



## Filazoo Filament

Technical Data Sheet V1.0



# PLA Matte

Low-Gloss Polylactic Acid — layer-line-hiding finish

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

## 1 Description

Filazoo PLA Matte prints with the same easy handling as PLA Basic while producing a smooth, low-gloss surface that visually softens layer lines. The matte effect comes from a fine surface texture rather than a coating, so it survives light sanding and handling without wearing off. It suits presentation models and finished parts where a clean, non-shiny look matters.

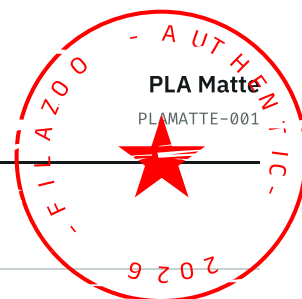
Typical applications — display and presentation models, home decor, enclosures and housings where a soft matte finish is preferred, and any print where visible layer lines are undesirable.

Processing summary — print slightly hotter and slower than PLA Basic to fully develop the matte texture; standard cooling and bed adhesion practices apply. Light annealing after printing can further even out the surface finish.

## 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, Dark Gray, Gray, White, Brown + additional standard colours |



### 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              | —                       | High (80 – 100 %)                             |
| Printing speed                | mm/s                    | 60 – 200                                      |
| 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            | °                       | ~ 55                                          |
| Max bridging length           | mm                      | ~ 30                                          |

Values are starting points. Annealing at 50–60 °C for 6–12 h evens out the matte finish and raises heat resistance.

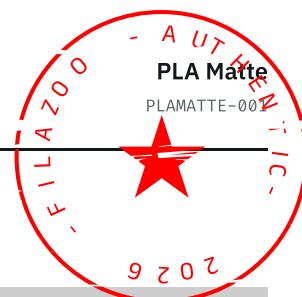
### 4 Material Properties

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> | ~ 1.31        |
| Melt flow rate (MFR)         | 210 °C, 2.16 kg  | g/10 min          | ~ 7 ± 1       |
| Melting temperature          | DSC              | °C                | ~ 163         |
| Glass transition temperature | DSC              | °C                | ~ 61          |
| Vicat softening temperature  | ISO 306          | °C                | ~ 63          |
| Heat deflection temperature  | ISO 75, 0.45 MPa | °C                | ~ 55          |
| Heat deflection temperature  | ISO 75, 1.8 MPa  | °C                | ~ 48          |
| Saturated water absorption   | 25 °C, 55 % RH   | %                 | ~ 0.5         |



## 4.2 Mechanical properties

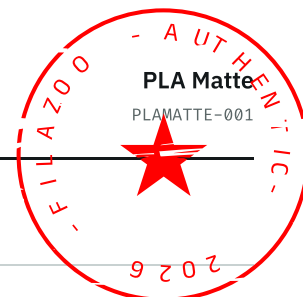
Table 4 — Mechanical properties

| PROPERTY                   | TEST METHOD         | UNIT              | TYPICAL VALUE |
|----------------------------|---------------------|-------------------|---------------|
| Young's modulus (X–Y)      | ISO 527 / GB/T 1040 | MPa               | ~ 2300 ± 150  |
| Young's modulus (Z)        | ISO 527 / GB/T 1040 | MPa               | ~ 2000 ± 150  |
| Tensile strength (X–Y)     | ISO 527 / GB/T 1040 | MPa               | ~ 42 ± 4      |
| Tensile strength (Z)       | ISO 527 / GB/T 1040 | MPa               | ~ 37 ± 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               | ~ 2300 ± 140  |
| Flexural strength          | ISO 178 / GB/T 9341 | MPa               | ~ 68 ± 5      |
| Impact strength, notched   | ISO 179 / GB/T 1043 | kJ/m <sup>2</sup> | ~ 3           |
| Impact strength, unnotched | ISO 179 / GB/T 1043 | kJ/m <sup>2</sup> | ~ 9           |

## 4.3 Chemical and physical characteristics

Table 5 — General characteristics of PLA Matte

| PARAMETER                    | VALUE                                                          |
|------------------------------|----------------------------------------------------------------|
| Composition                  | Poly(lactic acid (PLA), matte-finish 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   | 100                     |
| Infill density                    | %      | 100                     |
| Layer height                      | mm     | 0.2                     |
| Specimen conditioning / annealing | °C / h | 50 – 60 °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

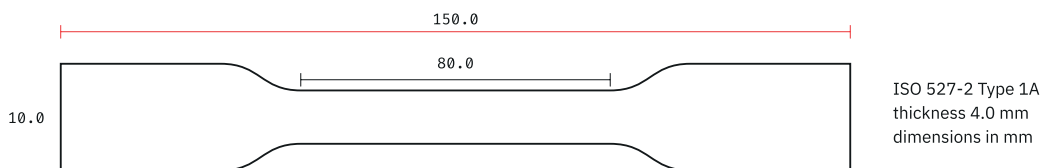


Figure 2 — Flexural specimen

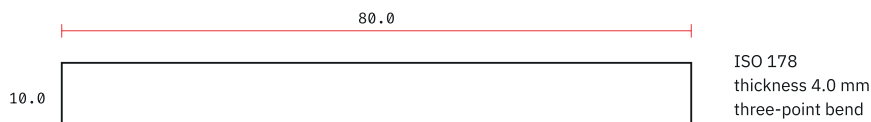
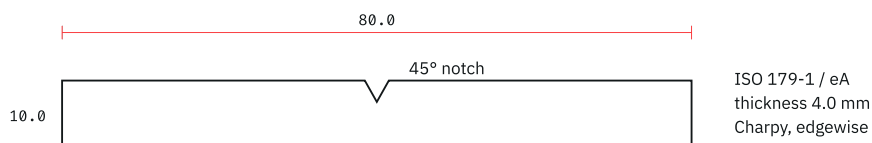


Figure 3 — Impact specimen



## 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.