

Ensinger GmbH . Rudolf-Diesel-Str. 8 . 71154 Nufringen . Germany

PRESS RELEASE

The Ensinger group at a glance

Overview of contents:

Brief profile	1
Facts and figures	1
Business areas	2
Company history – milestones	5
The Managing Directors	7
The company founder	8
Examples of products and technical applications	10
Wilfried and Martha Ensinger Foundation	14

Brief profile

The **Ensinger Group** is engaged in the development, manufacture and sale of compounds, stock shapes, composites, finished parts and profiles made from engineering plastics. To process the thermoplastic engineering and high-performance plastics, Ensinger uses a number of production techniques such as extrusion, machining, injection moulding, custom casting, sintering and pressing. With a total of 2,700 employees at 34 locations, the family-owned enterprise is represented in all major industrial regions worldwide with manufacturing facilities or sales offices.

Facts and figures

Employees:	2,700, with around 1,500 of these in Germany
Sales:	approx. 616 million euros (2022/23)
Managing Directors:	Ralph Pernizsak, Dr. Roland Reber
Year founded:	1966
Headquarters:	Nufringen, Baden-Württemberg (approx. 720 Employees)



Since 1971, the headquarters of the Ensinger Group have been located at the Nufringen site in the Böblingen district.



Other manufacturing sites in Germany

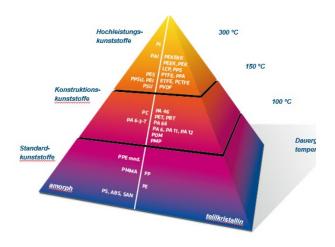
Cham, Bavaria (approx. 630 employees) Rottenburg-Ergenzingen, Baden-Württemberg (approx. 150 employees)

Products / Processes

Ensinger produces compounds, stock shapes, finished parts, precision profiles, filaments and composites from thermoplastic engineering and high-performance plastics.

Sectors: Areas of application for engineering and high-performance plastics

These products are used, for example, in mechanical engineering and plant manufacturing, in the automotive and aviation industries, and in medical technology. In addition, the technical solutions on the basis of thermoplastic polymers are widely used in the food industry, crude oil and gas industries and in electrical engineering and semiconductor technology. In many cases, the engineering and high-performance plastics replace other materials such as metals or ceramics. A further business division manufactures products for the thermal insulation of windows, doors and façades.



The polymers processed range from engineering plastics (such as PA, PET and POM), to the category consisting of particularly temperature-resistant, highperformance plastics (PEEK, PPS, PSU, Pl and others).

Business areas

Compounds

During compounding, plastic feedstock is melted, extruded into thin strands with the aid of fillers or additives, and cut into granules. This refining process makes it possible to adapt the properties of the plastics to suit the specific application. Examples of modified plastics from Ensinger are products with improved sliding friction coefficients, or materials with defined electrical properties.

Stock shapes

Stock shapes are the most common delivery form of plastic materials and traditionally constitute Ensinger's core business. The most important manufacturing process is extrusion. Polyamide stock shapes are additionally produced by means of unpressurised custom casting.

Machining then converts the sheets, rods or tubes into technical precision parts.







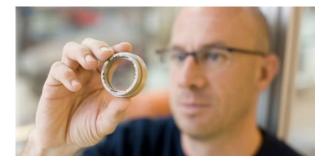
left: High-bay warehouse for stock shapes at the Ensinger premises in Nufringen.

Injection-moulded finished parts

The injection moulding process permits efficient series production of technical components and assemblies from high-performance plastics. Spherical shells are manufactured for the automotive industry, for example. Furthermore, Ensinger produces machine components such as bearings, housings, bushings, levers, gearwheels and guides. Additional fields of application for injection-moulded parts include medical technology and the aerospace industry.



Injection moulding plant in Rottenburg-Ergenzingen. Quality testing of a standard part (drive components for overhead locker in aeroplane interior).



A design engineer with an injectionmoulded sealing ring.



Machined finished parts

Finished parts are manufactured from stock shapes or injection-moulded parts through milling, turning, drilling and other mechanical processes. Machining is used above all to produce small production runs of technical components, but also for prototypes. Examples of products: Valve pistons, transmission levers, gearwheels, insulators, IC test sockets, dialysis blocks and trial implants.

Industry profiles and tubes

Profiles and speciality tubes which, reinforced with fibres or equipped with friction-lowering additives are produced in an extrusion process, resist high mechanical and thermal stresses.

Filaments for additive manufacturing

Additive manufacturing is particularly suitable for producing customised components. In this rapidly developing market environment, Ensinger works closely with universities, research institutions and printer manufacturers. For the diverse technical applications, Ensinger produces a wide range of filaments and 3D-printed precision parts from high-temperature thermoplastics with different properties.



insulbar: Insulating profiles for energy-efficient construction

Back in 1977, when in light of rising costs and environmental pollution the construction industry was confronted with the need to reduce energy consumption in buildings, Ensinger developed the world's first insulating profile for thermal breaks in metal windows, doors and façades. Today, Ensinger is a leading global manufacturer of insulating bars for window construction. The glass fibre reinforced "insulbar" insulating bars produced using an extrusion process join the inner and outer shells of the metal frame profiles. Thanks to their low thermal conduction capacity, they thereby prevent temperature losses.





The insulbar RE product line consists of 100 percent unmixed recycled polyamide.

Additional product lines

Exceptional long-term thermal stability and strength are properties offered by compressionmoulded **polyimide materials**. To cope with extreme thermal stresses, Ensinger offers new types of materials with a heat deflection temperature of up to 470°C.

Thermoplastic **composites** (**composite** materials with fibre reinforcement) stand out for their excellent mechanical, thermal and chemical properties, and in many respects outperform thermosetting materials or short fibre-reinforced thermoplastics. The X-ray permeability and biocompatibility, along with the resistance to superheated steam and chemicals, make orthopaedics an important area of application for this speciality material.

Company history – milestones

The company was founded by Wilfried Ensinger in 1966. The manufacture and sale of thermoplastic stock shapes were among the first focal areas of its work. Closely linked to this was the further development of the extrusion process and application technology.



On one of the first extruders: Wilfried Ensinger (2nd from left) with colleagues.

On shifting its corporate headquarters to Nufringen, the company expanded its production capacities. A short time later, the manufacture of components through the machining of stock shapes began. At the end of 1977, Ensinger was able to deliver the first series-produced, thermal insulating bars made from glass fibre reinforced, polyamide 6.6 to manufacturers of aluminium windows. A second manufacturing plant set up in Cham (Upper Palatinate) in 1980 enabled the series production of insulating profiles and other product lines. In 1985, the Injection Moulding division provided another string to Ensinger's bow.





Wilfried Ensinger at his desk (around 1970).

What is the Group's largest subsidiary today was established in 1986 in Washington, Pennsylvania. In the years that followed, Ensinger set up numerous other foreign branches in Europe, South America and Asia.

In 1997, management of the company was handed over to the second generation. Distribution in China began in 2002, and since 2007 the company has also had its own production plant in the country. The setting-up of the injection moulding plant in Rottenburg-Ergenzingen 2009 gave the company its third production site in Germany.

Klaus Ensinger, who ran the company for more than twenty years, made the personal decision to leave the Management Board in 2021. He is a member of several supervisory bodies, and provides support to strategic projects in the area of sustainability.

Wilfried Ensinger passed away on 23 May 2023 at the age of 87. Following its origins in a garage in Ehningen, the plastics processor he founded has developed within half a century from a small business into an international corporate group.



The Ensinger Group is represented with production facilities or sales offices in the most important industrial regions worldwide. The largest production sites outside of Europe are located in the USA, Brazil and China.

Full version of the company history, with pictures: <u>www.ensingerplastics.com/de-de/geschichte</u>

The Cham branch

The Cham site was founded in 1980 and since then has grown significantly. With around 630 employees, the plant situated on the Altenmarkt trading estate, is now one of the largest production facilities of the international oriented corporate group.



The broad range of products manufactured in Cham are used in nearly all important sectors of industry, be this mechanical engineering, the construction industry, medical technology or the food industry. Ensinger is one of the leading global producers of insulating profiles for metal windows and doors. The insulating profiles, manufactured using the technically sophisticated extrusion process, make an important contribution to energy saving.

The machining specialists at the site manufacture plastic parts on computer-controlled lathes and milling machines. The Upper Palatinate-based site frequently performs the entire series production of assemblies and systems on the customer's behalf. A further area of production is polyamide casting, a method for manufacturing large-scale semi-finished sheets and rods.

The injection moulding plant in Rottenburg-Ergenzingen

The globally positioned Injection Moulding division manufactures precision components and complete assemblies from high-performance plastics. The injection moulding plant in Rottenburg-Ergenzingen is the German development and production site for the Ensinger Group. The plant, built in 2009 and with optimised goods flow, is designed for efficient series production of finished parts.

Additional production sites belonging to the division are located in the USA, Brazil and China.

The Managing Directors







Ralph Pernizsak, following his degree in aerospace technology, took up a variety of management positions with automation specialist Festo and with the technology and service company Technotrans – with most of these being in Asia. In 2014 he moved to Ensinger, and in 2020 he was appointed Managing Director.



Dr. Roland Reber studied material sciences in Zürich and Lausanne. After completing his doctorate, he spent three years working as a management consultant for the Boston Consulting Group. In 2002, the Swiss Manager joined the Management Board of plastics processor Ensinger.

The company founder

At the start of his career, **Wilfried Ensinger** completed an apprenticeship as a toolmaker and passed his Master Craftsman examination. He subsequently worked as a site and factory manager in various companies specialising in mechanical engineering, precision mechanics and the plastics processing industry. Alongside his work, he studied for a degree, giving him the titles of Industrial Engineer and *Diplomingenieur*.

In 1966, Wilfried Ensinger founded the plastics processing company Ensinger oHG in Ehningen. In 1997 he handed over operational management to the second generation and increased his involvement in charitable activities.

The Wilfried and Martha Ensinger Foundation, which he and his wife founded, sponsors social, cultural and scientific institutions at home and abroad.

As President, and now Honorary President, of the Böblingen District Chamber of Commerce and Industry, he provided an important impetus for the reform of the supervisory bodies and for improving company-based training.



The University of Stuttgart awarded Wilfried Ensinger the title of Honorary Senator. In 2005, he was awarded the Federal Cross of Merit. Since 2021, Wilfried Ensinger has been an Honorary Citizen of the town of Rottenburg am Neckar.

Wilfried Ensinger passed away on 23 May at the age of 87. With the loss of its founder, the company says farewell to a passionate engineer, creative inventor and dedicated entrepreneur who was fully committed to the welfare of the company and its employees.



Wilfried Ensinger (1936-2023)

The dedication of the founder of the company and Foundation to charitable causes has received widespread recognition.

Apprenticeship and dual study programme at Ensinger

Committed employees are the most important basis for company success. This is why Ensinger places great value on the initial training and further qualification of its staff.

Ensinger offers school leavers the chance to complete an apprenticeship or to combine theory and practice with a degree at the Cooperative State University. The young talent gain diverse, deep insights into company processes and are motivated to contribute their ideas and take responsibility.

In the past few years, numerous graduates have been recognised for their outstanding examination results by the Chamber of Commerce and Industry. The Stuttgart Employment Agency awarded Ensinger the Certificate for the Support of Young Talent.



Qualification is a high priority at Ensinger. Skilled workers are permanently trained in the company's own training workshop



Further information:

Homepage: www.ensingerplastics.com

Wikipedia: https://en.wikipedia.org/wiki/Ensinger_(company)

Examples of products and technical applications

Medical technology



Test implants for knee joint prostheses. Manufactured from MT (medical grade) plastics supplied by Ensinger.



Lightweight and sterilisation-resistant: Surgical instruments made from high-performance plastics.





Hybrid lightweight design in trauma surgery: X-ray transparent fixing systems made from carbon fibre reinforced composite materials (CFRP) enable precise monitoring of the bone's position.

Pharmaceutical production



© Image by optek-Danulat GmbH

Single Use Cell for inline process control in biopharmaceutical production.

Building industry



Fensterschnitt: Die glasfaserverstärkten "insulbar" Dämmstege verbinden die Innen- und Außenschalen der Metallrahmenprofile.



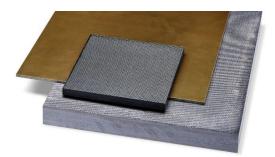
Automotive



Lightweight, wear-resistant components for axle and steering systems. Manufactured using injection moulding.



The transparent cabin lighting cover made from TECANAT PC natural is self-extinguishing in the event of a fire.



Thermoplastic composites are perfect for lightweight applications which place high demands on the design and material.

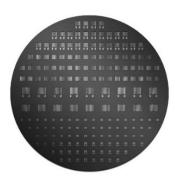


Oil and gas industry

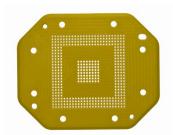


Seals and back up rings made from fibre-reinforced TECAPEEK. Thanks to outstanding mechanical properties and chemicals resistance, the ideal material for use in offshore conditions.

Semicon



Innovation on the semiconductor market: The plastic-based LDS method permits the economical production of sensors and other microsystems.



Dimensionally stable test sockets made from the high-performance plastic TECASINT are used in microchip production.



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Wilfried and Martha Ensinger Foundation

The aim of the Wilfried and Martha Ensinger Foundation is to help fund social, scientific and cultural projects in the long term.



International aid projects

The primary concern of the Wilfried and Martha Ensinger Foundation is providing aid to promote self-help. The charitable organisation helps people in countries across Africa, Central and South America and Asia.

Science and research

A further mainstay of the Foundation is its support for young talent in technical professions. The Foundation offers awards on outstanding diploma theses and dissertations in the field of plastics engineering, thereby ensuring more widespread recognition for this subject. The



Foundation also provides subsidies to research institutes, universities and universities of applied sciences in Germany, which are used for scientific purposes.

Society and culture

The third focus of the Foundation is the cultural opportunities presented by towns and local communities around the Ensinger sites.

Details of the focal areas of funding and further information can be found at <u>ensinger-stiftung.de</u>

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