Technical Data Sheet

Issued: March 7, 2018

Revised: June 19, 2018

PETG Filament

SECTION 1, IDENTIFICATION

Product Part Number:
Black AW3D-F14501
Blue (Transparent) AW3D-F14515
Red AW3D-F14504
White AW3D-F14502
Yellow (Transparent) AW3D-F14508

Recommended Use: 3D printing filament

Restrictions on Use: For use with 3D printers

AIRWOLF 3D TESTED PROPERTIES

Ultimate Strength:	50.0 MPa
Elongation at Break:	21.5 %

(see “Methodology of Test” for details)

SECTION 2, DESCRIPTION

Description:

PETGs (or copolyester) are glycol modified PETs; the modification is done by adding a second glycol during polymerization. The resulting molecular structure is irregular and the resin is clear and amorphous with a higher glass transition temperature of 88 C (190 F). PETGs can be processed over a wider processing range than conventional PETs and offer good combination of properties such as toughness, clarity, and stiffness.

Polyethylene Terephthalate Glycol

Applications:

Low shrinkage (minimal warping) is ideal for printing larger prototypes
Prototypes which are shatterproof or translucent
Headlight covers
Mounts, jigs and fixtures
Food and liquid storage

Key Features:

Brilliant Color
Superior Chemical Resistance
BPA Free
Amorphous: Low and near isotropic shrinkage
Low moisture absorption
Very low odor emitted during printing
More flexible than PLA or ABS
Can be printed with lower bed temperatures than ABS
Does not need an enclosure

SECTION 3, SPECIFICATIONS (Manufacturer)

EXTRUDER TEMPERATURE	235C – 255C
BED TEMPERATURE	80C - 120C
HEATED BED	Required
RECOMMENDED BUILD SURFACE	Wolfbite for ABS, PETG, TPU, and TPE
DIAMETER	2.88mm
COLOR	Black, Blue, Red, White, Yellow
COMPATIBLE MACHINE	AXIOM, AXIOM 20, AXIOM Dual Extruder, EVO, HD Series
GENERAL	
Density	1.23 G/CM3
THERMAL	
Heat Distortion Temperature (HDT) @ 0.45MPa ISO 75	64 C
Melt Flow (g/10min)	20 (250 C / 2.16 kg)
MECHANICAL	
Elongation at Break	21.5 %
Tensile Strength	50 MPa
Flexural Modulus	2027 Mpa
Bending Strength	68 Mpa
Impact Strength IZOD	8 KJ/m2
Low moisture absorption	Low

SECTION 4, ADDITIONAL INFORMATION

PETG can jam in the print head if printed too hot. If the printer is enclosed, it is recommended to keep the enclosure door/top open if possible to prevent filament swelling and to maximize print quality.

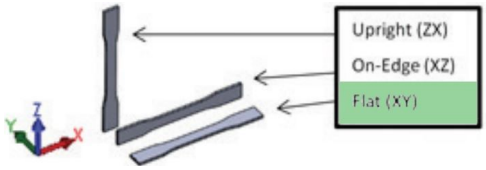
Methodology of Tests performed by Airwolf 3D:

Airwolf 3D tested this material, in its 3d printed form, for the mechanical properties of “Ultimate Strength” and “Elongation at Break” per ISO 527 standards. Specimens were printed on an AXIOM 3D printer with a nozzle orifice size 0.5mm. The specimens were “dog bone” shaped with a size of 75mm x

10mm x 2mm and printed with 90% fill density. Wolfbite adhesive was used to adhere the part to the heated bed during print cycle. The default “Standard” setting in APEX slicing software was used. Details are as follows:

Layer height:	0.25mm
Shell thickness:	1.0mm
Bottom/Top thickness:	1.2mm
Fill density:	90%
Printing temp:	250C
Bed temp:	100C
Flow:	100%
Filament Color:	Yellow

Specimens were printed flat on the XY plane.



The equipment used: MODEL 1ST Electromechanical Testing Machine by Tinius Olsen (Crosshead).

A minimum of six specimens were tested. The Ultimate Strength and Elongation at Break values were determined by calculating the average of all specimens tested.

Disclaimer

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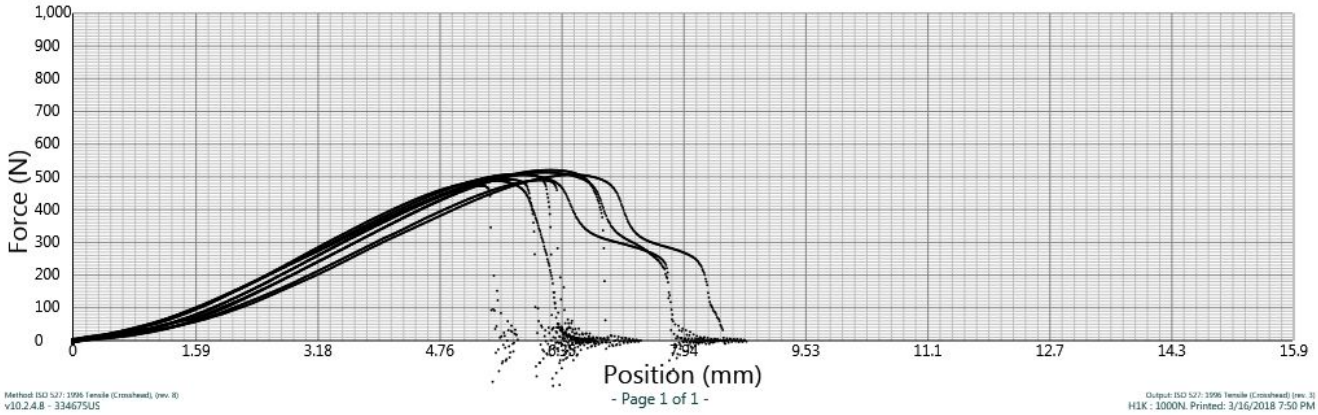
Version	1.300
Date	06/19/2018

AIRWOLF 3D FILAMENT - PETG YELLOW

ISO 527 Tensile (Crosshead)

	Ultimate Strength MPa	Elongation at Break %	Yield Strength MPa
	52.1	22.6	N/F
	47.3	19.1	N/F
	50.9	21.8	N/F
	49.0	20.6	N/F
	49.2	20.0	N/F
	51.4	23.3	N/F
	49.0	20.6	N/F
	50.6	21.8	N/F
	50.7	23.6	N/F
Average	50.0	21.5	N/A
SD		1.53	N/A



Method: ISO 527: 1996 Tensile (Crosshead), (rev. 8)
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Output: ISO 527: 1996 Tensile (Crosshead) (rev. 3)
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