

Material Information



Nylon PA 12 Black

Introduction

Nylon PA 12 Black is compatible with selective laser sintering. It is a high-performance polyamide that can produce detailed and durable parts ideal for functional prototypes and end-use components like housings, enclosures, fixtures, snap fits, and hinges.

Advantages

SLS 3D printed nylon PA 12 Black offers high tensile strength, excellent dimensional accuracy, and low moisture absorption, making it ideal for durable and precise parts.

Disadvantages

Grainy surface, may have powder residue inside the hollow structure.

Tolerance

±300µm or 0.3%

Recommendation

It is ideal for functional prototypes and end-use parts in industries such as automotive, aerospace, and consumer goods. Common applications include gears, hinges, and other mechanical components.

Material Specifications		
Density	DIN 53466	0.95 g/cm ³
Heat Deformation (0.45 MPa)	ASTM D648	180.85°C
Heat Deformation (1.8 MPa)	ASTM D648	115.4°C
Tensile Strength	ASTM D638	50MPa
Tensile Modulus	ASTM D638	2000MPa
Elongation at Break	ASTM D638	11.5%
Flexural Strength	ASTM D790	60MPa
Flexural Modulus	ASTM D790	1900MPa
Notched Impact Strength	ASTM D256	21 J/m
Unnotched Impact Strength	ASTM D256	294 J/m

Attention

Products printed with powdered material come with grainy surfaces. If you have a specific requirement for surface finishing, we offer 3D Plus™ service, which includes a variety of post-processing services, including vibratory smoothing and vapor smoothing, to achieve a smooth surface finish.

Applications

3DSPRO finds people using nylon PA 12 black to make functional parts and prototypes in the following industries and applications.

Automotive:

Functional prototypes, housings, and under-the-hood components that require durability and heat resistance. Examples include air intake manifolds, brackets, and clips.

Aerospace:

Lightweight and durable parts such as ducting, housings, and structural components. These parts benefit from the material's strength and resistance to harsh environments.

Consumer Goods:

Durable and lightweight parts like eyewear frames, sports equipment, and household items. The material's fine-detail capabilities make it suitable for intricate designs.

Medical Devices:

Biocompatible components such as surgical guides, prosthetics, and orthotics. Nylon PA 12's low moisture absorption and chemical resistance are advantageous in medical applications.

Electronics:

Enclosures, connectors, and other mechanical components. The material's electrical insulation properties and durability make it ideal for electronic housings and connectors.