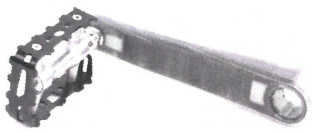
SCHEIDEGG SYSTEMTECHNIK
Luftfahrt
Medizintechnik

DATA SHEET

Designed to print parts with the strength of metal, the Composite 3D Printer is the world's first 3D printer capable of printing continuous carbon fiber, Kevlar®, and fiberglass. Using a patent pending Continuous Filament Fabrication (CFF™) print head along side a Fused Filament Fabrication (FFF) print head, the Printer can create functional parts by combining specially tuned nylon with continuous fiber filaments.

One part.
Thousands of Continuous Fibers



Mechanical Properties

3D Print parts:

- With a higher strength-to-weight than 6061-T6 Aluminum.
- Up to 30x stiffer than ABS.
- Up to 30x stronger than ABS.

Property	Test Standard	Nylon FFF	Carbon Fiber CFF	Kevlar CFF	Fiberglass CFF
Tensile Strength (MPa)	ASTM D3039	56	700	610	590
Tensile Modulus (GPA)	ASTM D3039	0,38	50	26	20
Tensile Strain at Break (%)	ASTM D3039	>50	1,5	5,5	5,5
Flexural Strength (MPa)	ASTM D790	No Break	470	190	310
Flexural Modulus (GPa)	ASTM D790	0,4	48	24	21
Flexural Strain at Break (%)	ASTM D790	No Break	1,2	2,1	2,1
Compressive Strength (MPa)	ASTM D6641	n/a	320	97	140
Compressive Modulus (GPa)	ASTM D6641	n/a	50	26	20
Compressive Strain at Break (%)	ASTM D6641	n/a	0,7	1,5	0,7
Heat Deflection Temperature (C°)	ASTM D648	44-50	105	105	105

Dimensions and construction of test specimens

- Test plaques used in this data are fiber reinforced unidirectionally (0° Plies).
- Tensile test specimens: 9.8 in (L) x 0.5 in (H) x 0.048 in (W) (CF composites), 9.8 in (L) x 0.5 in (H) x 0.08 in (W) (GF and aramid composites),
- Compressive test specimens: 5.5 in (L) x 0.5 in (H) x 0.085 in (W) (CF composites), 5.5 in (L) x 0.5 in (H) x 0.12 in (W) (aramid and GF composites)
- Flexural test specimens: 3-pt. Bending, 4.5 in (L) x 0.4 in (W) x 0.12 in (H)
- Heat-deflection temperature at 0.45 MPa, 66 psi (ASTM D648-07 Method B)

The Composite 3D Printer is capable of printing a wide variety of fiber reinforcement patterns creating both anisotropic and quasi-isotropic ply constructions. This data sheet gives reference and comparison material properties using one possible set of standards-compliant ASTM plaques printed with a production of our Composite 3D Printer. However, part and material performance will vary by ply design, part design, end-use conditions, test conditions, build conditions, and the like.

Tensile, Compressive, Strain at Break, and Heat Deflection Temperature data were provided by accredited 3rd party lab test. Flexural data was prepared by the Manufacturer. The above specifications met or exceeded.

Scheidegg GmbH Systemtechnik
In Oberwiesen 25
D-88682 Salem - Neufrach
www.scheidegg.com

Bodensee AIRea
Fascination aerospace

TECHNOLOGYMOUNTAINS
Der Technologieverbund im Südwesten