

AVEO ASA ENHANCED

FDM filament for 3D printing

Engineered for durability and outdoor performance, ASA Enhanced offers an excellent combination of strength, weather resistance, and superior surface finish. Designed for demanding environments, it delivers consistent results with strong layer adhesion, high UV resistance, and minimal warping when printed under controlled conditions. Suitable for both functional prototyping and end-use parts, ASA is ideal for applications exposed to sunlight, temperature variations, and harsh outdoor conditions.

1.75 mm filament / 1 kg spools

Key Properties

Print quality	Superior surface finish compared to benchmark; excellent layer adhesion with no stringing for reliable, functional parts.
Dimensional stability	Less warping than the commercial benchmark.
Strength & durability	Strong and durable; suitable for demanding indoor and outdoor applications.
Outdoor durability	Excellent weather and UV resistance; retains colour and mechanical properties under prolonged sun exposure.
Thermal stability	High thermal stability for parts exposed to elevated temperatures.
Chemical resistance	Good chemical and environmental resistance for long-term outdoor use.

Applications

Outdoor components requiring excellent UV and weather resistance; automotive exterior trims, brackets and covers; lightweight, stiff drone components; functional prototypes exposed to environmental stress and temperature variation; outdoor electronics and electrical housings; jigs and fixtures in thermally demanding environments; parts exposed to sunlight, moisture and varying climates; industrial components requiring resistance to ageing and discolouration.



Application examples

Technical Process

Specifications

Name	ASA Enhanced
Usage	FDM/FFF 3D printing
Diameter	1.75 ± 0.02 mm
Net filament Weight	1 kg

Process Parameters

Recommended Print Settings	Value	Unit
Printing temperature	260 (240-270)	°C
Bed temperature	100	°C
Max volumetric flow	12	mm ³ /s
Maximum cooling	80	%
Minimum cooling	10	%
Drying temperature (4-6 h)	70-80	°C

Evaluated with a 0.4 mm nozzle and 0.2 mm layer height on a Prusa Core One printer and Creality K2 Plus.

Typical Material Properties of Printed Parts

Mechanical property	Value	Unit	Standard*
Tensile modulus	2020 ± 178	MPa	ISO 525
Tensile strength	36.8 ± 0.2	MPa	ISO 525
Elongation at break	5.00 ± 1.13	%	ISO 525
Impact strength	6.150 ± 0.142	kJ/m ²	ISO 178

* Standard designations reproduced from the supplied technical sheet.

Disclaimer

Data sheet values are for quality control only. Actual values may vary due to processing, and end-use performance depends on factors such as materials, design and environment. Users are responsible for determining safety, suitability, and disposal practices. Aveo Carbon5D materials are not intended for medical, pharmaceutical, or food applications, and no warranty is given for fitness or liability for any damages.

Parameter Definitions

Printing parameters

Nozzle temperature	Recommended temperature range of the printer nozzle during extrusion and deposition of the filament.
Build-plate temperature	Recommended build-plate temperature during printing to promote first-layer adhesion and reduce warping.
Maximum volumetric flow rate	Maximum volume of material that can be extruded through the nozzle per second while maintaining stable extrusion and acceptable print quality, expressed in mm ³ /s.
Part-cooling fan	Recommended part-cooling fan setting during printing, expressed as a percentage of the printer's maximum fan speed.

Material handling and preparations

Drying temperature	Recommended temperature for drying the filament before printing to remove absorbed moisture without damaging or deforming the filament or spool.
Drying time	Recommended duration for which the filament should be dried at the specified drying temperature.