

Research



Development



Construction



Prototyping



Planning



Production



## Grabher-Group Technical Textiles



Your complete Partner for:  
Composite-Lightweight  
Composite-Materials  
Technical-Textiles  
Smart-Textiles

[www.grabher-group.at](http://www.grabher-group.at)

Nano-  
technology



**Nano - procedure:**

- Vakuüm procedure
- Organic / inorganic Nanotechnology
- Bio Nanotechnology
- Nano-Analytics

Plasma-  
technology



**Plasma - procedure:**

- Low-pressure-Plasma-Cleaning
- Low-pressure-Plasma-Etching
- Low-pressure-Plasma-Activating
- Low-pressure-Plasma-Coating

Surface-  
technology



**Surface - procedure:**

- Electrochemical processes
- Wet-chemical processes
- Atmosphäric-Plasma-processes
- Mechanical Surface - treatment

Technical-  
textiles



**Finishing - procedure:**

- High-temperature fixing
- High-temperature coloring
- High-temperature compacting
- Duro-and Thermoplastic-coating

Smart-  
textiles



**Integration - procedure:**

- Current-conducting-structures
- Light-conducting-structures
- Heat-conducting-structures
- Sensor structures

Fiber composite-  
materials



**Production – procedure:**

- Embroidery-technology
- Stitching-technology
- Wire-and Tube-Laying-technology
- Tailored fiber placement-technology (TFP)

### Nano-application:

- Nanoparticles for the protection against UV-radiation
- Nanoparticles for conductive substrates
- Nanoparticles for energy saving systems
- Nanoparticles for scratch-resistance surfaces



New materials

### Plasma-application:

- Change of Surface-energy (Filtration)
- Hydrophilic-/phob treatment (Infiltration)
- Nano-strukturen for composite-materials
- Interfacial-modification for Bonding



Modified surfaces

### Functional-application:

- New effects by inline Atmospheric-plasma
- Activation of Glas-Carbon-Basalt-fibers
- Infiltration of Fiber-composite-materials
- Volume-expansion by roughing/ brushing



Functional textiles

### Technical-application:

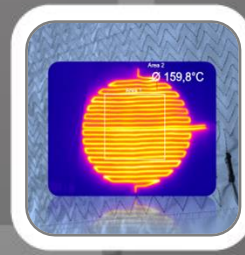
- Textile-preparation with Duro- or Thermoplastics
- Thermal stabilization of Composite-textiles
- Coloring of technical Multi-material-textiles
- Compacting of High-performance-textiles



High-performance materials

### Smart-textiles-application:

- 3-D textile-electrodes for Battery-systems
- Textile Matrix-structures for lighting-elements
- Textile heating-elements for high-temperatures
- Textile Sensors for health-monitoring



Intelligent textiles

### Light-weight-applications:

- Load-bearing structure-components like Carbon, Glas, Basalt
- Fiber-composite materials made of natural fibers
- Free-form geometry components ( no waste )
- Load-case appropriate, multi-position shelf of fibres



Light-weight

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