

TECHNICAL DATA SHEET



ASA Glass Fiber

Smart Print ASA Glass Fiber is a reinforced engineering-grade filament developed for functional and structural 3D printing applications. The material is based on ASA (Acrylonitrile Styrene Acrylate) copolymer enhanced with glass fibers, providing increased rigidity, mechanical strength, and improved dimensional stability.

By combining ASA's natural resistance to UV radiation and weather conditions with the structural reinforcement of glass fibers, the filament is well suited for components exposed to outdoor environments and demanding operating conditions. Printed parts maintain their shape, strength, and surface quality even during long-term use.

Product features

High Structural Strength

Glass fiber reinforcement significantly increases stiffness and load-bearing capacity. Printed components offer reliable mechanical performance and resistance to deformation under stress.

UV and Weather Resistance

ASA Glass Fiber is designed for outdoor applications. The material resists sunlight, moisture, and temperature fluctuations, ensuring stable performance and long service life.

Dimensional Stability

Reduced shrinkage and enhanced rigidity allow for accurate, consistent prints. The filament minimizes warping and distortion, making it suitable for precise functional parts.

Industrial Performance

The combination of mechanical strength and thermal resistance makes the material suitable for industrial, automotive, and technical applications where durability is essential.

Printing guidelines

Based on a 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

Nozzle temperature 190 - 220°C	Build surface material PEI, glass	Build surface treatment glue
Build plate 90–110°C	Cooling fan turned off	Printing speed: 30 - 70 mm/s
Raft separation distance 0.2 mm	Retraction distance 7 mm	Retraction speed 20 mm/s

Drying guidelines

Smart Print ASA Glass Fiber should be dried at 70–90°C for 2–4 hours prior to printing. Proper drying reduces the risk of surface defects, bubbling, and weakened layer adhesion. After drying, store the filament in a sealed container with desiccant to prevent moisture absorption.

Available colors



Precautions

Printer Compatibility

Smart Print ASA Glass Fiber is compatible with most FDM 3D printers that support temperatures above 240°C and a heated bed. Due to the abrasive nature of glass fibers, a hardened steel or ruby nozzle is required to prevent wear and maintain dimensional accuracy.

Shrinkage Control

ASA Glass Fiber offers excellent dimensional stability, but like all ASA materials, it may experience minor shrinkage if exposed to significant temperature fluctuations. To prevent warping or corner lift, keep the print environment warm and avoid drafts. Enclosed printers deliver the best results.

Cooling Settings

For best mechanical performance, print with cooling fan turned off. This supports stronger layer bonding and reduces the risk of cracking in larger or thicker parts.

Filament Storage

Store Smart Print ASA Glass Fiber in a dry, cool environment. Because the material can absorb moisture over time, keep it sealed with desiccant when not in use. If moisture is present, dry the filament before printing to restore optimal flow and surface quality.

Printing Guidelines

Smart Print composite filaments require professional-grade printing conditions to achieve optimal mechanical and surface performance. Due to the abrasive reinforcement, a hardened steel or ruby nozzle is essential to ensure consistent extrusion and prevent premature nozzle wear.

For best results, printing in an enclosed build chamber is recommended to maintain stable thermal conditions, improve layer adhesion, and reduce internal stress. Proper filament drying prior to printing is critical to minimize moisture-related defects and ensure smooth, repeatable extrusion.

Controlled cooling and a stable printing environment support strong interlayer bonding, dimensional precision, and high-quality surface finishes, particularly in structurally demanding or high-detail applications.

Important Notes

- High-performance composite material – use of a hardened steel or ruby nozzle is mandatory
- Enclosed printing environment strongly recommended for optimal thermal control
- Dimensional accuracy may be affected if stable printing temperatures are not maintained
- Final print results depend on printer configuration, process control, and ambient conditions

Property	Standard	Unit	Value
Flexural Modulus	ASTM D790	MPa	3500 ±200
Tensile Modulus	ASTM D790	MPa	3520 ±200
Tensile Strength	ASTM D638	MPa	59.8 ±3
Flexural Strength	ASTM D638	MPa	91.2 ±3
Elongation at Yield	ASTM D638	%	3
Elongation at Break	ASTM D638	%	8
Notched Izod Impact Strength	ASTM D256	kJ/m ²	88
Unnotched Izod Impact Strength	ASTM D256	kJ/m ²	16
Vicat Softening Temperature (VST A)	ASTM D1525	°C	101
Melting Temperature	ISO 3146-C	°C	190–210
Heat Deflection Temperature (HDT/B)	ASTM D648	°C	99
Melt Flow Rate (MFR)	ASTM D1238	g/10 min	12
Density	ASTM D792	g/cm ³	1.1
Mold Shrinkage	ASTM D955	%	0.3
Rockwell Hardness	ASTM D785	R	110

Disclaimer

The technical data and performance values provided in this document are based on internal testing and are intended solely for reference. Actual results may vary depending on printer configuration, part geometry, environmental conditions, and user experience. Due to the abrasive nature of glass-fiber-reinforced materials, nozzle wear and print characteristics may change over time and should be monitored regularly. Smart Print assumes no responsibility for damage to equipment, improper use of the filament, or any consequences arising from applications beyond the user's control. It is the user's responsibility to ensure safe handling, appropriate storage, and correct disposal of the material in accordance with local regulations.