

## SELECTIVE LASER SINTERING

# PA 40% GLASS-FILLED



### Product Description

PA 12 40% Glass-Filled is a polyamide powder loaded with glass spheres that add stiffness and dimensional stability. The material possesses higher thermal resistance than unfilled polyamides and exhibits excellent long-term wear resistance. Due to the glass additive, it has decreased impact and tensile strengths compared to other nylons.

### Applications

The material's stiffness and temperature resistance makes it suited for components like armatures and mounting plates.

### Key Product Benefits

- ▶ Stiffness and dimensional stability
- ▶ Long-term wear resistance
- ▶ High temperature resistance

### Tolerances

For well-designed parts, tolerances of  $\pm 0.012$  in. plus  $\pm 0.002$  in./in. for each additional inch can typically be achieved. Note that tolerances may change depending on part geometry.

### Properties

Property	Test Method	Value
Color	-	White
Sintered Density	ASTM D792	1.22 g/cm <sup>3</sup>
Water absorption (20 °C, 50% relative humidity)	ASTM D570	0.5 ± 0.2%
Water absorption, 24 hrs. in boiling water	ASTM D570	2.0 ± 0.3%
E-Module (x-y plane)	ASTM D638, test speed 10mm/min	3,600 ± 400 MPa
E-Module (z plane)	ASTM D638, test speed 10mm/min	3,600 ± 400 MPa
Tensile strength (x-y plane)	ASTM D638, test speed 10mm/min	50 ± 4 MPa
Tensile strength (z plane)	ASTM D638, test speed 10mm/min	46 ± 4 MPa
Elongation at break (x-y plane)	ASTM D638, test speed 10mm/min	5 ± 2%
Elongation at break (z plane)	ASTM D638, test speed 10mm/min	3 ± 2%
Heat deflection temperature @ 0.46 MPa*	ASTM D648	157 °C (314 °F)
Heat deflection temperature @ 1.82 MPa*	ASTM D648	96 °C (204 °F)

\* From supplier data sheet