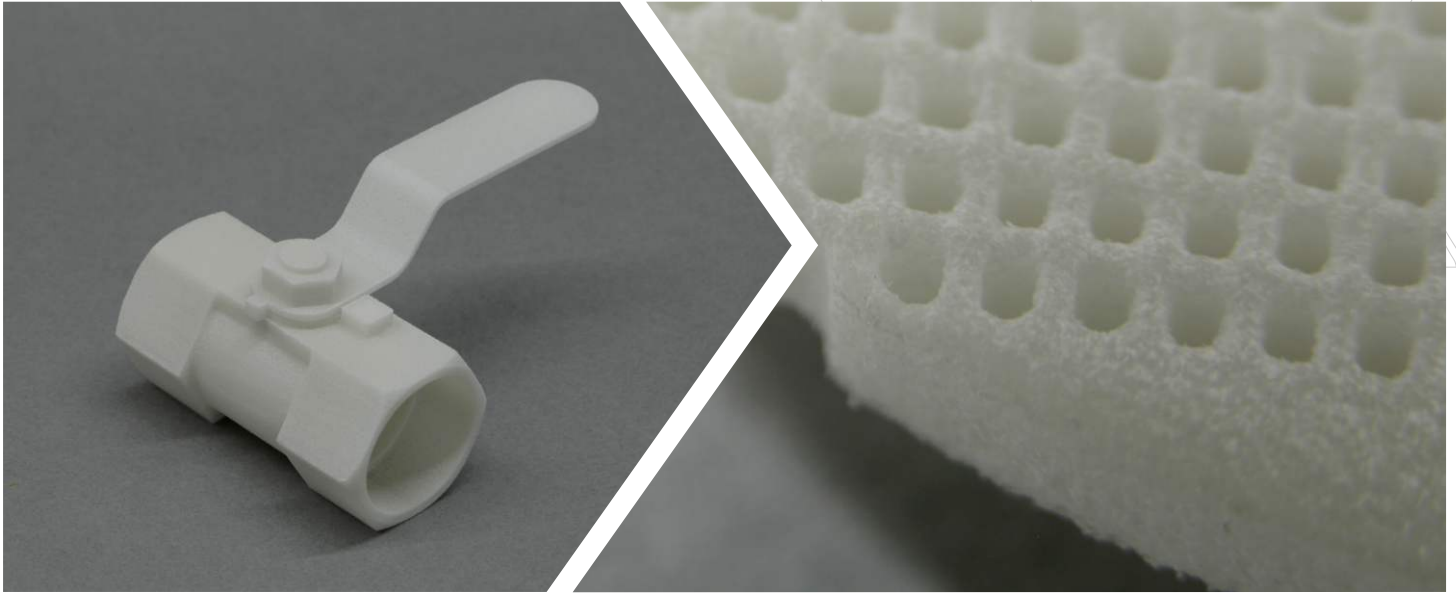


## Glass-Filled Nylon



### Generic Data :

Technical Name	PA 3200
Process	Selective Laser Sintering (SLS)
Layer Thickness	100 $\mu\text{m}$
Accuracy	(+/-)200 $\mu\text{m}$
Maximum Build Size	200x250x330 mm

Glass-Filled Nylon (GF) or PA3200 is a polyamide 12 compound. It is a Nylon composite material with 30% Glass-Filled. It has good mechanical properties coupled with excellent stiffness. PA 3200 is often used in applications that require high strength and stiffness, and functional parts.

GF is off-white in color and comes with an inherent grainy finish. Since GF parts are fabricated using Selective Laser Sintering technology, there is no support structure generation, making it suitable for parts which are complex and which have intricate geometries.

### Characteristics

- + Strong and rigid
- + Excellent stiffness and Low abrasive wear
- + Good thermal loading capability
- + No support structures
- Grainy surface finish
- Slightly dull color

### Applications

- ✓ Best suited for applications requiring high stiffness and low abrasive wear
- ✓ Functional parts and complex geometries
- ✓ Automotive industry

Material Properties	Value	Unit	Standard Test Method
Density (sintered powder)	1.22	g/cm <sup>3</sup>	EOS Method
Powder Color (Natural)	Off-White	-	-
Average Grain size	57	µm	ISO 13320-11
	2.24	mil	Laser diffraction
Mechanical Properties			
Tensile Modulus			
X-direction	3200	MPa	ISO 527-1/-2
Y-direction	3200	MPa	
Z-direction	2500	MPa	
Ultimate Tensile Strength			
X-direction	51	MPa	ISO 527-1/-2
Y-direction	51	MPa	
Z-direction	47	MPa	
Elongation at Break			
X-direction	9	%	ISO 527-1/-2
Y-direction	9	%	
Z-direction	5	%	
Flexural Modulus (23°C, X-direction)	2900	MPa	ISO 178
Flexural Strength (X-direction)	73	MPa	ISO 178
Charpy impact strength (+23°C, X-direction)	35	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C, X-direction)	5.4	kJ/m <sup>2</sup>	ISO 179/1eA
Izod Impact notched (23°C)	4.2	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact unnotched (23°C)	21	kJ/m <sup>2</sup>	-
Shore Hardness (15s)	80	Scale D	ISO 7619-1
Thermal Properties			
Melting Point (20°C/min)	176	°C	ISO 11357-1/-3
Heat Deflection Temp. under load			
1.8 MPa	96	°C	ISO 75-1/-2
0.45 MPa	157	°C	
Vicat Softening Temperature			
(50°C/h 10N)	176	°C	ISO 306
(50°C/h 50N)	166	°C	