



## Filazoo Filament

Technical Data Sheet V1.0



# PLA Silk Dual-Color

Silk-Sheen Polylactic Acid — two-tone colour shift

| DOCUMENT NO.           | REVISION | ISSUE DATE | DIAMETER | NET WEIGHT |
|------------------------|----------|------------|----------|------------|
| FZ-TDS-PLASILKDUAL-001 | V1.0     | 01/09/26   | 1.75 mm  | 1 kg       |

## 1 Description

Filazoo PLA Silk Dual-Color combines two coordinated pigments in a single strand, so the printed surface shifts between two colours depending on viewing angle and light direction. It carries the same glossy silk sheen as the rest of the silk range, which enhances the colour-shift effect.

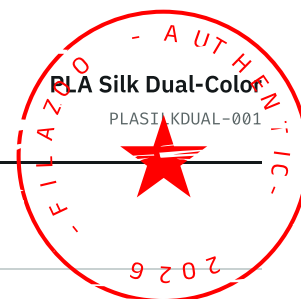
Typical applications — decorative and eye-catching models, gifts, cosplay and prop pieces, and any print designed to show off dynamic, angle-dependent colour.

Processing summary — print slower and with reduced part cooling to develop maximum shine; because colour distribution depends on filament orientation, avoid excessive retraction and purging that can disrupt the two-tone blend.

## 2 Product Specification

Table 1 — Filament and packaging specification

| PARAMETER                                   | UNIT | VALUE                                                                      |
|---------------------------------------------|------|----------------------------------------------------------------------------|
| Filament diameter                           | mm   | 1.75                                                                       |
| Diameter tolerance                          | mm   | $\pm 0.02$                                                                 |
| Net filament weight                         | kg   | 1                                                                          |
| Spool material                              | —    | ABS (heat resistance 70 °C)                                                |
| Spool dimensions ( $\varnothing \times H$ ) | mm   | $\varnothing 200 \times 67$ mm                                             |
| Colour range                                | —    | Black & Red, Black & Orange, Black & Magenta, Black & Gold, Black & Silver |



### 3 Recommended Printing Parameters

Table 2 — Recommended starting parameters

| PARAMETER                     | UNIT                    | VALUE                                          |
|-------------------------------|-------------------------|------------------------------------------------|
| Drying before printing        | °C / h                  | 50 °C for 8 h                                  |
| Printing and storage humidity | —                       | Dry storage; sealed with desiccant             |
| Nozzle size                   | mm                      | ≥ 0.4                                          |
| Nozzle type                   | —                       | Brass or hardened steel                        |
| Nozzle temperature            | °C                      | 210 – 230                                      |
| Build plate type              | —                       | Cool Plate, Engineering Plate or Textured PEI  |
| Bed surface preparation       | —                       | Clean; no adhesive typically needed            |
| Bed temperature               | °C                      | 45 – 60                                        |
| Part cooling fan              | —                       | Medium (50 – 70 %) – lower fan preserves shine |
| Printing speed                | mm/s                    | 40 – 90                                        |
| Enclosed chamber              | —                       | Not required                                   |
| Chamber temperature           | °C                      | Ambient                                        |
| Retraction length / speed     | mm / mm·s <sup>-1</sup> | 0.4 – 0.8 mm / 20 – 40 mm·s <sup>-1</sup>      |
| Max overhang angle            | °                       | ~ 50                                           |
| Max bridging length           | mm                      | ~ 25                                           |

Values are starting points. Lower cooling and moderate speed give the highest shine; annealing at 50–55 °C for 6–12 h raises heat resistance.

### 4 Material Properties

Values are typical results measured on standard printed specimens and are intended for design reference and comparison. They are not guaranteed minima.

#### 4.1 Physical and thermal properties

Table 3 — Physical and thermal properties

| PROPERTY                     | TEST METHOD      | UNIT              | TYPICAL VALUE |
|------------------------------|------------------|-------------------|---------------|
| Density                      | ISO 1183         | g/cm <sup>3</sup> | ~ 1.32        |
| Melt flow rate (MFR)         | 210 °C, 2.16 kg  | g/10 min          | ~ 7 ± 1       |
| Melting temperature          | DSC              | °C                | ~ 152         |
| Glass transition temperature | DSC              | °C                | ~ 57          |
| Vicat softening temperature  | ISO 306          | °C                | ~ 56          |
| Heat deflection temperature  | ISO 75, 0.45 MPa | °C                | ~ 50          |
| Heat deflection temperature  | ISO 75, 1.8 MPa  | °C                | ~ 45          |
| Saturated water absorption   | 25 °C, 55 % RH   | %                 | ~ 0.5         |



## 4.2 Mechanical properties

Table 4 — Mechanical properties

| PROPERTY                   | TEST METHOD         | UNIT              | TYPICAL VALUE |
|----------------------------|---------------------|-------------------|---------------|
| Young's modulus (X–Y)      | ISO 527 / GB/T 1040 | MPa               | ~ 2100 ± 150  |
| Young's modulus (Z)        | ISO 527 / GB/T 1040 | MPa               | ~ 1800 ± 150  |
| Tensile strength (X–Y)     | ISO 527 / GB/T 1040 | MPa               | ~ 38 ± 4      |
| Tensile strength (Z)       | ISO 527 / GB/T 1040 | MPa               | ~ 33 ± 4      |
| Elongation at break (X–Y)  | ISO 527 / GB/T 1040 | %                 | ~ 5           |
| Elongation at break (Z)    | ISO 527 / GB/T 1040 | %                 | ~ 3           |
| Flexural modulus           | ISO 178 / GB/T 9341 | MPa               | ~ 2100 ± 140  |
| Flexural strength          | ISO 178 / GB/T 9341 | MPa               | ~ 62 ± 5      |
| Impact strength, notched   | ISO 179 / GB/T 1043 | kJ/m <sup>2</sup> | ~ 2.5         |
| Impact strength, unnotched | ISO 179 / GB/T 1043 | kJ/m <sup>2</sup> | ~ 8           |

## 4.3 Chemical and physical characteristics

Table 5 — General characteristics of PLA Silk Dual-Color

| PARAMETER                    | VALUE                                                          |
|------------------------------|----------------------------------------------------------------|
| Composition                  | Poly(lactic acid (PLA), silk-effect dual-pigment grade         |
| Odour                        | Mild, faintly sweet odour when printing                        |
| Skin hazard                  | No hazard in solid filament form                               |
| Chemical stability           | Stable under normal storage and handling                       |
| Solubility                   | Insoluble in water; biodegradable under industrial composting  |
| UV and weathering resistance | Poor – degrades and discolours with prolonged outdoor exposure |
| Acid resistance              | Limited resistance                                             |
| Alkali resistance            | Limited resistance                                             |
| Organic solvent resistance   | Softened or dissolved by some solvents                         |
| Oil and grease resistance    | Limited resistance                                             |
| Flammability                 | Flammable                                                      |
| Combustion products          | Carbon oxides                                                  |



## 5 Test Conditions

### 5.1 Specimen printing conditions

Table 6 — Conditions used to produce test specimens

| PARAMETER                         | UNIT   | VALUE                   |
|-----------------------------------|--------|-------------------------|
| Nozzle temperature                | °C     | 220                     |
| Bed temperature                   | °C     | 50                      |
| Printing speed                    | mm/s   | 60                      |
| Infill density                    | %      | 100                     |
| Layer height                      | mm     | 0.2                     |
| Specimen conditioning / annealing | °C / h | 50 – 55 °C for 6 – 12 h |

### 5.2 Specimen geometry

Test specimens follow the geometry defined by the referenced standards. All dimensions in millimetres.

Figure 1 — Tensile specimen

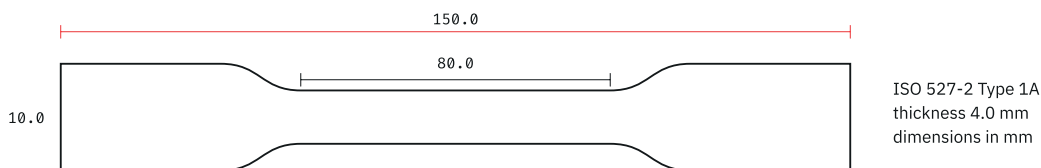


Figure 2 — Flexural specimen

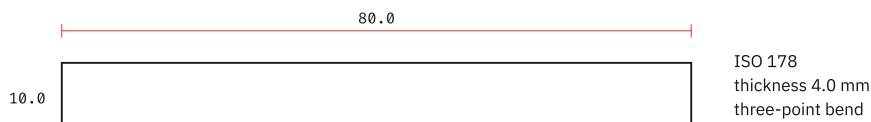
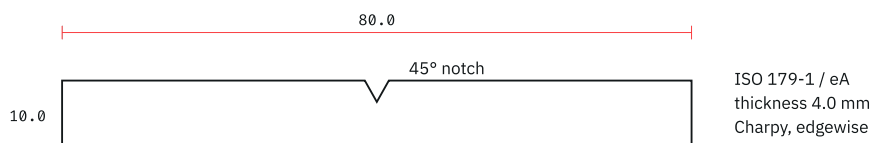


Figure 3 — Impact specimen



## 6 Disclaimer

The performance values in this document are typical values obtained from standard printed specimens. They are provided for design reference and comparison only and do not constitute a specification or a warranty of performance. Actual printed part performance depends on many further factors, including the printer, hotend and nozzle, slicer settings, part geometry, wall count and infill, build orientation, and ambient conditions.

Users are responsible for the legality, safety and suitability of anything they print. Filazoo accepts no responsibility for the use of its materials in any particular application, or for any damage arising in the course of using them.