



LIGHTWEIGHT

success factor hybrid design



***Mi*TRAS**
COMPOSITES SYSTEMS



Company

Your manufacturer of complex fiber-reinforced composite mouldings „Made in Germany“.

- More than 40 years of experience
- Long term and successful partnerships

Production

Efficient and stable processes



Manufacturing Flexibility

Continuous investments ensure an economical and high-quality production.

- Presses and injection moulding machines (up to 13 MN)
- 5-axis CNC-machining centers
- Lean and automated processes
- Flexible in part geometry and lot size

Research & Development

Competent partner from initial idea to serial production



Materials and Technologies

The right materials and processes for your application are defined based on your needs.

- Use of appropriate design for composites
- Cost-efficient manufacturing technologies
- Feasibility analysis
- Linking of industrial experience and scientific know-how

Quality

Certified customer satisfaction is our focus





Lightweight Development

Caused by increasing environmental and efficiency demands new applications for fiber-reinforced plastics arise.

Our know-how:

- **Lightweight material** based on fiber-reinforced thermoset and thermoplastic matrices
- **Lightweight design** by sandwich or hybrid solutions
- **Lightweight systems** in integral or differential design

The focus of our development:

- Compression moulding, injection moulding, HD-RTM¹ and RIM process²
- Innovative material mix
- Single-stage manufacturing process
- Sophisticated tool concepts
- Automated serial production



You have reached the limits of conventional materials for your application?
Do complex processes increase the costs of your products?

With our expertise in hybrid technology, we can provide you with adequate solutions.

- ➔ Mechanics
- ➔ Process optimization
- ➔ Material properties
- ➔ Weight
- ➔ Total cost



We are your partner for target-oriented lightweight solutions.





Best Practice

In a joint research project with partners from industry and science we developed a new metal - plastic hybrid design (steel – organic sheet – LFT³) specifically for high performance components.

Compared with conventional steel design:

- Significant weight reduction
- Significant improvement in energy absorption
- Implemented in a single-stage manufacturing process
- Reached a maximum functional integration

¹ High Pressure – Resin Transfer Moulding

² Reaction Injection Moulding

³ Long-fiber-reinforced thermoplastic

Range of Application



AUTOMOTIVE ENGINEERING SPORTS



SHIPBUILDING TELECOMMUNICATIONS

TRICAL INDUSTRY AGRICULTURAL MACHINERY

INERY **BUILDING**



CHEMICAL ENGINEERING

MEDICAL SHIPBUILDING **AEROSPACE** SPORTS

TELECOMMUNICATIONS ELECTRICAL INDUSTRY



MECHANICAL ENGINEERING MEDICAL



LEISURE AGRICULTURAL MACHINERY

SPORTS AND LEISURE **AUTOMOTIVE ENGINEERING**

SHIPBUILDING



AUTOMOTIVE BUILDING

AEROSPACE BUILDING

TELECOMMUNICATIONS ELECTRICAL INDUSTRY



INDUSTRIAL MACHINERY SPORTS AND LEISURE



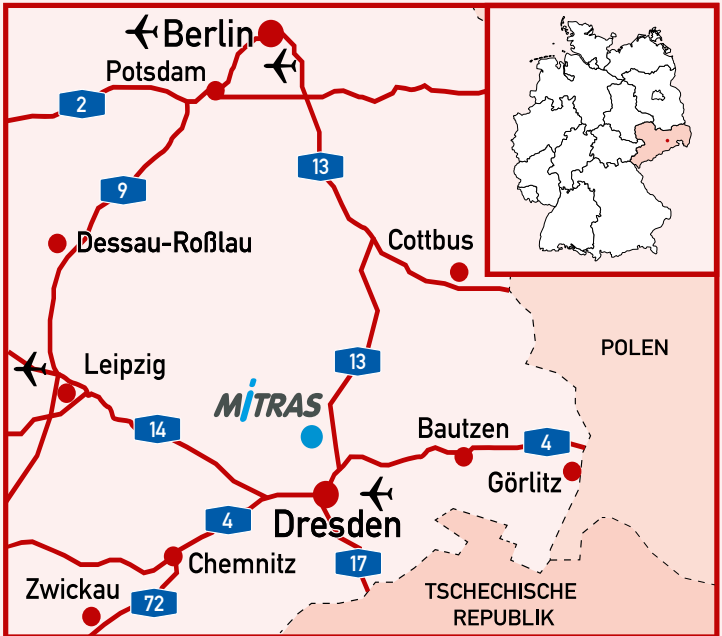
ELECTRICAL INDUSTRY AEROSPACE

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Distances

Dresden via A13/A4:

– To the airport 15 km – to city center 22 km

Berlin via A13:

– To the airport 155 km – to city center 176 km

www.kroemke.com

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