PA12

Everfil ™ | 3D Filament

TECHNICAL SPECIFICATION

DESCRIPTION

PA12 Everfil™ a structural polymer mainly produced for the automotive, clothing, and machinery industries. Thanks to its resistance to temperature, alcohols, and chemicals, it is particularly useful in mechanical and technical applications. It is extremely durable, strong, and indestructible. It works well with metal tools and paints, making it even more versatile and functional. Everfil Nylon PA.12 is perfect for coloring and does not tend to fade. It is one of the few materials for 3D printing that can undergo final processing using tools dedicated to metalworking. It is an incredibly flexible material - it stretches by 50% before tearing. However, the nylon filament is not resistant to concentrated bases and acids. Nylon filament absorbs moisture relatively quickly, so it should be stored in tightly closed packaging.

TYPICAL APLICATIONS

- Automotive parts: PA.12 is commonly used in the automotive industry for manufacturing various components such as air intake manifolds, fuel lines, brake components, and engine covers due to its durability, chemical resistance, and high-temperature stability.
- Industrial machinery: PA.12 is used in the production of parts for industrial machinery, including gears, bearings, rollers, and housings, where its strength, toughness, and resistance to abrasion are valued.
- Apparel and accessories: In the clothing industry, PA.12 is employed for creating durable and flexible accessories such as buckles, snaps, zippers, and straps due to its ability to withstand repeated stress and its resistance to chemicals.
- Electrical and electronic components: PA.12 is utilized in the manufacturing of electrical connectors, cable ties, and housings for electronic devices because of its excellent insulating properties, resistance to heat, and chemical resistance.

TECHNICAL PARAMETRS

PRODUCT PARAMETRS	
Diameter (mm)	1,75; 2,85
Diameter tolerance (mm)	+/-0,02
Ovality tolerance (mm)	+/-0,015

PHYSICAL PARAMETRS

PARAMETER	NOMINAL VALUE	UNIT	TEST METHOD
PHYSICAL:			
Density	1,01	g/cm^2	ISO -1183
Mould shrinkage 3,2 mm, flow	0,5-0,7	%	
MECHANICAL PROPERTIES			
Tensile stress yield, 50 mm/min	63	MPA	ASTM D638
Tensile modulus, 5 mm/min	1500	MPA	ISO 527-2
Flexural stress yield, 2 mm/min	90	MPA	ISO 178
Flexural modules, 2 mm/min	9400	MPA	ISO 178

Ball indentation hardness H358/30	95	MPA	ISO 2039-1

IMPACT

Isolt impact, notched 23 °C	633	J/m	ASTM D256
Isolt impact, notched -30 °C	30	J/m	ASTM D256
Charpy impact, notched 23 °C	30°C – 6,00 23°C -11	kJ/m²	ISO 179/2C

THERMAL PROPERTIES

Thermal conductivity	0,2	W/m°C	ISO 8302

RECOMMENDED PRINTING PARAMETERS

Nozzle temperature	250-265	°C
Bed temperature	80-120	°C
Cooling	0-40	%
Heated chamber	required	

The above data is illustrative, as it depends on the type of 3D printing equipment owned, the geometry of the specific print, and environmental conditions.

PACKAGING

The filament is produced on spools weighing 1.0 kg, 2.5 kg, and 5.0 kg. The spool is vacuum-packed in a bag made of high barrier moisture barrier foil and secured with a cardboard box. An additional advantage is the possibility of multiple openings of the 1.0 kg spool bag.

Weight netto/brutto	
1,0 kg spool	1,00 /1,42
2,5 kg spool	2,50/ 3,30
5,0 kg spool	5,00 / 5,90

Dimensions of the spool (mm)	Ø external/ height/ hole
1,0 kg spool	200/68/52
2,5 kg spool	300/100/52
5,0 kg spool	350/100/52

STORAGE

The filament must be stored in a sealed package in a cold and dry place.

MANUFACTURER

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