

## PolyCore ASA-3000

### Technical Data Sheet (Ver. 1.0, last updated: June, 2020)

PolyCore ASA-3000 is an alternative to ABS with an improved weather resistance, mainly designed for Medium Area Additive Manufacturing (MAAM) technology. Its UV resistance and excellent mechanical properties make it the perfect choice for real life application.

#### Physical Properties

Property	Testing Method	Typical Value
Density (g/cm <sup>3</sup> at 21.5 °C)	ASTM D792 (ISO 1183, GB/T 1033)	1.1
Melt index (g/10 min)	220 °C, 10 kg	25
Glass transition temperature (°C)	DSC, 10 °C/min	97.8
Vicat Softening temperature (°C)	ASTM D1525 (ISO 306 GB/T 1633)	105.3

Tested with 3D printed specimen of 100% infill

#### Mechanical Properties<sup>1</sup>

Property	Testing Method	Typical Value
Young's modulus (MPa)	ASTM D638 (ISO 527, GB/T 1040)	2379 ± 157
Tensile strength (MPa)	ASTM D638 (ISO527, GB/T 1040)	43.8 ± 0.8
Elongation at break (%)	ASTM D638 (ISO527, GB/T 1040)	6.7 ± 0.6
Bending modulus (MPa)	ASTM D790 (ISO 178, GB/T 9341)	3206 ± 108
Bending strength (MPa)	ASTM D790 (ISO 178, GB/T 9341)	73.4 ± 2.1
Charpy Impact strength (kJ/m <sup>2</sup> )	ASTM D256 (ISO 179, GB/T 1043)	10.3 ± 0.4

All testing specimens were printed under the following conditions:  
 nozzle temperature = 260 °C, printing speed = 50 mm/s, build plate temperature = 80 °C,  
 infill = 100% All specimens were conditioned at room temperature for 24h prior to testing

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## Recommended Printing Conditions

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Parameter	Recommended Setting
Drying temperature (°C)	80
Drying Time (h)	4-6
Maximum moisture content (%)	0.2
Barrel – zone 1 temperature (°C)	210 - 230
Barrel – zone 2 temperature (°C)	230 - 250
Barrel – zone 3 temperature (°C)	230 - 250
Nozzle temperature (°C)	240
Bed temperature (°C)	90-100
Other Comments	
<ul style="list-style-type: none"> <li>● It is recommended to stop feeding and continue extruding until the extruder is fully empty, if the printing stops in a short term, such as 10-30 min</li> <li>● It is recommended to stop feeding and continue extruding until the extruder is fully empty, then use polyethylene (PE) to clean the extruder, if the printing stop in a long term, such as several hours. It is helpful to avoid the carbonization of material and keep extruder working in a good condition</li> </ul>	

## Disclaimer

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The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End-use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice.

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