

Technical datasheet colorFabb copperFill

colorFabb

Date of issue: 28th of November , 2023
Version: v1.0

Description

colorFabb copperFill is a high quality PLA 3D printing filament, loaded with copper particles, specially developed for aesthetic prints. By polishing the part, the object will appear with a shiny copper effect, with a statue-like appearance.

Typical Properties

Mechanical Properties – Injection Molded*

	Method	Value	Unit
Youngs Modulus	Tensile, ISO 527-1A	N/A	MPa
Tensile Strength	Tensile, ISO 527-1A	25	MPa
Elongation at break	Tensile, ISO 527-1A	3-10	%
Flexural Modulus	Flexural, ISO 178	40	MPa
Flexural Strength	Flexural, ISO 178	7000	MPa
Izod Impact Strength	Izod Notch, ISO 180	10	kJ/m ²
Density	ISO 1183	4	g/cm ³

Thermal Properties*

	Method	Value	Unit
Glass Transition Temp.	DSC, ISO 11357	N/A	°C
Melting Temp.	DSC, ISO 11357	N/A	°C
Decomposition Temp.	TGA, ISO 11358	N/A	°C
Heat Deflection Temp.	HDT-B, ISO 75	N/A	°C
Melt Flow Index	MFI, (210°C/2.16 kg), ISO 1133-A	N/A	g/10min
Melt Flow Index	MFI, (190°C/1,16 kg), ISO 1133-A	N/A	g/10 min

*These results are obtained from the information provided by the supplier of the raw material

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Filament Specifications

	Unit		
Diameter	mm	1.75	2.85
Max. roundness deviation	mm	± 0.05	± 0.1
Net. Filament weight	g	750-1500	750-1500

Guideline for print settings

	Unit	
Nozzle Temp.	°C	195-220
Bed Temp.	°C	50-60
Bed / surface modification	-	Glass plate, glue stick, tape
Active cooling fan	%	On
Print Speed	mm/s	40-100

Notes

Depending on your set-up, 3D printers and slice software, the copperFill requires more flow than normal PLA materials. Most plastics show a phenomenon known as “die swell” after passing the nozzle top, which counteracts with specific slicer settings. Since copperFill does not exhibit such swelling behavior, it is recommended to decrease the flow rate slightly (4-8% was sufficient for UM2, UM did not need adjustment).

Sanding and polishing your parts will make the bronze particle shimmer. Start sanding with sandpaper of grid 120-180. Start working your way up to sandpaper with grid 240-320, and finish with grit 600 – or higher. Finally, use a clean soft cloth, and some copper polish.

Disclaimer

The product- and technical information provided in this datasheet is correct to the best of our knowledge. The information given is provided as a guidance for good use, handling and processing, and is not to be considered as a quality specification. The information only relates to the specific product and the material properties.