

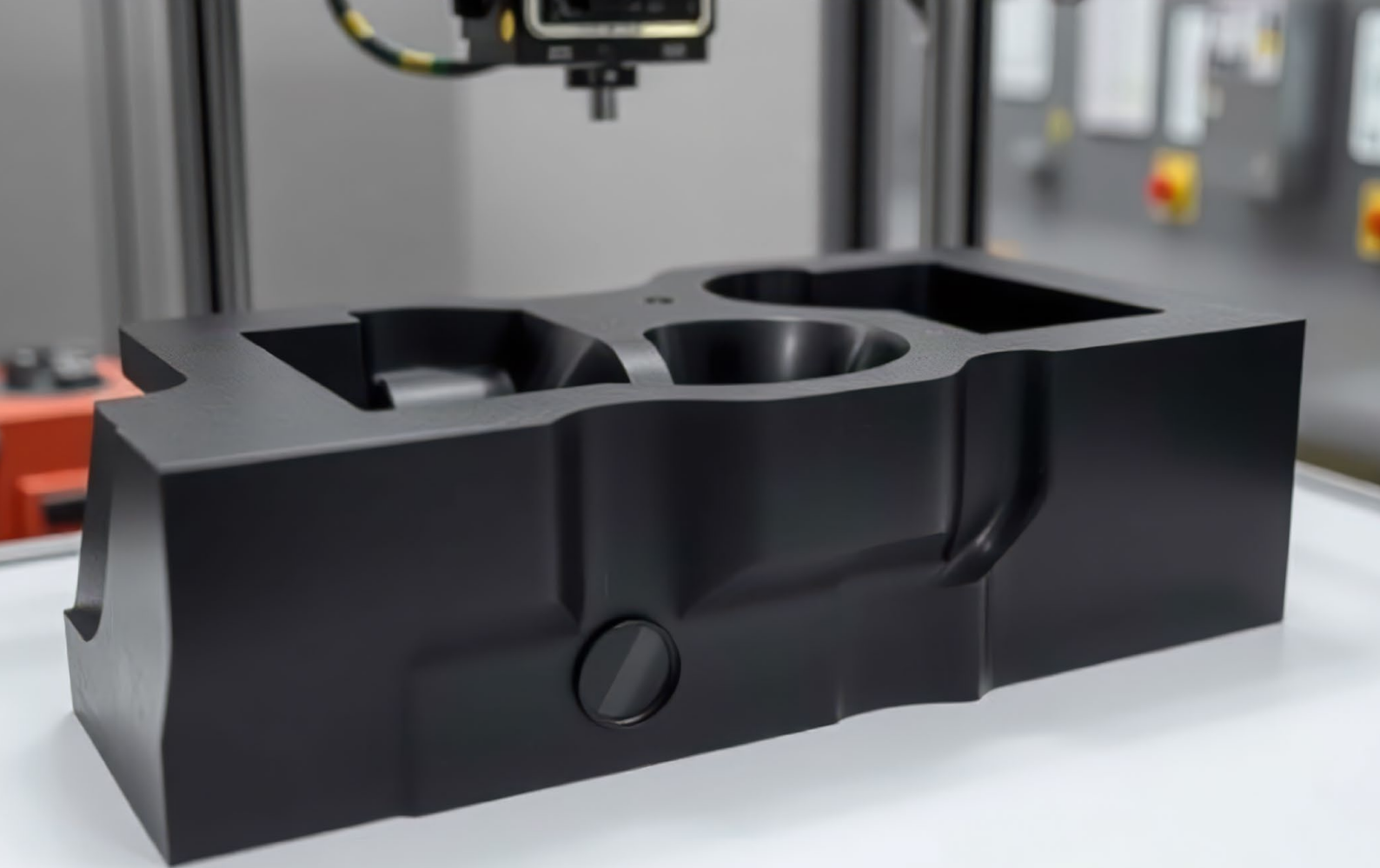
Your experts for high-performance chemical and mineral specialties. Since 1894.



The FGF Experience



LUVOPRINT®
Additive Manufacturing
Solutions



LUVOPRINT®

Proven materials for direct printing with granules.

Fused granules fabrication (FGF) uses granules like injection molding for 3D-printing. 3D-printing offers much greater design freedom than traditional processes, higher flexibility and faster availability of the printed part. Direct printing with granules takes in addition advantage of the significantly lower material cost as no additional transformation to filament or powder is needed. FGF is already established in large format printing e.g., molds for lamination where relevant surfaces will be machined to exact size and surface quality. Meanwhile, FGF is entering more and more the space of industrial fine printing, where satisfying surfaces can be achieved by fine nozzles in combination with fast printers.

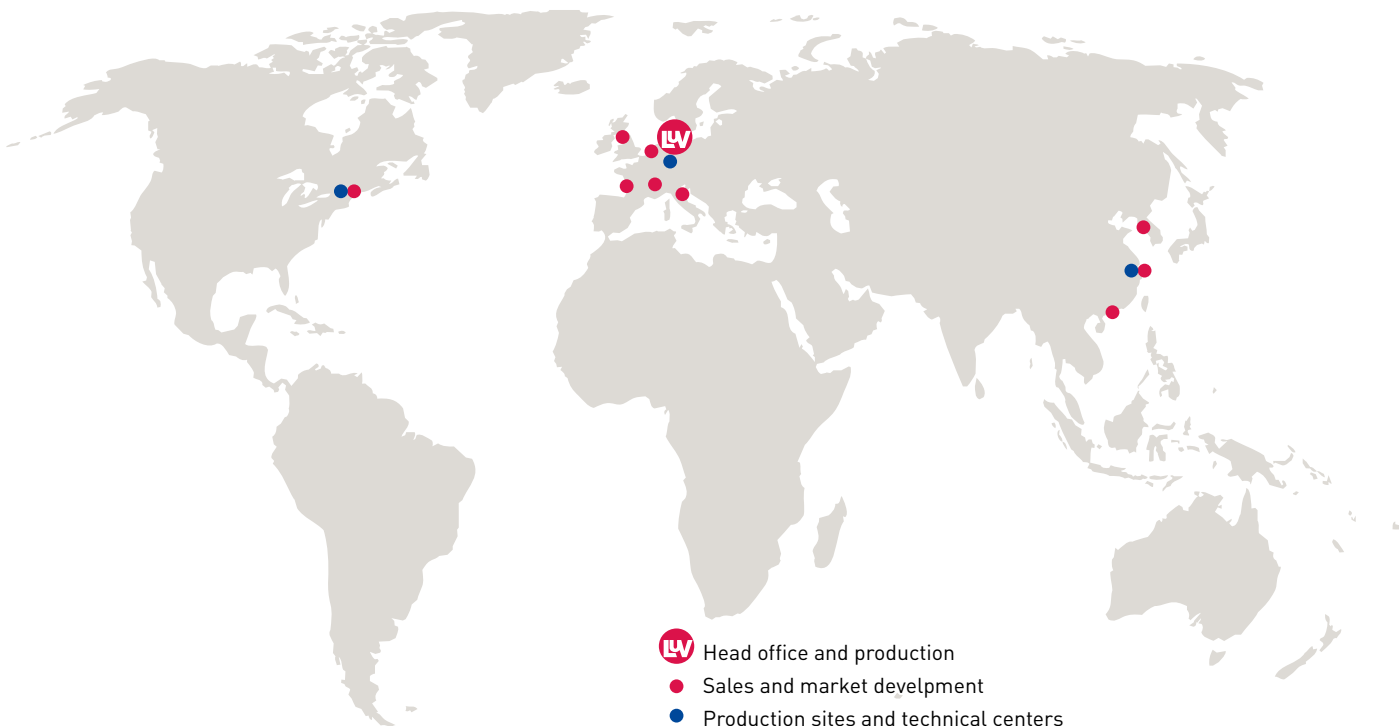
LUVOPRINT materials for FGF printing are designed to manufacture parts, molds, jigs and fixtures in demanding applications. The materials have been specifically developed and optimized for the printing process and proved their performance in intensive tests on the most common machines for industrial printing. Performance data and printer settings are available from us or our partners. The LUVOPRINT portfolio offers materials for a wide range of applications e.g., from materials for structural applications under ambient conditions to materials for molds for curing in autoclaves under high temperature and pressure. As designing high-performance compounds is the LEHVOSS DNA, we are able to design materials for very specific needs on demand, well beyond the portfolio presented here.

Our service offer

Switching from traditional manufacturing processes to 3D-printing is challenging. Reproducibility and cost efficiency in serial production are not easily achieved. We support in this process. With our extensive network of partners, we can provide solutions from the material to the final product. For printing with granules (FGF), filaments (FFF) and powders (PBF). And with our vast experience in injection molding, we can tell you where 3Dprinting has technological and commercial advantages and where you better stay with the traditional process.

Global presence

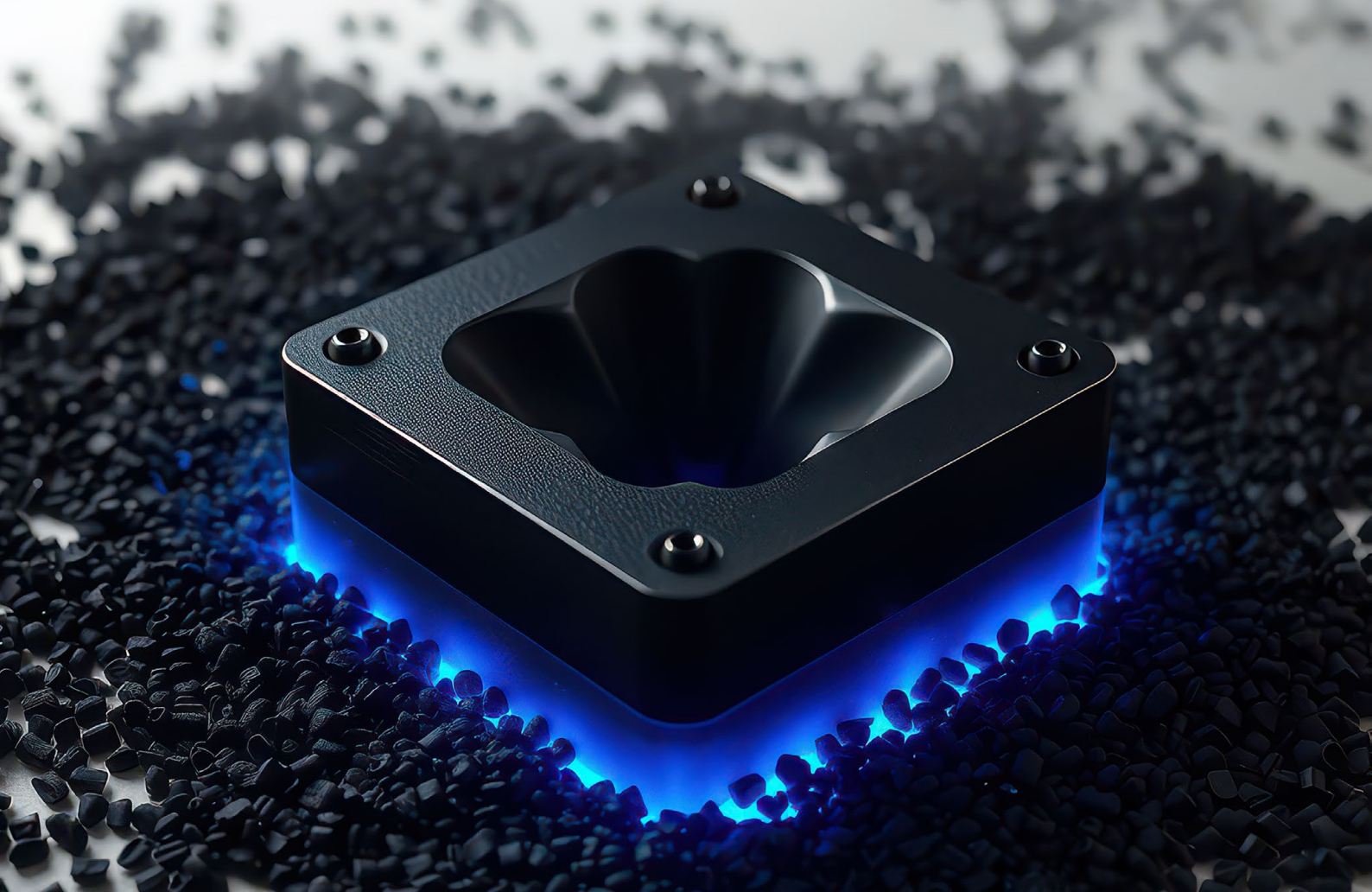
We are represented around the world. To help us react better to individual client and market requirements as well as to shorten supply routes and processing times, we produce on three continents. Apart from our main plant in Hamburg, Germany, we also have production sites in the USA and China. Our local market development staff provide on-site support.



View of the 3D printing laboratory in Hamburg, Germany.

High Performance Materials

LUVOPRINT materials for direct printing are specially designed to provide an easy-to-print experience and to achieve high performance in their application. Our portfolio offers materials for a wide range of applications, in ambient conditions, under pressure or at high temperatures. If you want to go further, our competence in dedicated material design will help you to create the material fitting best with your special needs.



Product range

LUVOPRINT eco PC/ABS GF 2848 BK

- High strength and rigidity with reduced weight
- Cost-efficient technical entry-level material

LUVOPRINT eco PA6 GF 2849 BK

- High impact resistance, increased abrasion and wear resistance
- For heavy-duty technical applications

LUVOPRINT eco PPS GF 2850 BK

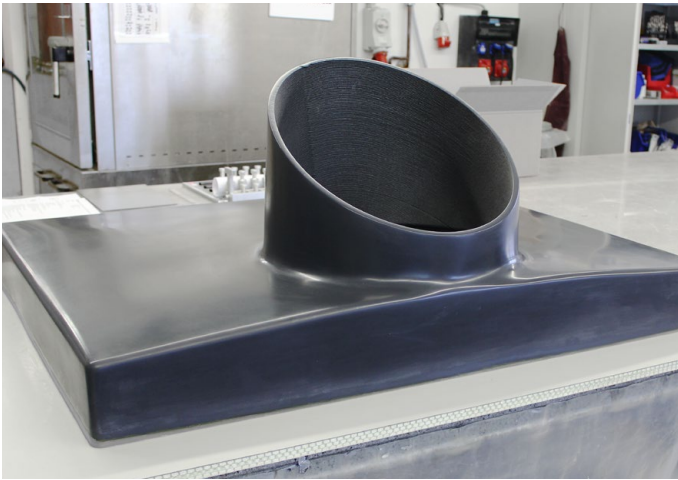
- Resistant to almost all chemicals, acids and solvents
- Thermally resistant and fire retardant (UL94-V0)

LUVOPRINT PESU GF 50954 NT

- Low thermal expansion and flame retardant (UL94-V0)
- For applications with high thermal, mechanical and chemical requirements

Application examples

The following application show industrialized applications with our materials.



Oil funnel mold

Material: LUVOPRINT eco PC/ABS GF 2848 BK
Production steps: printed, milled, filled and laminated
Printing time: 5:10 h
Dimensions: 100 cm x 83 cm x 45 cm
Quantity: 1 (for 15 funnels)
Part weight: 15.3 kg
Printed by: Forster System-Montage-Technik GmbH



Concrete mold

Material: LUVOPRINT eco PC/ABS GF 2848 BK
Production steps: printed, milled, coated
Printing time: 6.5h and 8.5h
Part weight: 52kg and 68kg
Quantity: 1
Milling time: 2.5h each
Printed by: Reichenbacher Hamuel GmbH



Seat stand

Material: LUVOPRINT eco PC/ABS GF 2848 BK
Production steps: printed, milled and polished
Printing time: 13 h
Dimensions: 100 cm x 80 cm x 85 cm
Quantity: 1
Printed by: NEDCAM Solutions BV



Lamination mold for carbon composite part

Material: LUVOPRINT eco PA6 GF 2850 BK
Printed by: Brandenburg University of Technology Cottbus-Senftenberg.
OEM: Last



Our other 3D printing material product lines

LUVOCOM® 3F

Customized materials for extrusion-based 3D printing

Our LUVOCOM® 3F materials for FFF (Fused Filament Fabrication) printing are designed for the manufacturing of functional parts in demanding applications. The materials have been developed keeping the printing process and the final product application in mind in order to achieve a higher level of properties and quality. All our products are thoroughly tested in our development laboratories and in close cooperation with printer manufacturers, which ensures that they will work in most systems available on the market. We are offering granulates from PP to PEEK and a selected number of filaments in both 1.75mm and 2.85mm diameters. Our materials are available worldwide as filaments in a wide range from qualified filament manufacturers.

LUVOSINT®

Materials for laser sintering

Laser sintering is a technique for the additive manufacturing of plastic components. The layered structure offers a level of design freedom as well as engineering opportunities that cannot be achieved with injection molding and other techniques. Consequently, laser sintering does not compete with these methods but complements them. This requires that materials and their properties should correspond to those that you know and use today. Our LUVOSINT® materials meet this requirement. Material and laser sintering machine are adapted exactly to your individual component. Together with our technology partners, we offer you complete solutions – for the quality assured manufacturing of additively produced components.

Product data

LUVOPRINT® eco PC/ABS GF 2848 BK

Mechanical properties	Test method	Specimen	Units	Typical value
Tensile strength	ISO 527	ISO 3167 A	MPa	105
Elongation @Fmax.	ISO 527	ISO 3167 A	%	1.5
Tensile modulus	ISO 527	ISO 3167 A	GPa	10
Impact strength, notched	ISO 179 1eA	80x10x4 mm	kJ/m ²	7
Thermal properties				
Heat distorsion temp. HDT A	ISO 75	80x10x4 mm	°C	123

LUVOPRINT® eco PA6 GF 2849 BK

Mechanical properties	Test method	Specimen	Units	Typical value
Tensile strength	ISO 527	ISO 3167 A	MPa	180
Elongation @Fmax.	ISO 527	ISO 3167 A	%	2.7
Tensile modulus	ISO 527	ISO 3167 A	GPa	15
Impact strength, notched	ISO 179 1eA	80x10x4 mm	kJ/m ²	12

LUVOPRINT® eco PPS GF 2850 BK

Mechanical properties	Test method	Specimen	Units	Typical value
Tensile strength	ISO 527	ISO 3167 A	MPa	185
Elongation @Fmax.	ISO 527	ISO 3167 A	%	2
Tensile modulus	ISO 527	ISO 3167 A	GPa	15
Impact strength, notched	ISO 179 1eA	80x10x4 mm	kJ/m ²	8
Thermal properties				
Heat distorsion temp. HDT A	ISO75	80x10x4 mm	°C	265

LUVOPRINT® PESU GF 50954 NT

Mechanical properties	Test method	Specimen	Units	Typical value
Tensile strength	ISO 527	ISO 3167 A	MPa	140
Elongation @Fmax.	ISO 527	ISO 3167 A	%	2
Tensile modulus	ISO 527	ISO 3167 A	GPa	12
Impact strength, notched	ISO 179 1eA	80x10x4mm	kJ/m ²	9
Thermal properties				
Heat distorsion temp. HDT A	ISO 75	80x10x4mm		220

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