PA12 Smooth

Product specification

A polyamide powder (nylon) with good mechanical properties and excellent surface quality.

General information

Status	Available
Category	Material for SLS printing
Material type	Powder - Polyamide 12

Packaging

Type	Plastic container
Weight	2 [kg] (4,4 [lb])
Dimensions	135 x 135 x 280 [mm] (5.3 x 5.3 x 11 [in])

Material

Granulation	Average size 38 [µm] (1,5 [mil])
Colour	Navy Grey
Material refreshing ratio[1]	30 [%]

Parameters

Tensile Strength	41 [MPa] (5.9 [ksi])
Elongation at Break	13 [%]
Elastic / Young's modulus E	1020,4 [Mpa] (148 [ksi])
Charpy - Impact strength (Unnotched)	15 - 20 [kJ/m^2]
Shore Hardness (D scale)	74 $\pm$ 1
Melting point	182 $\pm$ 2 [°C] (359 $\pm$ 36 [°F])
Softening point (Vicat method - A50 / B50)	172 [°C] (342 [°F]) / 155 [°C] (311 [°F])
Glass transition Temperature T°g	40 [°C] (104 [°F])
Heat deflection temperature B (0.45 [MPa])	143 [°C] (289 [°F])

Applications

Detailed parts, snap-fit designs, structural or mechanical parts, functional prototypes or final parts, jigs, fixtures, tools elements, covers, housings, enclosures.

[1] Material refreshing ratio - percent of Fresh powder which has to be mixed with Used (unsintered) powder - to be reused to the next print.

SINTERIT
www.sinterit.com

PA12 Smooth

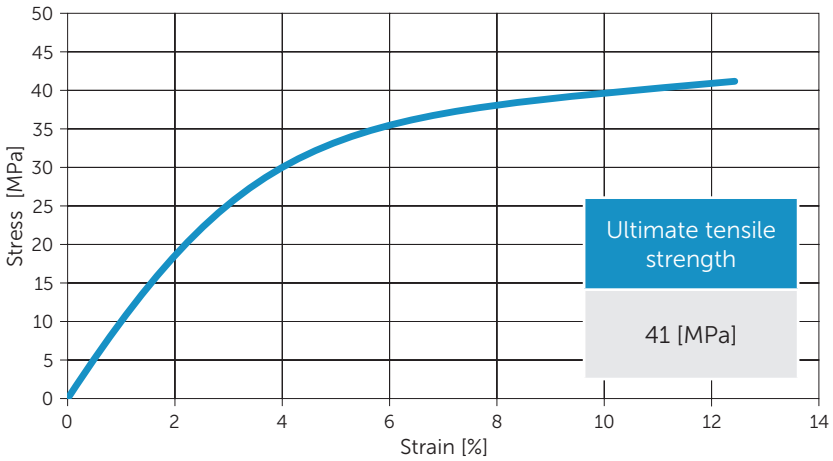
Mechanical properties

Charpy U- and V-notched impact testing

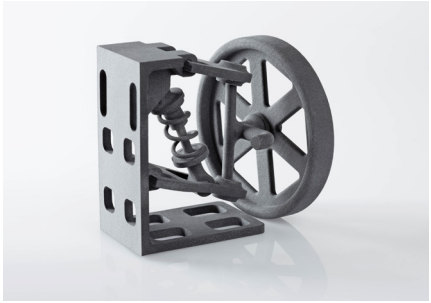
Nº	notch	KJ/m²
1.	U	5,23
2.	V	3,28

Charpy impact test results for specimens printed from PA12 smooth using pendulum of maximum energy of 50 [J], weight of 6,8 [kg] and length of 380 [mm].

Tensile testing



While the tensile stress does not exceed 17 [MPa], after load release, the test specimens retain their shape, with no external damage observed (e.g. fractures).
The test specimens fracture when max tensile stress of 41 [MPa] is applied.



Surface roughness

Roughness parameter	side surface	top surface
Ra	9,680 [µm]	6,470 [µm]
Rz	54,184 [µm]	31,633 [µm]

Roughness of test speciments surfaces printed with layer thickness of 100 [µm].

SINTERIT
www.sinterit.com