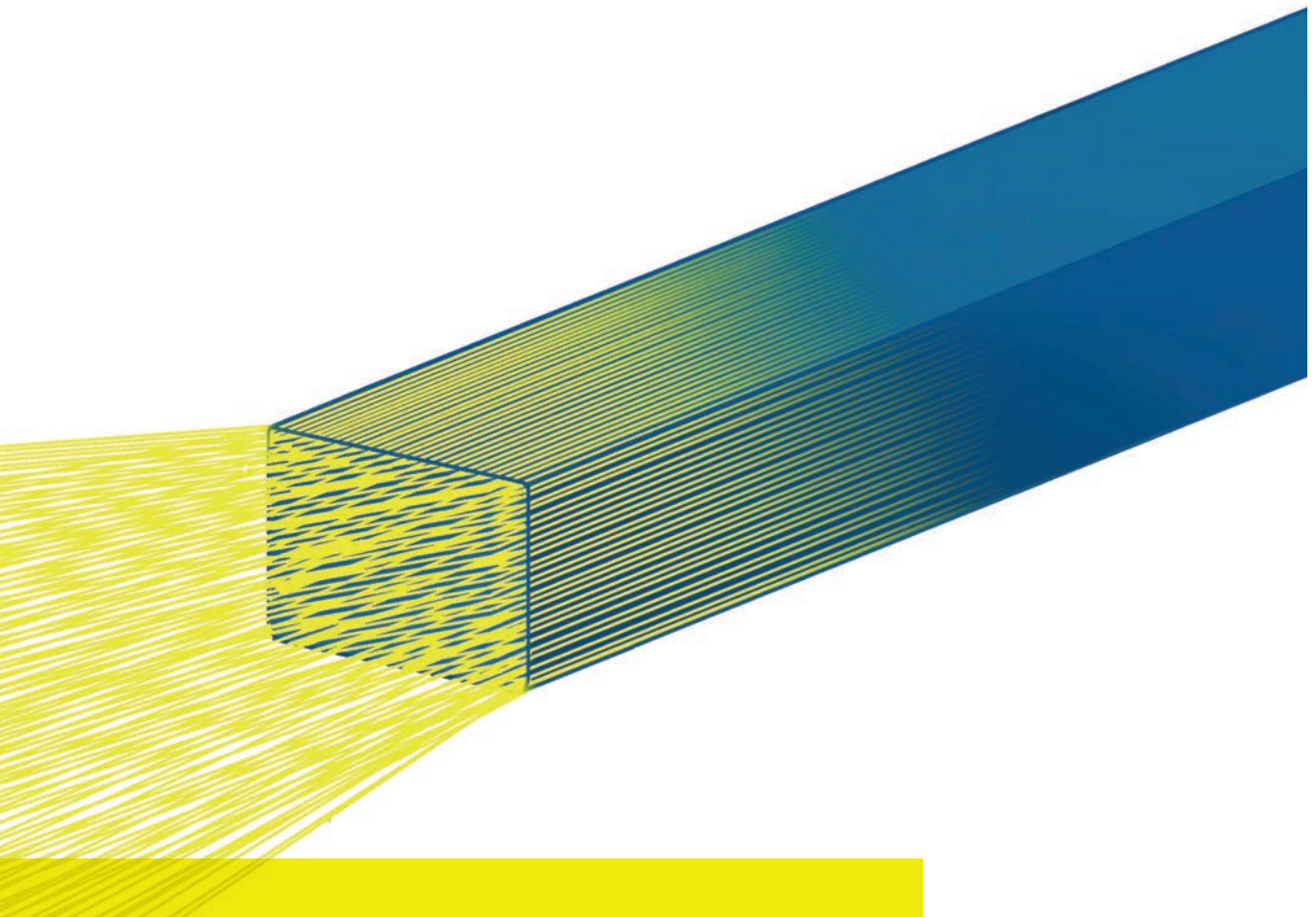
Ensinger



Thermoplastic Pultrusion

Ensinger – Your Partner for Thermoplastic Pultrusion

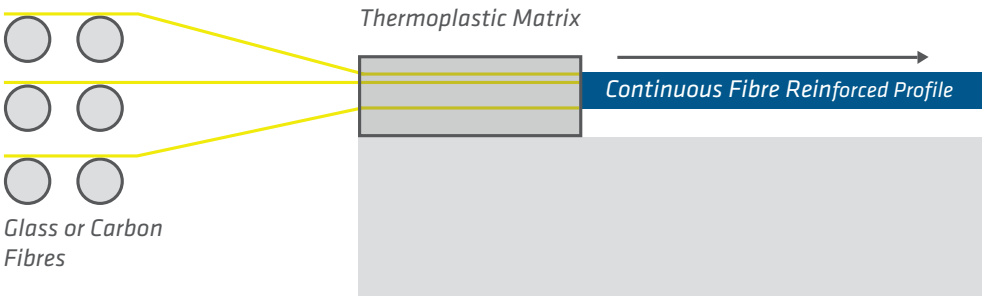
Being in business for over 50 years not only shapes our in-depth knowledge of high-performance plastics and manufacturing processes. At Ensinger, we also understand the need to constantly adapt to changing market developments, customer requirements and opportunities.

Innovations have always been seen as a driver for progress. Rethinking existing processes, developing them further and promoting new approaches has always been an integral part of our actions. The high demands of the sustainable use of economic, ecological and social resources require the further development of existing processes and the development of new approaches. The advantageous properties of thermoplastics, for example their recyclability and durability, contribute to a sustainable use of resources. Together with our partners and customers, we are working to fully exploit the potential of thermoplastic materials.

One of the innovative projects of Ensinger is the further development of pultrusion processes using thermoplastic matrix materials. We use various pultrusion methods to produce glass or carbon fibre reinforced profiles with thermoplastic matrices and develop suitable solutions for numerous applications and industries.

Thermoplastic Pultrusion Process

With thermoplastic pultrusion, we combine glass or carbon fibres with the advantageous properties of thermoplastics in a profile. In order to meet the requirements of each individual application, we develop pultrusion processes with different fibre contents, thermoplastic materials and geometries.

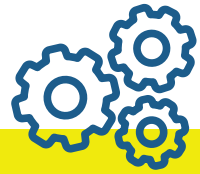


With our in-house compound production and highly-qualified development experts within the field of thermoplastic pultrusion, we provide continuous support throughout the whole process.

Benefits of Thermoplastic Pultruded Profiles

Sustainable

Continuous fibre reinforced profiles offer great advantages in terms of resource-saving material use:
The material can substitute metal and thermoset materials to reduce the CO_2 footprint. It can also be reused by melting and, if necessary, chipping and thus offers an opportunity for material recycling. With this, the material as well as the thermoplastic profile can be recycled.



Easily Customisable

Depending on the selection of the thermoplastic pultrusion method, individual solutions tailored to your application are possible.
Whether in the selection of the matrix material, the design of the profile or, in part, the positioning of the fibres – a high degree of customisation is possible.

Mechanically Advanced

- → High impact strength and significantly higher damage tolerance than thermosets
- → High stiffness at a low weight: Up to -60% lower weight compared to metals
- → High creep resistance compared to non-reinforced thermoplastics
- → Weldability

Optimised Properties

- → Non-brittle fracture behaviour due to high elongation at break of the thermoplastic
- → Lower coefficients of thermal expansion (CTE) in a range of about 5x10-6 K-1
- → Constant high performance due to consistent quality and tight tolerances

Fields of Application

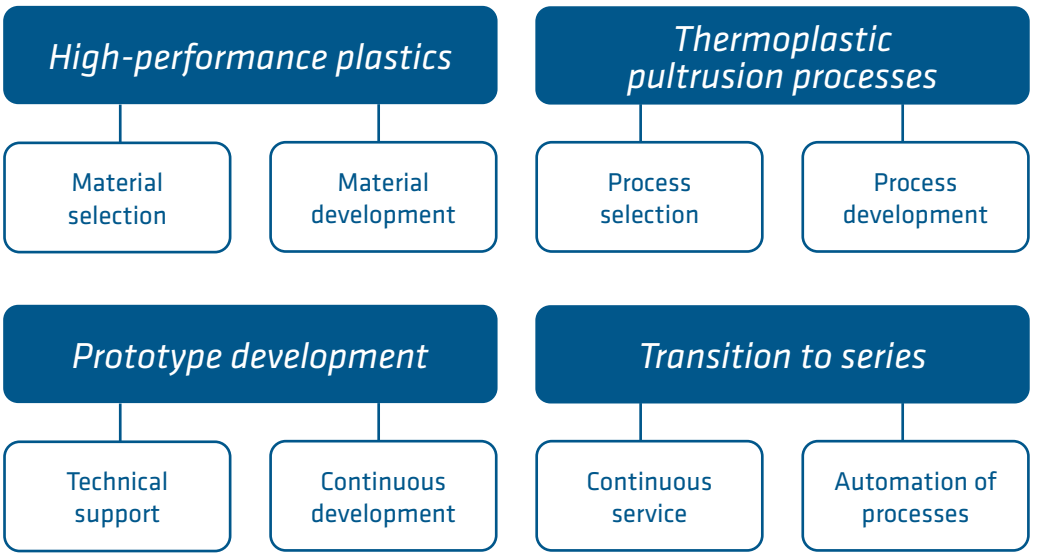
- → Aerospace
- → Automotive
- → Electromobility
- → Light Weight Structures
- → Renewable Energies
- → Building

Ready to Shape the Future of Profiles with us?

Continuous fibre reinforced profiles offer numerous advantages for a wide range of industries and applications. The high potential of thermoplastic pultrusion can be fully exploited through a deep understanding of the basic components, thermoplastic pultrusion methods and requirements on the part of the application.

Our goal is to find new development partners in order to jointly pursue new solutions and fully exploit the possibilities of thermoplastic pultrusion.

Let's shape the future of profiles together!

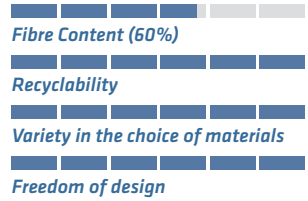


Feel free to reach out for more information. Let's shape the future of profiles together!

Thermoplastic Pultrusion Methods

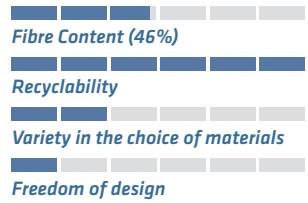
Melt Pultrusion

With melt pultrusion, very high fibre contents are possible, these can be uni-directionally aligned, whereby more complex geometries and local fibre reinforcements are also possible.
There are no limits to the choice of matrix material: As experts in plastics, we advise you on the right choice of plastic and offer individual solutions.



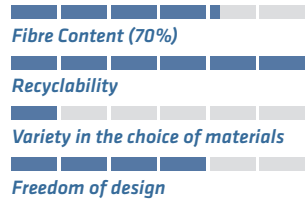
Hybrid Yarn Pultrusion

Hybrid yarn pultrusion is ideally suited for the production of continuous fibre profiles with simple geometries. Compared to other pultrusion processes, hybrid yarn pultrusion is a more effective manufacturing process.



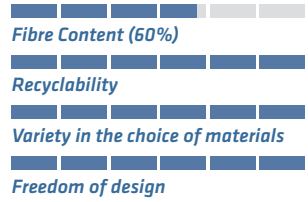
PA6 Cast Pultrusion

The PA6 cast pultrusion process allows a high fibre volume of up to 70% and thus the currently highest fibre content for thermoplastic pultruded profiles.
Due to the unique character of PA6 cast, the matrix material can completely enclose the fibre used.



High-Volume-Short Fibre Extrusion

We not only offer solutions concerning thermoplastic pultrusion. In some cases, short fibre extrusion is more ideally suited, as it offers high flexibility in the choice of materials and a high freedom of design.
With the use of short fibres, a fibre content of up to 60% is possible, whereby the direction of the fibres cannot be influenced.



Headquarters

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Your benefits of working with Ensinger:

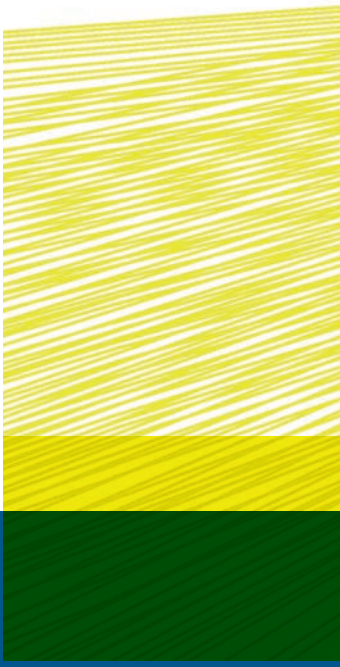
→ Selection, development and use of the right processing method by our experts

→ In-house compounding, material selection and material development

→ Fibre suppliers are implemented in the process

→ In-house prototype development

→ In-house processing, further development & support



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. To process the thermoplastic polymers, Ensinger uses a wide range of production techniques, such as extrusion, machining, injection moulding, casting, sintering and pressing. With a total of 2,600 employees at 33 locations, the family-owned enterprise is represented worldwide in all major industrial regions with manufacturing facilities or sales offices.

ensingerplastics.com

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