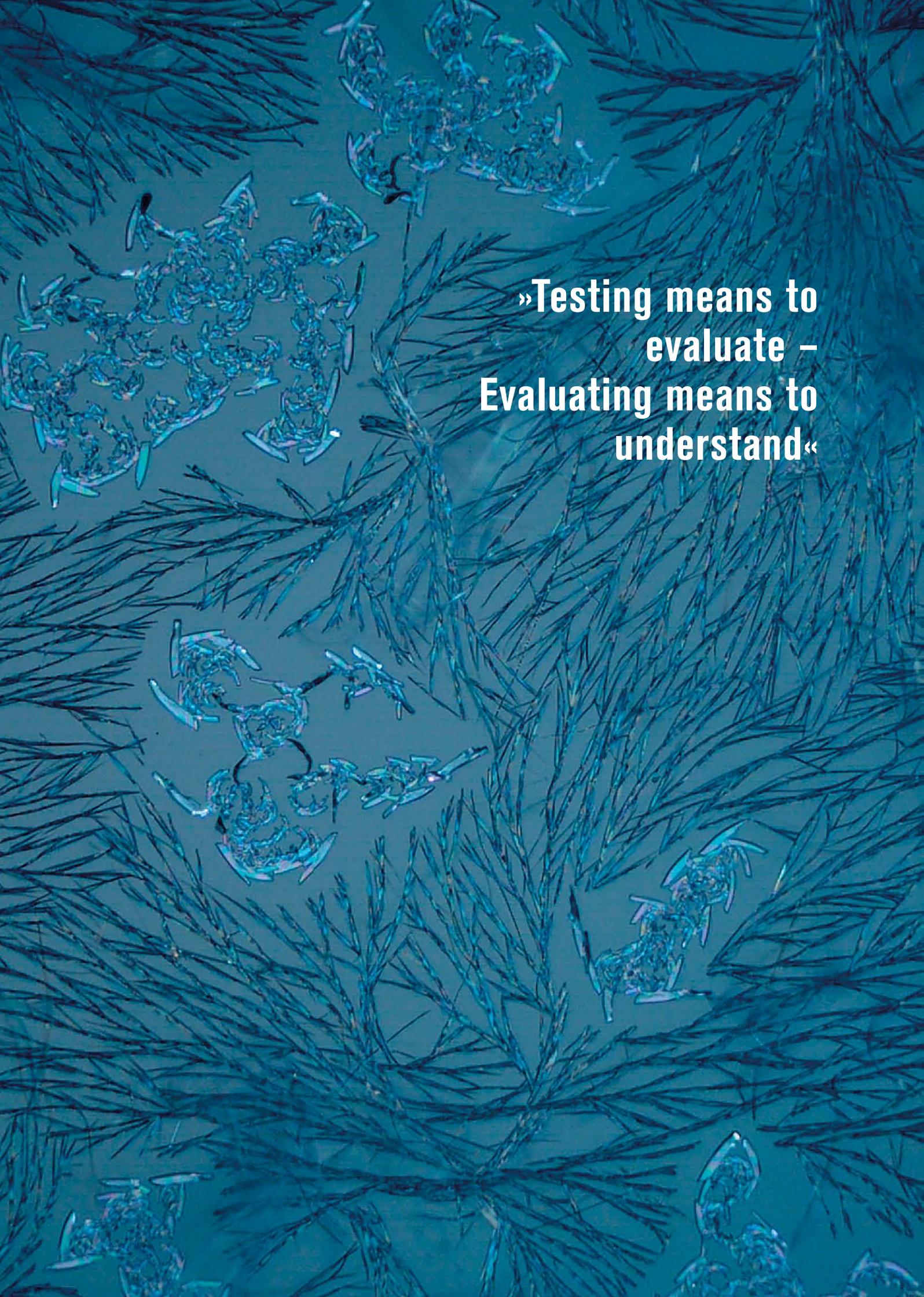




FILK Freiberg Institute

**Testing
Driven by Science**



»Testing means to
evaluate –
Evaluating means to
understand«



We tell you, what's in for your material

More than just test results – As a service provider for material testing the benefit for our customers arises from the close integration with the research environment of our institute. With more than 130 years of experience and extensive knowledge in materials and technology research, we can identify material-specific correlations and can relate them to characteristics and properties. Inter-disciplinary expertise and the latest scientific insights find application in advice and processing of your test orders.

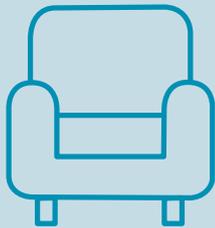
Our accredited test laboratory offers you more than 1.000 standardised test methods, over 200 of which are accredited according to DIN EN ISO/IEC 17025. In turn, these methods can be found in a multitude of specifications

from a wide range of industries. Moreover, there are numerous special test methods, damage and defect analyses and tests according to legal requirements.

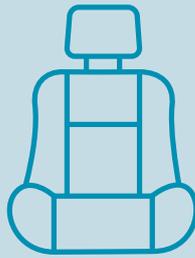
That is why testing competence begins with the choice of the right procedure. Depending on which material is used and where, we will work out a customised test plan. Our employees will be glad to help you with their material expertise. And our quality management ensures that you can rely on our work. Put us to the test!

Dr. Sascha Dietrich
Head of Accredited Test Laboratory

We work for these industries



Furniture /
Object furnishing



Automotive /
Mobility



Technical textiles /
Personal protective equipment



Shoes / Garments /
Accessories

FILK



Toys /
Commodities



Chemical
industry



Medical products

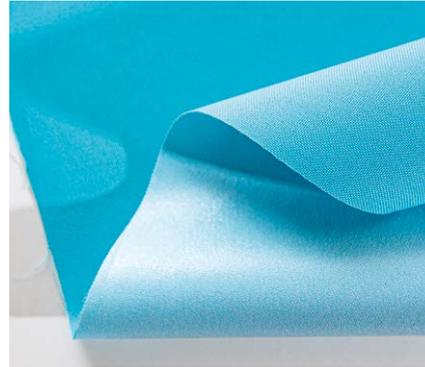
The high industry relevance of our testing laboratory is no coincidence. Typical fields of application arise from our materials and technology research, which are also reflected in the services offered by our testing laboratory. A good understanding of the value chains of the applying industries, the manufacturing and pro-

cessing technologies as well as the material properties are an important basis for our activities as a testing service provider. This means that we know exactly what our customers need and can respond to them accordingly.

These materials we know particularly well



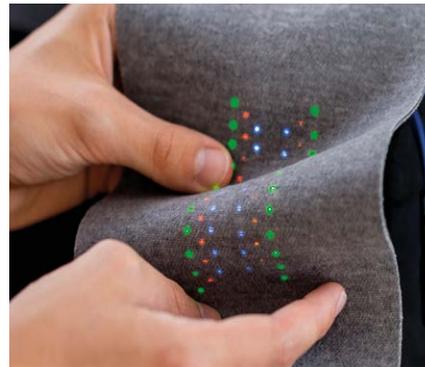
Leather / Leather fibre material
Leather, crust, rawhides, leather products, materials containing leather fibres



Coated textiles
Flexible composite materials on various raw material basis, multilayer composite



Plastic parts / Foils / Elastomers
Thermoset plastic parts, flexible membranes, films and coatings, seals



Functional layers / Composites
Multifunctional, flexible polymer materials and films, smart materials



Textiles / Yarns
Textile fabrics based on different raw materials e.g. vegetable, synthetic or mineral



Trend substitutes
Alternative materials with biological content as substitute for leather and coated textiles



Collagen / Biogenic raw materials
Collagen-based raw materials, collagen-based materials, biological raw materials and materials thereof



Biomaterials
Synthetic or biogenic materials for diagnostic or therapeutic applications



**WE TEST FOR
YOU ON ALL LEVELS**





PHYSICAL TESTING

The portfolio of the working group Physical Testing includes a wide range of nationally and internationally standardised methods from a wide variety of application areas and industries. The test services range from the determination of basic material parameters to strength and resistance tests, fastness and durability tests, ageing and material fatigue tests, as well as tests on flammability and burning behaviour, to special tests and surface analyses. With the help of modern and versatile equipment, a wide range of tests is offered to determine the behaviour of materials and components in use. In addition to tests under standard conditions, tests are also possible under varying climate conditions e.g. temperature and humidity variation.

WE TEST

- General material properties, basic parameters
- Strength and resistance properties
- Deformation behaviour and bending properties
- Ageing and material fatigue phenomena
- Abrasion and wear properties
- Resistance to media
- Fastness properties
- Soiling behaviour and cleanability
- Surface properties
- Burning behaviour and flammability
- Tribological properties
- Special tests
- Resistance to NO_x and amines



CHEMICAL ANALYSIS

Materials and products that have been tested for harmful substances and that are safe and comply with legal requirements are essential for all manufacturers, distributors and consumers. Since many years, the working group Chemical Analysis performs material-specific analysis for detection of harmful substances. Both, qualitative and quantitative methods are within the portfolio. According to the individual requirements of the client, a comparison is made with legal and regulatory requirements as well as other defined specifications such as OEKO-TEX®, RAL and CADS standards. Material identification using spectroscopic or thermoanalytical methods as well as the classic operations for the purification of chemical substances are part of the core competence of the testing laboratory and are carried out using the latest instrumented analysis technology.

WE TEST

- Organic pollutant analysis
- Inorganic pollutant analysis
- Formaldehyde content
- Chromium(VI) content
- Determination of collagen / leather
- Determination of tannin / tanning agent
- Thermoanalytical properties
- Identification / Detection



EMISSION AND ODOUR

The working group Emission conducts tests on the detection of highly volatile organic compounds and heavy volatile, condensable substances using standardised test methods and evaluation systems. In addition to the pure quantification of emitted substances, e.g. VOC and fog, the focus of these investigations is also on the qualification of critical substances and pollutants.

Odour is a special form of emission. It as an important quality feature and contributes significantly to the purchase decision. For this reason, odour is of particular interest in the automotive and furniture industry and is a test criterion relevant to the release of materials. Odour impressions themselves cannot be measured by instrumental analysis, so odour tests can only be performed as sensory tests carried out by specially trained test personnel.

WE TEST

- Emission properties
- Chromatographic methods
- Sensory tests: Odour
- Fogging behaviour
- Formaldehyde emission
- Amine emission tests
- Special methods

DAMAGE ANALYSES AND ASSESSMENT

For an expert quality assessment and reliable material evaluation, the working group Damage Analysis offers a comprehensive portfolio of special analyses and methods. The evaluation of the results and an assessment of the causes or sources of defects corresponding to the case form an integral part of the damage analysis section. If necessary, our employees also act as appointed experts for leather and coated textiles.

FAILURE ANALYSIS

Material examinations and special analysis for the clarification of damage patterns:

- Detachment of layers, abrasion
- Cracking of surfaces, cracks in the material
- Discolouration / staining / rashes
- Delamination, adhesion problems
- Surface and dimensional stability (shrinkage)
- Waves, wrinkles, loose grain
- Processing problems

MATERIAL TYPE DETERMINATION

- Determination of material type (leather, split leather, leather imitations, etc.)
- Product labelling (watch straps, bags, mobile phone cases, etc.)
- Determination of animal type (cow, goat, deer, etc.)
- Determination of leather type (aniline, semi-aniline or pigmented)
- Determination of the full grain of leather
- Composite materials (correct labelling)

MATERIAL ASSESSMENT

- Examination of material properties, recommendations on possible applications
- Quality assessment according to applicable standards and technical delivery conditions
- Material comparison between your material and reference samples
- Verification of applicability for new material developments

We go all the way with you

Material Development from Start to Finish

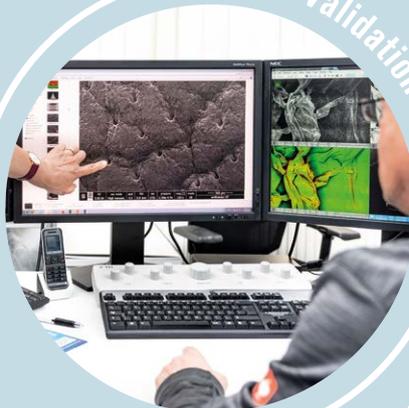
- 1 We discuss and advise on your specific issues.
- 2 We identify application-related and specific material-related properties.



- 3 We develop a test plan based on specification.
- 5 We assess the conformity of your material and assign performance classes.



- 4 We work off the test plan reliably and on time. You always have direct contact with our employees.



- 7 For material qualification we create documentation and reports for the external material release.



- 6 With our research-based material and technological expertise, we help you to optimise your material.



- 8 As a recognised testing service provider we confirm the quality of the material.

Accreditation – Standardisation – Certification

Comparable quality

Standards specify in a comprehensible way what can be expected of a product or service and at the same time specify which rules and conditions must be observed in production or when offering services. In this way, standards ensure the quality of products in all areas of life. Through standardisation, all market participants can rely on a product or service being offered in accordance with the standard. Our material and testing experts are intensively involved in numerous standardisation committees and thus help to ensure that your customers can rely on comparable and comprehensible test results.

Flexibly accredited

Our testing laboratory meets the high requirements of the DIN EN ISO / IEC 17025:2018 standard, which certifies the institute's competence, reliability and service quality in materials testing on leather, plastics, coated textiles, textiles and multi-layer material composites. Within the scope of the applicable accreditation, the institute offers a comprehensive portfolio of test methods. In total, the certificate covers more than 200 individual tests, primarily physical, chemical and emission test methods, but also industry-specific methods such as stick-slip behaviour and odour testing. The flexible accreditation means that all the included testing standards can be carried out in their currently valid version. Accreditation according to DIN EN ISO / IEC 17025 is the most important standard for testing and calibration laboratories. In almost all countries of the world, accreditation according to this standard is required to demonstrate testing competence and compliance with quality standards. It is a prerequisite for manufacturers and authorities accepting test results from a testing laboratory.

Transparent certification

Certifications are an important instrument for the conformity assessment and comparability of products, services, processes, procedures or even locations. They are encountered in almost all areas of economic and social life. They offer a reliable measure of security with regard to the quality to be expected and compliance with standards. The material and testing competence, coupled with the scientific-technological background, are the basis for the Institute's activity as a certification body in the traditional fields of competence. This includes both the safety of products and ecological and environmental aspects such as the efficient use of materials and resources. A high level of expertise as well as an expert evaluation of results ensure a transparent certification process. Our institute is a certification body for the entire OEKO-TEX® product range and for the ECO₂L energy efficiency label.



Research for the industry

Our testing laboratory is part of the FILK Freiberg Institute, an industrial research institution with a long tradition. Ever since it was founded in 1889, research, materials testing and specialist training for the industry have been central tasks. What once began with leather now comprises materials research in a wide range of flexible polymer materials: leather, leather imitations, coated textiles, functional layer systems and collagen-based materials. Natural and synthetic polymers serve as the raw material basis. A special feature is the close proximity to the

industry. The activities are oriented towards the research and development needs of small and medium-sized enterprises (SMEs) in particular. They are supported and strengthened in their innovation activities with industry- and application-oriented research. This also includes the range of services of our test laboratory.





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