



# Advanced thermoplastic composite systems

**BOND**  
LAMINATES



# Nothing remains the way it was

In every aspect of life, the cycle of innovation is becoming more rapid. At the same time the quality requirements are becoming more demanding in all fields of technology, manufacturing, and research & development.

## **Composite materials**

The constant advancements in technology lead to higher demands on materials, e.g. in the automotive industry. Sustainable use of resources demands the reduction of weight in order to save fuel consumption and cost. At the same time, products need to remain reliable. Therefore, materials with outstanding properties are required.

In our development process, we do not so much improve a specific grade of material but combine materials together. The result is a composite material, which demonstrates a superior performance compared to the sum of the individual components: TEPEX®.

## **Product variety and superior properties**

Bond-Laminates products are being used in several technical fields and market areas. The broad range of applications is leading to continuously increasing know-how and new possibilities of use. In any case where light weight, stiffness and strength, fatigue resistance and damage tolerance, and last but not least high volume production capabilities are required, our materials come into play.

***Innovation is the daily challenge for Bond-Laminates. Only if we are innovative in everything we do, we can create sustainable value for our customers.***



# The technological docking station

Speed and quality give a competitive edge. Knowledge transfer and direct implementation into production processes are the basis of progress.

To be ahead of competition requires knowledge and speed of implementation. Bond-Laminates is a docking station for customer product development, thus creating this competitive edge.

## **Added Values for Bond-Laminates customers**

### **In engineering and application developments**

- Customers dock into a database on material and processing know-how gathered from many different industries; at the same time the intellectual property of our customers is protected.
- Intelligent networking of internal and external expertise through highly trained employees, processing partners and universities.
- Hand-in-hand with our customers we develop and test composite materials, structures and processes; for leading edge products.

**SPEED and QUALITY**

### **In manufacturing**

- When developing and manufacturing our products, Bond-Laminates thinks in implementation and efficiency.
- Bond-Laminates manufactures customized materials using continuous mass production processes.
- The direct link between development and manufacturing ensures maximum efficiency in time and cost.
- Bond-Laminates generates performance and cost effective innovations.

### **In material diversity and superior product properties**

- Optimum compatibility of fibres and polymers as well as automated production and perfect control of consolidation level results in superior material properties.
- Our materials are used to obtain lightness, stiffness & strength, durability and resistance to the application's environment.
- The use of the materials in several different technologies and fields of application ensures continuous know-how enhancement.

All values result in a maximum degree of innovation combined with superior performance for outstanding products.



# Synergy & Solutions

Maximum Innovation & Maximum Experience

The inspiration from highly specialised technical fields opens unexpected opportunities and creates development potentials. Bond-Laminates works in the sporting goods, automotive, protection, aerospace and consumer goods industries.

## Sporting goods

In the sporting goods industry, the whole spectrum of product qualities is valued. Reducing weight, great aesthetics and optimum performance such as energy return, impact resistance or stiffness – depending on the specific application TEPEX® covers it all: from the sole of a sports shoe to bicycle components and from protective clothing to ski boots. Outstanding materials for all fields where dynamic results meets superior products.

## Automotive

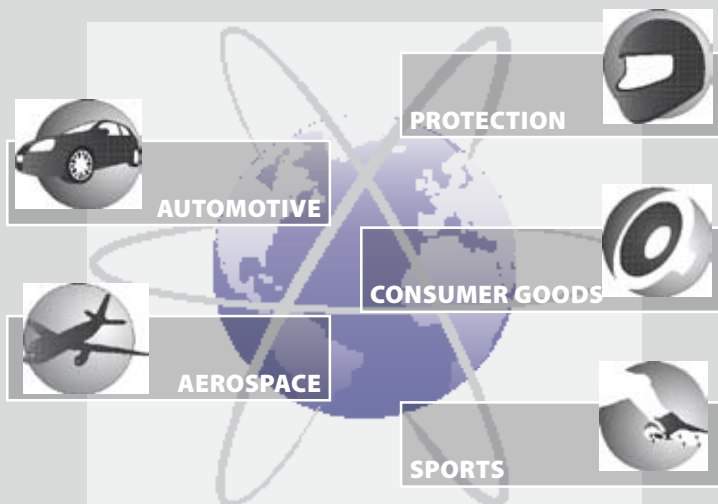
The automotive sector is confronted with stricter fuel economy and weight reduction requirements. Maximum safety and performance with minimum waste of resources is the daily challenge. Combining contradictions like weight reduction and maximum energy absorption for bumpers or chassis elements – TEPEX® makes it possible.

## Protection

Protection can be a serious matter. Then it is good to know that you can rely on TEPEX®. We offer optimised materials for protective wear, sports helmets and anti-ballistic helmets and panels. Maximum protection at minimum weight.

## Aerospace

The aerospace industry has specific requirements and standards for lightness and safety. TEPEX® is used in interior components, as it can offer a combination of superior performance and inherent fire, smoke and toxicity safety. The result: weight reductions and fuel savings.



*It is our ability to engineer material properties making new applications and processes possible: a product weight that can be more than 50% lower than with conventional materials, such as injection moulding plastics or aluminium.*



# The world of TEPEX®

Superior in Motion –  
Maximum performance with minimal resources

# Bionic benefits

Learning from Nature's Success



## **Minimum weight – maximum performance**

The superior strength & stiffness to weight ratio of composite materials enables up to 50% weight saving potential vs. metal structures.



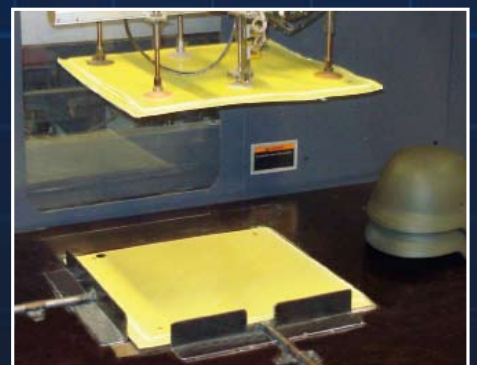
## **Superior energy absorption**

Thermoplastic composite materials absorb large amounts of energy in impact and crash vs. metals and plastic materials. This again enables weight reduction in applications with such specific requirements.



## **Processing speed – improved quality**

TEPEX® thermoplastic composite materials and parts are being processed within an automated production environment, offering processing speed and a constant quality of composite parts.



## **Energy savings – recyclability**

Using light weight materials saves energy during the product's lifetime. Moreover, TEPEX® waste can be recycled and reused.



# TEPEX® – Superior in Motion

## Advanced thermoplastic composite materials

Composite materials offer great mechanical performance at minimum weight. TEPEX®, the advanced thermoplastic composite material, adds two important advantages: cost efficiency and mass manufacturing capability. TEPEX® is being produced in an automated continuous industrial process and the semi-finished material can be transformed into 3D products in cycle times of typically a minute.

Wherever you need stiffness and/or strength combined with low weight, TEPEX® is the material for you.

### **TEPEX® standard materials**

TEPEX® comes in a wide range of standard materials; a variety of polymers, fibres and fabrics in 0.25 up to 3.0mm thickness. A list of these standard materials is available from Bond-Laminates.

### **TEPEX® customised yet mass-manufactured materials**

Beyond the standard products there are applications which call for tailor-made solutions. TEPEX® materials can be custom designed, to satisfy all requirements for a specific application. These customised TEPEX® materials are mass-manufactured using Bond-Laminates proprietary continuous manufacturing technology, guaranteeing the same high level of quality as for standard materials.

Many options – one target: product qualities which minimise the compromise between weight, performance, durability, sustainability and manufacturability.





**BOND**  
LAMINATES

**Contact**

Bond-Laminates GmbH  
Am Patbergschen Dorn 11  
59929 Brilon, Germany

Tel. +49-2961-96628-0  
Fax +49-2961-96628-500

[info@bond-laminates.de](mailto:info@bond-laminates.de)  
[www.bond-laminates.com](http://www.bond-laminates.com)