



Filazoo Filament

Technical Data Sheet V1.0



PLA Glow

Glow-in-the-Dark Polylactic Acid — photoluminescent filament

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

1 Description

Filazoo PLA Glow contains a phosphorescent pigment that absorbs light from sunlight or a UV/bright light source and releases it gradually as a visible glow in darkness. The pigment loading raises density and is mildly abrasive, so a hardened nozzle is recommended for long-term use.

Typical applications — night lights and signage, safety markers, toys and novelty items, and any print meant to glow after the lights go out.

Processing summary — a hardened nozzle is recommended since the glow pigment is abrasive to brass over extended printing. Print slightly hotter than PLA Basic to keep the heavier-loaded filament flowing smoothly; expose finished parts to bright light before use to charge the glow effect.

2 Product Specification

Table 1 — Filament and packaging specification

PARAMETER	UNIT	VALUE
Filament diameter	mm	1.75
Diameter tolerance	mm	± 0.02
Net filament weight	kg	1
Spool material	—	ABS (heat resistance 70 °C)
Spool dimensions (ø × H)	mm	ø 200 × 67 mm
Colour range	—	Glow White to Green, Glow Green to Green, Glow White to Blue



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	—	Hardened steel (recommended – abrasive pigment)
Nozzle temperature	°C	200 – 230
Build plate type	—	Cool Plate, Engineering Plate or Textured PEI
Bed surface preparation	—	Clean; no adhesive typically needed
Bed temperature	°C	35 – 45
Part cooling fan	—	High (80 – 100 %)
Printing speed	mm/s	50 – 150
Enclosed chamber	—	Not required
Chamber temperature	°C	Ambient
Retraction length / speed	mm / mm·s ⁻¹	0.4 – 0.8 mm / 20 – 40 mm·s ⁻¹
Max overhang angle	°	~ 50
Max bridging length	mm	~ 25

Values are starting points. The phosphorescent pigment is abrasive — a hardened nozzle extends nozzle life significantly.

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 ³	~ 1.35
Melt flow rate (MFR)	210 °C, 2.16 kg	g/10 min	~ 7 ± 1
Melting temperature	DSC	°C	~ 155
Glass transition temperature	DSC	°C	~ 58
Vicat softening temperature	ISO 306	°C	~ 58
Heat deflection temperature	ISO 75, 0.45 MPa	°C	~ 52
Heat deflection temperature	ISO 75, 1.8 MPa	°C	~ 46
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	~ 2400 ± 160
Young's modulus (Z)	ISO 527 / GB/T 1040	MPa	~ 2100 ± 160
Tensile strength (X–Y)	ISO 527 / GB/T 1040	MPa	~ 40 ± 4
Tensile strength (Z)	ISO 527 / GB/T 1040	MPa	~ 34 ± 4
Elongation at break (X–Y)	ISO 527 / GB/T 1040	%	~ 4
Elongation at break (Z)	ISO 527 / GB/T 1040	%	~ 2
Flexural modulus	ISO 178 / GB/T 9341	MPa	~ 2450 ± 150
Flexural strength	ISO 178 / GB/T 9341	MPa	~ 65 ± 5
Impact strength, notched	ISO 179 / GB/T 1043	kJ/m ²	~ 2.5
Impact strength, unnotched	ISO 179 / GB/T 1043	kJ/m ²	~ 8

4.3 Chemical and physical characteristics

Table 5 — General characteristics of PLA Glow

PARAMETER	VALUE
Composition	Poly(lactic acid (PLA) with phosphorescent (strontium aluminate) pigment
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
UV and weathering resistance	Poor for the PLA base; the glow pigment itself is UV-charged
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	215
Bed temperature	°C	40
Printing speed	mm/s	100
Infill density	%	100
Layer height	mm	0.2
Specimen conditioning / annealing	°C / h	23 °C / 50 % RH for 24 h (ISO 291)

5.2 Specimen geometry

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

Figure 1 — Tensile specimen

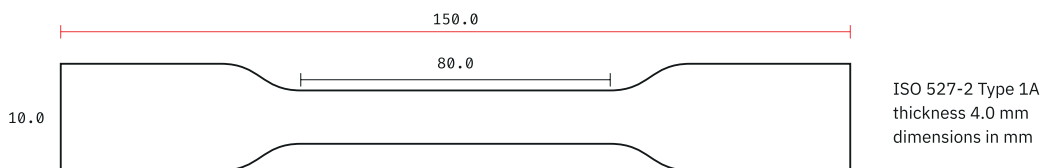


Figure 2 — Flexural specimen

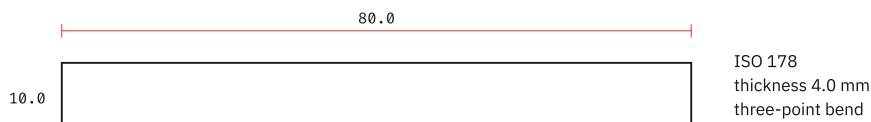
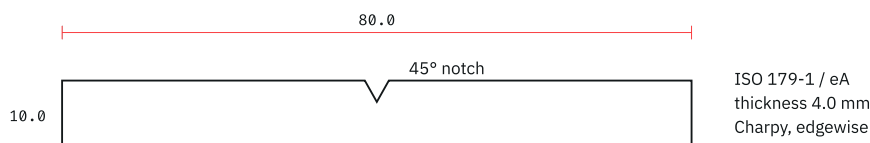


Figure 3 — Impact specimen



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.