

SUSTAINABLE 3D PRINT MATERIALS

REFLOW
PRODUCT
OVERVIEW



PRODUCT RANGE

rPETG



colour: **Nautical Blue**
diameter: 1.75, 2.85
roll size: 1 kg



colour: **Seafoam Green**
diameter: 1.75, 2.85
roll size: 1 kg



colour: **Midsummer Glow**
diameter: 1.75, 2.85
roll size: 1 kg



colour: **Arctic Breeze**
diameter: 1.75, 2.85
roll size: 1 kg



colour: **Dark Emerald**
diameter: 1.75, 2.85
roll size: 1 kg



colour: **Burnt Amber**
diameter: 1.75, 2.85
roll size: 1 kg

*Custom colouring available with min order quantity of 40kg

TECHNICAL DATA SHEET

rPETG

Name	Recycled PETG
Chemical name	Polyethylene Terephthalate - Glycol Modified
Source of plastic	The Netherlands
Description	Our flagship rPETG is sourced from leading local recyclers. It's durable and easy to use, with exceptional visual and mechanical performance.

Available colours



FILAMENT SPECIFICATIONS

Diameter	1.75 mm. $\pm 0.05\text{mm}$ / 2.85 mm. $\pm 0.07\text{mm}$
Roundness	$\geq 98\%$
Net filament weight	1 KG
Filament length	$\sim 357\text{m}$ / $\sim 137\text{m}$

PRINTER SETTING RECOMMENDATION

Nozzle temperature	$225^{\circ}\text{C} \pm 10^{\circ}\text{C}$
Bed temperature	$75^{\circ}\text{C} \pm 5^{\circ}\text{C}$
Bed modification	glue / hairspray
Fan speed	30 - 100% (varies based on print geometry)
Print speed	30 - 50 mm/s
Retraction distance	10 mm
Retraction speed	35-45 mm/s
Drying recommendation	55°C for 3 to 4 hours in a hot air or vacuum oven

MATERIAL PROPERTIES

	unit	value	method
Density	g/cm ³	1.27	ASTM D1505
Izod Impact strength	kJ/m ²	6.2	ISO 180 @23°C
Tensile stress at yield	MPa	50	ISO 527
Vicat softening temperature	°C	85	ASTM D1525
Deflection temperature	MPa	64	ASTM D648 @1.82 MPa
Elongation at yield	%	100	ISO 527
Melt flow rate (225 °C/1.20 kg)	g/10 min	13	ISO 1133-2
Glass transition	°C	79.2	ISO 11357-2

MECHANICAL PROPERTIES

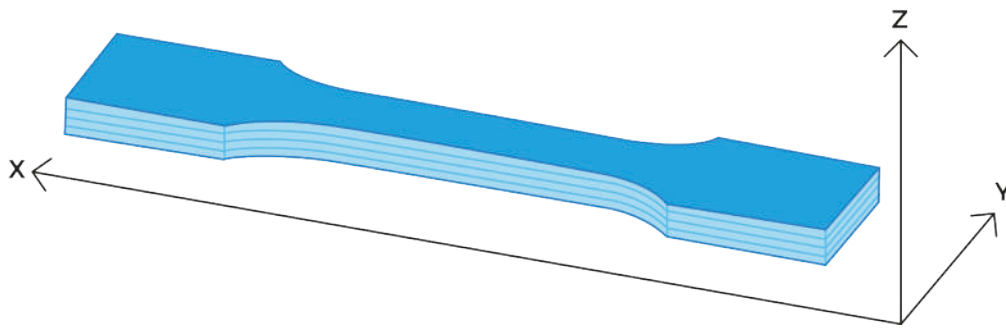
	unit	value	method
Tensile modulus	MPa	1730±203	ISO 527
Tensile strength	MPa	38.4	ISO 527
Tensile stress at break	MPa	36.9	ISO 527
Tensile strain at break	%	3.3	ISO 527
Flexural modulus	MPa	1772±32	ISO 178
Flexural strength	MPa	63.6	ISO 178
Flexural stress at break	MPa	58.1	ISO 178
Flexural strain at break	%	4.2	ISO 178

SAMPLE PREPARATION AND TESTING CONDITIONS

Sample preparation conditions:

Ultimaker 2+ with 0.4 mm nozzle was applied for preparing both tensile and flexural specimens.

Line width: 0.35 mm | layer height: 0.2 mm | printing speed: 20 mm/s | retraction distance and speed: 9 mm and 35 mm/s | printing temperature: 230 °C | fan speed: 40% | infill percentage: 100% | outline overlap: 35%



Testing conditions:

Five samples were tested and the value shared was the average value.

For tensile specimens, they were printed flatly (x-y direction) and the printing direction was in line with the tensile stretching direction. As for the flexural specimens, the printing direction was perpendicularly to the test direction.

DISCLAIMER

The values and recommendations provided herein are given or accepted at your own responsibility. In view of variations in maintenance or processing, neither Reflow nor its affiliates provide any warranty for their use. You must make your own determination of its suitability and completeness for your specific use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products.



TRACEABILITY

rPETG

Name	Recycled PETG
Chemical name	Polyethylene Terephthalate - Glycol Modified
Geographic location	Flevoland, The Netherlands
Waste category	Post Industrial
Type of product	Thermoformed medical trays

Over 359 million tonnes of virgin plastic was produced globally in 2019 but only 18% of this material is recycled. This material has an average life cycle of less than one year but it lives on for centuries, polluting our natural habitats and consequently, our food supply. As the 3D printing industry rapidly expands each year, the materials market is becoming a significant contributor to the production of new virgin plastic and plastic pollution.

At Reflow, we're committed to building an effective after use economy for discarded plastic as well as developing truly biodegradable materials. Our r-PETG filament delivers outstanding performance while using a fully recycled and traceable input.

The r-PETG filament you are printing with is derived from a consistent stream of thermoformed, medical tray waste that are recycled in Flevoland with our partnering recycler before arriving at our facility in North Amsterdam where extrusion takes place.

By choosing Reflow you are supporting a growing ecosystem of recyclers, engineers, entrepreneurs and designers, all committed to making 3D printing sustainable.



GET IN TOUCH

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