

AGENDA

18.00 - 18.30:
Mise en place

18.30 - 19.15:
Présentation du Workshop

19.15 - 20.00:
'Filament playground', boissons & snacks



LE PLUS GRAND RÉSEAU MONDIAL D'IMPRIMANTE 3D



3D HUBS

“3D Hubs tapped into a market that needed tapping”

Forbes

“3D printing on demand is now locally available”

FAST COMPANY

www.3dhubs.com
[@3dhubs](https://twitter.com/3dhubs)



3D HUBS





>25.000 IMPRIMANTES DANS 160 PAYS

maps.3dhubs.com

DISTRIBUTION DIGITALE

Les imprimantes 3D permettent la distribution digitale de produits physiques.

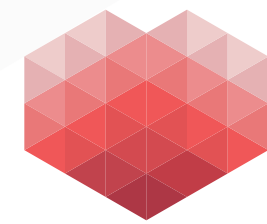
Après la musique, les livres et les films, on peut aujourd'hui en faire de même pour les biens de consommation.



Plus d'un million de livres



Plus de vingt millionS de chansons



3D HUBS

Can print over 1 Million designs

FIRST 3D PRINTING STEPS OF LARGER CONSUMER BRANDS



Disney



NOKIA



LEGO



Talk



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MODERATE 3

START A NEW THREAD



1

Lost-wax casting on Formlabs Resin



Hello fellow Hubs, I have a customer who wants to use Lost-Wax Casting on a ring, printed with a Form1+. Can the Formlabs resin (or resin in general) take this? Is it advisable? Thanks! Filemon



Filemon

5 hours ago

10 comments 1 new[/Formlabs](#)[/Resin](#)[/Form1+](#)[/How To Hub](#)

2

transparent filament or?



I wonder if there is a material that is possible to print with, that will be transparent. I am printing with PLA and ABS and all kind of filament. But sometimes I see on the tube transparent products and don't quite understand how it's done...



GN 3DImprimo

6 hours ago

3 comments 2 new[/Filament](#)[/Linköping](#)

About Talk

Talk is a place to share projects, ask questions, show off prints and announce events. It's all about 3D Printing. We're currently in beta so we would love to [hear](#) your ideas on how we can make it better.

My Tags

[/Ultimaker](#)[/Amsterdam](#)[/Marvin](#)[/London](#)[/Fairphone](#)[/ColorFabb](#)[/3D Hubs Team](#)[/New York](#)[/Formlabs](#)[/Drones](#)[/Maker Tale](#)[/Los Angeles](#)[/San Francisco](#)[/3DRacers](#)[/Event](#)



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How To Hub Talk

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START A NEW /HOW-TO-HUB THREAD

▲ 1 Lost-wax casting on Formlabs Resin

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Filemon

5 hours ago

10 comments (1 new)

/Formlabs

/Resin

/Form1+

/How To Hub

▲ 2 How many prints to hubs get on average?

▼ How many prints to hubs get on average per day or hour?



georgeh1ll

1 day ago

5 comments

/How To Hub

How To Hub Talk

9 followers

UNFOLLOW /HOW TO HUB

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My Tags

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Drones Talk

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START A NEW /DRONES THREAD

13



3D Printed drone build

For some time now I have wanted to 3D Print a quadcopter. So I have started and wanted to share the project with you guys. Maybe some of you are in the same situation, Maybe you

Copenhagen 7 days ago 5 comments (1 new)

/Copenhagen /Drones /Maker Tale

8



Voxel8 printing drones?

Just saw this. And I want one now. This is amazing. Read the article here: <https://medium.com/the-letters/3d-printed-drones-are-finally-here-c76811...> Would any of

Copenhagen a month ago 7 comments /Drones /Voxel8

Drones Talk

17 followers BC GS

UNFOLLOW /DRONES

About Drones

Drones are aircrafts controlled by pilots from the ground.

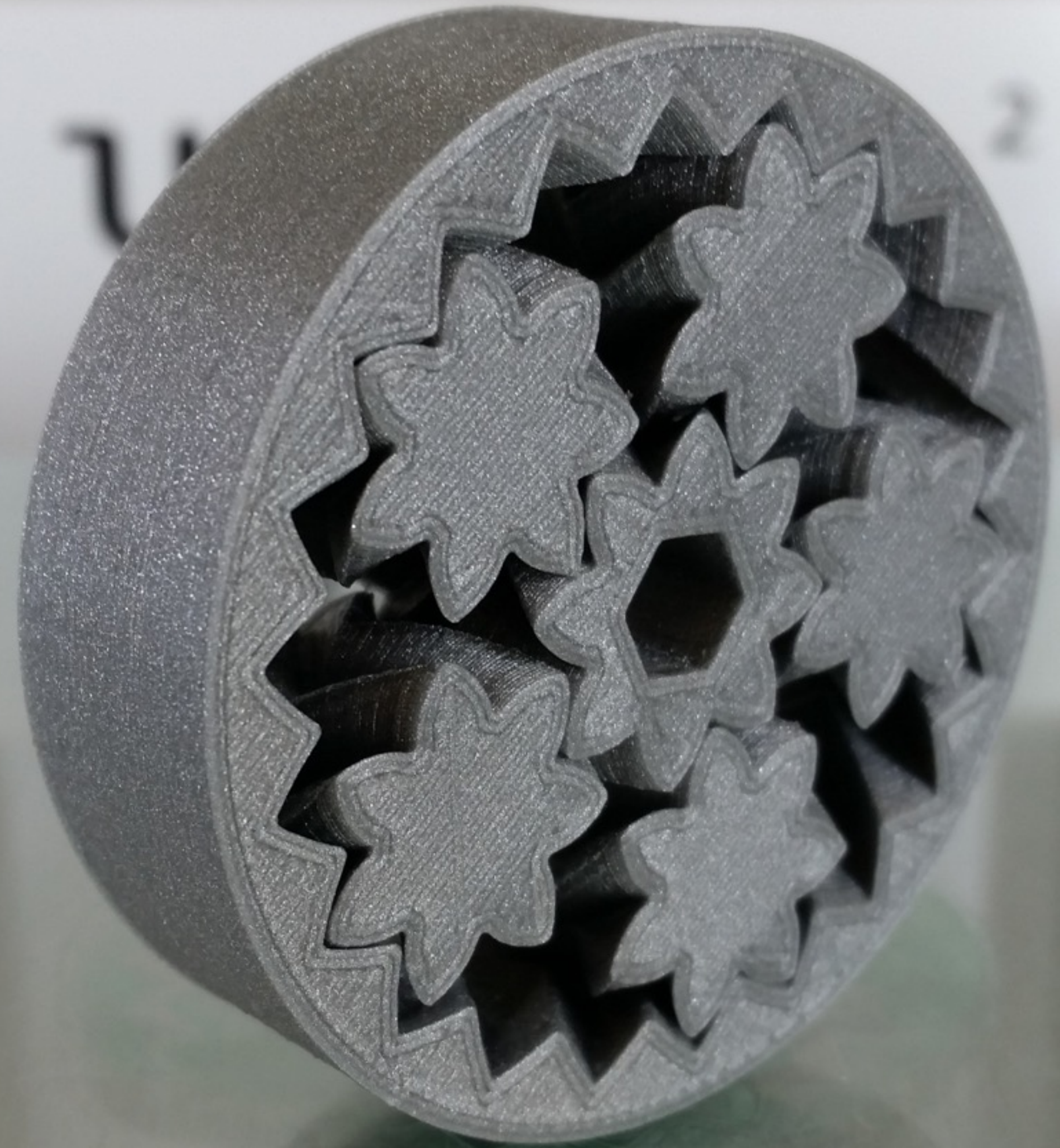
Quadcopters, Helicopters, and other hobby drones fall into this category.

My Tags

- /Ultimaker
- /Amsterdam
- /Marvin
- /London
- /Fairphone
- /ColorFabb
- /3D Hubs Team



★
FAIRPHONE





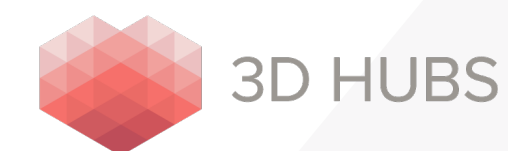


15%
Filament discount

Congratulations, you qualify for a 15% Colorfabb discount! If you would like to use this discount at any time, click the link below.

[LEARN MORE](#)


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— *fabulous colors* —



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Ultimaker Sample Issues: Nut & Bolt

Ok, so something that earlier I got to work without any problem, suddenly I can't get done. I'm trying to print a smooth Nut & Bolt print on my Ultimaker 2 for a customer and these are my



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3 days ago

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/ColorFabb

/Ultimaker 2

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Nikki

7 days ago

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FILAMENT WORKSHOP



FILAMENTS SPECIAUX

Matériaux composites / conseils pour imprimer

3D HUBS SAMPLE PACK

PLA SPECIAUX



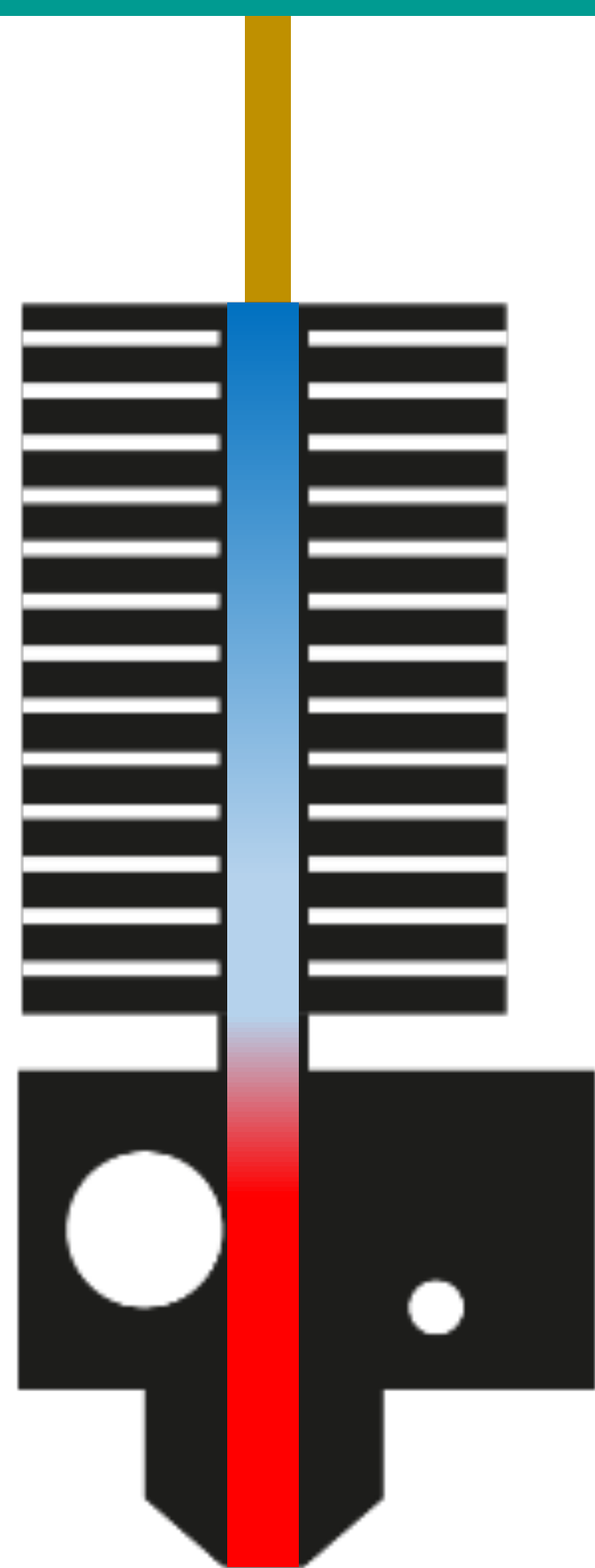
XT's



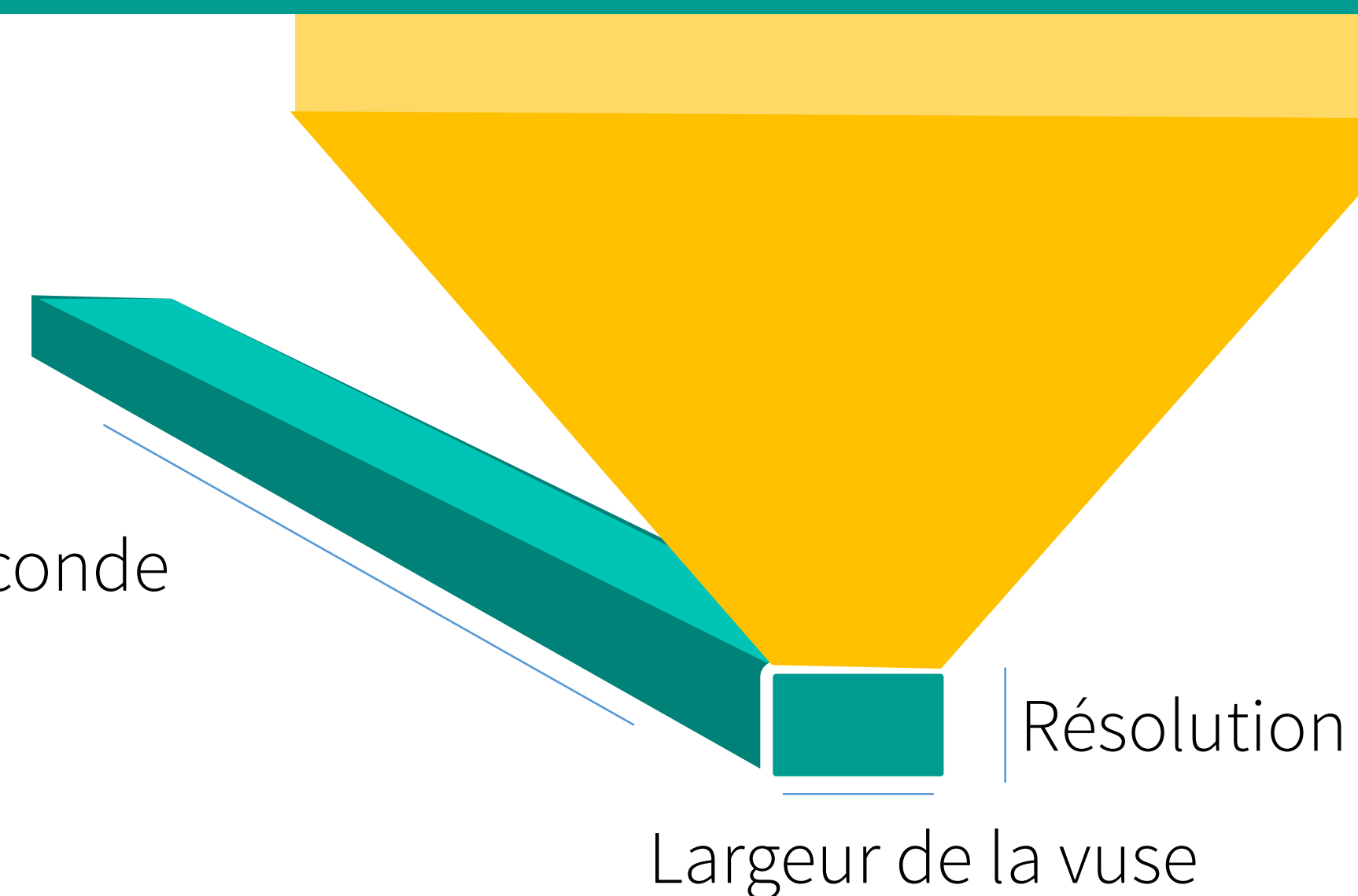
FILAMENTS SPECIAUX

Matériaux composites / conseils pour imprimer

Vitesse à laquelle le filament traverse la zone à haute température



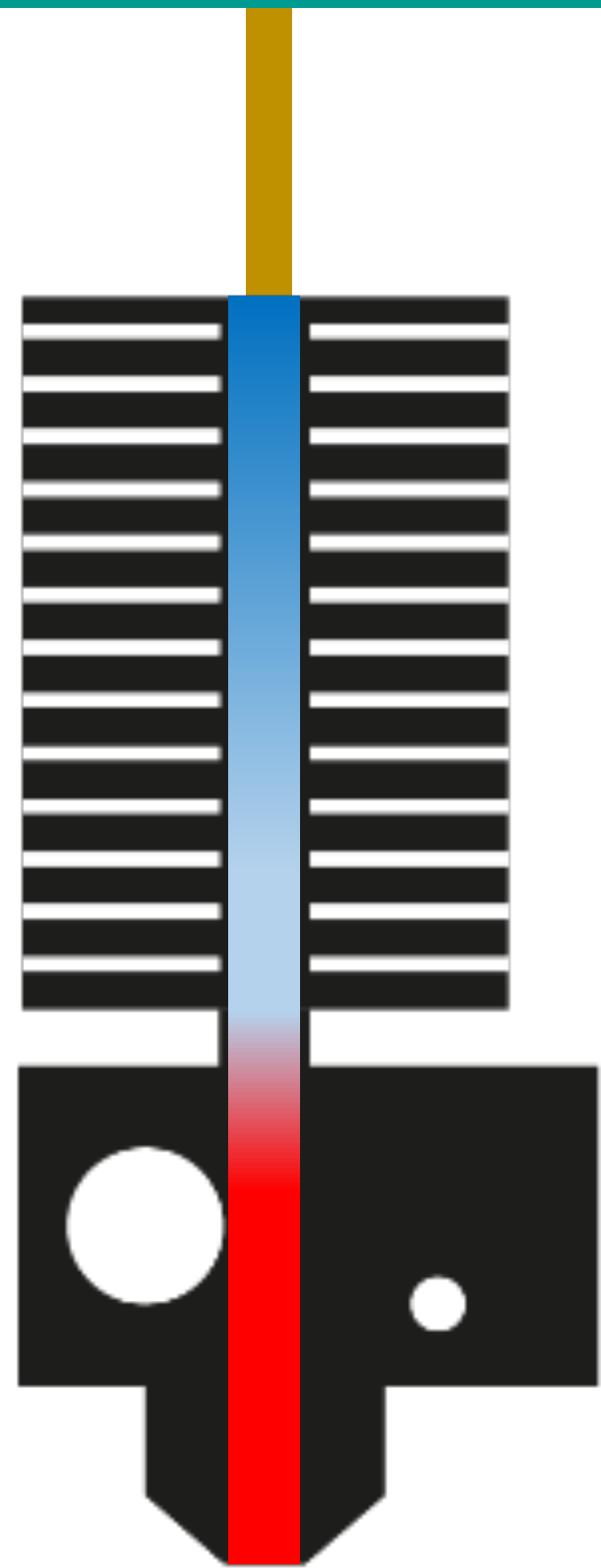
Distance parcourue par seconde



Résolution x largeur buse x vitesse d'impression
=
Volume par seconde (débit)

FILAMENTS SPECIAUX

Matériaux composites / conseils pour imprimer



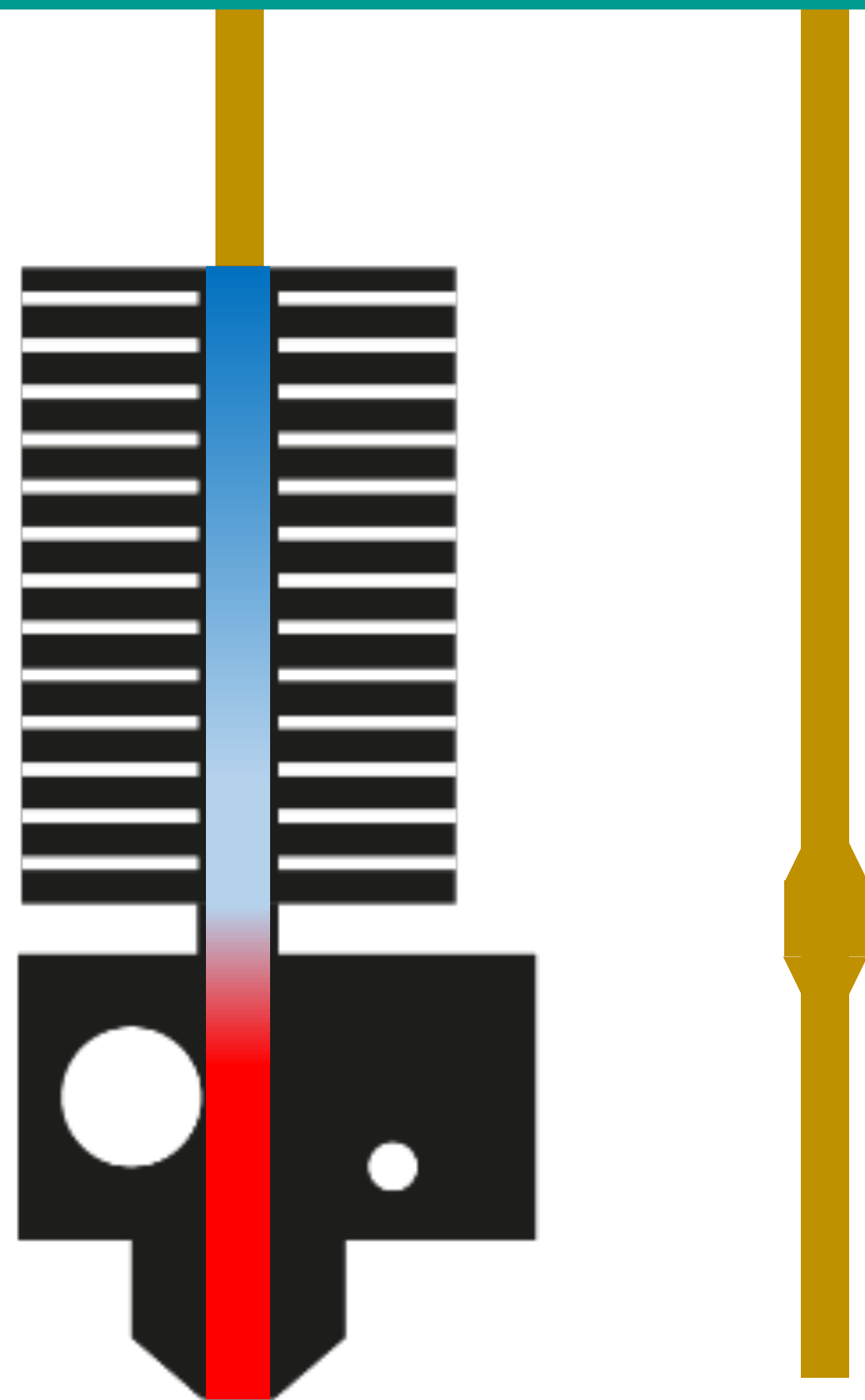
$$0.05\text{mm} \times 0.4\text{mm} \times 50 \text{ mm/s} = 1 \text{ mm}^3 / \text{s}$$

$$0.2\text{mm} \times 0.4\text{mm} \times 100\text{mm/s} = 8 \text{ mm}^3 / \text{s}$$

FILAMENTS SPECIAUX

Matériaux composites / conseils pour imprimer

Propagation ascendante de la chaleur dans le filament



Occlusion
partielle voire totale

FILAMENTS À BASE DE PLA/PHA

Composite materials / general tips for 3D printing



PREMIERS RÉGLAGES POUR

BRONZEFILL, COPPERFILL, BRASSFILL,
BAMBOOFILL, WOODFILL.



Commencer avec des couches d'épaisseur comprise entre 0.2mm et 0.3mm

À température et vitesse habituelles pour le PLA sur votre imprimante

FILAMENTS À BASE DE XT

Matériaux composites / conseils pour imprimer



XT-copolyester

conseils généraux pour imprimer

Ni du PLA ni de l'ABS



Température conseillée:

240-260C

Vitesse d'impression conseillée:

40 - 70 mm/s

Température conseillée plateforme chauffante:

60-70C

XT-copolyester

conseils généraux pour imprimer

Déformations lors des déplacements



Paramètres de retrait Ultimaker 2

Vitesse de retrait 45 mm/s

Distance de retrait 4.5 / 6mm

Vitesse déplacement 150 / 200 mm/s

Température 240 / 260C

XT-CF20

conseils généraux pour imprimer



XT avec fibres de carbone

Température conseillée:

240-260C

Vitesse conseillée:

40 - 70 mm/s

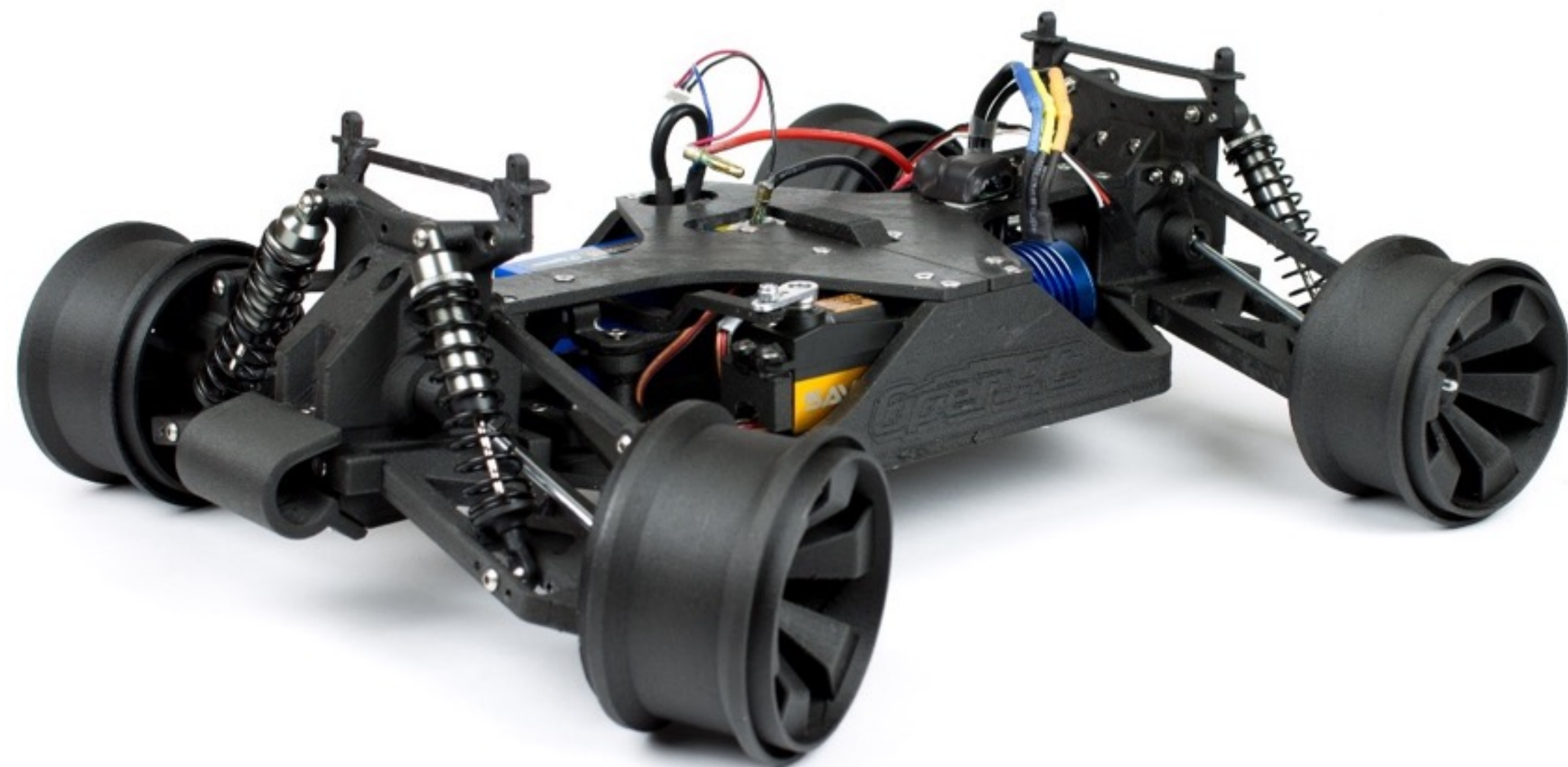
Température conseillée plateforme chauffante:

60-70C

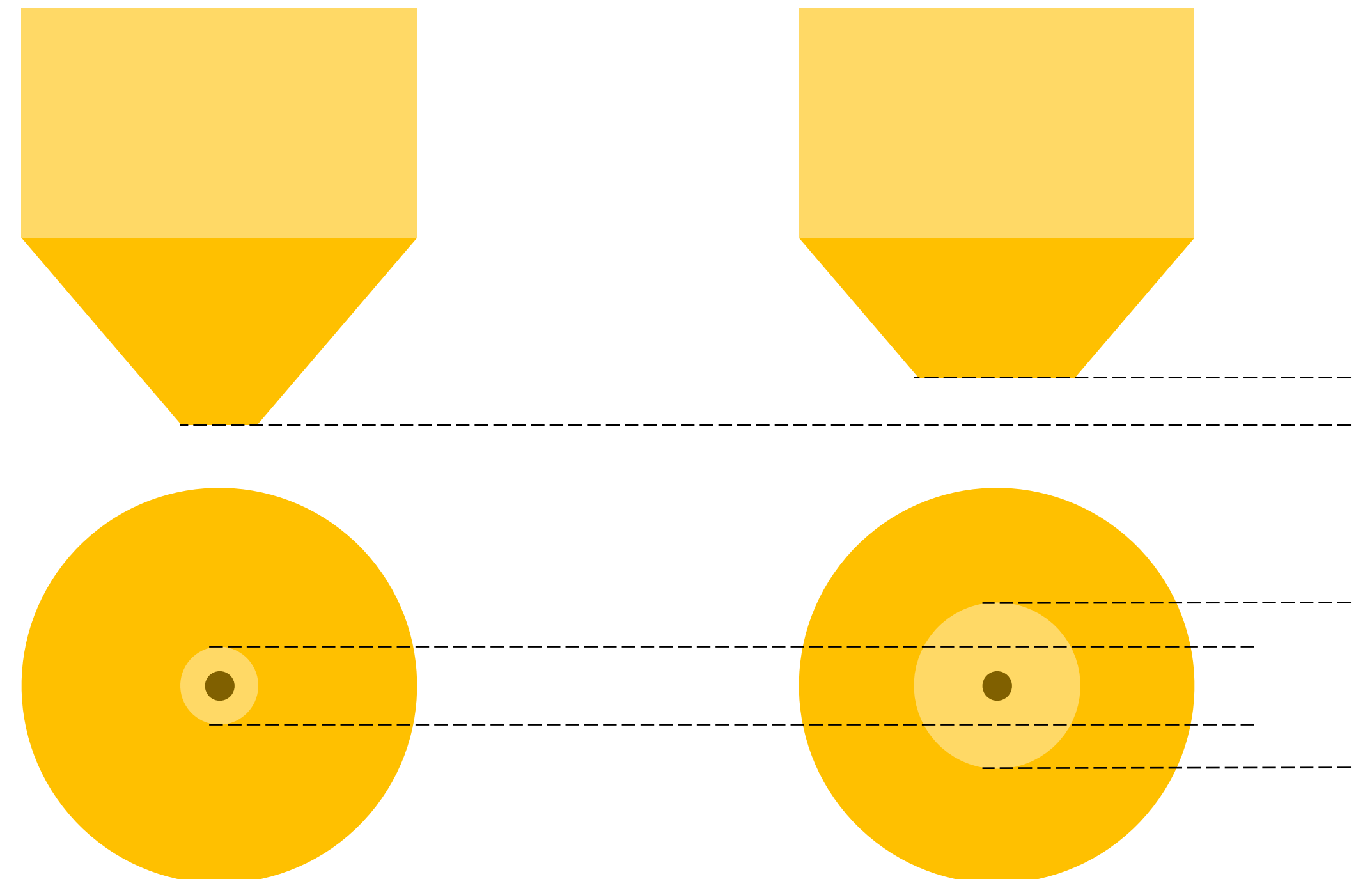
XT-CF20

conseils généraux pour imprimer

La fibre de carbone est abrasive



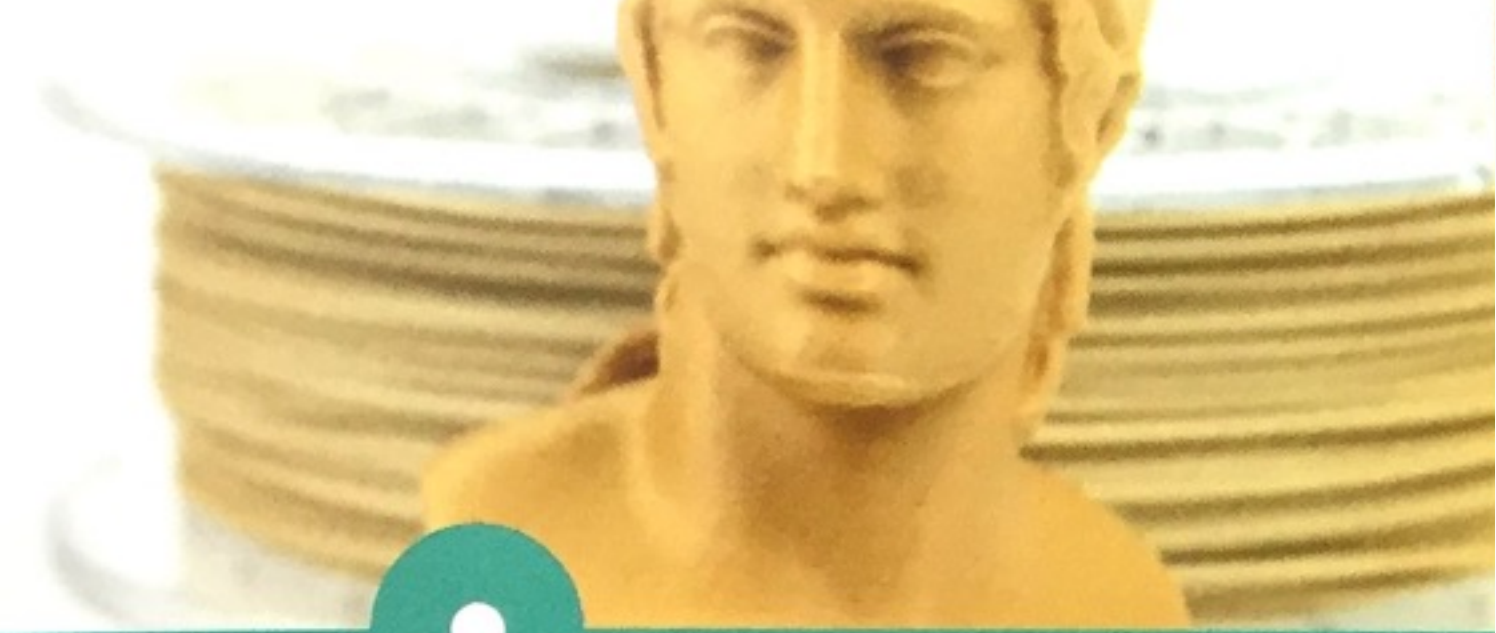
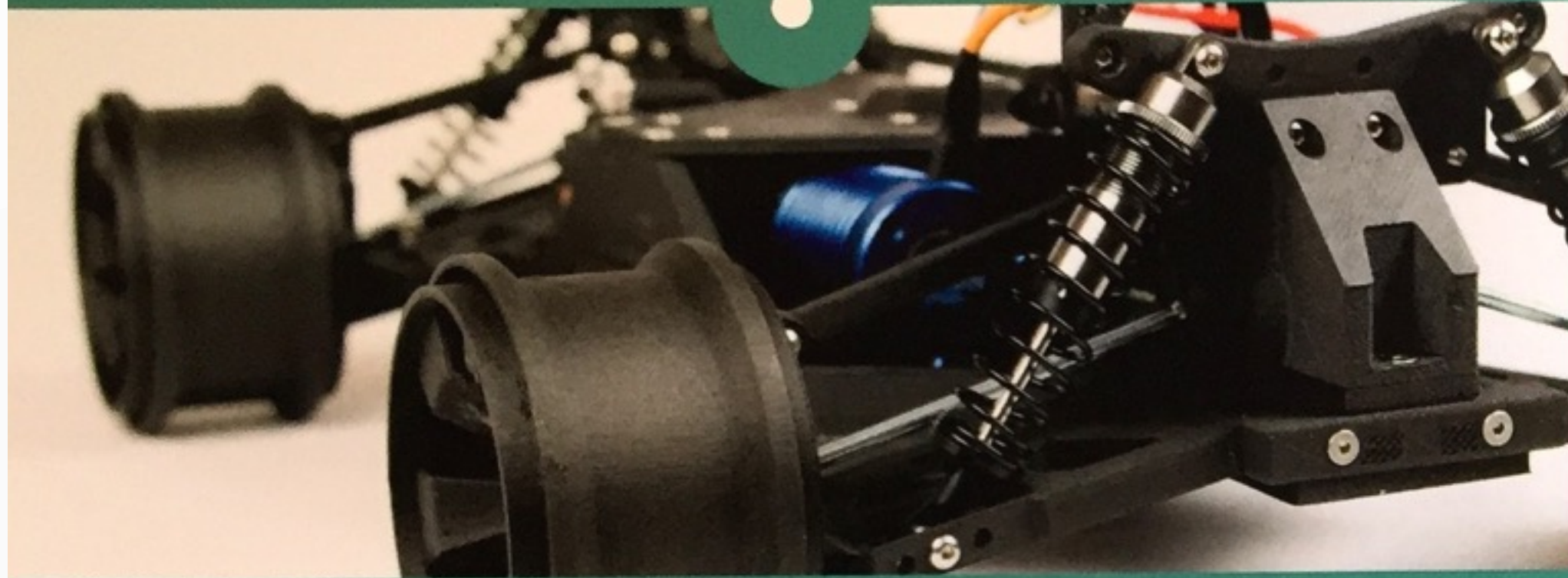
L'impression avec du XT-CF20 va user le laiton de la buse



XT-CF20

density **1,35 gram/cc**
flex modulus **6,2 GPa**
glass temperature **80C**

Advised 3d printing temperature:
240-260C*
Advised 3d print speed:
40 - 70 mm/s
Advised Heated bed
60-70C



bambooFill

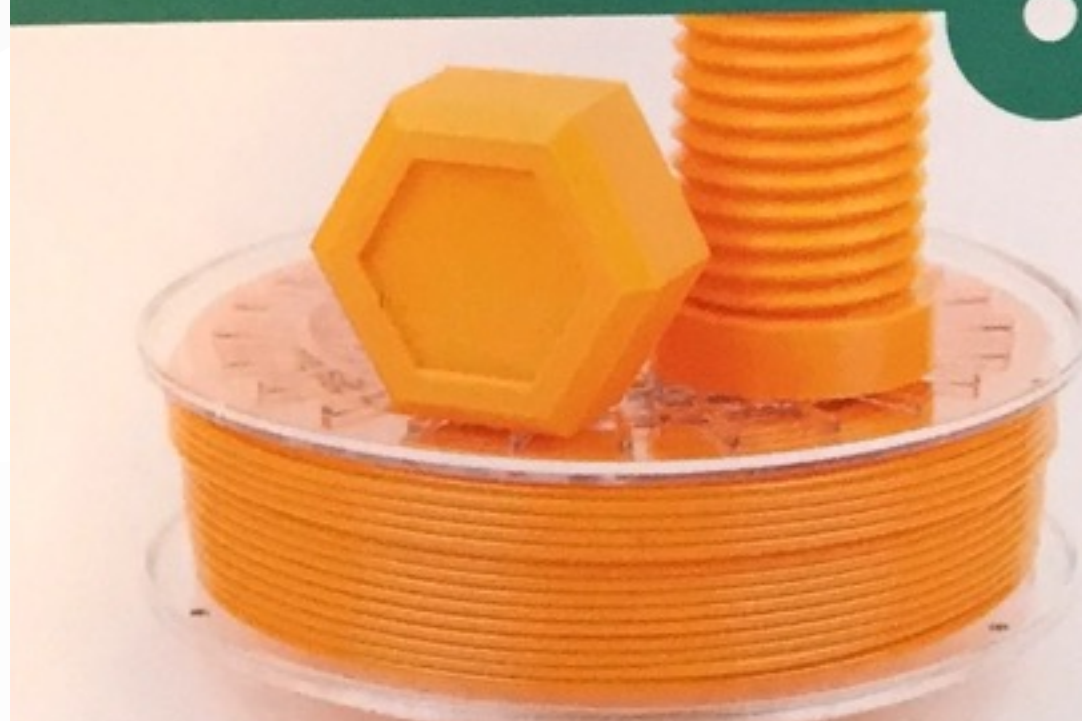
density **1,12 - 1,15 gram/cc**
flex modulus **3,3 GPa**
glass temperature **55C**

Advised 3d printing temperature:
195-220C*
Advised 3d print speed:
40 - 100 mm/s
Advised Heated bed (not mandatory)
50-60C

XT-copolyester

density **1,27 gram/cc**
flex modulus **2,1 GPa**
glass temperature **75C**

Advised 3d printing temperature:
240-260C*
Advised 3d print speed:
40 - 70 mm/s
Advised Heated bed
60-70C



copperFill

density **3,9 gram/cc**
flex modulus **n/a**
glass temperature **55C**

Advised 3d printing temperature:
195-220C*
Advised 3d print speed:
40 - 100 mm/s
Advised Heated bed (not mandatory)
50-60C

Exemple de réglages bronzeFill

<http://learn.colorfabb.com/print-bronzefill/>

3d printer	layerheight (mm)	speed (mm/s)	temperature (C)	Build Plate temp (C)	Retraction Distance (mm)	Retraction Speed (mm/s)
Ultimaker Original	0.2	50mm/s	215	n.a.	4.5	45
Ultimaker 2	0.2	50mm/s	220	55 / 60	4.5	25
Makerbot Replicator 2	0.2	90mm/s	200C	n.a.	(standard makerware)	(standard makerware)



Exemple de réglages CopperFill

<http://learn.colorfabb.com/print-copperfill/>

3d printer	layerheight (mm)	speed (mm/s)	temperature (C)	Build Plate temp (C)	Retraction Distance (mm)	Retraction Speed (mm/s)
Ultimaker Original	0.2 / 0.27	50mm/s	200-210	n.a.	4.5	45
Ultimaker 2	0.2 / 0.27	50mm/s	195-210	55 / 60	4.5	25 / 45
Makerbot Replicator 2	0.16 / 0.2	80mm/s	190 - 205	n.a.	(standard makerware)	(standard makerware)



Exemple de réglages XT

http://learn.colorfabb.com/print_xt/

Ultimaker 2 – speed and temperature settings

Layerheight (mm)	Speed (mm/s)	Temperature (C)	Build Plate Temperature (C)
0.2	50	240-245	70
0.1	50 - 70	235-240	70

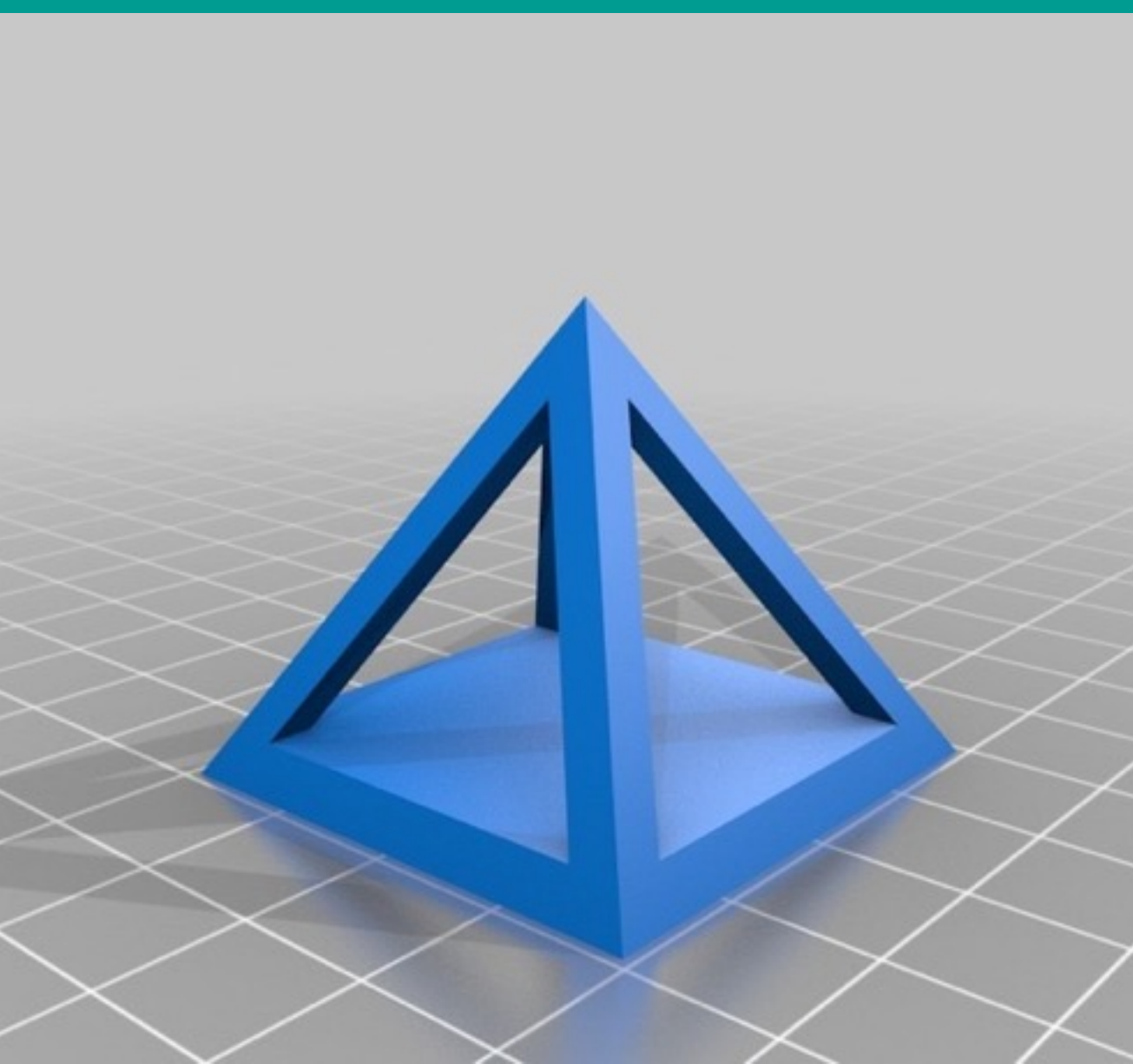
Retraction settings remained unchanged, 40 mm/s speed and 4.5 mm distance.

Ultimaker Original – speed and temperature settings

Layerheight (mm)	Speed (mm/s)	Temperature (C)	Cooling
0.2	50	250-255	off for first centimeter
0.1	50 - 70	245-250	off for first centimeter

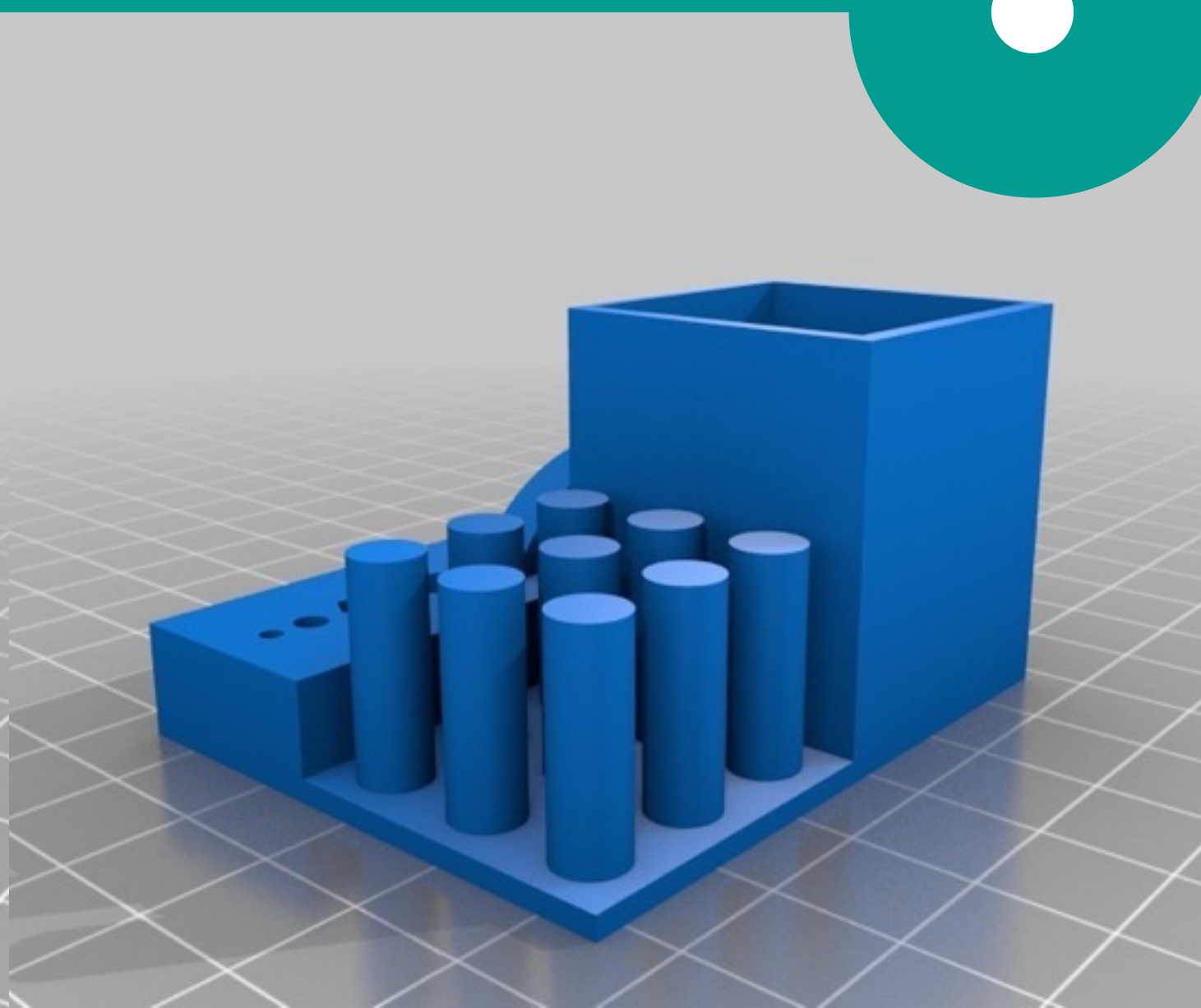


MODELES POUR CALIBRATION



Hollow Pyramid

Retraction settings
thing:11846



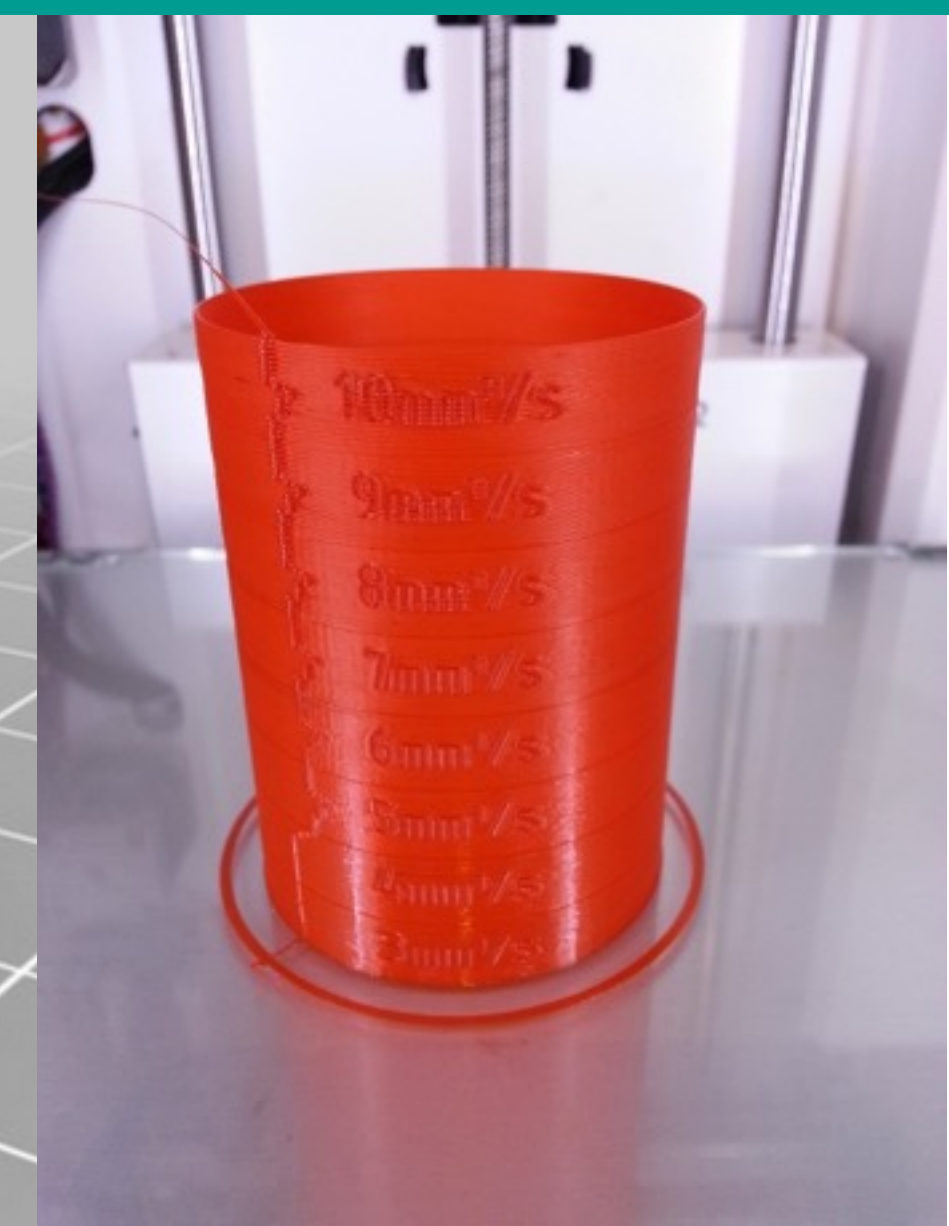
Torture Test

Overall test
thing:33902



Marvin Test

Overall test
thing:215703



Flow test

Max volume / second
at temperature

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Ultimaker Sample Issues: Nut & Bolt

Ok, so something that earlier I got to work without any problem, suddenly I can't get done. I'm trying to print a smooth Nut & Bolt print on my Ultimaker 2 for a customer and these are my



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copperFill

Déplacement et suintement du filament
entre support et pièce

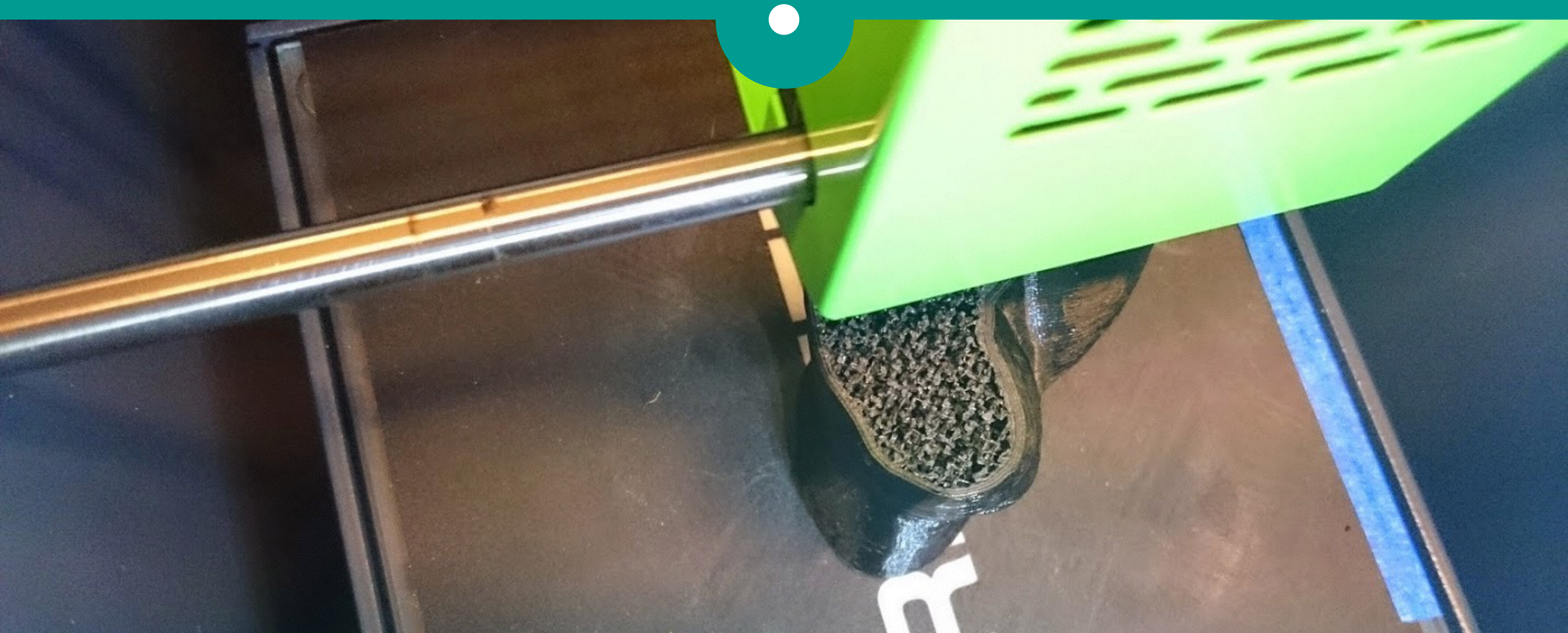
Baisser la température Augmenter le retrait



XT-copolyester

Le remplissage ne se fait pas de manière continue

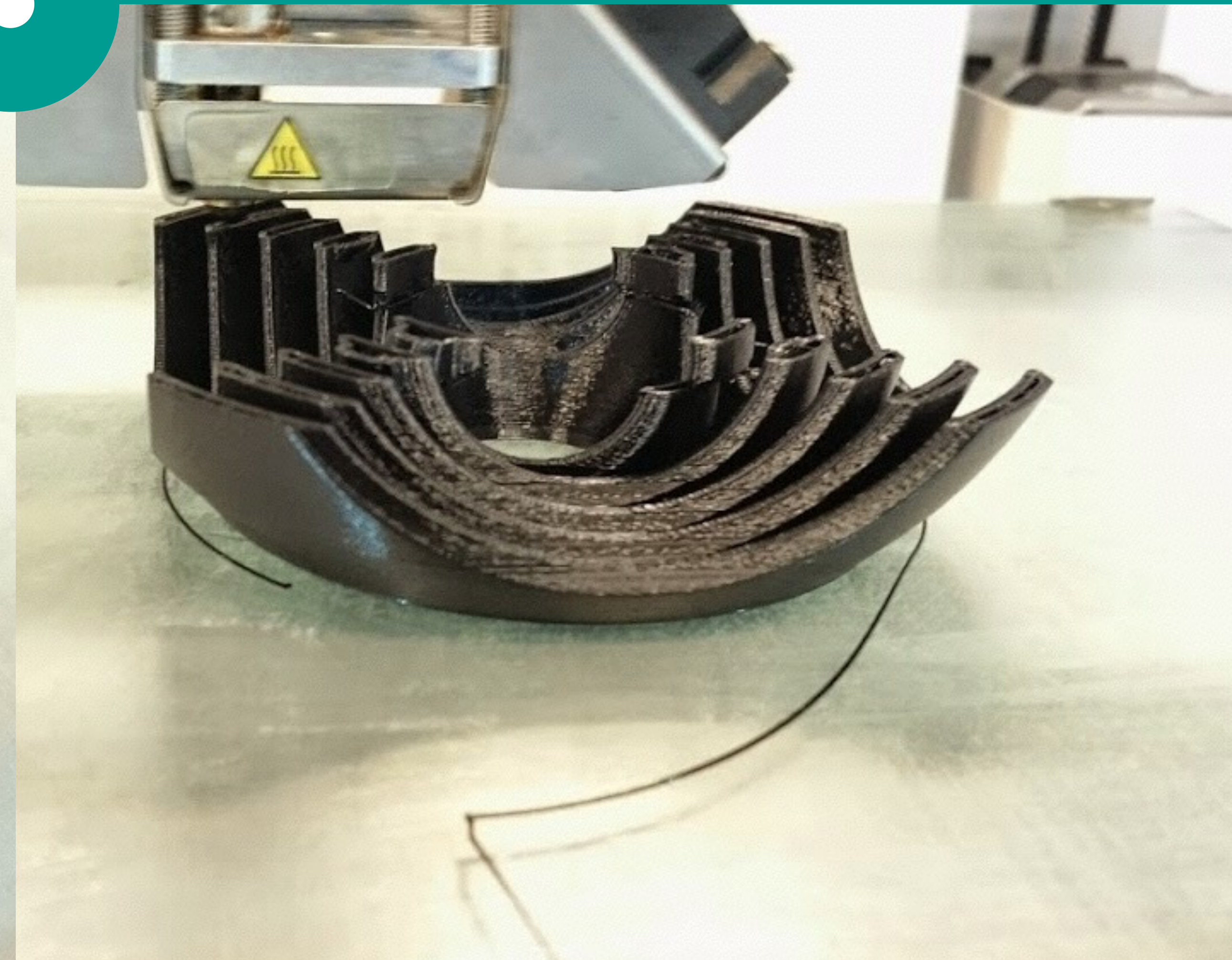
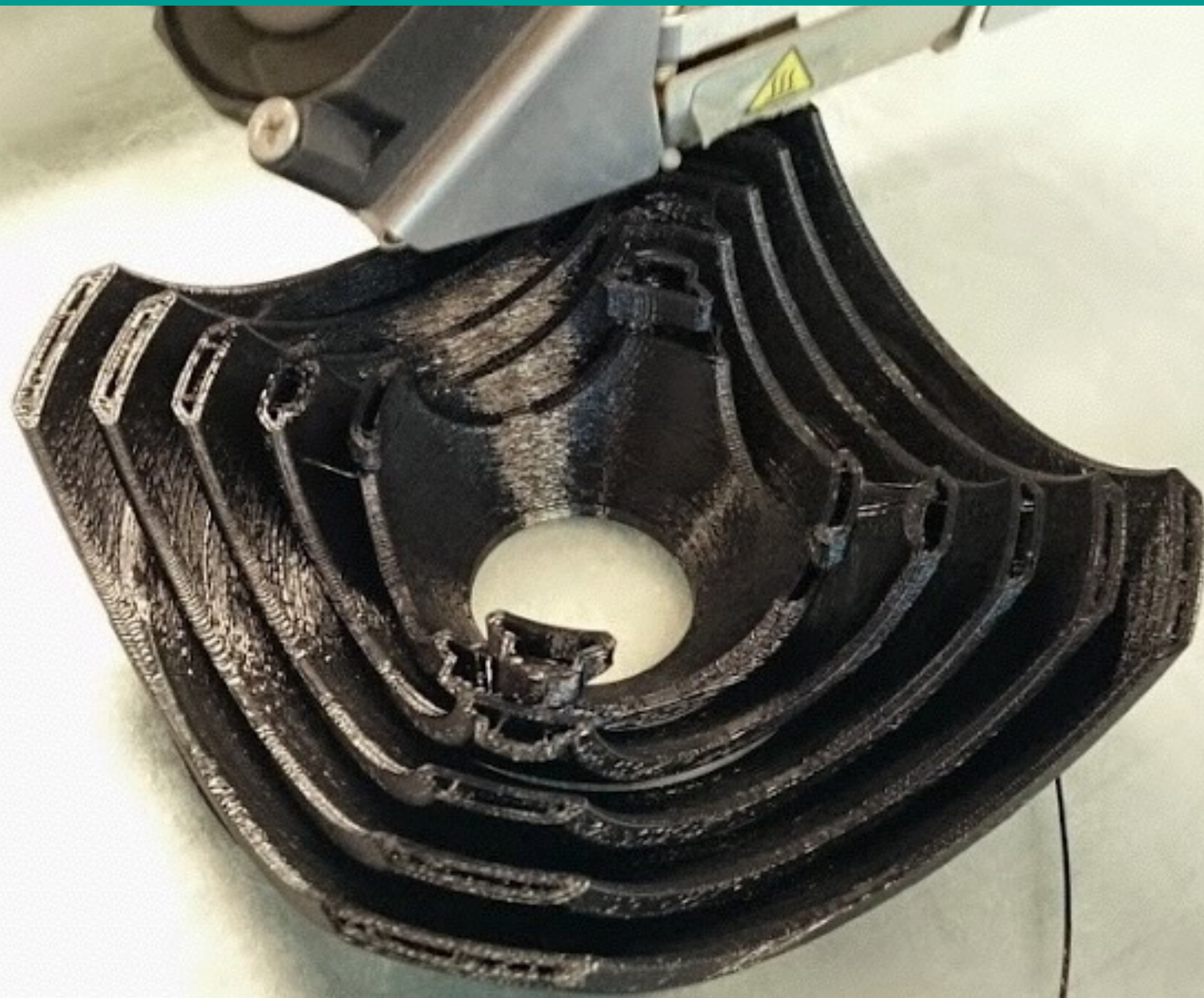
Vitesse d'impression plus lente pour le remplissage



XT-copolyester

Déformation de la pièce durant l'impression
due au repli du matériau

Application d'une nouvelle couche de colle



XT-copolyester

Extrémités fondues dues à une impression trop rapide et un refroidissement insuffisant

Augmenter le temps min. par couche

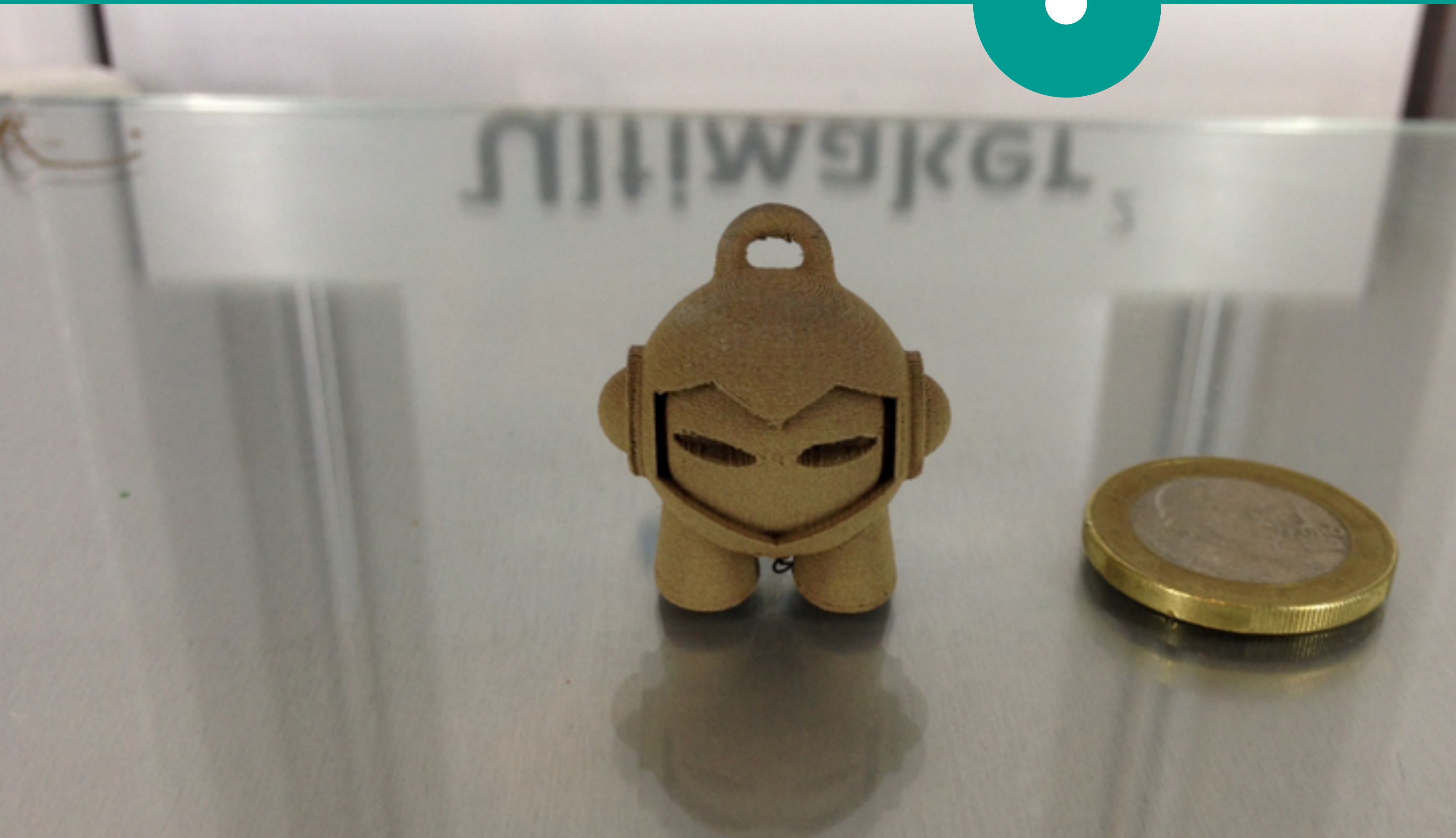


bronzeFill

comment imprimer le Marvin parfait en Bronzefill

<https://www.3dhubs.com/talk/thread/bronzeFill-marvin-0>

Best Practices on Talk



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