Dresden University of Technology
Institute for Solid Construction

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.

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Germany
www.tu-dresden.de/bu/bauingenieurwesen/imb/

Organisation type
University or higher education institution

Sector

Employees
50 up to 249

Turnover
n/a

Funding

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About this organisation

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

Overview of lightweighting expertise

Machine translation

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	Research	Development	Manufacturing & Supply
Offer			
Products			
Services & consulting Training, Consulting, Testing and trials, Engineering, Standardisation, Prototyping, Validation, Simulation, Technology transfer, Approval	✓	✓	

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Overview of lightweighting expertise

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

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials)			
Composites Short fibre-reinforced concrete, Textile-reinforced concrete, Others (Non-metallic reinforcements)	✓	✓	
Fibres Basalt fibres, Glass fibres, Carbon fibres	✓		
Functional materials Shape memory materials	✓		
Metals			
Plastics			
Structural ceramics			
(Technical) textiles Laid webs, Others (Non-metallic reinforcements)	✓		

Contacts

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Contacts

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Public relations

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