

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 ± 0.012 in. plus ± 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 ³
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