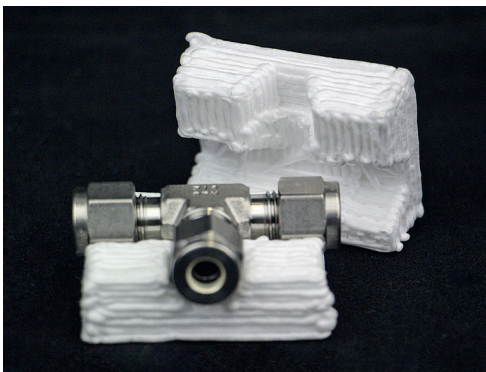


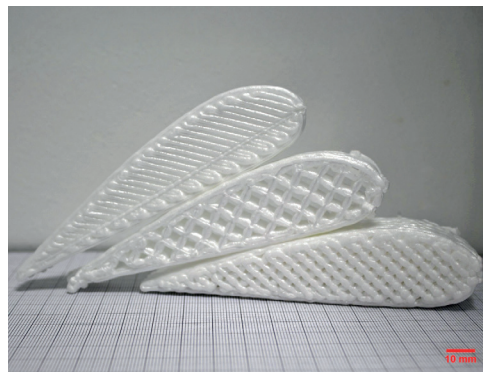
Foam-3D-Printing

Novel foam manufacturing process for lightweight 3D-printed components

Fraunhofer ICT has developed 3D-printable thermoplastic foams with extremely low densities, enabling the production of tailored lightweight components. The core of the technology is a two-step process for producing a special filament that only foams during the printing process. This approach achieves foam densities below 50 kg/m³ in FDM/FFF 3D printing, and by fine-tuning the process parameters, the density can be adjusted over a wide range.



Individualized packaging or insulation solution for pipe T-joints produced using foam 3D printing.



Airfoil cross-sections with varying infill produced using foam 3D printing.

Application range

The aim of the research on foaming 3D-printing filaments is to offer a mature manufacturing technology that produces lightweight foam parts tool-free and without conventional peripheral equipment.

The application areas include:

- Tailor-made packaging
- Custom lightweight components
- Small-series and prototyping
- Insulation parts with complex geometries
- Graded components

Service portfolio

- Consulting for interested individuals and companies on the potential applications of foam 3D printing
- Development of customized foaming 3D-printing filaments and components
- Material characterization and process development
- Production of prototype components
- Tailored individual solutions

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