



3D|CORE™
all around composites

3D|CORE™ SERVICES



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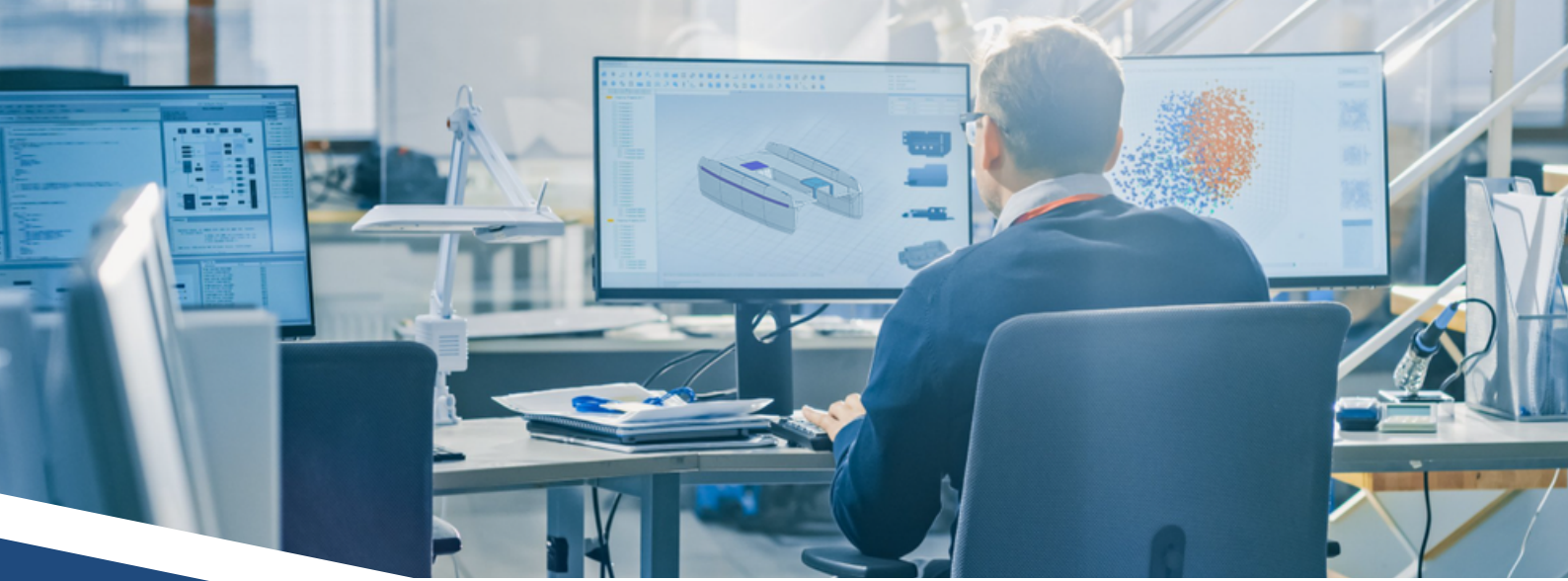
The challenge today: reduce the volume weight, but at the same time increase the performance, range and productivity of vehicles and machines in a wide variety of industries, while still achieving savings in raw materials, costs and energy. We say: Challenge accepted!

Our experienced engineering team supports you in finding the perfect composite solution for your project. Together we will develop your ideas further and take on new challenges in order to develop the optimal lightweight solution for you. We support you in the design and construction, in the material selection, in the verification through material testing, in the optimization of the fibre composite components as well as in the production. In this way, we enable you to manufacture high-quality components in the shortest possible time.

Lightweight construction is part of our corporate DNA. Therefore we reliably support our customers in all phases of their value chain. As an extended workbench, you benefit from our expertise - from drawing to production.



BE FASTER THAN YOUR COMPETITION!

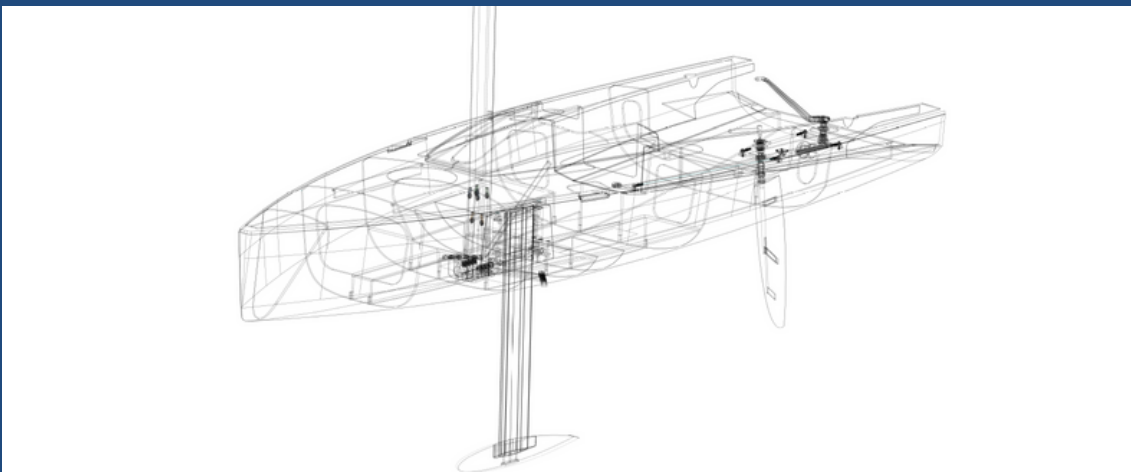


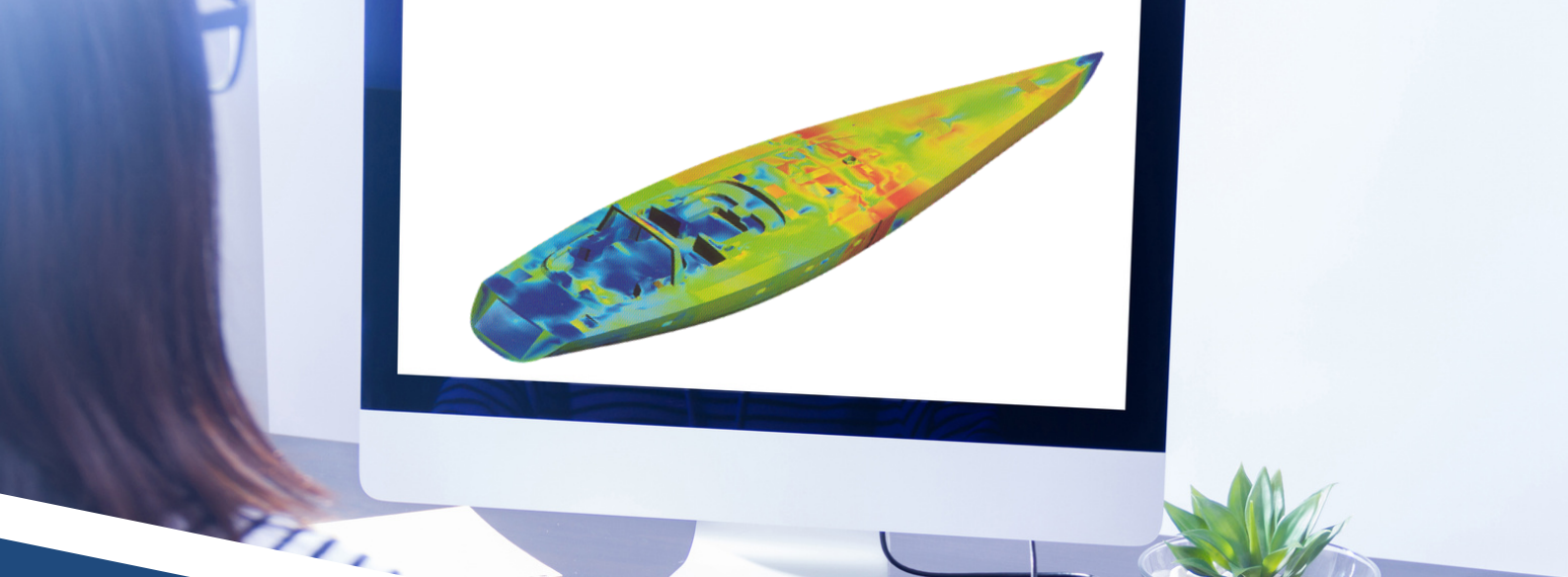
ENGINEERING

SIMPLY WELL THOUGHT OUT

You want to improve an existing product (re-design) or have already put a new idea on paper? Our engineering team supports you from the very beginning in the implementation of your idea: throughout the entire production chain all the way to the completion of your composite component. In order to allow an optimal design of your components, we analyze your planned lay-up, the product design as well as your requirements and wishes. Our specially developed 3D|Calculator calculates the technical properties of the composite component and simulates load cases to improve future performance. To validate our calculations, we produce prototypes which are then subjected to extensive testing in our test laboratory.

We pay particular attention to the subsequent material and energy consumption in your production, as well as to the use of sustainable composite materials. In order to guarantee you a fast time to market and to enable optimal material consumption, we create cutting data for the production of prototypes or series components. This accelerates your production process and additionally minimizes your waste and shipping costs.





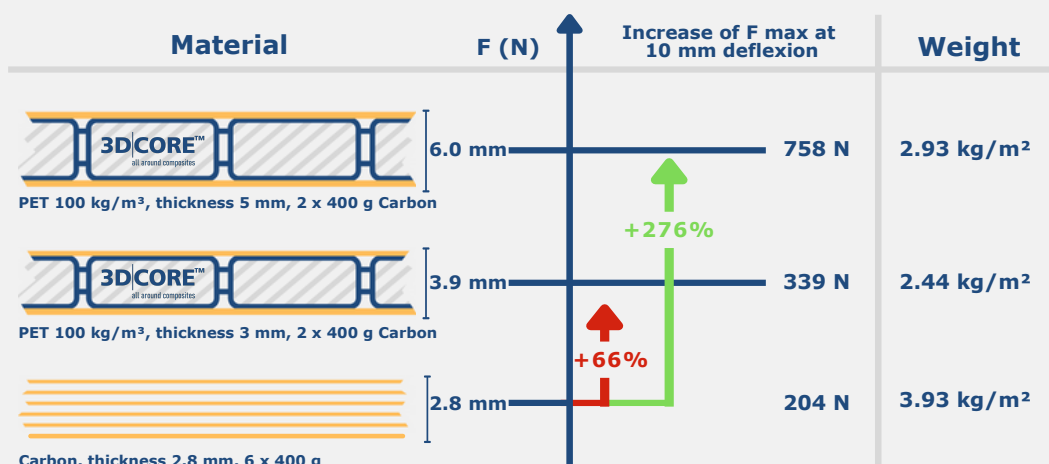
SANDWICH OPTIMIZATION

OPTIMIZED LAMINATE PLAN - OPTIMUM PROPERTIES

By comparing possible lay-up combinations (topology) with regard to their technical properties, we optimize your existing laminate plan and thus find the balance between weight and performance for you. To do this, we have access to an extensive database that we have built up with empirically determined characteristic values of a wide range of composite materials from our own materials research. Our development engineers are always actively involved in new material decisions. In order to always be able to make the best decisions for our customers when selecting materials and raw materials, we work exclusively with globally recognized manufacturers.

We also optimize existing sandwich structures and convert monolithic components into sandwich structures. Our 3D|CORE™ structure makes it possible to save on expensive fibre layers. The technical properties of the component are improved immensely - along with a decreasing component weight.

CARBON FIBRE MONOLITHIC VS. CARBON FIBRE & 3D|CORE™





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SUSTAINABILITY CONCEPT

SUSTAINABLE LIGHTWEIGHT CONSTRUCTION

Sustainability is a global priority. For all industries, it is necessary to drastically reduce CO₂ pollution. Our solution: minimizing weight and maximizing component quality with the help of our 3D|CORE™ technology. We pay particular attention to reducing material and energy consumption in production and to using sustainable composite materials. For this reason, we rely on recycled and recyclable core material with excellent mechanical properties. Our 3D|CORE™ PET GR consists of 100% post-consumer recyclate obtained from plastic bottles. Furthermore we fundamentally refrain from using substances that endanger people and the environment.

In addition, our 3D|CORE™ ASSEMBLY KITS reduce waste and ensure optimal material consumption. With the help of our in-house rapid prototyping and the possibility to produce small series, we also avoid unnecessary transport and thus reduce your and our carbon footprint.



Did you know?

Already 2,5 m² of our green material 3D|CORE™ PET GR with a thickness of 20 mm can save 9,2 kg of CO₂.



EFFICIENCY CALCULATION

CALCULABLE SUCCESS

Efficiency is important to us in every respect! Based on our many years of know-how, the data from our composite database and of course based on your wishes, we compare your existing lay-up, the process as well as the cycle times. In this way, we find out where optimizations, savings or improvements are possible. All these factors serve as a basis for your decision and as an indication for your calculations.

The savings have a particular effect on the following points:

- The final component weight
- The materials used (less resin, fibres and consumables)
- The process, material and labour costs



Component
weight



Costs



Risk



Sustainability



Quality



Efficiency



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PRE - SERIES

LIGHTLY CONSTRUCTED

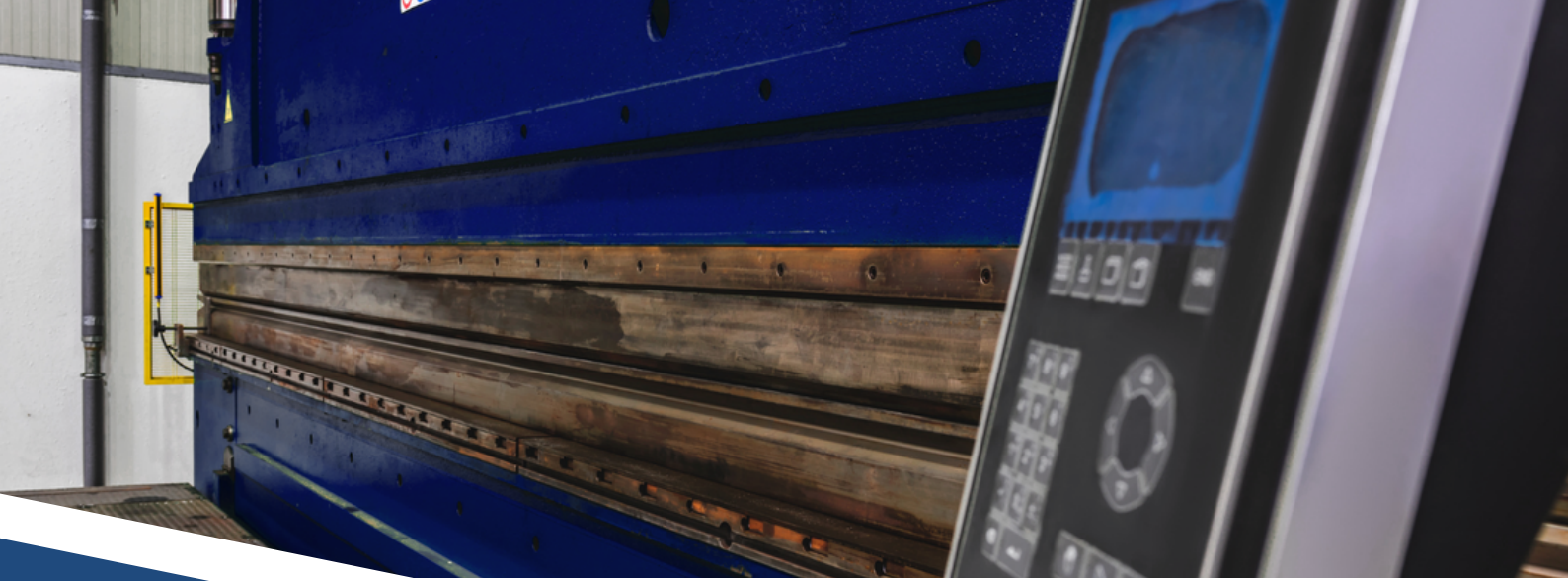
In order to make first product samples cost-effective and quickly accessible in the development phase, we also design and manufacture prototypes, machines, moulds and mould tools for you, in addition to our 3D|CORE™ ASSEMBLY KITS. With the help of our rapid prototyping, constructive optimizations can be detected quickly and then implemented cost-effectively. We also support you in integrating our lightweight construction solutions into your production and offer trainings so you can implement your projects faster and more economically right from the start.



GERMAN
**INNO
VATION**
AWARD '19
WINNER



GERMAN
DESIGN
AWARD
GOLD
2021

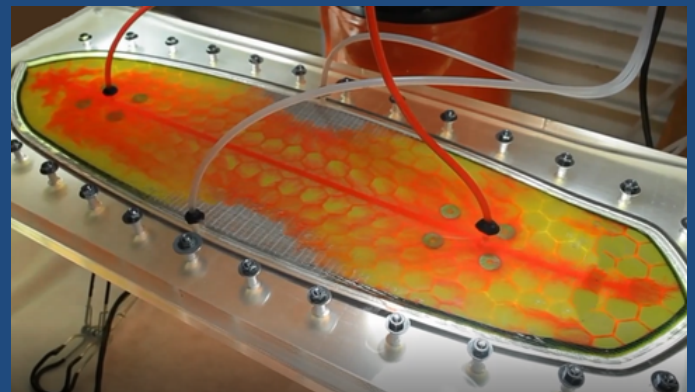


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PRODUCTION

LIGHTWEIGHT CONSTRUCTION IS PRECISION WORK

The use of lightweight components is essential to reduce fuel and energy consumption, improve the CO2 balance of a component and to increase the maximum load capacity. Decisive for this: the choice of the right manufacturing process! We will be happy to support you in selecting the right process for manufacturing your components. Our machinery, which is equipped with cutters and milling machines, various saws, welding machines, a labelling device, testing machines as well as an adhesive station, is at your disposal. To round off our wide range of solutions, we are happy to manufacture your lightweight components in small batches as well as individual pieces in our factory. For the production of large series, we provide you with our qualified partners!



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ENGINEERING

PROCUREMENT

PRODUCTION

CERTIFICATION

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