ASA Filament

Acrylonitrile-Styrene-Acrylate (ASA) polymers are amorphous and have mechanical properties similar to those of ABS plastics. However, the ASA properties are far less affected by outdoor weathering. The outstanding weather resistance abilities of ASA is due to the acrylic ester elastomer. ASA parts have good chemical and heat resistance, and high impact strength, even at low temperatures. Typical ASA applications are buiding/construction, automotive and recreation parts.

The 3D4MAKERS ASA Filament contains unique properties because the material has an extremely constant diameter and roundness. On top of that the ASA filament does not come into contact with water during the production process and is directly packaged in a vacuum packaging. These properties make the 3D4MAKERS ASA Filament particularly suitable for FDM and FFF 3D printers. The material has an excellent adhesion between layers which results in great improvement of the impact resistance, strength, durability and the printing process.

PHYSICAL	CONDITIONS	TEST METHOD	TYPICAL VALUE
Density		ASTM D792	1.05 g/cm^3
Melt volume-Flow Rate (MVR)		ASTM D1238	12 g/10 min
Molding Shrinkage-Flow	3.20 mm	ASTM D955	0.40 to 0.70 %
MECHANICAL			
Tensile modulus	3.20 mm	ASTM D638	2080 MPa
Tensile Strength	Yield, 3.20 mm	ASTM D638	47.1 MPa
Tensile Elongation	Yield, 3.20 mm	ASTM D638	> 6.0%
	Break, 3.20 mm	ASTM D638	25%
Flexural Modulus	3.20 mm	ASTM D790	2210 MPa
Flexural Strength	3.20 mm	ASTM D790	75.5 MPa
IMPACT			
Notched Impact Strength	23 °C, 3.20 mm	ASTM D256	180 L/m
THERMAL			
Heat Deflection Temperature		ASTM D648	
	0.45 MPa, Unannealed, 6.40 mm		96.0 °C
	1.8 MPa, Unannealed, 6.40 mm		86.0 °C
Vicat Softening Temperature		ASTM D1525	95.0 °C
HARDNESS			
Rockwell Hardness (R-Scale)		ASTM D785	103
FLAMMABILITY			
Flame Rating	1.6 mm	UL 94	HB
	3.1 mm	UL 94	HB

PRINT RECOMMENDATIONS	
Nozzle Temperature	240 - 280 ºC
Bed Temperature	90 - 110 ºC
Print Speed	35 - 70 mm/s
Bed Adhesion	PEI Sheet, Buildtak, Adhesion Spray

To get the best results while printing we advise you to keep the 3D printer in a room where there is hardly any draft and/or temperature fluctuations. Keep the 3D printer out of the sun. This cannot be a room where people sleep. When the 3D printer is not being used it is important to keep the 3D4MAKERS ASA Filament in a bag and stored in a cool, dry and dark place until it is used again.

Disclaimer: 3D4Makers makes no warranties what so ever, expressed or implied, including but not limited to, any implied fitness for any particular purpose. From the moment the product is shipped it is beyond our control. The information in this document is believed to be correct at the time of writing. However, handling, processing, settings, the type of 3D printer, slicing and other variables are completely up to the user. The method through which the product is used can be varied. It is up for the customer to determine how it is 3D printed and whether it is fit for purpose or suited to a particular application.