



# TURNING TECHNOLOGICAL REVOLUTIONS AND VISIONS INTO REALITY.

EXPERTS FOR LIGHTWEIGHT





# CONTENTS



- 04 VAP®-TECHNIQUE
- 08 ELEVATOR TECHNOLOGY
- 12 AEROSPACE
- 14 NAVAL SYSTEMS
- 16 WIND ENERGY
- 18 MEDICAL TECHNOLOGY
- 20 DESIGN
- 22 SALES / SUPPORT / SERVICES
- 26 AWARDS AND CERTIFICATES

VAP®





THE EASE WITH WHICH  
WE CREATE COMPOSITE  
STRUCTURES WITH PERFECT  
MECHANICAL PROPERTIES.



VAP®

**MORE STABILITY,  
MORE STIFFNESS,  
MORE POSSIBILITIES –  
WITH THE PATENTED  
VAP®-TECHNIQUE**

COMPOSYST has the license from the patent holder AIRBUS Defence and Space GmbH to offer the complete VAP®-portfolio of products and services. Customers can choose from the full range of licensed VAP®-materials developed for manufacturing of high-strength composites. If buyers need further assistance, COMPOSYST can offer experienced experts for consulting.

# VAP® – VACUUM ASSISTED PROCESS



The AIRBUS Defence and Space GmbH (formerly EADS) patented Vacuum Assisted Process (VAP®) uses the properties of modern, semi-permeable membrane systems in highly developed textile composites to apply the effect of a vacuum to the entire surface of a component. This “vacuum assist” ensures that trapped air and gas can be reliably and efficiently removed during resin infusion.

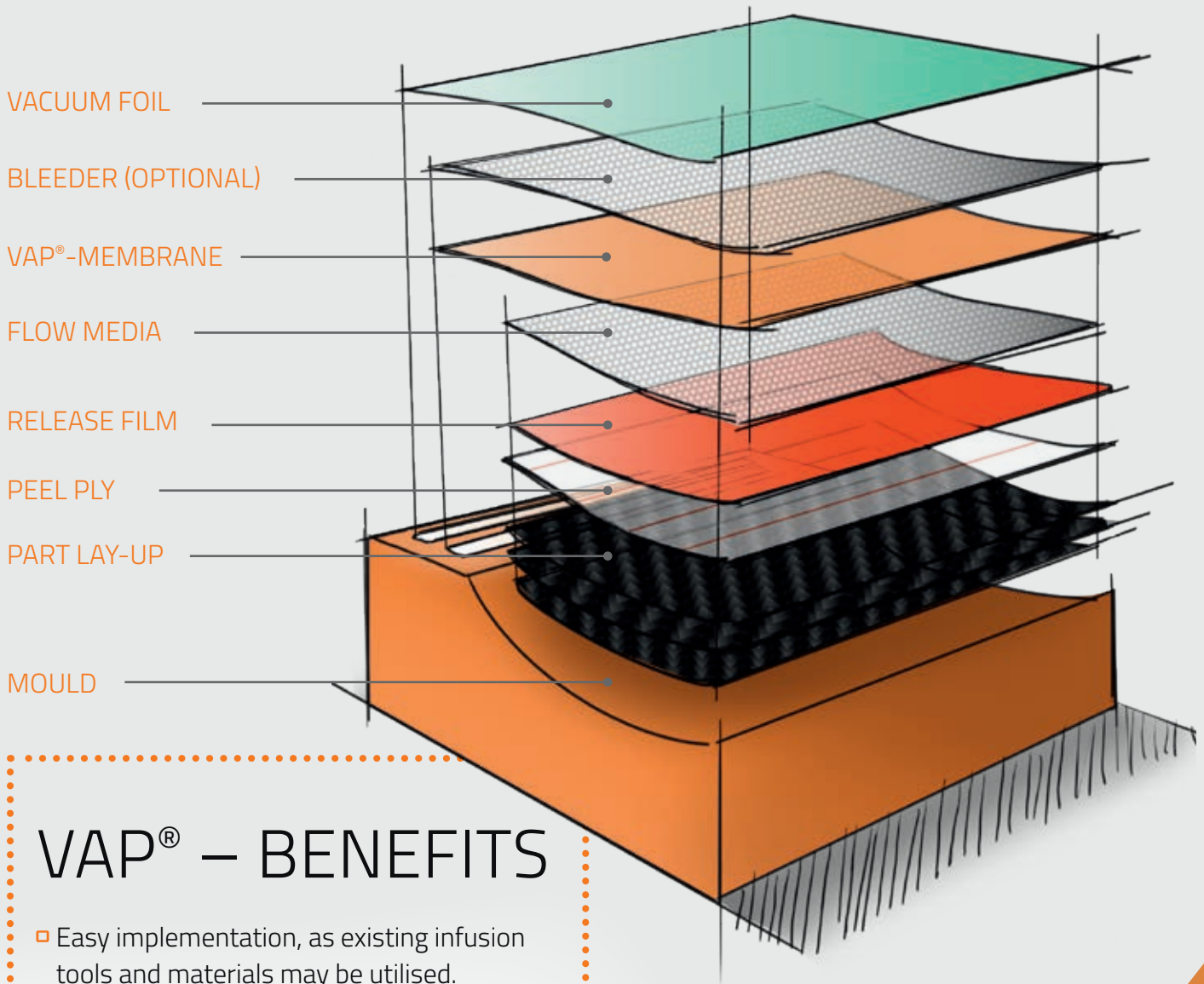
## VAP® – Functional Principle

The Vacuum Assisted Process (VAP®) is a technique to manufacture composite parts using vacuum injection; it applies membrane-assisted low-pressure infiltration.

The surface of the part to be infiltrated with resin is covered with a flexible membrane system. The membrane is permeable to gas but impermeable to resin. When resin is infiltrated into the part inside the membrane, the latter keeps the resin inside the matrix and away from the vacuum duct.

Yet, aided by the low pressure in the vacuum duct, trapped air and gas can still escape through the membrane’s micro-permeability and are purged via the textile layer. The vacuum acts uniformly, so purging takes place across the entire contact surface between part and membrane, during and after infiltration.





VACUUM FOIL

BLEEDER (OPTIONAL)

VAP®-MEMBRANE

FLOW MEDIA

RELEASE FILM

PEEL PLY

PART LAY-UP

MOULD

## VAP® – BENEFITS

- Easy implementation, as existing infusion tools and materials may be utilised.
- Excellent component quality without dry spots.
- Low laminate porosity due to efficient purging of air and gas through the VAP®-membrane during and after infiltration.
- Accurate control of fibre volume content.
- Minimum resin waste, the needed amount of resin can be calculated in advance.
- Homogeneous fibre volume content due to uniform vacuum across entire surface.
- No need for detailed planning of resin flow channels.
- Potential for higher component integration.
- Consistently stable and controlled process, offers high process reliability and reproducibility.
- Minimum investment needed.





ELEVATOR TECHNOLOGY

JUST USE THE ULTIMATE AND  
SUPER LIGHTWEIGHT **MASTER  
PANEL** FOR ELEVATORS.



26

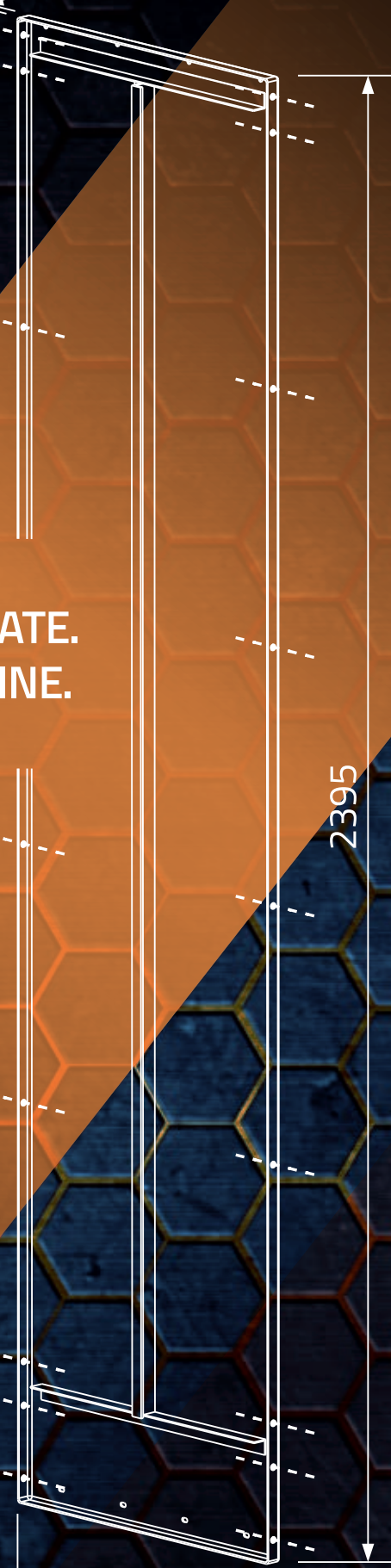


# JUST CREATE. JUST COMBINE.

- easy to combine
- unlimited design options
- improves lifespan
- almost unbreakable
- saves manpower and energy
- integrated audio system

2395

560



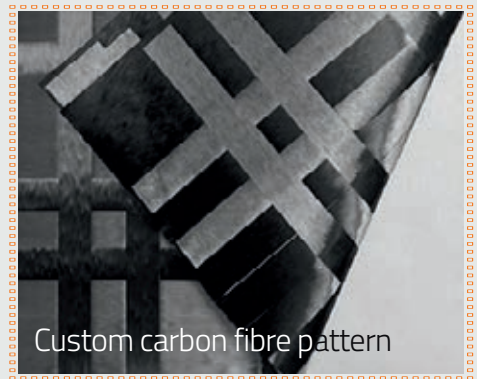


# JUST DESIGN!

COMBINE WHATEVER  
YOU WANT. IT FITS!



Wood veneers



Custom carbon fibre pattern



Colour variety

## SIZE MATTERS:

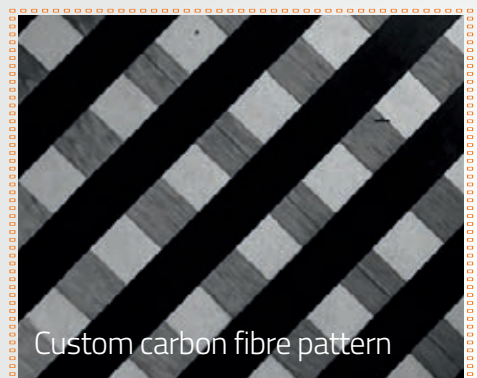
The COMPOSYST MASTER PANEL can be combined with any other material. It can replace used steel panels while reducing the weight to a quarter.

Equipped as standard with 18 mounting holes for an easy assembly.

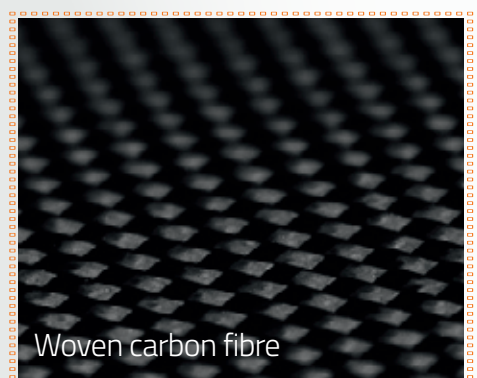
Measures of our MASTER PANEL:

56,0 x 239,5 x 2,6 cm

The width can be customized!



Custom carbon fibre pattern



Woven carbon fibre

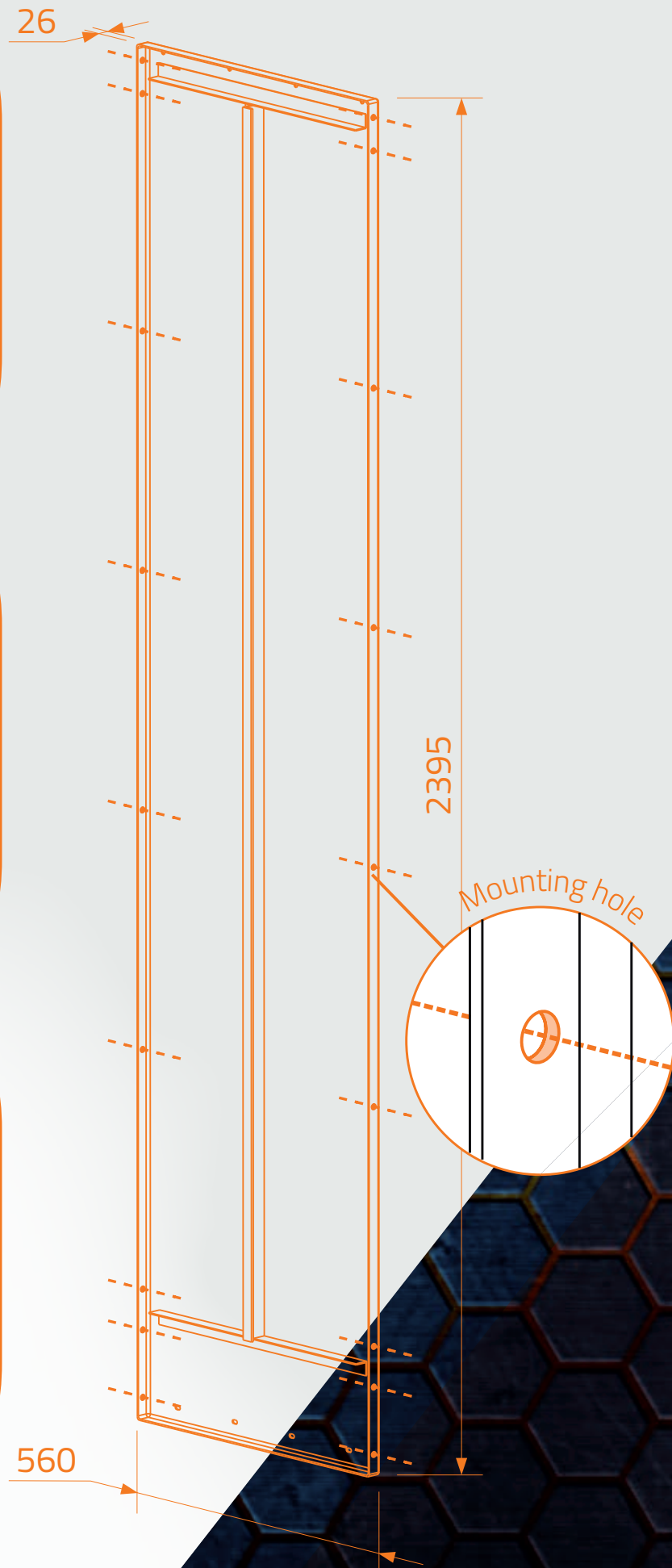
# UNLIMITED DESIGN OPTIONS:

- Your individual texture
- Your colour code
- Your corporate design
- Your logo or content

JUST PLACE  
YOUR LOGO  
HERE

# MORE OPTIONS WANTED?

- Add a seat
- Make it sound – best results with our wood veneers
- Realise this with the lowest weight possible





WE ARE THE WIND  
UNDER THE WINGS OF  
THE AEROSPACE  
INDUSTRY – WITH  
INNOVATIVE IDEAS AND  
SUSTAINABLE SOLUTIONS.





## AIMING HIGH WITH OUR KNOW-HOW ABOUT MAXIMUM STIFFNESS IN LIGHTWEIGHT STRUCTURES.

Lightweight structures represent a steadily growing market segment in the booming global aviation industry. Reduced operating costs of lighter structures outweigh their higher acquisition cost. Lower fuel consumption reduces air pollution and environmental impact.



NAVAL SYSTEMS

# WE SHOW HOW TO MAKE NAVAL SYSTEMS INVISIBLE

- Own design and production of active radar absorbing materials and structures
- Wide variety of masts and other submarine parts
- Active geometry for radar absorption
- Decades of experience in naval radar systems
- Active supplier in the European market for radar absorbing structures and materials



## WE MAKE FAIRINGS INVISIBLE TO RADAR

The fairings for submarine masts enhance stealth capabilities even when various masts have been raised during surface navigation.



WHENEVER WIND  
TURBINES DELIVER  
RENEWABLE ENERGY,  
WE ARE ON TOP OF IT.





## WE GUARANTEE TO MAKE IT EASIER FOR FUTURE TECHNOLOGIES.

Whenever wind and weather conditions threaten to test the physical limits of power generation, lightweight structures come to the rescue. With a currently demonstrated length of up to 90 metres, the latest rotor blades for wind turbines try out the state of the art and maximise energy output.



WHENEVER MEDICAL  
TECHNOLOGY IS TO  
SAVE LIVES, WE BRING  
FORWARD A WEIGHTY  
ARGUMENT.



## OUR COMPOSITE STRUCTURES PROVIDE THE FOUNDATION FOR HEALTHY GROWTH.

In health care, whenever push comes to shove, a few seconds can make the difference between life and death. There are situations where the necessity to handle a heavy and bulky medical apparatus may have grave consequences. Under such circumstances, it would be much better if doctors and paramedics could use lightweight medical equipment built with composite structures. This would enable hospital staff to handle equipment with more ease and less stress, providing faster and better service to patients.



DESIGN

TO HAVE DESIGNERS  
THINK WITHOUT LIMITS,  
THEY SHALL KNOW  
FIRST THAT NOTHING IS  
IMPOSSIBLE.



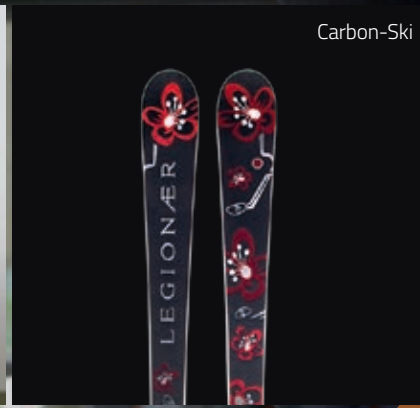
## ART IN YOUR SPACE.

The interplay of filigree design elements and a central light source creates an artistic composition of light and shadow. The soft lines of the components underline the light design and refine the light to shine.

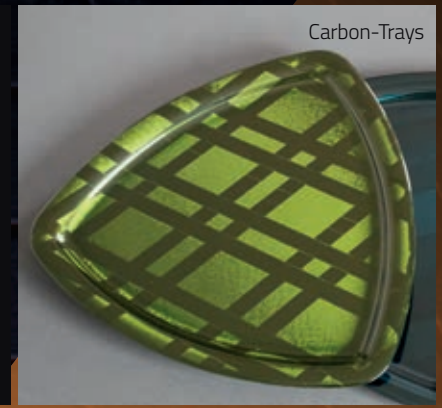
[www.compline.de](http://www.compline.de)



Carbon-Attache Case



Carbon-Ski

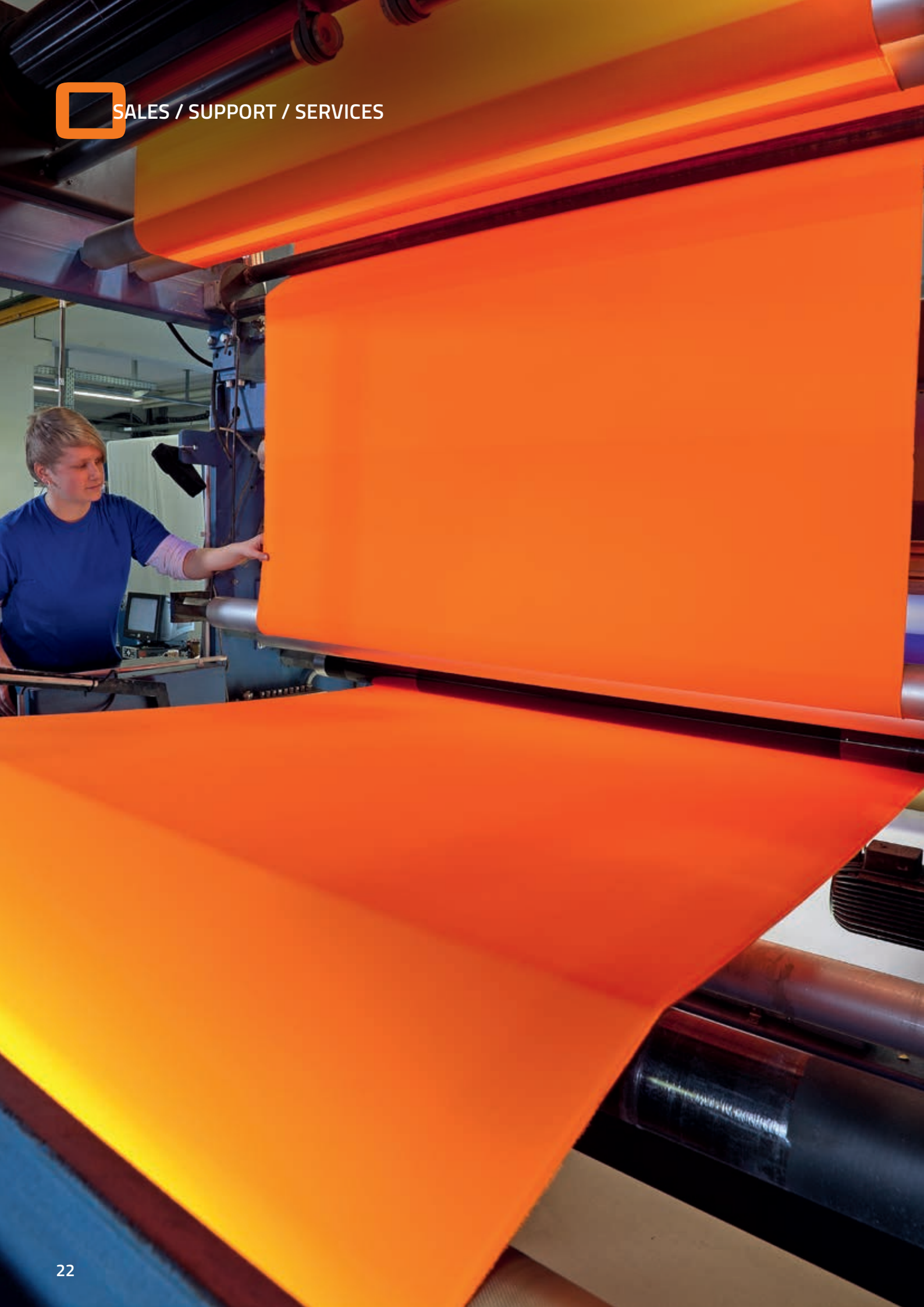


Carbon-Trays



## WHEN FUNCTION CAN BE SHAPED INTO AESTHETIC FORM

It is not only the lightness of composite structures that offers multiple application possibilities – the virtually unlimited mouldability of textile composites and resin gives makers maximum design freedom. Low quantity production batches can easily be customised or personalised, making such products highly attractive for specific target groups.



# FROM CONSULTING TO THE FINISHED PRODUCT



Whether customers are looking for some auxiliary supplies or one specific tailor-made part – COMPOSYST's extensive product portfolio will provide the perfect solution. The offered materials are perfectly in line with the processes used by different customers. The interplay of carefully chosen materials and the product development process determines subsequent part quality and increases overall production efficiency. That way, modern composite technologies are at their most impressive, realising their full potential.

At COMPOSYST, customer service comes first. Customer needs and requirements regarding material and product design are analysed thoroughly to find the optimum solution, always considering innovative technologies.

The latest product information and technical data sheets are available under Downloads.

[www.composyst.com](http://www.composyst.com)



# SUPPORT

One COMPOSYST core competence is the provision and development of customer-specific manufacturing technologies. It is the goal to grow existing capabilities of customers and to help them win new markets.

This approach relies on extensive corporate expertise from the different disciplines of aerospace, wind energy and marine engineering. Whenever possible, new and innovative developments in materials and processes are incorporated.



<b>(TECHNICAL) CONSULTING</b>	<ul style="list-style-type: none"> <li>▣ Design Engineering Support</li> <li>▣ Concept Development</li> <li>▣ Cost Calculation</li> <li>▣ Manufacturing Support</li> <li>▣ Project Management</li> <li>▣ Prototyping</li> <li>▣ Small Batch Manufacturing</li> <li>▣ Production Engineering</li> </ul>
<b>SALES AND DISTRIBUTION</b>	<ul style="list-style-type: none"> <li>▣ VAP®-membranes for Different Resin Systems</li> <li>▣ Supplies for Vacuum Infusion</li> <li>▣ Industrial Textiles (Spiral, Textiles, Curve Textiles, Gussets ...)</li> <li>▣ Preform Profiles (T, LZ, I, C – Built to Customer Specifications)</li> </ul>
<b>TOOLMAKING</b>	<p>Tools for Infusion Technology</p> <ul style="list-style-type: none"> <li>▣ Development Engineering</li> <li>▣ Design</li> <li>▣ Project Management</li> <li>▣ Production Engineering</li> </ul>
<b>TRAINING</b>	<ul style="list-style-type: none"> <li>▣ Plastics Technology Fundamentals</li> <li>▣ Introduction to Vacuum Infusion</li> <li>▣ Customer-Specific Training</li> </ul>





COMPOSYST  
GMBH

COMPOSYST  
G M B H



## AWARDS AND CERTIFICATES

# WE ARE AWARD-WINNING!



Uwe  
Tiltmann

Managing Partner  
Composyst GmbH



Stefan  
Utecht

Managing Partner  
Composyst GmbH

Our business has flourished steadily over the last couple of years. With our team of subject matter experts, we have quickly earned a good reputation, be it as consultants, developers, designers, planners or fabricators. We think outside the box and will

continue to do so in the future. This character trait will help us to implement bold ideas and turn vision into reality. That is how it was in the past, how it is in the present, and how it will be in the future.



CARBON  
EXPERTS  
FOR LIGHTWEIGHT

COMPOSYST

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