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Plastics engineering

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LAURAMID® Engineered Solutions
PA12

LAURAMID® 3D

PA12 FILAMENT

Lauramid® 3D polyamide 12 printing filament is characterised by high chemical resistance and dimensional stability.
Its very good thermal and mechanical properties make it exceptionally well-suited to the manufacture of technical products.

It is available in [N]atural and short [C]arbon fibre reinforced versions in diameters of 1.75 ±0.05 mm and 2.85 ±0.05 mm. Reel sizes: 0.75 kg and 2.5 kg

Applications and properties: functional components, prototypes, jigs, auxiliary devices

- High temperature resistance
- Dimensionally stable
- Very good weather resistance
- Good chemical resistance
- Excellent tribological properties
- Outstanding combination of strength and toughness
- Attractive appearance

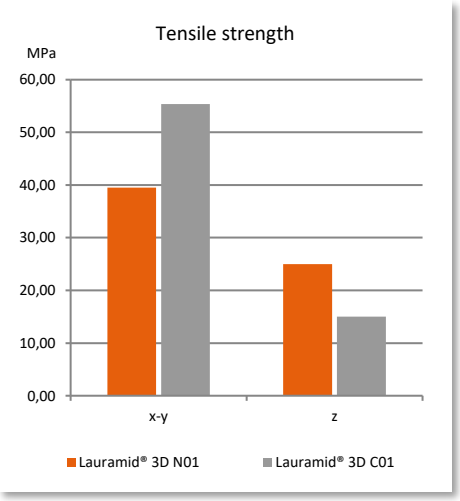
Parameter recommendations:	■ Lauramid® 3D N01 (natural)	■ Lauramid® 3D C01 (carbon fibre)
Printing temperature:	235-255 °C (depending on printer)	245-265 °C (depending on printer)
Printing bed temperature:	60-110 °C (depending on bed material)	60-110 °C (depending on bed material)
Printing substrate[1]:	PEI, glass; aluminium, Lauramid®	PEI, glass; aluminium, Lauramid®
Printing speed:	< 40 mm/s (nozzle dia. 0.6 to 4.8 mm³/s)	< 40 mm/s (nozzle dia. 0.6 to 4.8 mm³/s)
Storage:	dry (use directly from dry box)	dry (use directly from dry box)
Component cooling[2]:	none	none
Nozzle:	≥ dia. 0.2 mm	≥ dia. 0.4[3]

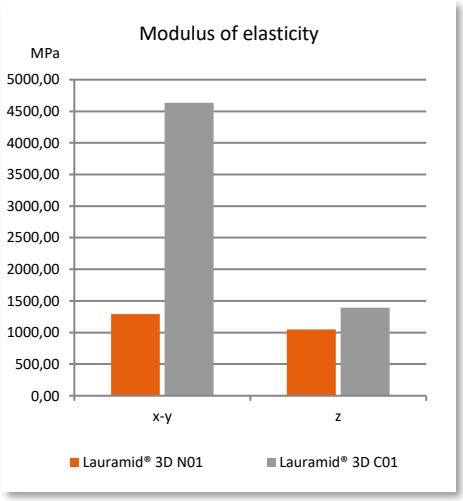
PROPERTY	TESTING METHOD	■ N01	□ C01	UNIT
Density	DIN EN ISO 1183	1.03	1.10	kg/m³
Yield stress (X-Y/Z)	DIN EN ISO 527	40/25	56/15	Mpa
Tensile strain at break	DIN EN ISO 527	17	7	%
Modulus of elasticity (tensile)	DIN EN ISO 527	1293	4632	Mpa
Flexural stress	DIN EN ISO 178	42	77	Mpa
Flexural modulus	DIN EN ISO 178	1307	3720	Mpa
Flexural strength	DIN EN ISO 178	53	89	Mpa
Notched impact strength (Charpy) +23 °C	DIN EN ISO 179	100	19	kJ/m²
Vicat B50	DIN EN ISO 306	125	125	°C
HDT A	DIN EN ISO 75	70	108	°C

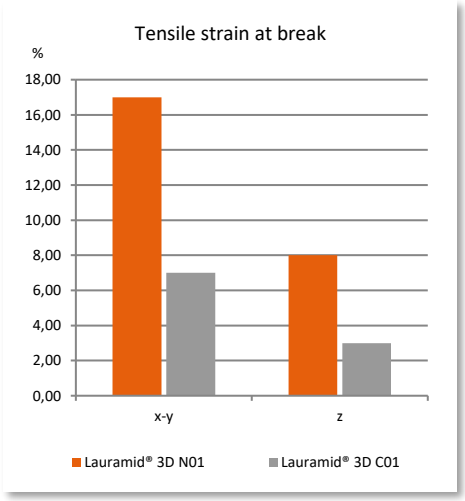
Values may vary depending on the printing parameters. Test specimens 3D printed.
100 % solid (perimeter/walls)
Measurements in X-Y unless otherwise indicated.

[1] Use an adhesive like Magigoo PA or Dimafix
[2] A cooling fan may be used when dealing with short layer times (< 10 s) or small parts/elements.
[3] ≥ dia. 0.6 mm recommended for larger and longer printing jobs. Use a nozzle for abrasive material.

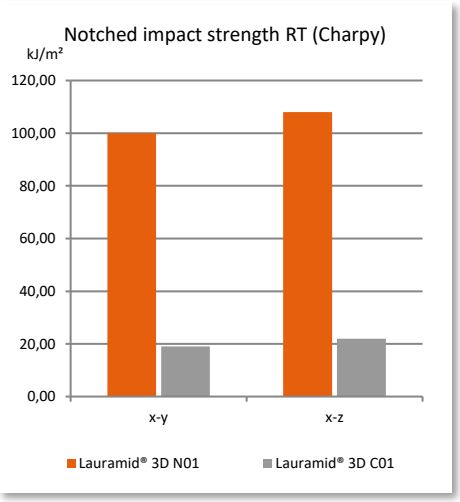
Tensile tests with 100 % infill

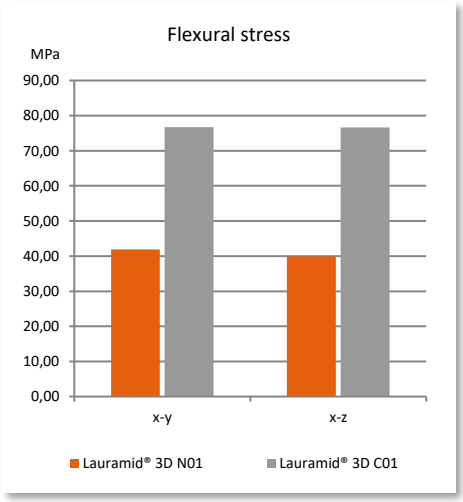


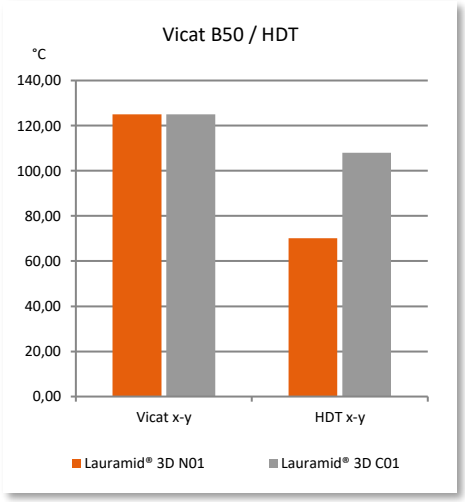




Impact, bending and temperature tests with 100 % infill







Orientation of the test specimens