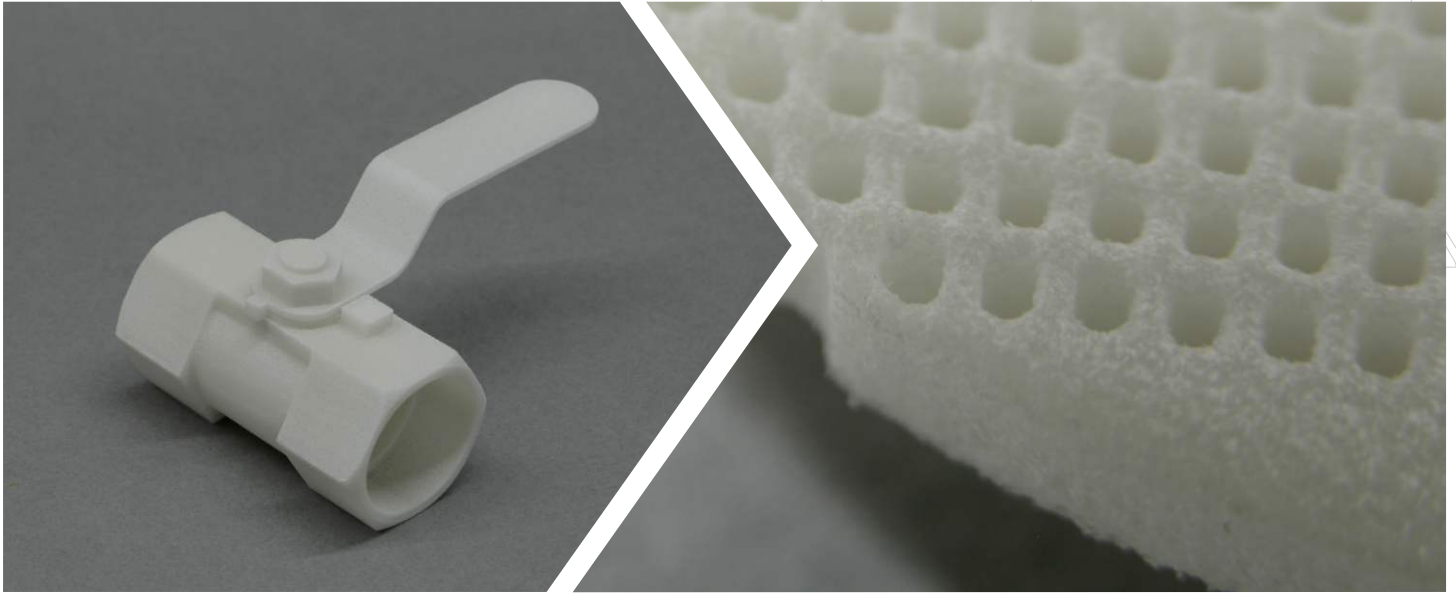


Glass-Filled Nylon



Generic Data :

| | |
|--------------------|---------------------------------|
| Technical Name | PA 3200 |
| Process | Selective Laser Sintering (SLS) |
| Layer Thickness | 100 μm |
| Accuracy | (+/-)200 μm |
| 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 ³ | 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 ² | ISO 179/1eU |
| Charpy notched impact strength (+23°C, X-direction) | 5.4 | kJ/m ² | ISO 179/1eA |
| Izod Impact notched (23°C) | 4.2 | kJ/m ² | ISO 180/1A |
| Izod Impact unnotched (23°C) | 21 | kJ/m ² | - |
| 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 | |