

## SKZ

## Foundation:

- 1961

## Turnover:

- 26 million €

## Employees:

- 260

## Branches:

- Service provider for the plastics industry

## Key products/services:

- Testing and Certification of materials and products
- Basic and advanced training of professionals
- Research and Development (materials, processing, testing, environmental impact)
- Certification of management systems



## Das Kunststoff-Zentrum

## Centre

SKZ started 50 years ago at a time when polymers had been discovered as materials for the future. As today's biggest institute for plastics in Germany, SKZ offers practical solutions dedicated to meet your needs.

- The **research and development** is focused on the entire production chain, starting with material development, through processing and joining, to the evaluation of component properties and sustainability
- SKZ supports your product policy and provides valuable aspects for your markets by means of **quality tests and quality inspection**.
- With more than 11 000 participants a year SKZ is the European market leader in **education, professional training and knowledge transfer** in the field of plastics
- By **certifying management systems** SKZ promotes high efficiency and economic success of your company

SKZ is equipped with modern machinery and instruments for compounding, extrusion, injection moulding and joining as well as for testing of biomaterials. In addition, SKZ experts deal with various topics of material development, processing, material testing and an solutions that are relevant to the plastics industry.

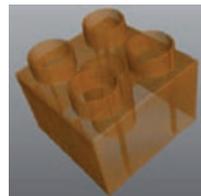
## Development of WPC

Since 2003 SKZ's research and development division has been working on Wood Polymer Composites (WPC). The influence of formulation and processing parameters on physical properties of the composite have been studied extensively. It was also analyzed how different processing techniques (direct extrusion, extrusion from compounds and injection moulding) influence the properties of WPC with a similar composition. In addition, joining as well as long-term tests such as weathering of WPC were performed.



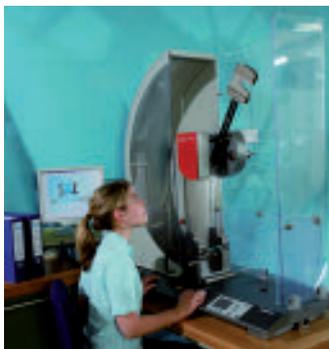
## Compounding of Biomaterials

The synthesis of new biopolymers is not always necessary, because already known and available biopolymers can be optimized sufficiently, for example by additives. In addition to the formulation development our main activities are concentrated on developing and optimizing necessary process technology. To achieve this goal there is a wide range of state-of-the-art compounding and extrusion equipment available, such as single screw, co-rotating twin-screw, planetary roller or ring extruder.



## Injection moulding of WPC and Biomaterials

Concerning WPC and Biopolymers the complete understanding of all technical relationships and interactions around the injection moulding was





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achieved (e.g. in the field of hot runner systems). As for processing of Biomaterials there are two modern pilot plants with a total of five injection moulding machines available. Main topics particularly deal with part development, tool technology, process optimization and quality assurance.

### Testing of WPC and biomaterials

In case of WPC, standardization is still in its infancy, but there are already some standards, draft standards and quality guidelines which allow the accredited SKZ - laboratory to perform the following tests:

- Tests according to Quality and Testing Specification issued by Quality Association for Wood-based Panels, registered association to achieve a quality mark for terrace deckings (initial type test and third-party supervision)
- Test methods for characterisation of WPC materials and products according to CEN/TS 15534, parts 1 to 3
- Product characteristics and general test methods for WPC according to Önorm B3031; Önorm B3032

Furthermore, SKZ supports companies in order to create and perform testing programs for building inspection approvals for statically relevant applications. These tests comprise:

- Tests of material properties, e.g. mechanical and thermal properties, resistance tests
- Tests of product properties, such as water absorption, flexural behavior, long-term resistance, thermal behavior, impact, slip, chemical resistance as well as weathering resistance

### Sustainability assessment

What do you contribute to a sustainable development of economy, environment and society? SKZ's working group „Sustainability“ helps finding answers to these questions. Reliable data are collected and comprehensive analyses are made for your materials, processes and products. Life Cycle Assessments, Environmental Product Declarations (EPD), Carbon Footprints and energy efficiency analyses are issued. Our primary goals: make sustainability measurable and realize optimisations.

### Training and knowledge transfer in the field of biomaterials

Professional training and comprehensive knowledge are individual and company key factors for a successful future. In SKZ's training centre professionals and managers are trained a.o. in the fields of WPC. The seminar „Wood Plastic Composites“ has been conducted once a year since 2007. The event has a workshop character, i.e. topics are discussed intensively with participants in small groups. Experts discuss markets, raw materials, processing and applications of WPC. The conference „Biopolymers in film applications“ has been conducted in collaboration with Innoform coaching since 2008. The aim of the conference is to report about current developments and trends when using biopolymers for film applications.



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