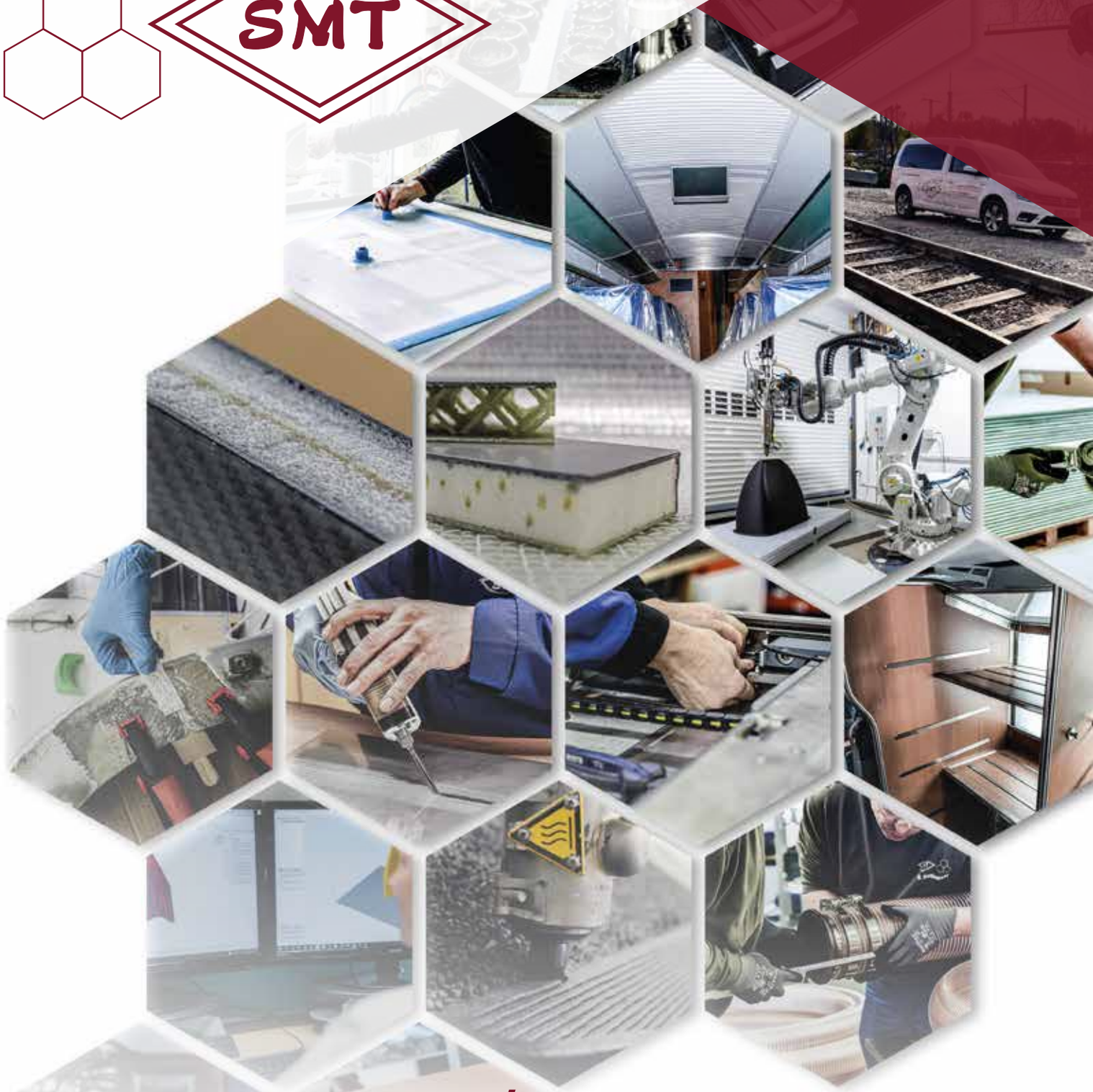
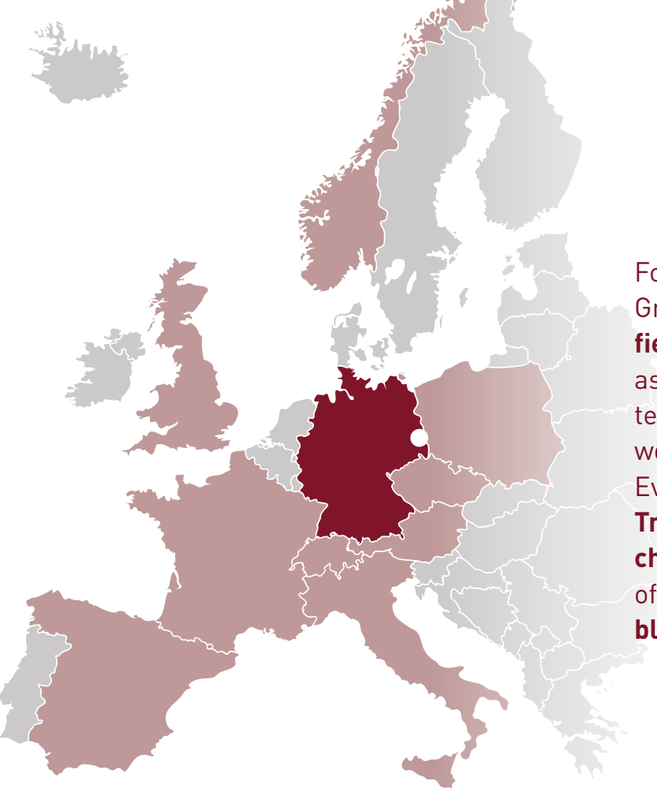
SMT



Lightweight Construction / Composites
Flooring Systems
Interior/Exterior Components
Refurbishment of System Components
Bonding
Assembly



FROM FORST TO THE WORLD...

For 20 years, **F**orster **S**ystem-**M**ontage-Technik GmbH (**SMT**) has been a **reliable partner in the field of rail vehicles**. A wide range of services, as well as a highly competent and motivated team of engineers, technologists, and skilled workers, form the foundation for this success. Evolving from the long-established **Technical Trade MROSE**, we encompass the **entire value chain firsthand**, and the in-house procurement of system components ensures **short and reliable processing times**.

OUR SERVICES AT A GLANCE

Manufacturing



Flooring Systems



Bonding



Assembly



1 MANUFACTURING

We manufacture plastic composites using a **multi-material approach** to produce **prototypes, test samples, individual pieces** and **series components**. We employ resource-efficient vacuum infusion processes with **custom-made and reusable silicone membranes**, using **resin systems** tailored to specific requirements. The integration of **fasteners** such as inserts or bigHeads, as well as the application of **gelcoats and coatings**, is customized to meet our customers' needs. With continuous quality checks, we ensure our commitment to delivering a flawless product.



Trained Production Staff



In-House Research & Development

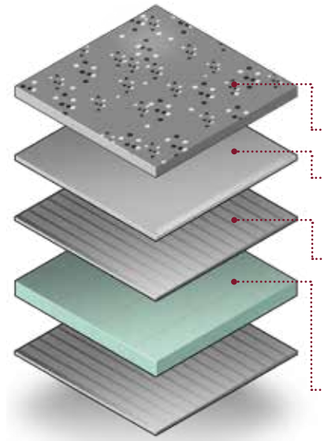


In-House Research & Development

- » Rail Vehicles, Boat and Shipbuilding, Commercial Vehicle
- » Processing of composite materials, including functional integration
- » Small, medium, and large series production
- » Vacuum infusion, hot pressing, RTM-light, hand lamination
- » Manufacture and use of reusable silicone membranes
- » Resin systems: Vinyl ester, epoxy, phenolic, bio-resins
- » Fibers: Glass, aramid, carbon, flax



FIBER-REINFORCED SANDWICH SYSTEM



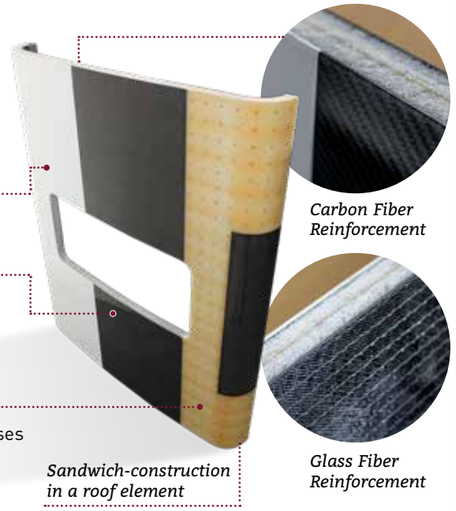
Selectable Resin System

Selectable Coatings

Top Layer / Gelcoat
» Fire Protection according to DIN EN 45545-2

Fiber Reinforcement
» Various Materials and Configurations
» Also available in wood or aluminum versions

Foam Core
» Available in Various Thicknesses and Densities
» Different Materials Available



Sandwich-construction in a roof element

Carbon Fiber Reinforcement

Glass Fiber Reinforcement

Excellent Properties

» Mechanical Properties / Fatigue strength
» Moisture Resistance
» Chemical Resistance
» Thermal Insulation
» Sound Insulation
» Electrical Insulation
» Durability

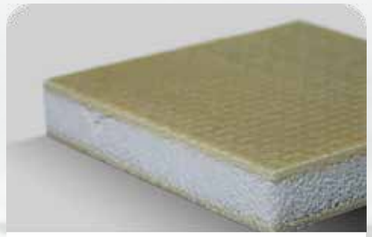
Designed for the Application

» Design (Revisions and Fastening Elements)
» Fire Protection Integration (e.g., Gelcoat Selection)
» Functional Integration (Heating, Sensors)
» Self-Supporting
» Various Resin Systems

Very well-Equipped Machinery

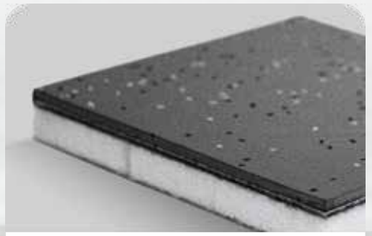
» CNC Cutter
» CNC Milling Machine
» Industrial Robot for Additive Manufacturing and Finishing
» Lathes
» Cutting Machines
» Bending Devices

OUR STARTERS



SMT-SLIM-Panel

SLIM-Panel introduces lightweight and fire-resistant sandwich panels that offer an optimal combination of a fire-protected surface and a lightweight core. Our panel stands for high safety, easy handling, and cost-effective production. With the option of integrated heating, it is flexible and versatile for various applications.



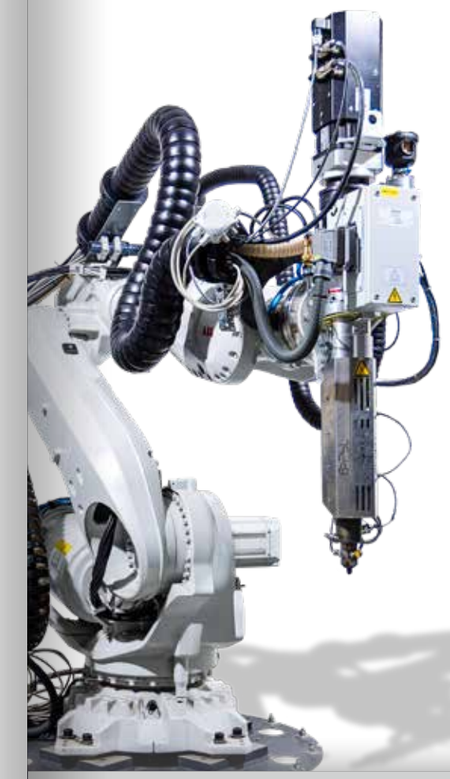
SMT-BASIC-Panel

BASIC-Panel stands for exceptional stability and low weight. With cores made of polyurethane, polyisocyanurate, or polyethylene terephthalate, they are ideal for construction, mobility, shipbuilding, and other industrial sectors. These multifunctional and cost-effective panels are the perfect all-rounder.



SMT-STRUCTURE-Panel

STRUCTURE-Panels combine optimal weight and stability with their intelligent rigid foam core. This combination enhances material performance, facilitates handling, and enables significant savings in transportation and energy costs. They are ideal for construction, transport, aerospace, and other applications.



GULLIVER 3D
ADDITIVE MANUFACTURING

We design and manufacture large-scale structures using robot-assistedadditive manufacturing. The advantages include significant **material savings, flexibility, reproducibility** and **dimensional stability**.

„Additive manufacturing is an innovative production process that fundamentally differs from traditional manufacturing methods, offering us entirely new possibilities.“

Stefan Losansky, Project Manager Engineering SMT





» Component Sizes up to 1.2 m x 2.0 m x 1.4 m
» Industrial Robots with High Feed Rates (up to 3 m/s)
» twinform® Technology: Speed through Parallel Printing
» Option for Subsequent Machining
» Industrial Robots with Extruder & Milling Spindle
» Manufacturing Components for FRP Production
» Expertise in Engineering and Manufacturing

Gulliver's fascinating travels serve as a metaphor for **our sense of discovery** at SMT Forst. However, we don't set off for Lilliput or the land of giants; instead, we venture into **new technological realms** to create exceptionally large or small solutions.

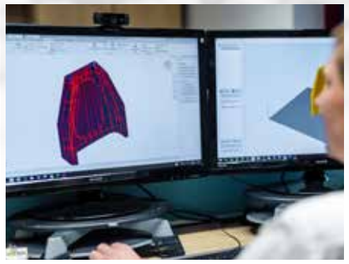
Based on our own experiences, we have deliberately chosen not to follow the conventional approach of automated customer processing: uploading parts online, approving orders based on offers, and ultimately receiving components that don't meet practical needs—this goes against **thoughtful engineering**. We develop solutions in **close collaboration with our customers**, integrating our **comprehensive expertise** in additive manufacturing.



Robotic Twin Printing with twinform® Technology



Mission Gulliver: 3D Printing in New Dimensions



Our USP: Engineering from Concept to Finished Part

GFRP REPAIR

We specialize in the production of lightweight components, **from repair to new manufacturing**. Given that replacing components can often be challenging due to missing documentation, low quantities, or urgent needs, we offer a reliable solution. We meticulously refurbish the parts to their **original specifications** and provide them **ready for use**, allowing you to quickly and efficiently access **high-quality components**. Over the past two decades, we have assisted many companies in giving their lightweight components a second life in numerous projects.

» Hand Lay-Up, Vacuum Infusion, Hot Pressing, RTM-Light
» Resin Systems: Vinylester, Epoxy, Phenolic, Bio-Resins
» Fibers: Glass, Aramid, Carbon, Natural Fibers
» Processing of Fiber-Reinforced Plastics, Including Functional Integration



Damaged fiberglass component



Filling the voids with fiberglass and resin

Rely on the **highest quality** and **extensive experience** for refurbishing your GFRP components. Our experts work with skill and precision to restore your GFRP parts to their **optimal condition**. We follow a proven process, executed in four meticulously carried out steps:

» Precise Preparation
» Expert Filling
» Accurate Restoration
» Flawless Surface Treatment

„The regeneration of already deployed components is economically worthwhile and conserves both the environment and resources.“

Matthias Senftleben, Managing Director SMT



Filled and Restored Surface



Painted Surface



Refurbished Component in Use

INTERIOR/EXTERIOR COMPONENTS

Our expertise in **manufacturing interior components** opens up a world of possibilities. Whether for the mobility industry, furniture construction, or other **demanding applications** - we offer **tailored solutions** that excel in both **functionality and aesthetics**.

„The combination of functionality, complexity, and aesthetics is what makes our interior components so appealing.“

David Krüger, Project Manager Engineering SMT

We manufacture a **wide range** of interior and exterior components for the rail industry, including **ceiling elements, wall panels, front aprons**, and many other components such as **handrails** and **grab poles**. These parts are essential for equipping modern rail vehicles and contribute to **safety, comfort**, and **durability**.



Seat box covers made of GFRP



WC enclosure and toilet seat made of GFRP

Handrails made of stainless steel

» Diverse Material Options
» Custom Solutions
» Highest Quality Standards
» Integration of Additional Components
» Innovative Technologies

In addition to composite materials, we also specialize in the production of **interior components made from wood**. Wood imparts a warm, natural ambiance to any space and is a **timeless material** that seamlessly integrates into various design concepts. To enhance the beauty and durability of wood, we **refine** surfaces to the highest standards. Whether **lacquered, stained, veneered** or **coated with decorative finishes**, our refinement techniques ensure a result that excels in **functionality, aesthetics** and **tactile** appeal.

Due to our certification as a bonding specialist, we can act
directly as a producer and supplier for your wood interior parts
in the rail vehicle sector.

» High-quality craftsmanship for lasting elegance
» Custom finishing for unique surfaces
» Perfect integration of function and aesthetics
» Certified application of bonding techniques



Certified bonding of components



Pressing Wood Panels with Decorative Laminates



Our services extend beyond the mere manufacturing of interior components. We **integrate all relevant additional parts** necessary for the completion of your furniture piece. This includes hinges, handles, connectors, and other functional components, which we **precisely and meticulously incorporate**. This ensures you receive a **complete, ready-to- assemble product** that not only excels in aesthetics but also meets the **highest practical standards**.



Decorative Panels with Integrated Components



2 FLOORING SYSTEMS

SMT has established itself as a system supplier and product developer in the field of **new construction, redesign, and renovation of floors and flooring systems**, utilizing lightweight materials made of **fiber-reinforced plastics as well as wo od and aluminum**. Over the past two decades, we have equipped numerous **rail vehicles** with new flooring systems and other interior components in various projects.









Complete Flooring Renovation: From Damaged Wood Flooring to a System of GRP Sandwich Panels

» Customized Design and Manufacturing
» Increased Payload Capacity and Passenger Comfort through Weight Reduction
» Experienced Engineering Department (Design & Calculation)
» Matured Overall Concepts from Substructure to Flooring Surface
» Assembly-Friendly Connection and Fastening Systems
» Certified Fire Protection (DIN EN 45545-2: 2020), Sound Insulation, Thermal Transmittance
» Reliable and Proven in Practice



Installation of Flooring System



Fully Installed Flooring System



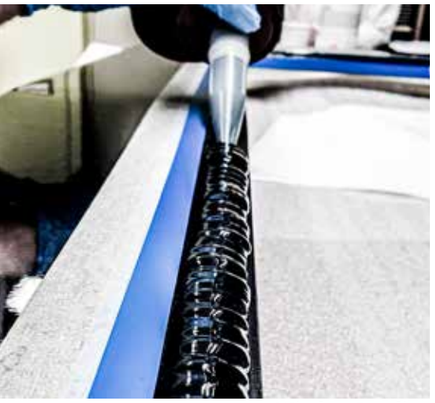
Refurbished Entrance Area of a Tram

- Weight-Optimized
- Fully Customizable
- Cost-Optimized
- High Load-Bearing Capacity
- Fire Protection
- Sound Insulation
- Heatable
- Short Delivery Times
- Various Mounting Options
- Integration of Sensors
- Freeform Surfaces
- Compatible Connection Systems

3 BONDING

Certified according to **DIN EN 17460 - A1** and **DIN 2304 - S1** for design, process planning, manufacturing, and maintenance, we apply these capabilities to the advantage of our customers through the use of adhesives in rail vehicles or vehicle components. As one of the few companies in Germany, Forster SMT is authorized to carry out adhesives, including **Class A1**, both internally and externally at our customers' locations as a **subcontracted third party**.

» Certification according to DIN EN 17460 - A1 and DIN 2304 - S1
» Comprehensive Adhesive Engineering
(Adhesive Selection and Design, Adhesive Joint Calculations)
» Certified Adhesive Areas
» Modern Adhesive Application Technology
» Experienced Adhesive Personnel
» Norm-Compliant Testing Equipment and Methods
» Peel Test, T-Peel Test, Stamp Break Tests, Tensile Shear Tests



Window Bonding



Safety-Related Certifications or Verifications



Window Sealing

„Mastering the influencing factors is what makes adhesive bonding so appealing to me."

Martin Lucia, Adhesive Bonding Engineer SMT

Quality-Assured Bonding

» Plastics
» Foams
» Elastomers
» Fiber-Reinforced Plastics
» Metal
» Wood

Advantages

» Enables the Combination of Diverse Materials
» Targeted Integration of Additional Functions
» Preservation of Material
» Properties
Adaptability and Tolerance
» Compensation
Manufacturing of Large-Scale Connections
» Bonding of Smallest Parts

Application of Bonding Techniques

» Air Intake Boxes
» Step Treads
» Slide Plates
» Glass Cutting Discs
» Toilet Sets
» Profiles
...

4 ASSEMBLY

Our team is composed of **skilled engineers, electricians, mechanics** and **adhesive specialists**. The tasks assigned to us are carried out with the necessary care and, of course, in compliance with applicable industry standards and occupational safety regulations. From **floor renovation and installation** to **bonding** and **sealant joint repair**, we are **on-site for you**.



Substructure Installation for Flooring



Sealing of Damaged Sealing Joints



Installed Flooring System

» Installers for Deinstallation and Installation
» Adhesive Practitioners and Adhesive Specialists according to DIN EN 17460 - A1 and DIN 2304 - S1
» Final Assembly of Components and Individual Parts
» Repairs of Fiber Composite Components
» Custom Adaptation of Wood and Fiber Composite Materials
» Manufacturing, Completion, and Installation of SMT Flooring Systems at the Customer's Site
» Qualification of All Relevant Specifications
» Design Consultation
» Material Selection
» Paint repair and painting on-site at the factory

„Assembly services by Forster SMT mean understanding the customer's requirements and meeting the highest quality standards in execution."

Matthias Senftleben, Managing Director SMT



Sand the surface



Paint the surface



Inspect and treat the surface

OUR CORPORATE NETWORK

Technischer Handel-Industriebedarf
MROSE GmbH
Heinrich-Werner-Straße 6-8
03149 Forst • Deutschland

+49 3562 9814-0
info@mrose.de

to the website

Occupational safety

- VTH-certified specialist advisor for PPE
- Custom fitting of hearing protection and workwear
- Shoe measurement

Rail Transport Technology

- Q1 supplier for DB
- Order processing and management of DB framework contracts
- Spare parts procurement for rail tranport

Standard parts

- Verification of movable devices
- Inspection of shelves, heavy-duty shelves and ladders

Elastomers

- VTH-certified specialist company for hose and fitting technology
- Processing of plastics
- Custom manufacturing of profiles and molded parts with toolmaking
- Chemical-technical products

Güschu Stanzwerk GmbH Straßfurt
An der Liethe 4b
39418 Straßfurt • Deutschland

+49 3925 8005-0
info@gueschu.de

to the website

Over 60 years in sealing technology - our own seal stamping facility for:

- Stamped parts from foam and sponge rubber
- Molded parts and seals made from felt and cork
- Molded parts for sealing and insulation made from paper and pressboard
- Seals made from asbestos-free materials
- Seals made from graphite and rubber

FIS GmbH – Forster Industrieservice
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+49 3562 69 755 0
info@fis-forst.de

to the website

Metalworking

- Laser cutting, punching and flame cutting
- CNC milling, turning and bending
- Single-part and series production

Component & Assembly Manufacturing

- Welding of steel, stainless steel and aluminium
- Fixture and special-purpose fabrication
- Assembly of complete units

Rail Vehicle Technology

- Certified welding in accordance with EN 15085 CL1
- Certified adhesive bonding in accordance with DIN EN 17460 for rail vehicle components
- Manufacture of customised components and assemblies

to the website

Save contact details

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