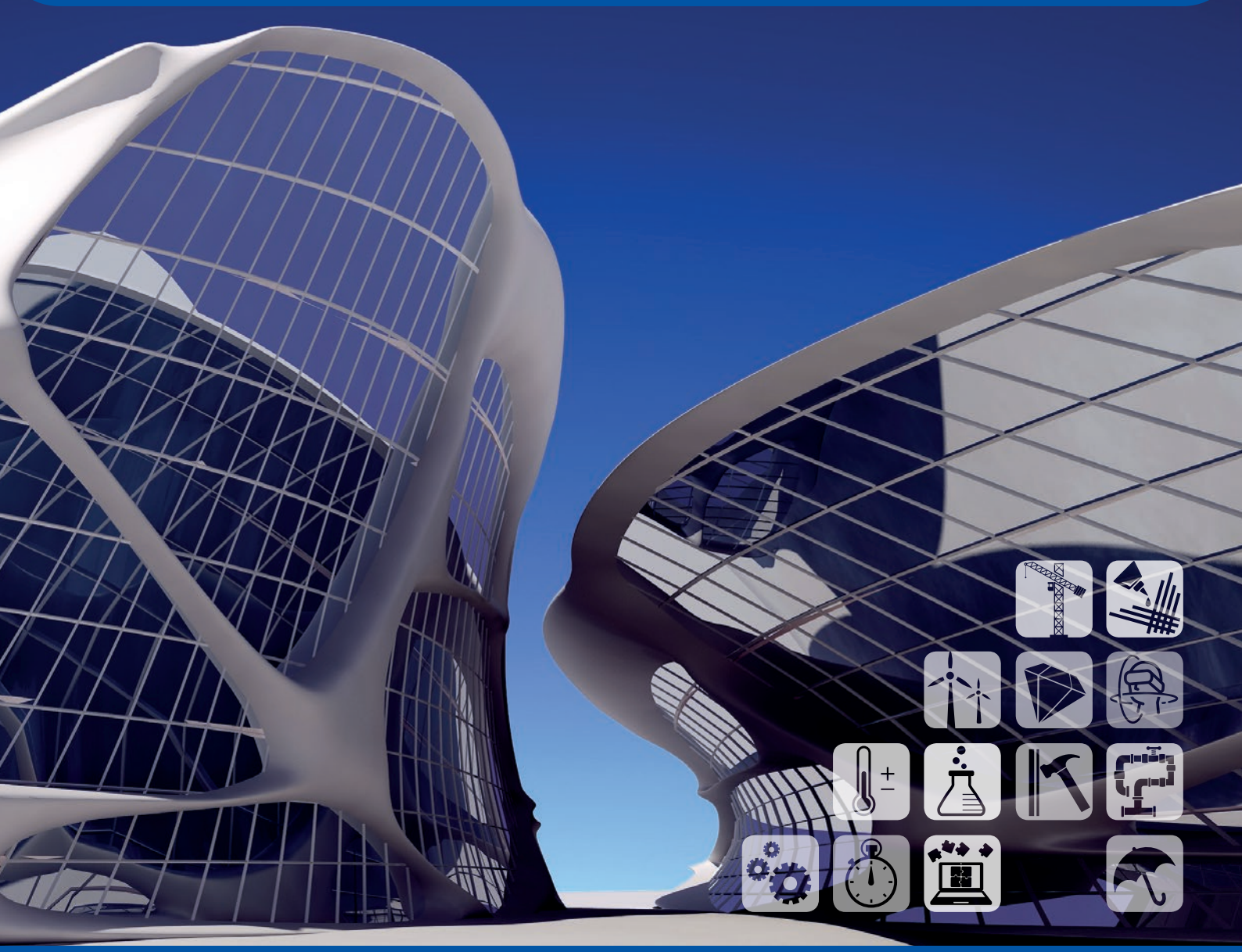
Applus IMA



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 qulaity control. We make statements about strength, durability, damage behaviour, ageing and functionality.

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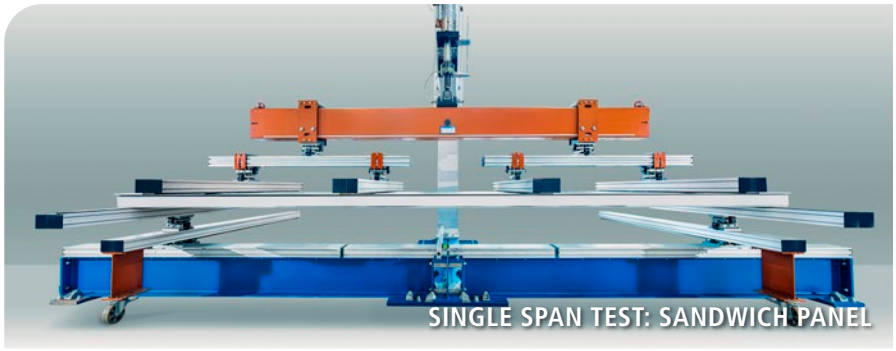
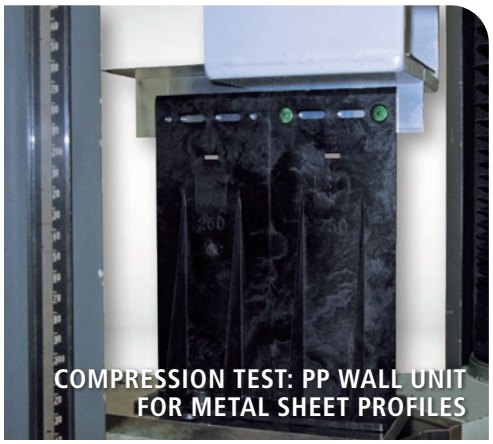
Deutsches Institut für Bautechnik DIBt

European Association for Panels and Profiles

Eisenbahn-Bundesamt


SINGLE SPAN TEST: SANDWICH PANEL


COMPRESSION TEST: PP WALL UNIT FOR METAL SHEET PROFILES

SHEAR TEST AT SHORT BEAM OF SANDWICH PANEL

COMPRESSION TEST OF SANDWICH PANEL

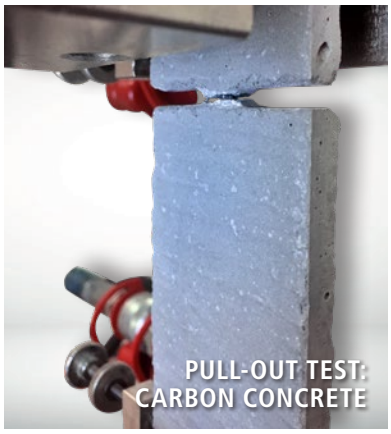
TESTING A KNOTTED CONNECTION: GFRP CONSTRUCTION PROFILES

COMPRESSION CREEP TEST: DRAINING SYSTEM MADE OF PP

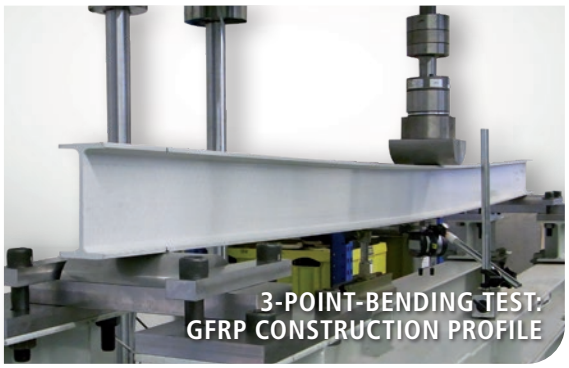
BENDING TEST: GFRP GRATING

COMPRESSION TEST IN LONGITUDINAL PROFILE DIRECTION: GFRP CONSTRUCTION PROFILE

COMPRESSION TEST: GFRP WALL UNIT FOR METAL SHEET PROFILES


PULL-OUT TEST: CARBON CONCRETE

CREEP TEST ON SANDWICH PANEL


3-POINT-BENDING TEST: GFRP CONSTRUCTION PROFILE

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.

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)

The testing services of Applus + IMA (IMA Materialforschung und Anwendungstechnik GmbH) are accredited in accordance with the DAkkS accreditation certificate.

Deutsches Institut für Bautechnik DIBt

European Association for Panels and Profiles

Eisenbahn-Bundesamt

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.

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 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 FACE MATERIAL

- Mechanical tests
- Determination of layer thicknesses

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

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 downs 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 – 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.

IMA TESTED

THE WORLD ON THE TEST BENCH

Benefit from the competence of IMA Dresden.

IMA Materialforschung und Anwendungstechnik GmbH, short IMA Dresden: the internationally recognized testing, monitoring and certification body for manufacturers and the entire supply industry to make new developments marketable faster.

Wherever strength, validation or material characteristics are concerned, IMA Dresden joins forces when it comes to testing standards, approval tests and experimental investigations.

As a partner for industry, business and research, IMA Dresden has been helping to make tomorrow's products reliable, efficient and safe since 1993. We test innovative products and technologies from the aerospace, rail vehicle, automotive and medical technology, plastics and metal industries and other branches of industry on more than 10,000 square meters of testing space in certified and accredited testing laboratories . You can rely on it: the testing, inspection and certification tasks are processed at IMA Dresden according to the current state of the art and enjoy acceptance and trust.

As an independent testing service provider, we offer reliable results and the strictest confidentiality.

We work according to German and international standards and guidelines and are certified according to DIN EN 9100 and ISO 14001.

The testing services of Applus + IMA (IMA Materialforschung und Anwendungstechnik GmbH) are accredited in accordance with the DAkkS accreditation certificate.

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