

Practical Printing

A handy cheat sheet for FDM 3D Printing



Useful
Print Tests

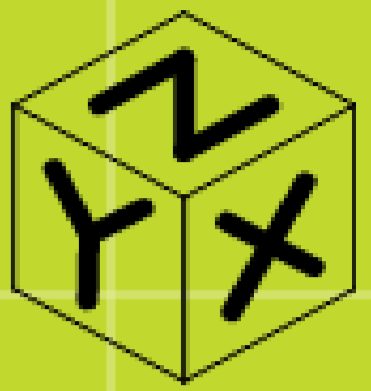
download at <http://coreelec.io/30>

USEFUL LINKS:

Remote Printer Control Setup - <http://coreelec.io/d>
 3D Printing Reddit Community - <http://coreelec.io/2t>
 A Guide to Perfect Prints - <http://coreelec.io/2u>
 Lulzbot Assembly Guides - <http://coreelec.io/2v>
 Our Online Printing Workshop - <http://coreelec.io/2w>
 Pictorial Troubleshooting - <http://coreelec.io/2x>
 3D Benchy - <http://coreelec.io/2y>
 Replacement Parts and Designs - <http://coreelec.io/2z>

The Cal Cube

Most FDM 3D Printers boast dimensional accuracy of $\pm 1\%$. Print a 20 mm³ Cube and measure it with some digital callipers to test the dimensional accuracy of your printer.

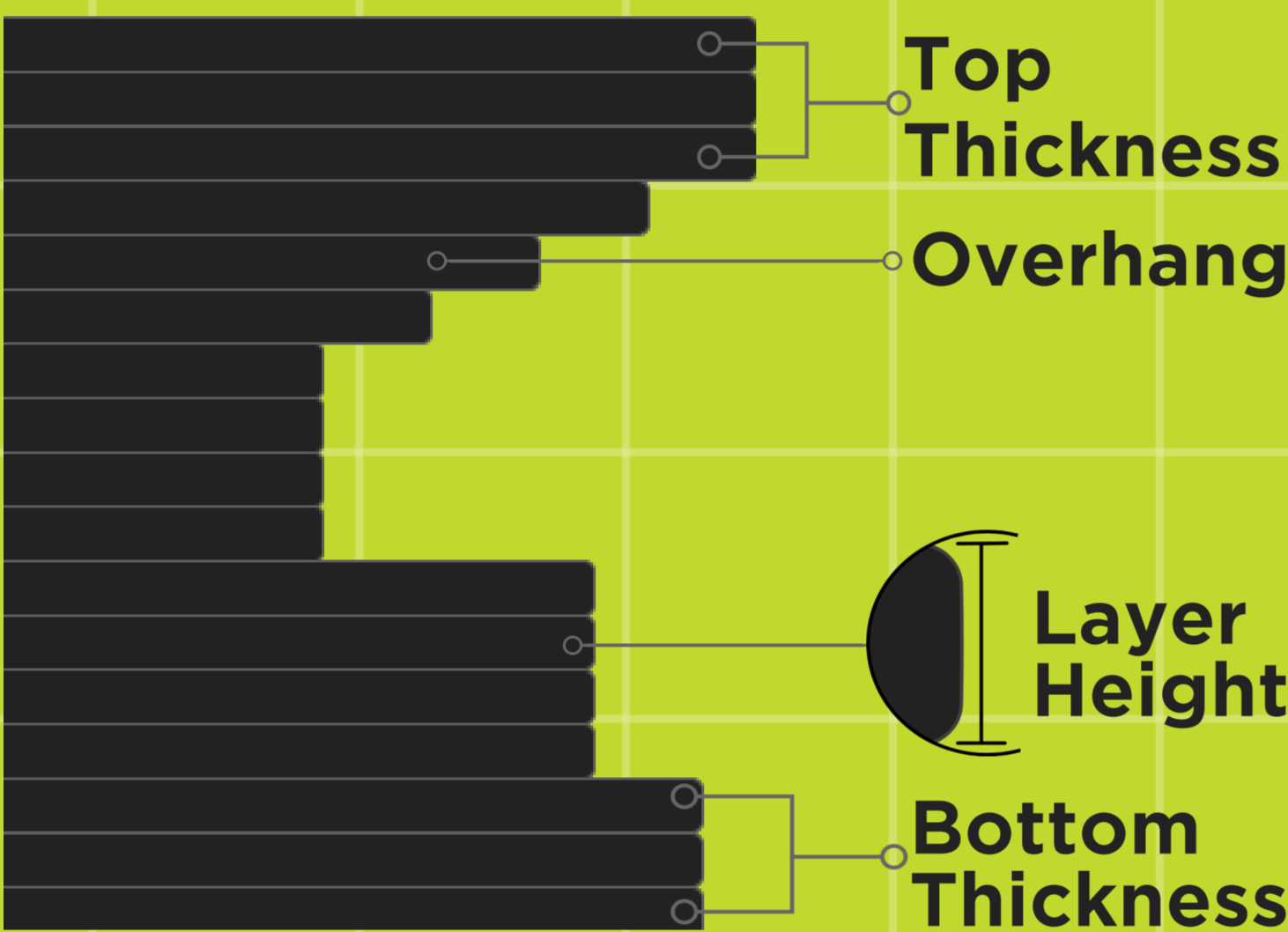


Negative spaces rely on tolerances of both your printer and the properties of your filament. Print one of these tests to find out the minimum spacing required for a snug 3D print.

Negative Spacing Test



Side View

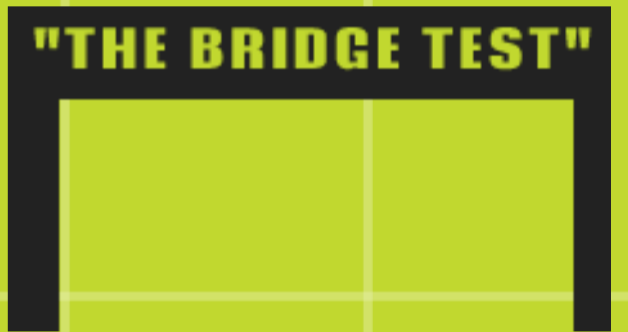


Knowing when a model will need to print supports is essential for most practical prints, this test allows you to see what angles are printable and which aren't. The results may surprise you!

Overhang Test



Bridging is when you print between two pillars with no supports. Try printing this model using different combinations of speed & temperature to find the best bridging settings.

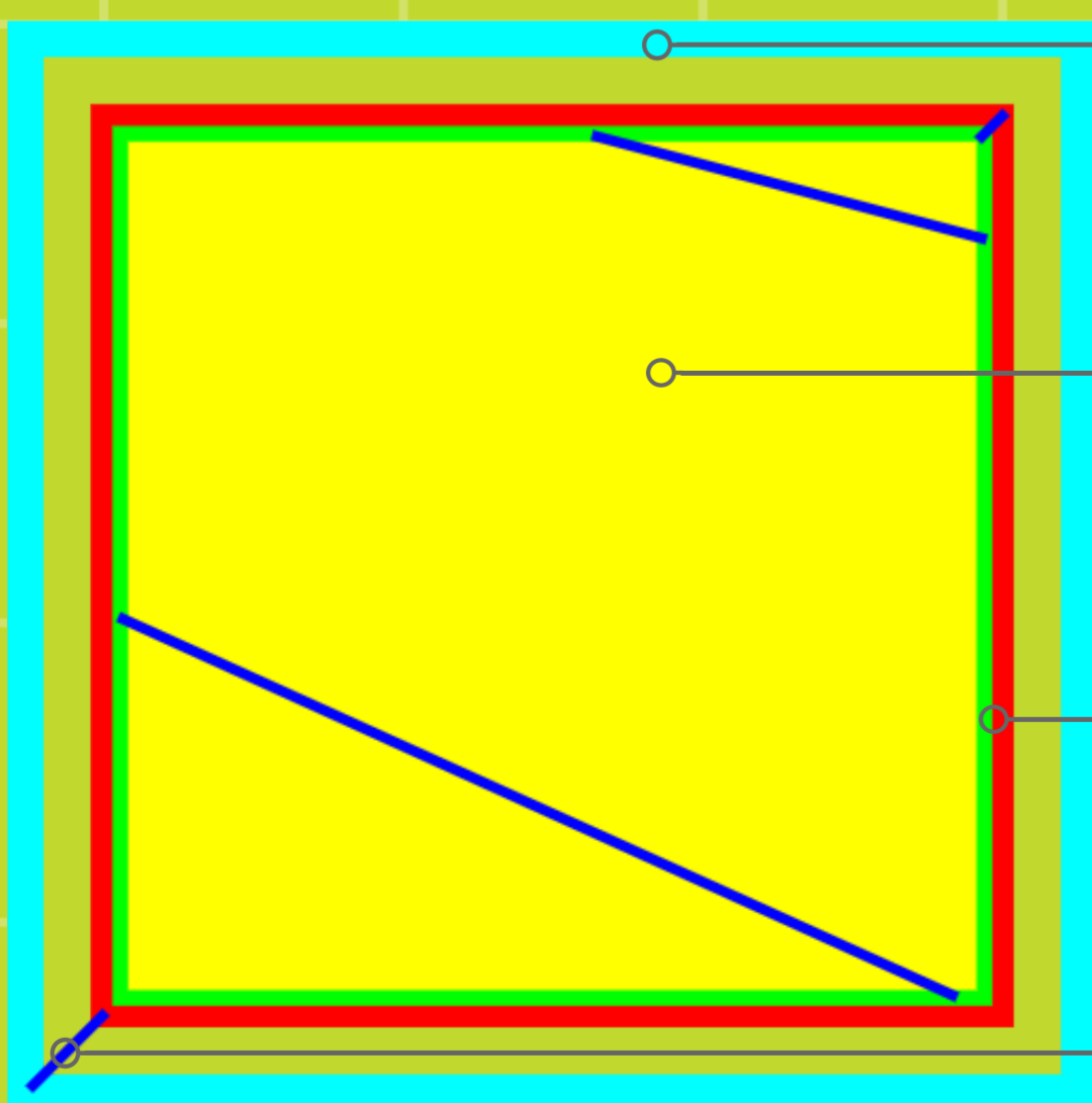


Stringing Test

If your part requires separate features to be printed on the same layer, you'll need to dial in your retraction settings to make sure you get the perfect finish. This test is a quick and easy way to test retraction settings.



G-Code View



Skirts, Brims and other non-essential support materials are shown as light blue in the g-code view. These are removable post-print.

Infill material makes up the inside of your print. It's represented as a density (%) and shown as a yellow tool path.

The perimeter of your print is called the shell. Its consists of an inner (green) and outer (red) shell and should always be set to a multiple of your nozzle diameter.

Dark blue lines represent travel moves made by the tool head. This is where retractions would take place.

Temperature Tower

Your filament may come with suggested print temperatures, however to really dial in your filament, its worth while printing a temperature tower to see how small changes affect the finish of your print



E-Steps Table

Single		
Flexy		
Dual		
FlexyDual		
MOAR		

1 PLA Polylactic Acid ↓ 205°C ≈ 60°C	2 ABS Acrylonitrile butadiene styrene ↓ 230°C ≈ 110°C	3 PETG Polyethylene Terephthalate ↓ 245°C ≈ 80°C	4 HIPS High Impact Polystyrene ↓ 240°C ≈ 110°C	5 910 Nylon (Polyamide) ↓ 235°C ≈ 100°C	6 TPU Thermo-Plastic Polyurethane ↓ 250°C ≈ 50°C	7 TPE Thermo-Plastic Elastomer ↓ 220°C ≈ 30°C	8 PCTPE Plasticized Copolyamide TPE ↓ 205°C ≈ 160°C
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