

TECHNICAL DATA SHEET

Spectrum Filaments PET CF15

The material offered by Spectrum Group Sp. z o.o. has been developed and adapted to general modeling. Tests performed by Spectrum Group Sp. z o.o. have showed that it is feasible to use the offered product in most 3D printers operating in FDM/FFF technology. Before the first use, it is advisable to print out a hard proof to check if the filament is compatible with user's printer. All shown data are typical properties. The information were processed with the best knowledge of the manufacturer and it is for information only. Users should confirm results by their own tests.

Identification	
Trade name	Spectrum Filaments PET CF15
Chemical name	Polyethylene terephthalate with carbon fibers
Use	Additive Manufacturing
Origin	Spectrum Group Sp. z o.o.

Filament specification	
Diameter	1.75mm ± 0.05mm
Verify your spool	Yes

Material properties			
Properties		Typical value	Test method
Density		1.40 g/cm ³	ISO 1183-3
Tensile strength	at 23°C / 50% rh; @50mm/min	80 MPa	ISO 527
Elongation at max. force	at 23°C / 50% rh; @50mm/min	2.5%	ISO 527
Modulus of elasticity	at 23°C / 50% rh; @1mm/min	9 GPa	ISO 527
Flexural strength	at 23°C / 50% rh; @10mm/min	130 MPa	ISO 178
Flexural elongation at max. force	at 23°C / 50% rh; @10mm/min	3.5%	ISO 178
Flexural modulus	at 23°C / 50% rh; @2mm/min	8 GPa	ISO 178
Charpy impact strength	at 23°C / 50% rh	40 kJ/m ²	ISO 179 1eU
Operation temperature	max. 200h	125°C	

Guideline for print settings*

Nozzle temperature	250-280°C
Bed temperature	40-60°C
Active cooling fan	Yes (50% as default)
Layer height**	≥ 0.20mm
Brim/skirt	3 outlines with 1 layer
Print speed**	30-80mm/s
Nozzle diameter	≥ 0.50mm
Nozzle type	abrasion resistant
Bed adhesive	buildTak, Magigoo, 3DLac, Dimafix

* settings are based on a 0.5mm nozzle

** the range depends on the geometrical complexity

In case filament has become wet, it should be dried. Drying at 80°C for 12h is recommended.

Key features:

- low processing (linear) shrinkage of 0.1 %
- a very wide temperature range for prolonged operation as well as a very high temperature up to 125°C for short-time operation
- a relatively high resistance to thermal ageing
- abrasion resistance
- chemical resistance to lubricants and oils
- high Z-strength
- very robust lamination of layers
- good tribological properties, including dry friction conditions such as in slide bearings