

Additive Manufacturing



About Ensinger

The Ensinger Group is engaged in the development, manufacture and sale of compounds, semi-finished materials, composites, technical parts and profiles made of engineering and high-performance plastics. Further development of proven production techniques, new applications and international expansion have earned this family-owned enterprise a place among the leaders in its field.

Over 50 years of experience in the extrusion of a broad range of engineering and high-performance plastics, have led to high precision filaments.

Ensinger produces filaments made from engineering and high temperature plastics and offers application advice to all issues around additive manufacturing of high-performance plastics. Where high temperature plastics are required in FFF (fused filament fabrication) processes, Ensinger filaments are very well suited. There are stock materials available as well as the option to develop customized filaments.

The goal is to supply customers with high quality materials which can be used for new technologies like additive manufacturing.

Advantages of Ensinger *TECAFIL*

Additive manufacturing with Ensinger filaments made from engineering and high temperature plastics have many advantages:

- Precision filaments (close tolerances, very round, homogenous material)
- Development and optimization of materials
- Sample productions
- Large and small series production

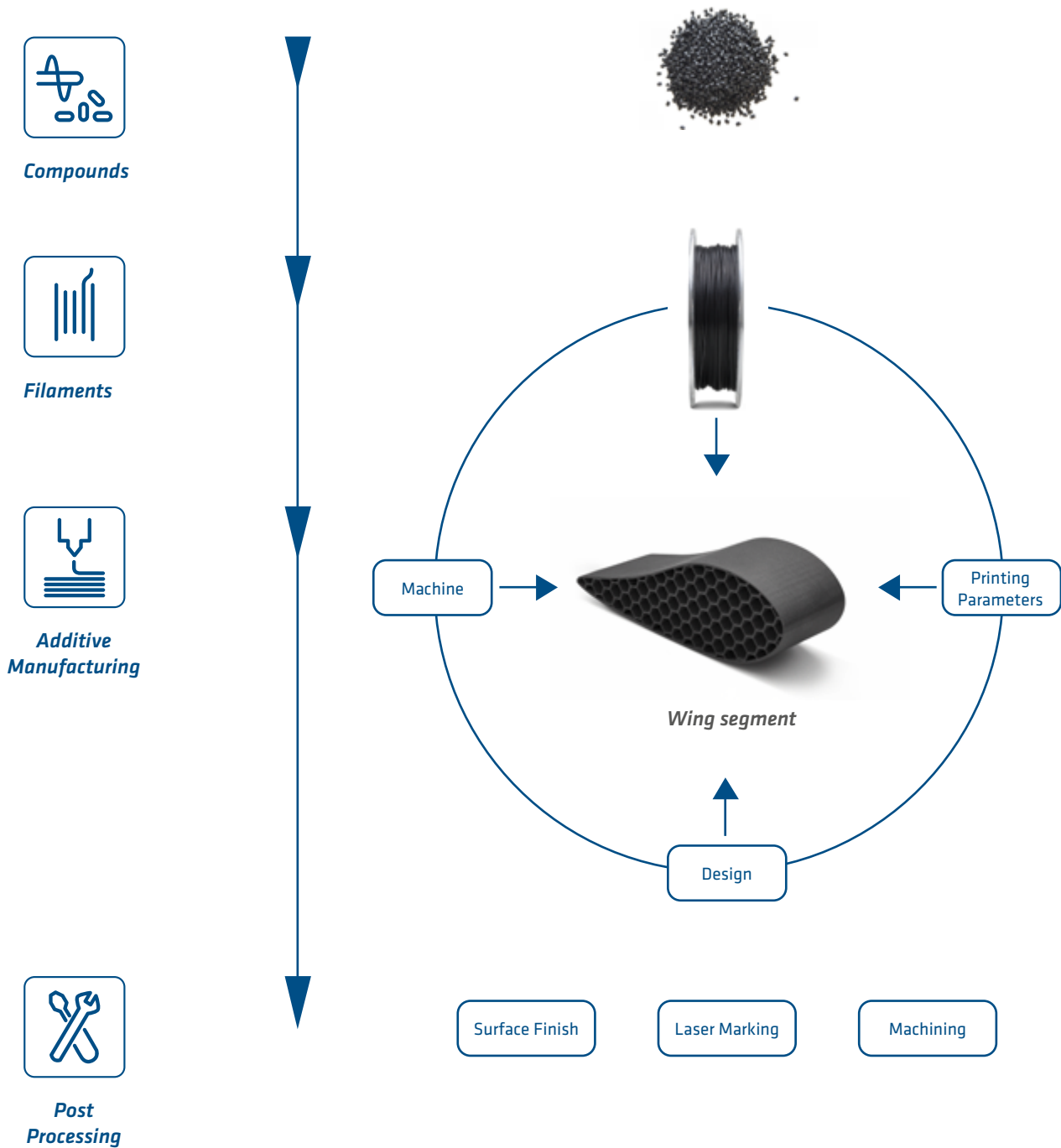
Fields of application

- Medical
- Aerospace
- Electronics

- Food
- Automotive
- Mechanical

Our possibilities for the FFF 3D printing process in detail

We provide continuous support throughout the whole process: from the selection of materials right through to production. Due to our compound production and development experts you are free to design and develop a material that meets your individual application requirements. As experts of each stage of processing, Ensinger covers the entire value-added supply chain.

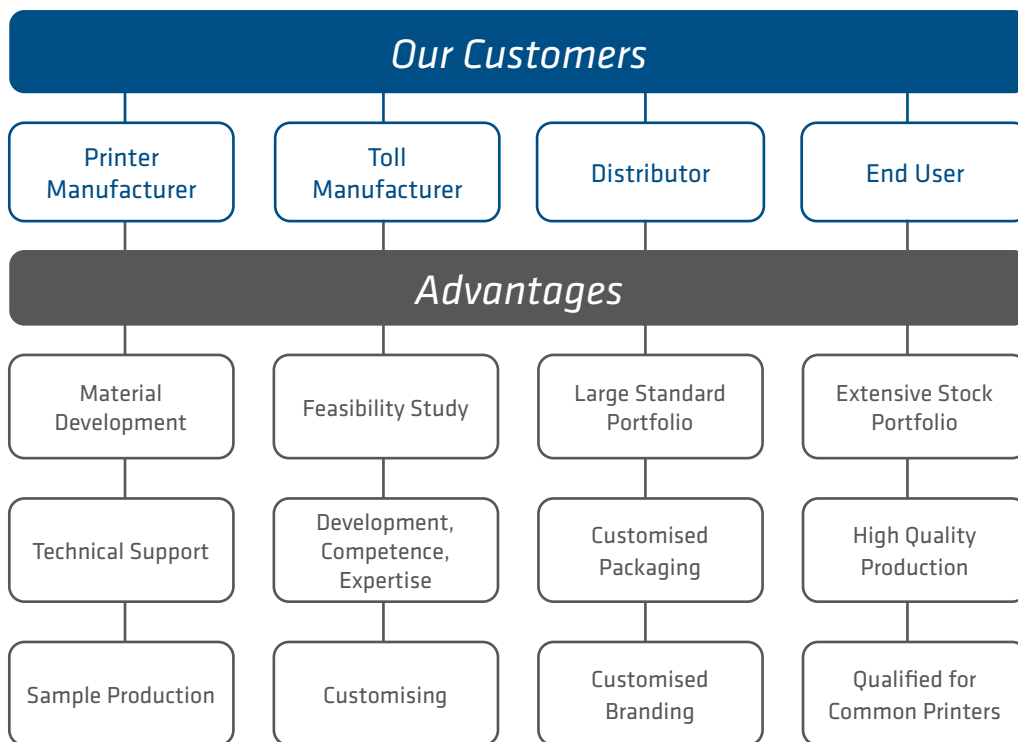


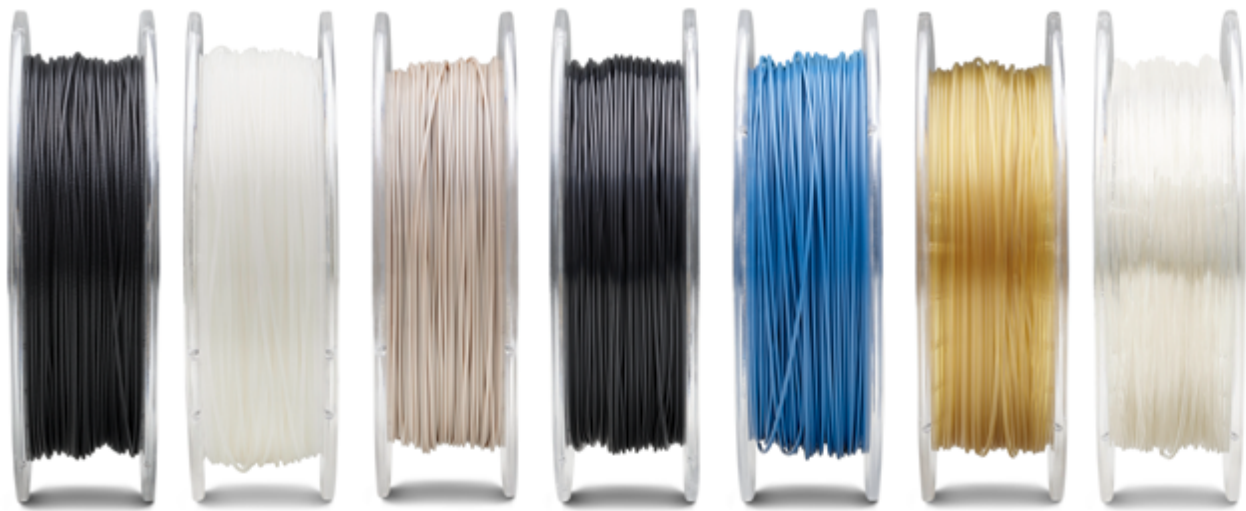


Customer benefits of Ensinger TECAFIL

Additive manufacturing with Ensinger filaments enables forms of products which are not possible with any other processing technology. This opens application fields for high-

performance plastics that were unthinkable before. Ensinger offers several benefits for different customer groups:





Our standard portfolio

Our filament materials are available in stock in the sizes $\varnothing 1.75$ or 2.85 ± 0.05 mm. Other dimensions or material requests can also be implemented to customer specifications.

<p>TECAFIL PEEK LDS</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p> <p>Modification</p> <ul style="list-style-type: none"> ■ Laser direct structuring 	<p>TECAFIL PEEK CF30</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p> <p>Modification</p> <ul style="list-style-type: none"> ■ Carbon fibre 30% ■ Medical technology 	<p>TECAFIL PEEK</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>	<p>TECAFIL PES</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>
<p>TECAFIL PPSU</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p> <p>Modification</p> <ul style="list-style-type: none"> ■ Medical technology ■ X-ray detectable 	<p>TECAFIL PEI</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>	<p>TECAFIL PSU</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>	<p>TECAFIL PVDF</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>
<p>TECAFIL PC FR</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p> <p>Modification</p> <ul style="list-style-type: none"> ■ Flame retardant 	<p>TECAFIL PA6 GF30</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p> <p>Modification</p> <ul style="list-style-type: none"> ■ Glass fibre 30% 	<p>TECAFIL PA12</p> <p>Long-term service temperature</p> <p>Glass transition temperature</p> <p>Modulus of elasticity</p> <p>Tensile strength</p>	

PORTFOLIO

REQUEST

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Ensinger TECAFIL products allow new possibilities for your 3D printing with our stock materials and special modifications of engineering and high temperature plastics.

Together with a variety of partners in printing, we cover the entire supply chain and provide expertise through all stages of the value chain – from compound to final application.