

# 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](http://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
<b>Offer</b>			
<b>Products</b> 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 )	✓		
<b>Services &amp; consulting</b> Training, Standardisation, Validation, Technology transfer	✓	✓	

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

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

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

## Contacts

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