

Up2-Tec GmbH

Prototyping & Production of
Lightweight Structures



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Lightweight Prototypes

Composite Structures

- + Design
- + Tooling
- + Production

Assembling

- + Full functional Demonstrators
- + E-Mobility Components
- + Large model aircraft

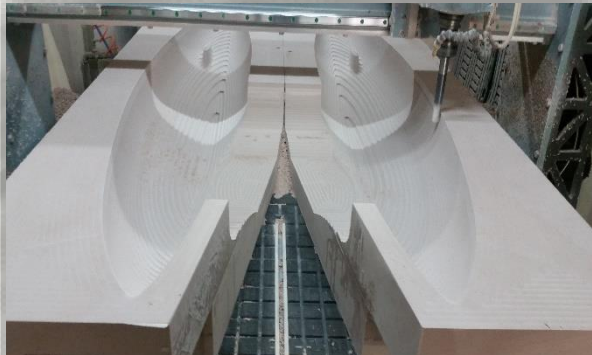
Engineering

- + Structure, Design & Process optimization
- + CAD design and technical drawings
- + Structural strength analyses

Prototyping & Production

- + Serial and prototype production of composites
- + 2D/ 3D shells, tubes and profiles
- + CNC machinery

Best practice: From Sketch to Prototype



CNC Tool Production



Composite Production



Assembling



Finishing

Challenge

- + Composite structure & design
- + Efficient development & production
- + Project testing and presentation

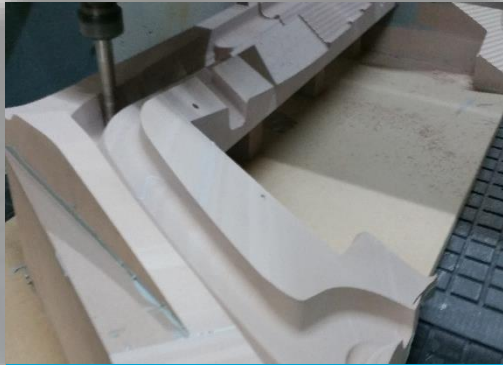
Approach

- + Design of lightweight structure
- + Concept & CAD modelling
- + Production of tools and components
- + Assembling and finishing

Results

- + Ready for tests and presentations
- + Approved design concept
- + Total duration of 6-8 weeks

Tooling for Composites



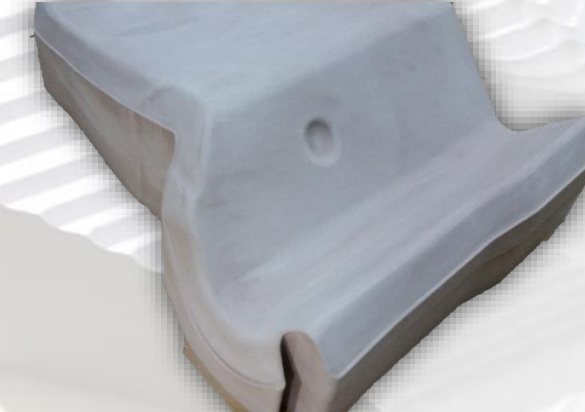
CNC Tool Production



Vacuumthermo Systems



Vacuum Systems



Preform Systems

Challenge

- + Efficient tool systems for prototypes and small series production
- + Process evaluation and testing

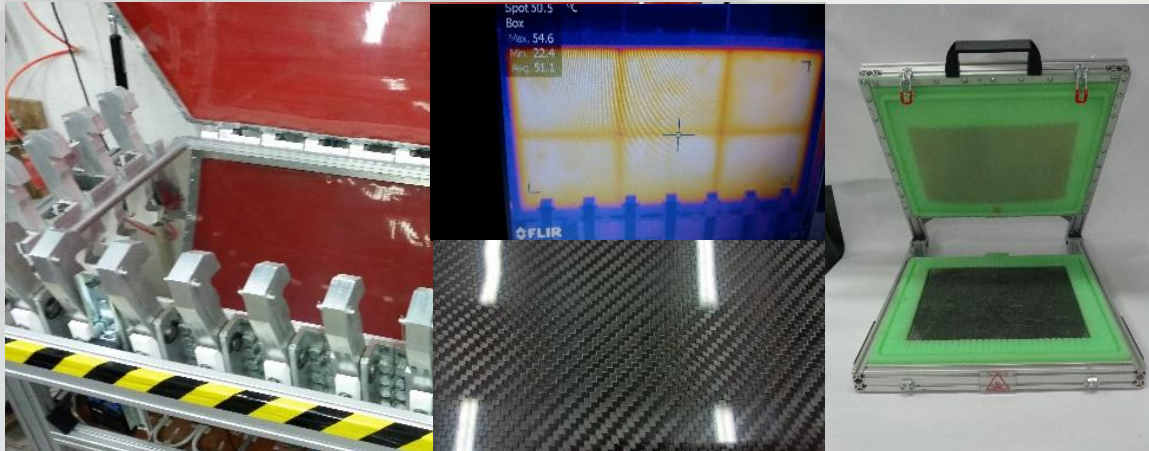
Approach

- + Process and tool development
- + CAD design and structure optimization
- + CNC tool production
- + Material grade in dependence of part quantity
- + Heated flexible membrane systems (out of autoclave) for constant quality of produced composites

Results

- + Finished tool system for prototype production
- + Vacuum thermoforming and preform tools
- + Segmented tool systems
- + Variothermal process (SPS controlled)

Special Equipment



Variothermal Press Systems – one/double sided

Variothermal press systems

- + Process up to 8 bar = 35 t/ vacuum option
- + Temperature up to 180 °C/ cooling option
- + Out of Autoclav

Double sided heating/ cooling

- + Prototypes & Series
- + Individual shapes, slightly 3D shapes
- + Individual process



Bendable Core for Winding and Consolidation

Bendable core for winding and consolidation of curved profiles

- + Straight or curved
- + Multifilament or coil winding
- + Flange/ plug in option
- + Heatable core for consolidation
- + SPS controlled process

Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages

Lightweight Components



Clips & Springs



Profile Systems



Non constant section



Curved, non constant

Challenge

- + Lightweight composite structure and design
- + Engineering, tooling and production

Approach

- + Design of lightweight structure
- + Process and tool development
- + Laminate lay-up and characteristics
- + Production of tools and parts

Results

- + Specific designed lightweight structure

Sandwich Structures



Closed Edges



Multi Material



Sustainable Systems



Biobased Anti-Noise

Challenge

- + Lightweight sandwich systems
- + Structural, sustainable or economic
- + Anti-Noise and shielding systems

Approach

- + Various Material lay-up options
- + Design based upon requirements
- + Process in dependence of serial grade

Results

- + Specific designed lightweight structure

Best practice: Cooperations & Networking

Challenge

- + Development, design and production of full systems
- + Structure, hardware, software and automation
- + Lightweight composite parts and components

Approach

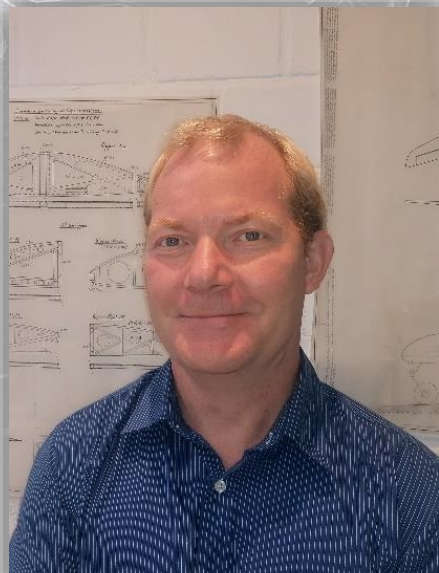
- + Cooperation and networking with partners
- + Design and integration of technical equipment
- + Engineering and lay-up definition for composites
- + Development and production of tools and components

Result

- + Ready-to-Use Systems
- + Functional composites:
 - Battery safety cover
 - Intrusion provider
- + Free shaped composites:
 - Shell components/ casings
 - Supporting structures



If we have attract your
interest please feel free to
contact us!



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