

PA12 GF Nylon 12

PA12 GF is Nylon 12 filled with about 40 wt% glass beads. It is stiffer and more wear-resistant than unfilled PA12, which suits housings under load, abrasion-prone parts, and forming tools on our EOS P 396 and EOS P 770.

1.22 g/cm³

Typical part density (EOS Method)

3200 MPa

Tensile modulus, X/Y (ISO 527-1/-2)

96 °C

HDT at 1.80 MPa, X (ISO 75-1/-2)

About this material

PA12 GF is polyamide 12 powder with about 40 wt% glass beads. Parts come out whitish, stiffer than unfilled PA12, and better under abrasion. Evology prints it on the EOS P 396 and EOS P 770. Reach for it when rigidity, wear, or heat deflection matter more than elongation.

Typical applications

Machine housings that need stiffness under load; parts that see wear and abrasion; forming tools.

Mechanical properties (ISO 527-1/-2, dry)

PROPERTY	X	Y	Z	TEST
Tensile modulus [MPa]	3200	3200	2500	ISO 527-1/-2
Tensile strength [MPa]	51	51	47	ISO 527-1/-2
Strain at break [%]	9	9	5.5	ISO 527-1/-2
Flexural modulus [MPa]	2900	—	—	ISO 178
Flexural strength [MPa]	73	—	—	ISO 178
Shore D hardness	80	—	—	ISO 7619-1
Ball indentation hardness [MPa]	98	—	—	ISO 2039-1

Impact properties (+23 °C, X orientation)

PROPERTY	TYPICAL VALUE	TEST
Charpy impact strength [kJ/m ²]	35	ISO 179
Charpy notched impact [kJ/m ²]	5.4	ISO 179
Izod impact strength [kJ/m ²]	21	ISO 179
Izod notched impact [kJ/m ²]	4.2	ISO 179

Thermal properties

PROPERTY	X ORIENTATION	TEST
HDT at 1.80 MPa [°C]	96	ISO 75-1/-2
HDT at 0.45 MPa [°C]	157	ISO 75-1/-2

Other properties

PROPERTY	TYPICAL VALUE	METHOD
Density	1.22 g/cm ³	EOS Method
Powder color	Whitish	—
Component color	Whitish	—
Glass bead fill	~40 wt%	—

Source and notes

Values are drawn from the EOS PA 3200 GF Material Data Sheet ([OEM source](#)) as representative data for glass-filled SLS PA12. Results vary with powder grade, system parameters, job layout, moisture, and post-processing. They are not a guarantee of properties on your part.

Full page: <https://www.evologymfg.com/manufacturing-capabilities/sls-selective-laser-sintering/pa12-gf>