

## About this organisation

### Machine translation

This organisation has been machine-translated based on data provided in German.

The Institute of Concrete Structures (IMB) is one of eleven institutes at the Faculty of Civil Engineering at the Technical University of Dresden. We deal with the mechanical properties of reinforced concrete in all its facets - different reinforcements, concretes from lightweight to high-strength, stresses from static permanent load to highly dynamic, new and existing buildings - in experiments and theory at material level through to the complete structure.

For example, in SPP1542 we are working on component-specific basic research. The entirety of possible constructible structures is divided into shell structures, flat or slightly curved plates and discs, bar-shaped load-bearing elements and fractal structures. The design of force fields or force systems forms the basis of ideally weight-minimised concrete structures. We find clues for efficient load-bearing structures in nature with the help of bionics. Another focus is the Collaborative Research Centre/Transregio 280, which is researching new construction strategies for carbon concrete. The aim is for the new material composite carbon concrete not only to replace the previous material reinforced concrete, but also to find new ways of construction that are specially tailored to the properties of carbon concrete in order to utilise the full performance potential of carbon concrete.

August-Bebel-Str. 30/30A  
01219 Dresden  
Saxony  
Germany

[www.tu-dresden.de/bu/bauingenieurwesen/imb/](http://www.tu-dresden.de/bu/bauingenieurwesen/imb/)



### Organisation type

University or higher education institution

### Sector



### Employees

50 up to 249

### Turnover

n/a

### Funding

### About this organisation

|                           |   |
|---------------------------|---|
| <b>Main areas covered</b> | Carbon concrete, Textile concrete, Reinforcement of buildings, Material development, Support with DIBt approvals                          |
| <b>Infrastructure</b>     | Otto Mohr Laboratory, Falltum for impact, Textile and carbon concrete testing, In-situ load tests, Trials Recalculation guideline         |
| <b>Certifications</b>     |   |
| <b>Keywords</b>           | Carbon concrete, New construction methods / reinforcement, Construction strategies, Collaboration in standardisation and approval, Impact |
| <b>Memberships</b>        | C3-Carbon Concrete Composite e.V., TUDALIT  |

### Overview of lightweighting expertise

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|   | Research | Development | Manufacturing & Supply |
|---|----------|-------------|------------------------|
| <b>Offer</b>  |          |             |                        |
| <i>Products</i>   |          |             |                        |
| <b>Services &amp; consulting</b><br>Training, Consulting, Testing and trials,<br>Engineering, Standardisation, Prototyping,<br>Validation, Simulation, Technology transfer,<br>Approval | ✓        | ✓           |                        |

## Overview of lightweighting expertise

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|   | Research | Development | Manufacturing & Supply |
|---|----------|-------------|------------------------|
| <b>Field of technology</b>  |          |             |                        |
| <b>Design &amp; layout</b><br>Lightweight construction concepts   | ✓        | ✓           |                        |
| <b>Functional integration</b><br>Sensor technology, Thermal activation  | ✓        |             |                        |
| <b>Measuring and testing technology</b><br>Component and part analysis, System analysis, Materials analysis, Destructive analysis, Non-destructive analysis | ✓        | ✓           |                        |
| <b>Modelling and simulation</b><br>Loads & stress, Life-cycle analysis, Optimisation, Structural mechanics, Materials                                       | ✓        |             |                        |
| <i>Plant construction &amp; automation</i>  |          |             |                        |
| <i>Recycling technologies</i>   |          |             |                        |
| <b>Manufacturing process</b>  |          |             |                        |
| <i>Additive manufacturing</i>   |          |             |                        |
| <i>Coating (surface engineering)</i>  |          |             |                        |
| <i>Fibre composite technology</i>   |          |             |                        |
| <i>Forming</i>  |          |             |                        |
| <i>Joining</i>  |          |             |                        |
| <i>Material property alteration</i>   |          |             |                        |
| <i>Primary forming</i>  |          |             |                        |
| <i>Processing and separating</i>  |          |             |                        |
| <i>Textile technology</i>   |          |             |                        |

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|---|----------|-------------|------------------------|
| <b>Material</b>   |          |             |                        |
| <i>Biogenic materials</i>   |          |             |                        |
| <i>Cellular materials (foam materials)</i>  |          |             |                        |
| <b>Composites</b><br>Short fibre-reinforced concrete, Textile-reinforced concrete, Others (Non-metallic reinforcements) | ✓        | ✓           |                        |
| <b>Fibres</b><br>Basalt fibres, Glass fibres, Carbon fibres   | ✓        |             |                        |
| <b>Functional materials</b><br>Shape memory materials   | ✓        |             |                        |
| <i>Metals</i>   |          |             |                        |
| <i>Plastics</i>   |          |             |                        |
| <i>Structural ceramics</i>  |          |             |                        |
| <b>(Technical) textiles</b><br>Laid webs, Others (Non-metallic reinforcements)  | ✓        |             |                        |

## Contacts

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## Contacts

Mr Stefan Gröschel

*Public relations*

[stefan.groeschel@tu-dresden.de](mailto:stefan.groeschel@tu-dresden.de)