MULTI JET FUSION

PA11 BLACK

[Supplier Data Sheet: HP 3D High Reusability PA11]

PRODUCT DESCRIPTION

PA11 Black provides excellent ductility and temperature resistance without sacrificing tensile strength. It offers one of the highest elongation break thresholds in the nylon family. Final parts are water and airproof without further treatment and possess more consistent mechanical properties when compared to processes like selective laser sintering.

APPLICATIONS

The material is suited for functional, moving parts with features like snap fits and living hinges. Its grey colour makes it desirable for optical applications due to low reflectivity. The material can also be used to build housings, enclosures, and fixtures, as well as sport goods.

KEY PRODUCT BENEFITS

- High elongation at break
- Flexibility
- Uniform black colour

PROPERTIES

PROPERTY	TEST METHOD	VALUE (STANDARD)	VALUE (VAPOUR SMOOTH)
Colour	-	Black	Black
Sintered Density*	ASTM D792	1.05 ± 0.01 g/cm³	1.05 ± 0.01 g/cm³
Surface Roughness**	DIN EN ISO 4287	Ra = 10-25 µm; Rz = 60-100 µm	Ra = 5-10 µm; Rz = 20-45µm
E-Module (x-y plane)	DIN EN ISO 527, test speed 10mm/min	1800 ± 200 MPa	1800 ± 200 MPa
E-Module (z plane)		1800 ± 200 MPa	1800 ± 200 MPa
Tensile strength (x-y plane)		52 ± 4 MPa	52 ± 4 MPa
Tensile strength (z plane)		52 ± 4 MPa	52 ± 4 MPa
Elongation at break (x-y plane)		35% ± 5°%	50% ± 10°%
Elongation at break (z plane)		30% ± 5°%	35% ± 5°%
Heat deflection temperature @ 0.46 MPa*	ASTM D648 Test Method A	185 ± 5°C	185 ± 5°C
Heat deflection temperature @ 1.82 MPa*		54 ± 5°C	54 ± 5°C

*From supplier data sheet

**Surface roughness may vary depending on orientation

TOLERANCES

For well-designed parts, tolerances of ± 0.20mm plus 0.002mm/mm can typically be achieved. Note that tolerances may change depending on part geometry

PROTOLABS

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