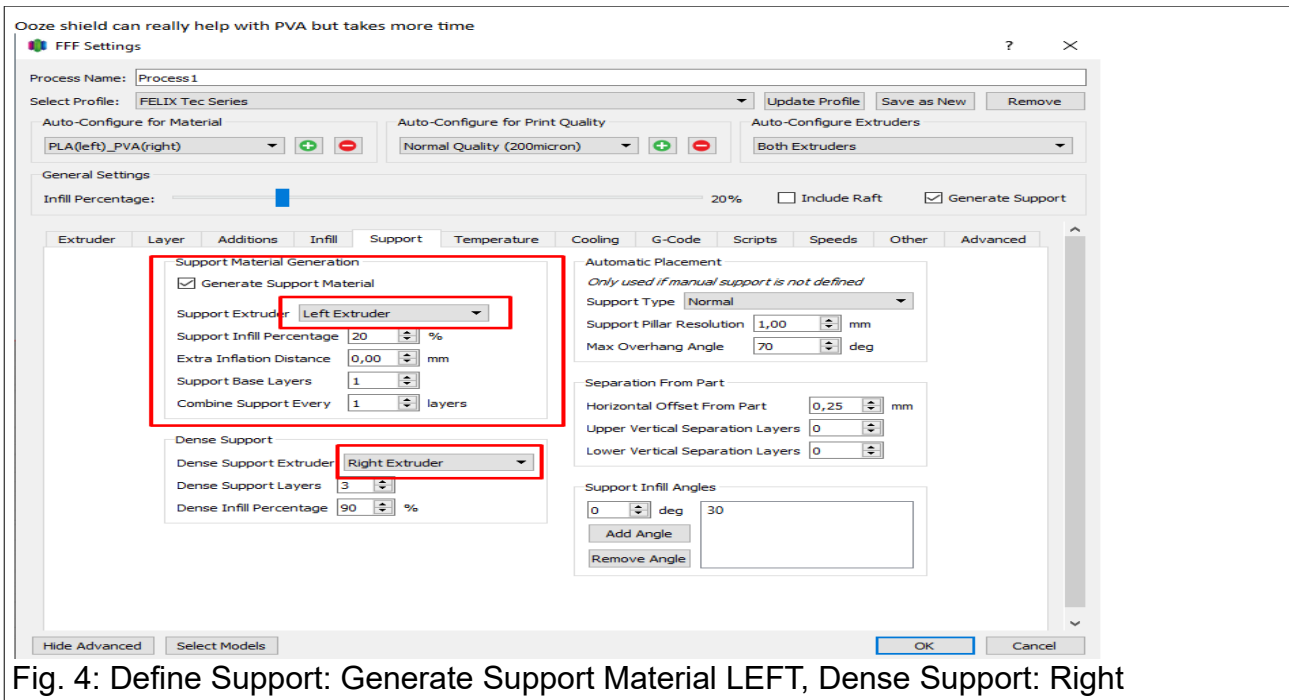


Fig. 4: Define Support: Generate Support Material LEFT, Dense Support: Right

Not clear: Why Support Material Extruder LEFT? PVA is in the RIGHT extruder!

For the following printing experiment of a very small object it was needed to "Include Raft", else the object gets pushed away by the PVA or PLA Nozzles, printing in the air after half of the printing time!

2. Design of a very small object with windows and base cavity

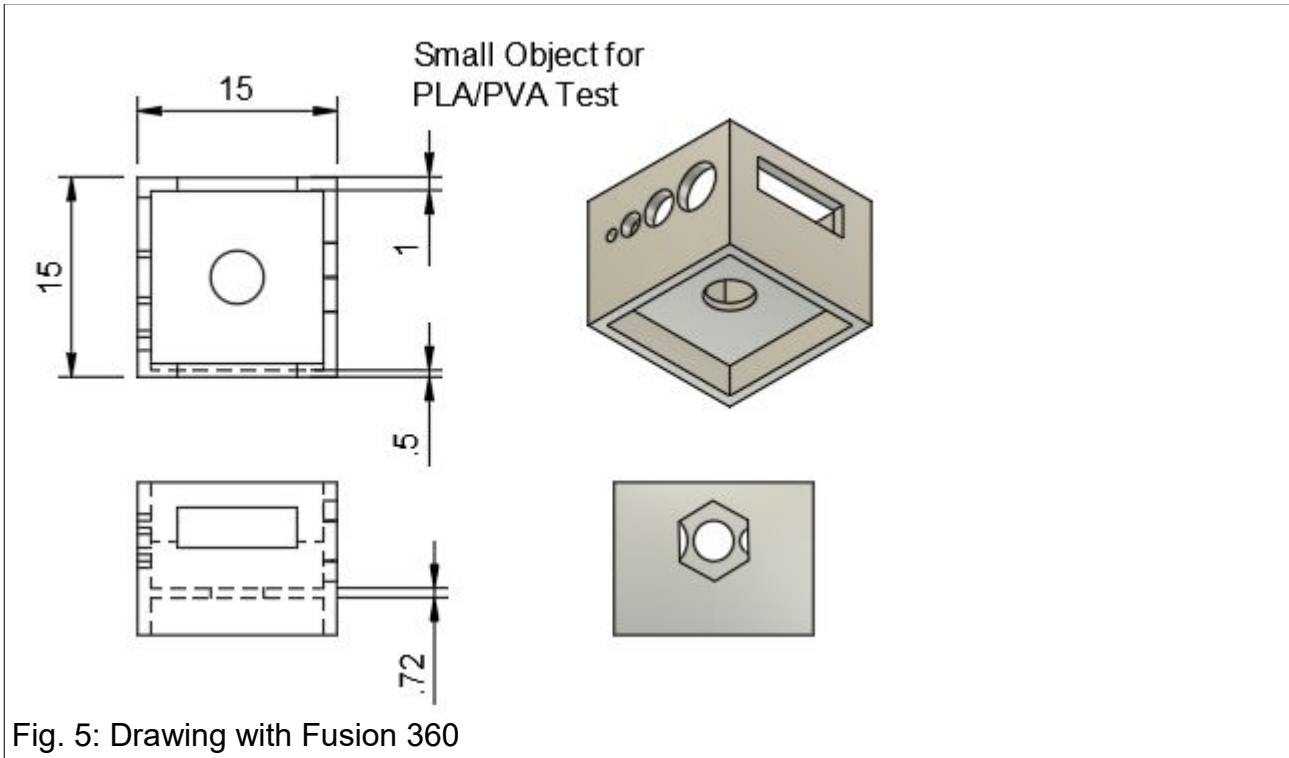


Fig. 5: Drawing with Fusion 360

3. Experiment with ProFill PLA and FELIX PVA

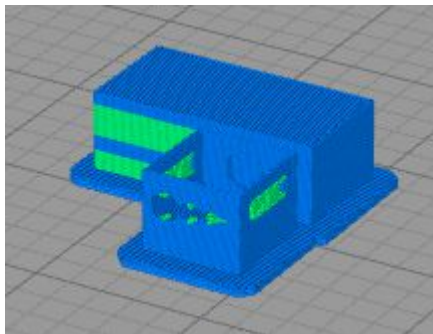


Fig. 6: Preview
PLA 185, PVA 215, Bed 70
With tower: 2 hours printing time

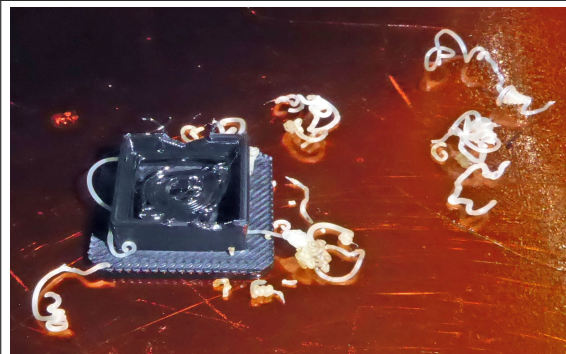


Fig. 7: Printing Result
No success!
Many strings, very poor PVA infilling

The FELIX PVA material shows a good adhesion to Kapton+Spray, but very poor to PLA and to upper layers of PVA. The PVA layers shows a lot of nasty strings which pushes the PLA Nozzle. This leads to an x-y Offset in the upper layers of PLA, game over!

Note: The FELIX PVA material was stored all the time in its bag at room temperature in the dark and ambient outside humidity less than 30%.

4. Experiment with ProFill PLA and ProFill PVA-HT

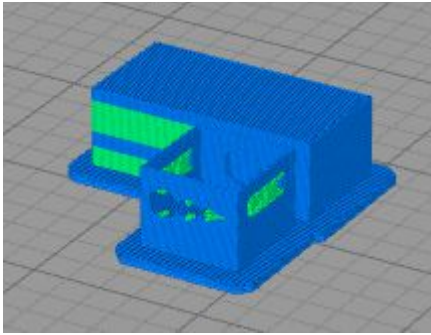


Fig. 8: Preview
PLA 185, PVA 250, Bed 70
With tower: 2 hours printing time



Fig. 9: Printing Result
Some strings after half time printing
but well PVA infilling!



Fig. 10: Bottom side: ok, PVA infilling ok

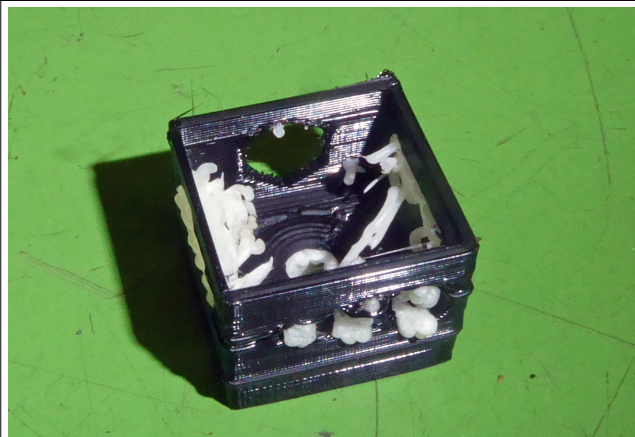


Fig. 11: Object just after printing: ok

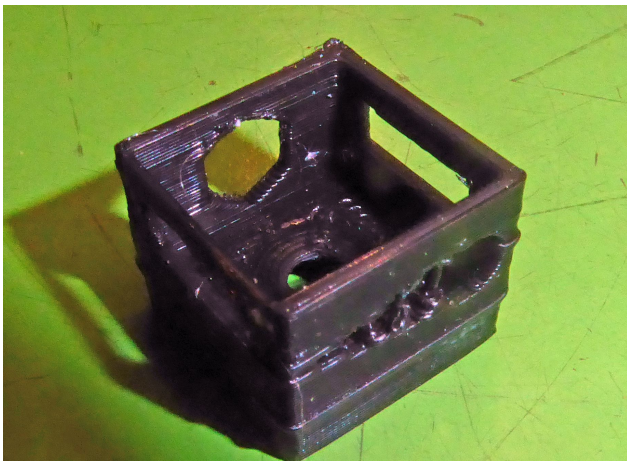


Fig. 12: Object washed 2 hours in warm water

Comment:

Perfect result with **ProFill PVA-HT**

Many thanks to Felix Support Joffrey for his competent advice

and to

Printerstore.ch for the expensive, but fine ProFill PVA-HT

5. Limitations observed with printing more difficult objects

- PVA strings pushes the PLA-Nozzle: Building platform shifted in x-y direction!
- Poor adhesion PLA to former lower PVA layers
- Very poor PVA printing WITOUT Primary Pillar