3DCORE[™] all around composites

MARKETS



MARKETS

YOUR IDEA - OUR SOLUTION

The applications of our high-strength, ultra-light 3D|CORE[™] core materials are endless and are already benefiting a wide range of customers in a variety of industries.

Our goal: a sustainable future. That's why we actively work every day to develop forward-looking solutions that minimize CO2 emissions, achieve resource-saving processes and reduce the cost of your product life cycle. We make your products more environmentally friendly.

Our versatile products always adapt to your individual requirements. Whether weight reduction, longer component life, more efficient production, performance-optimized components or cost reduction - we will find the right solution for you.







MARINE

LIGHTWEIGHT AT SEA

Lightweight construction, cost efficiency, safety and environmental friendliness are today's key factors for marine applications and easily achievable with 3D|CORE[™]. Because we know: Watercrafts are only as good as the materials they are made of.

The use of 3D|CORE[™] products means a drastic reduction in weight with the same strengths. The highquality composite materials ensure efficient use of resources, pave the way towards economical production to maximize the performance of lightweight and rigid components, and also reduce fuel consumption almost linearly with weight savings at the same length and speed.

YOUR BENEFITS

- Excellent shear and compression properties
- Low weight
- Excellent durability
- High damage tolerance & impact resistance
- DNV certified
- IMO Part 5 fire certification
- High strength and stiffness
- Sustainable operation
- Maximum flexibility
- Easy processing

- Sailing Yachts
- Motor Yachts
- Super Yachts
- Passenger ferries
- Special purpose vessels (e.g. lifeboats)







3DCORE[™] all around composites

RAILWAY

LIGHTNESS IN HIGH SPEED

The demands on modern railways in terms of safety, energy efficiency and weight are becoming increasingly high. Rail vehicles must last for decades and must not wear out prematurely despite daily acceleration and deceleration processes. The fire protection standard according to DIN EN 45545-2, which applies throughout Europe, presents designers with additional challenges in the selection of suitable materials. Furthermore, the issue of sustainability and safety plays a major role in the development of modern rail vehicles today.

In order to meet all these requirements, the use of non-metallic lightweight materials is particularly suitable. The low weight not only reduces the energy requirements of the vehicles, but also minimizes the abrasion of the rail systems. In addition, they keep maintenance costs low due to their high corrosion resistance.

YOUR BENEFITS

- Excellent shear and compression properties
- Fire protection certification according to EN 45545-2 (HL3 for R1, R7, R10 and R17)
- High weight saving potential
- High fatigue strength
- Maximum design freedom
- Good thermal insulation & soundproofing
- High corrosion resistance
- Easy processing
- Excellent flexural strength, dimensional stability and impact resistance
- Integration into functional groups

- Local passenger rail transport
- Long-distance passenger rail transport
- Trams
- Subways
- Rail freight transport







TRANSPORT

LOAD MORE WITH EASE

The advantages of lightweight transporters are clear to see: compared to conventional vehicles, they impress with an enormous payload increase thanks to their low weight and can thus carry significantly more freight. They are also indispensable for reducing the CO2 footprint of a transport operation, as the weight advantages are clearly noticeable in fuel consumption. If empty runs cannot be avoided, this aspect also plays a key role in terms of cost benefits.

The biggest challenge in road haulage is to reduce the weight of a transport vehicle without the weight reduction having a negative impact on rigidity. We solve this challenge easily, as we achieve maximum payload for your transport by using our weight-optimized 3D|CORE[™] core materials.

YOUR BENEFITS

- Weight savings
- Reduced fuel consumption
- 🕘 Maximum design freedom
- Strength & stability
- High bending & impact strength
- Reduced maintenance
- High fatigue strength
- Easy processing

- Agricultural vehicles
- Trucks
- Buses
- Caravans
- Special vehicles







3D CORE[™] all around composites

WINDING

MASTS

DYNAMICALLY LIGHTWEIGHT

Manufacturers and engineers of wound components will also have to deal with the issue of sustainability and weight saving in the near future, especially as the use of expensive materials is often chosen. The laminate plans usually include countless layers of glass or carbon fibre with high resin uptake to achieve the desired technical properties. This is exactly where 3D|CORE[™] comes in.

PIPES

3D|CORE[™] TAPES are specially designed for the winding process and simplify the production of pipes, masts, rollers and tanks. They are made from our high-performance and closed-cell 3D|CORE[™] PET GR foam cores and thus significantly increase the service life of your products, simplify handling in production and noticeably reduce your maintenance costs.

YOUR BENEFITS

- Ourability
- High dimensional stability
- Easy processing
- No exothermic reaction
- Shorter production times
- High bending & impact strength
- Significant weight savings
- Excellent flexibility of the foam

- Pipes
- 🕘 Tanks
- Sleeves
- Rollers
- Masts







3D CORETM all around composites

AUTOMOTIVE

LIGHTWEIGHT CONSTRUCTION WITH SPEED

Lightweight construction is one of the biggest challenges facing the automotive industry. Automobile manufacturers and suppliers are confronted with high demands for vehicle weight reduction and its effects on fuel consumption, CO2 emissions and manufacturing costs. On-board electronics, including modern safety systems, are becoming increasingly complex and add a great amount of weight. This weight not only has a negative impact on fuel consumption, but is also at the expense of driving dynamics.

With 3D|CORE[™] lightweight products, you are able to manufacture vehicles that meet increasingly stringent requirements in terms of safety, weight, mechanics and sustainability.

YOUR BENEFITS

- Weight savings
- Reduced fuel consumption
- Maximum design freedom
- Strength & stability
- High bending & impact strength
- No rotting
- Easy processing

- Passenger cars
- Electric vehicles
- Sports cars
- Motorcycles







3D CORE[™] all around composites

SKATEBOARD

SKI

KAYAK

CANOE

SPORTS & LEISURE

JET SKI

WITH LIGHTNESS TO PEAK PERFORMANCE

Sports equipment designed to withstand intense loads and achieve peak performance requires structural reinforcement that does not come at the expense of its own weight. 3D|CORE[™] products offer advantages for a wide range of demanding sports applications. They can be used to produce particularly lightweight, high-strength, durable components that are resistant to bending. Sports in and on the water in particular benefit from the fact that the closed-cell 3D|CORE[™] foam cores do not absorb water.

SURFBOARD

YOUR BENEFITS

- Weight savings
- Maximum design freedom with integrated unique selling point
- Strength & stability
- Homogeneity
- No water absorption
- Less porosity
- High bending & impact strength
- No rotting
- Easy processing

- Skateboards
- Surf- & Kiteboards
- Snowboards
- 🕘 Ski
- 🕘 Canoes & Kayaks
- 🕘 Jet Ski







FACADES ROOFS PANELS COVERINGS DESIGN ELEMENTS

3DCORE[™] all around composites

DESIGN & ARCHITECTURE

LIGHTWEIGHT CONSTRUCTION WITHOUT LIMITS

Lightweight solutions have become much more important for designers and architects. Lightweight materials are easier to assemble and reduce the cost of construction and product solutions. For users, lightweight construction results in additional flexibility, maximization of usable space, and faster construction progress. A main argument for lightweight construction is also the saving of raw materials. 3D|CORE[™] products are particularly resource- and energy-efficient and actively counteract unnecessary material consumption. They also allow the construction of complex architectural designs with high stability and long life indoors and outdoors.

YOUR BENEFITS

- Weight savings
- Maximum design freedom
- Strength & stability
- High bending & impact strength
- No rotting
- Easy processing
- High weather resistance
- Good insulation properties

- Facades
- Roofs
- Panels
- Coverings
- Design elements





NACELLES

ROTOR BLADES



all around composites

WIND ENERGY

CLIMATE PROTECTION BEGINS IN PRODUCTION

The expansion of wind turbines is essential for achieving the climate targets. However, several tons of CO2 could already be saved in the production of the turbines. We support you in reducing your costs and contributing to a sustainable world. 3D|CORE[™] products save large amounts of fibre and thus reduce the weight of rotor blades, nacelles and spinners. At the same time, strength, stiffness, resilience and service life are increased.

For particularly large components, such as rotor blades, 3D|CORE[™] ROLLS, as up to 64 meters of foam core can be effortlessly unrolled and placed in the mould. With customized fix-in-place[™] ASSEMBLY KITS, we increase your production capacity by reducing production time, manufacturing costs and material consumption. Due to the shortened process time, enormous energy savings can be achieved even before the system is put into operation.

YOUR BENEFITS

- Low weight
- High stiffness and strength
- Maximum flexibility
- Easy processing
- No unnecessary material consumption
- Sustainable materials

- Rotor blades
- Nacelles
- 🕘 Spinner

3DCORETM all around composites



3DICORE GMBH & CO. KG OSTSTRASSE 74 32051 HERFORD GERMANY <u>WWW.3D-CORE.COM</u> TEL: 0049 5221 93 63 90 E-MAIL: SALES@3D-CORE.COM

CONNECT WITH US:

