

Technology 1 – Filament extrusion 3D (3DEVO)



Type of techno:

3Devo's extrusion machine transforms plastic pellets (new or recycled) into a quality **filament** for 3D printing.

Operating mode :

1. Turn on the machine
2. Download the 3DEVO software
3. Connect the connector of the machine to the computer
4. Set up the extrusion according to the type of material
5. Empty the material
6. Place the new material Extruder et unpack the filament

Production capacity:

Practical information:

- PLA 1 hour of extrusion = 340 g
- HDPE 2 hours of extrusion = 200 g

Advantages :

- Easy to use
- Allows us to recycle our own waste
- Continuous checking of the filament diameter, thanks to the sensors integrated on the machine.
- Use of recycled plastic caps
- Saves on the purchase of a spool

Parameters - type of material:

Within the Green Fab-Lab, for the realization of the filament two types of plastics are used for the moment. PLA and HDPE with a filament diameter of 1.75 mm. Here is the parameters used:

Plastic	°C 1	°C 2	°C 3	°C 4	Extruder speed	Fan
PLA	170	185	190	170	3,5 rpm	40%
HDPE	200	215	230	240	3,5 rpm	40%

Safety Rules:

Wear gloves when emptying and winding the filament.

Constraints :

- Heating time
- Time to adjust the filament diameter
- Placement of the filament on the spool
- Complete emptying of the extruder when changing material or color.
- Difficulty to put the spool holding nut on the rod