MATERIAL AND COMPONENT TESTING
SANDWICH ELEMENTS AND CONSTRUCTION PRODUCTS

In addition to testing for all metals, plastics, fibre-reinforced composites and textile reinforced concrete, we can provide a wide range of initial type tests, qualification tests and external quality control. We make statements about strength, durability, damage behaviour, ageing and functionality.
SANDWICH ELEMENTS

In accordance with the standards and guidelines EN 14509, the DIBt sandwich guideline and the PPA Europe testing rules, we test sandwich panels and their fastening systems on component level as well as their and their individual components: face material or core materials such as plastic rigid foam or mineral wool.

TESTING BODY
- Initial testing (Initial Type Tests)
- Mechanical component and material tests
- Statements regarding strength, durability, damage behaviour, ageing and functionality
- Flexible accreditation for modification, subsequent advancement and new development of test procedures

INSPECTION BODY
- Independent and neutral external production controls
- Third-party monitoring
- Inspections
- Controlling manufacturer’s factories, sampling as well as product testing and inspection

CERTIFICATION BODY
- For sandwich elements and construction profiles made of glass fibre-reinforced plastic (GRP)
- Issuing certificates of conformity (LBO, EBA) and certificates of consistency of performance and product conformity (EU Construction Regulation)

COMPONENT TESTING PURSUANT TO DIN EN 14509
- Single span test
- Simulate central support test coefficient
- Test for resistance to repeated loads
- Test for resistance to point loads
- Support reaction capacity at the end of a panel
- Dimensional control

TESTING FACE MATERIAL
- Mechanical tests
- Determination of layer thicknesses

TESTING CORE MATERIAL
- Pull-out test
- Compression testing
- Shear test on short bar
- Creep rupture shear test on short bar
- Tightness determination of core material

PERMANENT ADHESION BEHAVIOUR/DURABILITY BEHAVIOUR
- Creep behaviour for single-span element
- Creep rupture test on short beam
- Ageing test (durability tests DUR1, DUR2)
- Wedge test

TESTING THE FASTENING SYSTEMS - BOLT PULL-OUT TESTS
- Quasi-static test of connection strength
- Load level stress and subsequent residual strength test
- Dynamic stress and residual strength test

IMA Dresden plays a leading role in the field of construction products. As an independent, recognised and accredited certification body, testing facility and inspection body, we support manufacturers, operators, suppliers and experts with all important questions and issues relating to conformity of products, service life, condition assessment, material characterisation as well as quality and safety standards. You will always get good advice from us – against the background of globalisation and regulation, we can guide you through the requirements, testing processes and specifications of the applicable standards, policies and laws.
MATERIAL TESTING

We can execute material tests and produce samples as well as laminates for you: plastics, composites, metals and textile concrete. Furthermore, IMA Dresden has comprehensive experience in the fields of adhesive technology, laminate calculation as well as approval for materials.

Benefit from our comprehensive knowledge when it comes down to the preparation and execution of material tests. This service comprises not only structural, static, cyclic and dynamic tests but also static long-term tests. We will additionally be pleased to assist you with all questions relating to testing programmes, planning and, of course, evaluating the results.

MATERIAL TESTING

MATERIAL TESTING – PHYSICAL
- Melt index (MFR/MVR)
- Crystallinity
- Homogeneity
- Determination of cell size
- Closed cell content
- Fibre content, filler content
- Layer structure
- Determination of density
- SEM/microscopy

MATERIAL TESTING – THERMAL ANALYSIS
- DSC (differential scanning calorimetry)
  Glass transition temperature, melting temperature, OIT (stat./dyn.)
- DMA (dynamic mechanical analysis)
  Glass transition temperature, complex module, loss factor
- Dilatometry
  Coefficient of thermal expansion

MATERIAL TESTING – MECHANICAL
- Tensile testing
- Compression testing
- Bend testing
- Shear testing
- Hardness testing
- Impact testing
- Bolt-bearing capacity

MATERIAL TESTING – LONG-TERM
- Time to rupture testing
- Time to creep testing
- Extrapolation
- Types of testing: tensile, compression bending
- Long-term testing under the influence of: temperature, increased humidity/water, chemicals

MATERIALOGRAPHY

The following materialographical and supplementary, accompanying testing methods are available in order to be able to execute examinations and investigations into material quality, microstructure formation, surface and edge layer structures, weld seam quality or possibly damage characteristics. Based on this, we can answer your questions regarding development, quality assurance and damage assessment.
CONSTRUCTION PRODUCTS
PLASTIC COMPONENTS, PLASTIC-METAL COMPOSITES, METAL LIGHTWEIGHT CONSTRUCTION PRODUCTS

In addition to initial type tests of products, we provide with support for obtaining general building authority approvals, approvals and/or certificates from quality bodies and associations.

- Construction profiles made of glass fibre reinforced plastics (GFRP)
- Gratings made of glass fibre reinforced plastics (GFRP)
- Panels made of glass fibre reinforced plastics (GFRP)
- Wall and roof holder
- Draining systems, seepage boxes
- Thermoplastic, composite and glass fibre-reinforced plastic (GFRP) construction elements
- Bulk material silos made of Thermoset plastics
- Aluminium, copper and steel sheet metal profiles (trapezoidal profile, standing seam profile, cassette profile, facade profile, sidings)
- Reinforcement textile
- Glass fibre-reinforced plastic (GFRP) reinforced bars
- Leak-proof linings

COMPONENT TESTING
- Bend test (incl. multi-span beam testing; determination of effective flexural modulus of elasticity in accordance with DIN EN 13706-2)
- Compression testing
- Creep testing
- Time-rupture test
- Screw connection
- Screw extraction

ENVIRONMENTAL SIMULATION AND AGING TESTING
- Specimen conditioning
- Temperature, humidity
- Water absorption
- Chemicals

THE IMA QUALITY SEAL FOR YOUR PRODUCTS

The test mark of IMA Dresden gives you a recognised seal of quality for your products and manufacturing process. We can thereby demonstrate that your construction products are reliable and conform. Independent inspections and monitoring by IMA prove the quality of your products.

The IMA Dresden is accredited and recognised by numerous bodies, thus serving as a distinction for your products. You can utilise the IMA test mark for advertising and labelling purposes in accordance with our testing rules.
THE WORLD ON THE TEST BENCH

IMA Materialforschung und Anwendungstechnik GmbH (IMA Dresden) is an internationally active company for engineering and consulting services which comprehensively cover the qualification, validation and monitoring of materials, components and products. Positioned between research and industry, we can support you throughout the entire development process of a product with our comprehensive engineering expertise.

By working for many industries such as traffic engineering, the synthetics, plastics and metal industries as well as numerous others, we can provide you with a head start in comprehensive know-how. The test laboratories are equipped with state-of-the-art technology for testing, measurement and control with a testing area of more than 10,000 m².

We work according to German and international standards as well as directives, guidelines and are certified pursuant to DIN EN 9100 and ISO 14001. All of the testing laboratories involved are accredited according to DIN EN ISO/IEC 17025. IMA Dresden is an accredited Type A inspection body according to DIN EN ISO/IEC 17020 and an accredited certification body according to DIN EN ISO/IEC 17065. These accreditations were awarded by the Deutschen Akkreditierungsstelle GmbH (DAkkS).

We have been approved by the German Institute for Building Technology Berlin (DIBt) as a recognised inspection and certification body in accordance with the state building regulations, which has also been approved by the German Federal Railway Authority (EBA) for railway-specific building products, designs, components and construction methods. We are recognised by Panels and Profiles Europe (PPA Europe) as a testing and inspection (“third-party”) body within the framework of the EPAQ Quality Mark for sandwich elements and metal sheet profiles.

UTILISE THE COMPETENCE FROM IMA DRESDEN FOR YOUR CONSTRUCTION PRODUCTS

As an independent testing service provider, we can provide reliable results and strictest confidentiality. The ability to be able to think and act in the interests of our customers is not a frivolously formulated code of conduct. This principle also includes much more, such as continuously striving for engineering perfection, which is then reflected in intelligent solutions and sustainable usable results at fair prices.

Please feel free to contact us with questions or enquiries at ima@ima-dresden.de

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