

Federal Institute for Materials Research and Testing (BAM)

About this organisation

Machine translation

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

BAM ensures safety in technology and chemistry. As a departmental research organisation of the Federal Ministry for Economic Affairs and Energy, BAM researches, tests and advises on the protection of people, the environment and material goods. The technical safety of products and processes is at the centre of all activities in materials science, materials engineering and chemistry.

- Fatigue strength of lightweight materials, in particular fibre-plastic composites - Experimental simulation of operational stresses on samples, components and parts, under multiaxial mechanical load and adjustable climatic environmental conditions (temperature, humidity, radiation)
- Fire tests on lightweight materials and components, in particular fire resistance (simultaneous flame and pressure loading) - Non-destructive testing using various methods (X-ray, thermography, ultrasound, electromagnetic methods, etc.) - Further development of lightweight mineral building and residual materials and their processing technologies - Development of mineral building materials and processing technologies specifically for additive manufacturing
- Component welding on high-strength steels under multiaxial mechanical load

Unter den Eichen 87
12205 Berlin
Berlin
Germany
www.bam.de



Organisation type

Non-university research institution

Sectors

No specific sector

Employees

500 and more

Turnover

More than €50m

Funding

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About this organisation

Main areas covered Material properties, Consistency, Fire behaviour, flame retardancy, Mechanical properties, Failure behaviour

Infrastructure Mechanical testing from mN to MN, Modern material analysis, Microscopy (ESEM, TEM, AFM,...), Test site technical safety

Certifications

Keywords Composite, Fibre-reinforced polymers (GFRP, CFRP), Additive manufacturing, Fire behaviour and fire resistance, Lightweight mineral building materials

Memberships

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Materials, Others (Customised research into fire behaviour and fire resistance, non-destructive material testing in-situ operational stress to clarify damage mechanisms)	✓		
Services & consulting Training, Standardisation, Validation, Technology transfer	✓	✓	

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Hybrid structures	✓		
<i>Functional integration</i>			
Measuring and testing technology Component and part analysis, Materials analysis, Destructive analysis, Non-destructive analysis, Others (Fire tests)	✓		
Modelling and simulation Loads & stress, Life-cycle analysis, Structural mechanics, Materials, Reliability validation	✓		
<i>Plant construction & automation</i>			
<i>Recycling technologies</i>			

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing, Deposition welding	✓		
<i>Coating (surface engineering)</i>			
Fibre composite technology Filament winding, Manual lamination, Resin infusion process, Pre-preg processing, Vacuum infusion	✓		
<i>Forming</i>			
Joining Adhesive bonding, Screwing, Welding	✓		
Material property alteration Mechanical treatment, Thermomechanical treatment, Heat treatment	✓		
<i>Primary forming</i>			
<i>Processing and separating</i>			
<i>Textile technology</i>			

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Material	Research	Development	Manufacturing & Supply
Biogenic materials Bioplastics, Biocomposites, Wood	✓		
Cellular materials (foam materials) Closed-pore, Open-pore	✓		
Composites Aramid fibre composites, Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Nanocomposites, Natural fibre reinforced plastics (NFRP), Laminates	✓		
Fibres Glass fibres, Carbon fibres, Natural fibres	✓		
Functional materials Shape memory materials, Others (Lightweight mineral building materials)	✓		
Metals Aluminium, Intermetallic alloys, Magnesium, Steel	✓		
Plastics Thermoset plastics, Elastomers, Thermoplastics	✓		
Structural ceramics Oxidic ceramics	✓		
<i>(Technical) textiles</i>			

Contacts

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