



# Technical Data Sheet

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## Wolfbend TPU Flexible Filament

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### SECTION 1, IDENTIFICATION

<b>Product Part Number:</b>	White	AW3D-F08402
	Black	AW3D-F08401
	Blue	AW3D-F08415
	Red	AW3D-F08404
	Clear	AW3D-F08416

**Recommended Use:** 3D printing filament

**Restrictions on Use:** For use with 3D printers

### AIRWOLF 3D TESTED PROPERTIES

**Ultimate Strength:** 23.8 MPa

**Elongation at Break:** 909%

(see "Methodology of Test" for details)

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### SECTION 2, DESCRIPTION

**Description:** A strong, flexible material with rubber-like elasticity. Excellent layer-to-layer bond making layer separation non-existent.

Thermoplastic Polyurethane

**Applications:**

- Automotive instrument panels
- Caster wheels
- Power tools
- Sporting goods
- Medical devices
- Drive belts
- Footwear
- Grips
- Shoes and insoles
- Electronic cases

**Key Features:**

- High elasticity
- Abrasion resistance
- Low-temperature performance
- Mechanical properties, combined with a rubber-like elasticity
- Shear strength
- Transparency
- Oil and grease resistance

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### SECTION 3, SPECIFICATIONS

<b>EXTRUDER TEMPERATURE</b>	230C - 245C
<b>BED TEMPERATURE</b>	40C-60C
<b>HEATED BED</b>	Optional
<b>RECOMMENDED BUILD SURFACE</b>	<a href="#">Wolfbite for ABS, PETG, TPU, and TPE</a>
<b>DIAMETER</b>	2.88mm
<b>COLOR</b>	Black, Blue, Clear, Red, White
<b>COMPATIBLE MACHINE</b>	<a href="#">AXIOM</a> , <a href="#">AXIOM 20</a> , AXIOM Dual Extruder, <a href="#">EVO</a>
<b>THERMAL</b>	
<b>Melting Point (via Differential Scanning Calorimeter) DSC</b>	216° C
<b>Glass Transition (Tg) DSC</b>	-35° C
<b>Heat Deflection Temperature (HDT) @ 10.75psi/ 0.07 MPa ASTM D648</b>	60° C
<b>Heat Deflection Temperature (HDT) @ 66psi/ 0.45 MPa ASTM D648</b>	44° C
<b>PHYSICAL</b>	
<b>Specific Gravity ASTM D792</b>	1.19 g/cc
<b>Hardness ASTM D2240</b>	95 Shore A
<b>MECHANICAL</b>	
<b>Elongation at Break ISO 527</b>	909.00%
<b>Tensile Strength, Ultimate ISO 527</b>	23.8 Mpa
<b>Moisture Absorption - 24 hours ASTM D570</b>	0.22 %

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## SECTION 4, ADDITIONAL INFORMATION

Wolfbend TPU Flexible Filament is best suited for direct-drive extruders. Flexible filaments require slower speeds for optimum print performance.

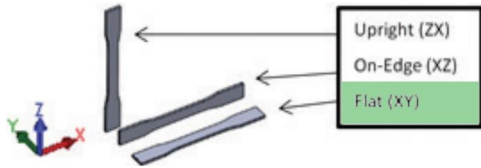
### Methodology of Tests performed by Airwolf 3D:

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:	235C
Bed temp:	55C
Flow:	100%
Color:	Red

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.

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AIRWOLF 3D FILAMENT - WOLFBEND ISO 527 Tensile (Crosshead)  
 TPU FLEXIBLE RED



Ultimate Strength MPa	Elongation at Break %	Yield Strength MPa
24.1	961	N/F
23.6	935	N/F
24.3	987	N/F
24.7	907	N/F
23.9	883	N/F
22.0	878	N/F
Average 23.8	909	N/A
SD	56.4	N/A

