

Dual-Extrusion Settings for PolySupport

Polymaker

Sep 2015



PolySupport™: A New and Better Support Material

PolySupport™



No More Hassle

Easy to use and store, no need to work with dangerous solvents



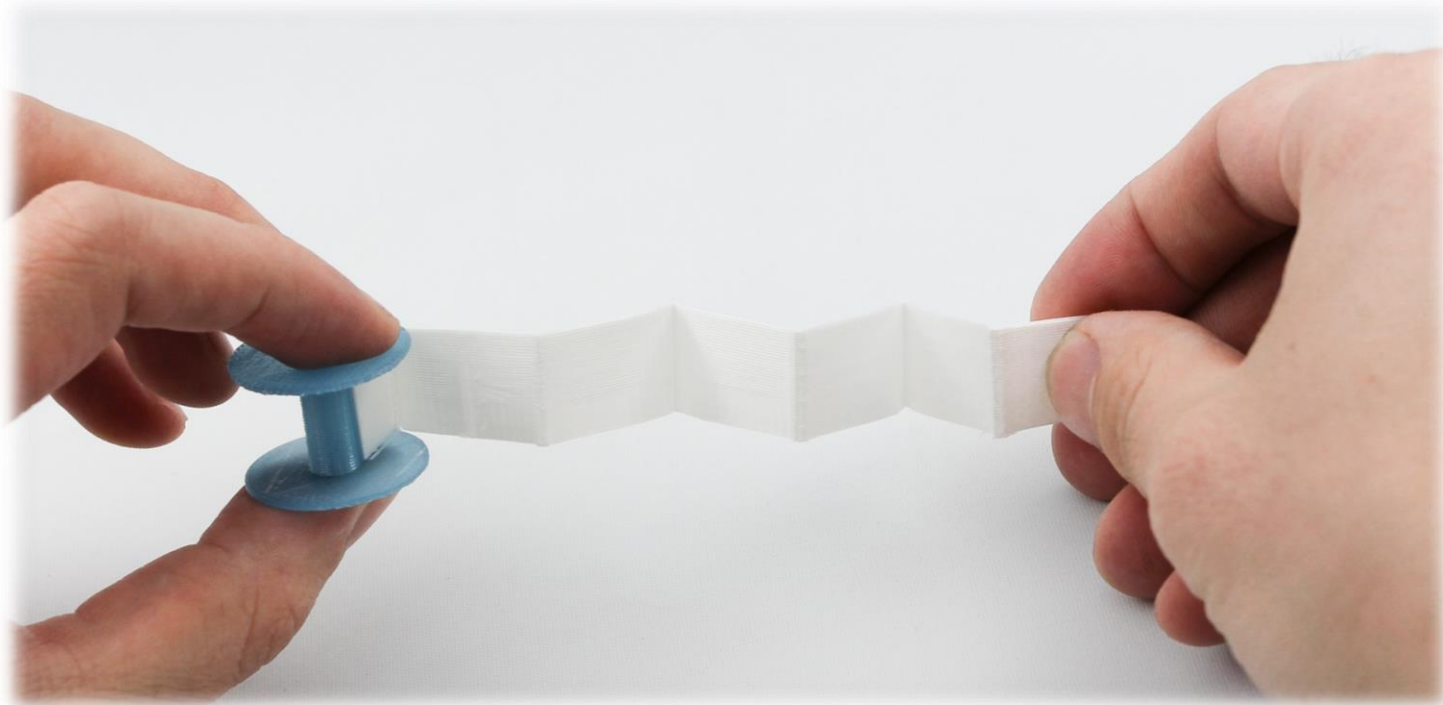
Freedom of Creation

Design and create without limits



Single & Dual Extruders

Can be used on both single- and dual-extruder 3D printers



PolySupport™: Freedom of Creation Redefined

PolySupport™



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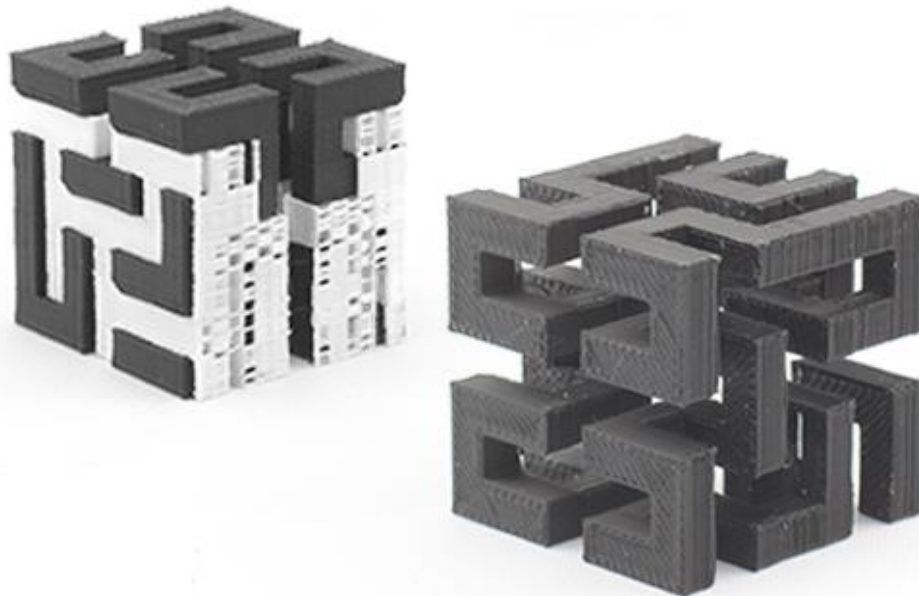
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PolySupport™: Single & Dual-Extrusion

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Dual Extrusion Settings with Simplify 3D

Enable dual-extrusion

FFF Settings

Process Name: Dual Extrusion with PolySupport

Select Profile: FlashForge Creator Pro (modified) [Update Profile] [Save as New] [Remove]

Auto-Configure for Material: PLA [+] [-]

Auto-Configure for Print Quality: Medium [+] [-]

Auto-Configure Extruders: Both Extruders

General Settings

Infill Percentage: 25% [Include Raft] [Generate Support]

Extruder | Layer | Additions | Infill | Support | Temperature | Cooling | G-Code | Scripts | Other | Advanced

Extruder List (click item to edit settings)

- Right Extruder
- Left Extruder

Add Extruder

Remove Extruder

Left Extruder Toolhead

Overview

Extruder Toolhead Index: Tool 1

Nozzle Diameter: 0.40 mm

Extrusion Multiplier: 0.90

Extrusion Width: Auto Manual 0.40 mm

Ooze Control

- Retraction
 - Retraction Distance: 1.00 mm
 - Extra Restart Distance: 0.00 mm
 - Retraction Vertical Lift: 0.00 mm
 - Retraction Speed: 1200.0 mm/min
- Coast at End
 - Coasting Distance: 0.20 mm
- Wipe Nozzle
 - Wipe Distance: 5.00 mm

[Hide Advanced] [Select Models] [OK] [Cancel]

Select "both extruders" here

In this case the right extruder is printing PolySupport and the left extruder is printing PolyPlus PLA.

Dual Extrusion Settings with Simplify 3D

Raft and purge wall settings

Extruder Layer Additions Infill Support Temperature Cooling G-Code Scripts Other Advanced

Use Skirt/Brim

Skirt Extruder Right Extrude: ▾

Skirt Layers 1 ▾

Skirt Offset from Part 4.00 ▾ mm

Skirt Outlines 2 ▾

Use Prime Pillar

Prime Pillar Extruder All Extruders ▾

Pillar Width 12.00 ▾ mm

Pillar Location North-West ▾

Speed Multiplier 100 ▾ %

Select the right extruder so the raft is printed with PolySupport

Use Raft

Raft Extruder Right Extruder ▾

Raft Layers 3 ▾

Raft Offset from Part 3.00 ▾ mm

Separation Distance 0.14 ▾ mm

Raft Infill 100 ▾ %

Disable raft base layers

Use Ooze Shield

Ooze Shield Extruder All Extruders ▾

Offset from Part 2.00 ▾ mm

Ooze Shield Outlines 2 ▾

Sidewall Shape Waterfall ▾

Sidewall Angle Change 30 ▾ deg

Speed Multiplier 100 ▾ %

Change the number of outlines to 2 (default is 1) for better purge wall stability

Dual Extrusion Settings with Simplify 3D

Support settings

Extruder Layer Additions Infill Support Temperature Cooling G-Code Scripts Other Advanced

Support Material Generation

Generate Support Material

Support Extruder **Right Extruder**

Support Infill Percentage 30 %

Extra Inflation Distance 0.00 mm

Dense Support Layers **2**

Dense Infill Percentage 100 %

Print Support Every 1 layers

Select the right extruder for PolySupport

Enable dense layers for better surface quality

Seperation From Part

Horizontal Offset From Part **0.30** mm

Upper Vertical Separation Layers **1**

Lower Vertical Separation Layers **1**

Automatic Placement

Only used if manual support is not defined

Support Type Normal

Support Pillar Resolution 4.00 mm

Max Overhang Angle **45** deg

This value (threshold overhang angle) can be adjusted based on model. A smaller value will lead to more support and better surface quality.

Support Infill Angles

0 deg

0

Add Angle

Remove Angle

The default settings are good for most models; the separation distance can be changed to "0" for parts with very small contact areas between the support and model

Dual Extrusion Settings with Simplify 3D

Temperature settings

Extruder Layer Additions Infill Support Temperature Cooling G-Code Scripts Other Advanced

Temperature Controller List
(click item to edit settings)

Right Extruder

Left Extruder

Heated Build Platform

Disable heating
of the platform
(not needed for
PolySupport)

Set the left extruder
(modeling material)
temperature accordingly;
~ 200 – 210 °C for
PolyPlus PLA

Add Temperature Controller

Remove Temperature Controller

Right Extruder Temperature

Overview

Temperature Identifier T0

Temperature Controller Type: Extruder Heated build platform

Relay Temperature Between Each: Layer Loop

Wait for temperature controller to stabilize before beginning build

Per-Layer Temperature Setpoints

Layer	Temperature
1	225

Set the printing temperature
of PolySupport to 225 °C

Add Setpoint

Remove Setpoint

Layer Number 1

Temperature 225 °C

Dual Extrusion Settings with Simplify 3D

Cooling settings

Extruder Layer Additions Infill Support Temperature Cooling G-Code Scripts Other Advanced

Per-Layer Fan Controls

Layer	Fan Speed
1	0
2	100

Enable cooling for better results with PolyPlus PLA

Add Setpoint

Remove Setpoint

Layer Number

Fan Speed %

Speed Overrides

Adjust printing speed for layers below sec

Allow speed reductions down to %

Fan Overrides

Increase fan speed for layers below sec

Maximum cooling fan speed %

Bridging fan speed override %

Fan Options

Blip fan to full power when increasing from idle

Additional notes

- Recommended layer height: 0.2 mm
- Only key settings are shown; other parameters, such as infill, number of outlines, printing speeds, etc., can be adjusted based on needs

Dual Extrusion Examples



Designed by Steve Medwin
<http://www.thingiverse.com/thing:88519>

Natural PolyPlus™ PLA
Printed as one part (no assembly);
PolySupport is removed and not shown



Brain Gear



Red: PolyPlus™ PLA
White: PolySupport™



Designed by meshmixer
<http://www.thingiverse.com/thing:131054>

Questions or Comments: ts@polymaker.com



Innovation Simplified