



Filazoo Filament

Technical Data Sheet V1.0



PETG Rainbow

Polyethylene Terephthalate Glycol — gradient colour transition

DOCUMENT NO.	REVISION	ISSUE DATE	DIAMETER	NET WEIGHT
FZ-TDS-PETGRAINBOW-001	V1.0	28/08/26	1.75 mm	1 kg

1 Description

Filazoo PETG Rainbow blends multiple colours along a single strand so durable PETG parts transition gradually between shades as they print, without an AMS or multi-material setup. It keeps PETG's impact resistance and low warping while adding a flowing, seasonal colour effect.

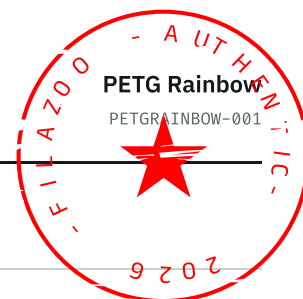
Typical applications — outdoor fittings and decor, protective covers, seasonal display pieces, and any durable print wanting a flowing multicolour gradient.

Processing summary — processes like standard PETG; no special tuning is needed for the gradient colourants.

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 ($\varnothing \times H$)	mm	$\varnothing 200 \times 67$ mm
Colour range	—	Spring, Summer, Autumn, Winter, Candy



3 Recommended Printing Parameters

Table 2 — Recommended starting parameters

PARAMETER	UNIT	VALUE
Drying before printing	°C / h	65 °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	230 – 250
Build plate type	—	Glass or PEI
Bed surface preparation	—	Clean; light adhesive if needed
Bed temperature	°C	70 – 80
Part cooling fan	—	Low to medium
Printing speed	mm/s	40 – 100
Enclosed chamber	—	Not required
Chamber temperature	°C	Ambient
Retraction length / speed	mm / mm·s ⁻¹	0.8 – 1.2 mm / 25 – 45 mm·s ⁻¹
Max overhang angle	°	~ 60
Max bridging length	mm	~ 25

Values are starting points; identical to PETG Basic since the gradient colourants do not materially change print behaviour.

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	~ 1.27
Melt flow rate (MFR)	210 °C, 2.16 kg	g/10 min	~ 3.0 ± 0.5
Melting temperature	DSC	°C	~ 230
Glass transition temperature	DSC	°C	~ 80
Vicat softening temperature	ISO 306	°C	~ 85
Heat deflection temperature	ISO 75, 0.45 MPa	°C	~ 75
Heat deflection temperature	ISO 75, 1.8 MPa	°C	~ 65
Saturated water absorption	25 °C, 55 % RH	%	~ 0.4



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	~ 2200 ± 200
Young's modulus (Z)	ISO 527 / GB/T 1040	MPa	~ 1200 ± 150
Tensile strength (X–Y)	ISO 527 / GB/T 1040	MPa	~ 50 ± 5
Tensile strength (Z)	ISO 527 / GB/T 1040	MPa	~ 45 ± 6
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 ± 150
Flexural strength	ISO 178 / GB/T 9341	MPa	~ 80 ± 10
Impact strength, notched	ISO 179 / GB/T 1043	kJ/m ²	~ 5.5
Impact strength, unnotched	ISO 179 / GB/T 1043	kJ/m ²	~ 15

4.3 Chemical and physical characteristics

Table 5 — General characteristics of PETG Rainbow

PARAMETER	VALUE
Composition	Polyethylene terephthalate glycol (PETG), gradient-pigmented
Odour	Slight odour when printing; low relative to ABS
Skin hazard	No hazard in solid filament form
Chemical stability	Stable under normal storage and handling
Solubility	Insoluble in water
UV and weathering resistance	Moderate – resists yellowing better than ABS
Acid resistance	Resistant to dilute acids
Alkali resistance	Resistant to dilute bases
Organic solvent resistance	Not resistant to some organic solvents
Oil and grease resistance	Resistant to common oils and greases
Flammability	Flammable
Combustion products	Water, carbon oxides



5 Test Conditions

5.1 Specimen printing conditions

Table 6 — Conditions used to produce test specimens

PARAMETER	UNIT	VALUE
Nozzle temperature	°C	240
Bed temperature	°C	75
Printing speed	mm/s	70
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

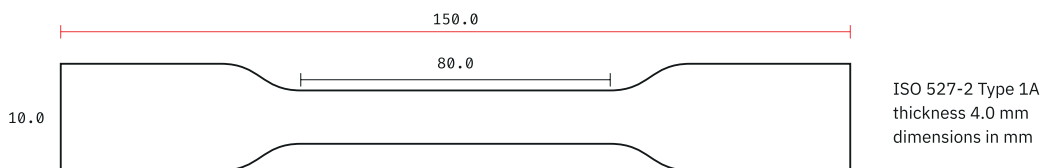


Figure 2 — Flexural specimen

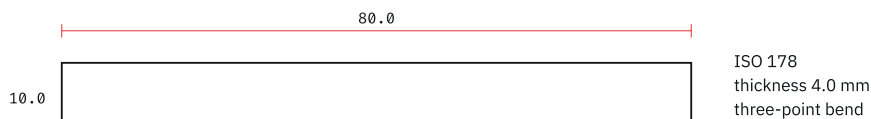
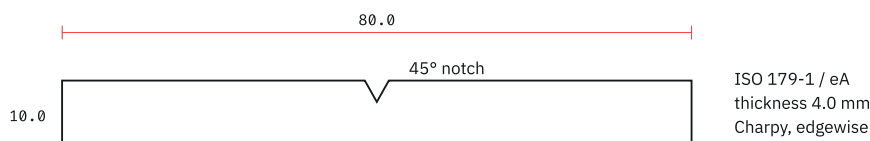


Figure 3 — Impact specimen



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.

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