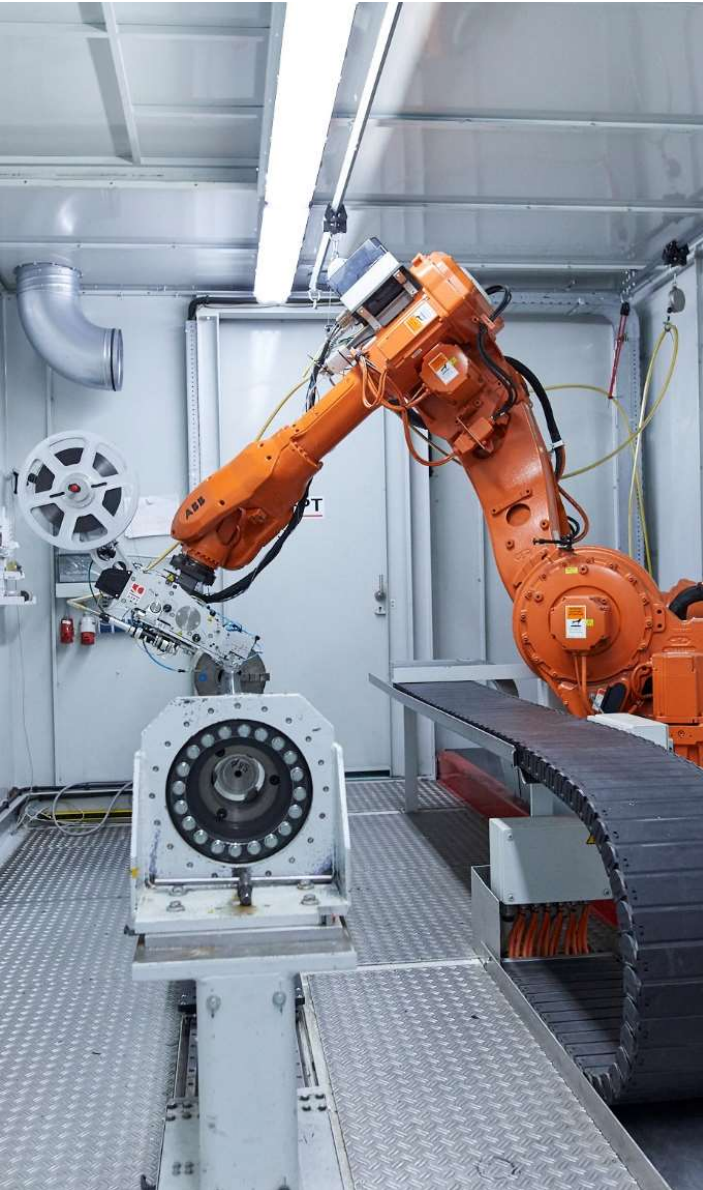


The logo for alformet features the word "alformet" in a bold, lowercase sans-serif font. The letter "a" is white, while the remaining letters "lformet" are black. To the right of the text is a white, stylized icon of the letter "a", which is composed of several overlapping, rounded shapes that create a sense of depth and movement.

**alformet** 

YOUR OPTION TO OUTPERFORM METAL



**alformet**   
YOUR OPTION TO OUTPERFORM METAL

# Alformet Company Introduction

AHK Lightweight Construction Conference  
Tallin 15.04.2024

## The AFPT Group

5

Machines in our application center

> 500

Kilometers of tape material processed in a year

... offers automated solutions for the (mass) production of ***thermoplastic*** composite structures using ***laser-assisted*** deposition technology since 2003 .



 **AFPT**

**alformet** 

12

Open & Completed Public research projects

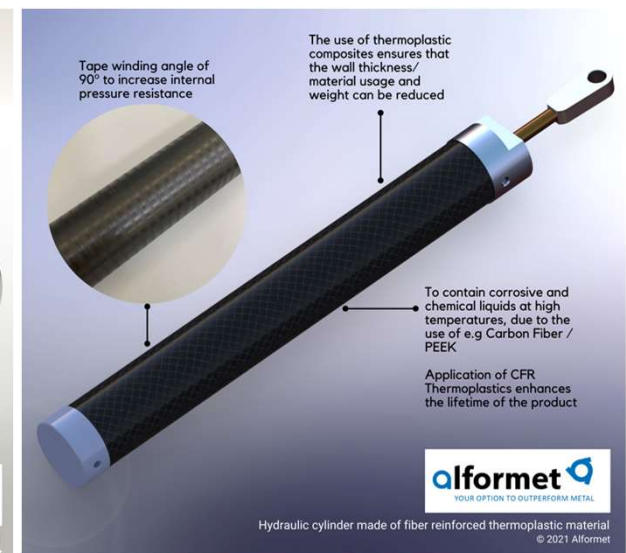
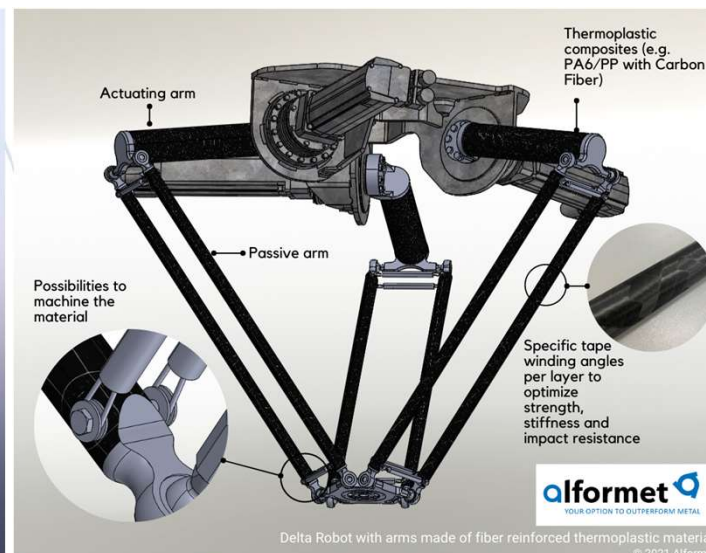
> 50

Deposition tools integrated in industry and academia



## Our Purpose

**Vision: Alformet aims to commoditize thermoplastic composites, making these advanced materials more accessible and shortening the path from development to industrial use, thereby replacing traditional metal solutions with tailored, innovative products.**



## The Alformet Way - Value Proposition

- A business model taking general CFR TP availability to the next level
- Categorization of Component Classes
- Standardization of Process Flows
  - Plug-and-play ERP
- Automation of Process Flows
  - Lean Business Model based on QRM Principles
  - Interface Customer Wish to Machine
- Automation of Equipment
- Tight Supplier Relations

<https://www.alformet.com/tubes/create-your-own-tube>

**alformet** HOME ABOUT OUR EARTH APPLICATIONS TUBES COMPOSITE BLOGS CONTACT

### Create your own tube

Alformet believes in easy access to the CFR Thermoplastic tube technology to support your business and overcome challenges. Like when you want to introduce new products (fast prototyping) or when you need parts to complete your model for testing or experimenting. Whatever the background of your need, Alformet offers you a number of standard inner diameters to build tubes with fast delivery. You can find these options in the form on the right.

The required information consists of:

- Dimensions and amount, noting that the wall thickness is indicative due to tolerance on the applied tape thickness.
- UD: Tape/Material type: in the order of price level (low to high):
  - PP: average performance for specific applications
  - PA6: good performance and very versatile
  - PC: high performance with moderate price level
  - PEEK: excellent performance with high price level
- Load condition:
  - Bending: fibres oriented to resist deflection
  - Torsion: fibres designed to take torsional loads
  - Internal pressure: reinforcement designed to take up internal pressure
- UU: Tape/Material type: in the order of price level (low to high):
  - PP: average performance for specific applications
  - PA6: good performance and very versatile
  - PC: high performance with moderate price level
  - PEEK: excellent performance with high price level
- Load condition:
  - Bending: fibres oriented to resist deflection
  - Torsion: fibres designed to take torsional loads
  - Internal pressure: reinforcement designed to take up internal pressure
  - Combined: combination of the different loads in one product

Fill in the form and you will receive our proposal by e-mail without any obligation. If you need a customized solution, please contact us using the button below.

**Price calculation tool**

Name:

E-mail address:

Inner Diameter (in mm)  Wall Thickness (in mm)

select one of the options value between 1 and 5 mm

Length of tube (in mm)  Amount

value between 10 and 2250 mm number of tubes

Material  Load condition

select UD tape select load condition

Length of tube (in mm)  Amount

value between 10 and 2250 mm number of tubes

Material  Load condition

select UD tape select load condition

Remarks

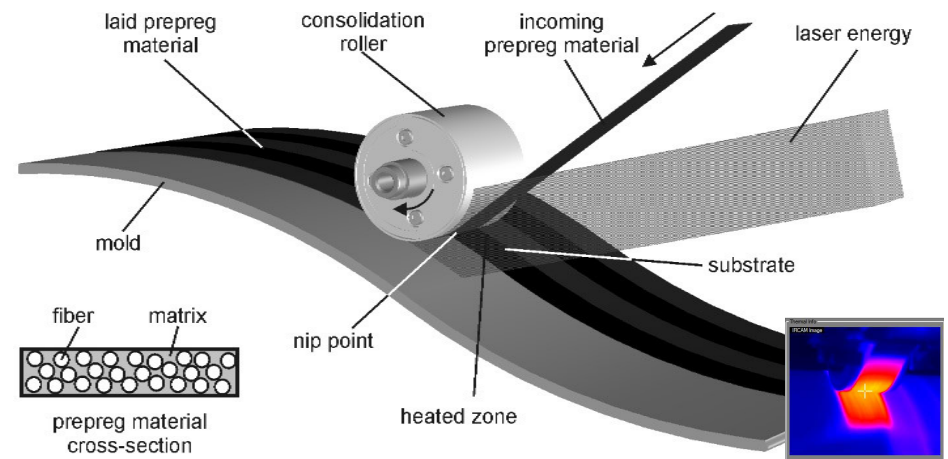
Please add questions or remarks here (max. 3 lines)

Customized solution request → Calculate and send result →



## The AFP Laser-Assisted Tape Winding / Placement (LATW/LATP) Process

- The thermoplastic pre-impregnated tape material is heated by a laser to the processing temperature
- A placement head positions the pre-impregnated tapes, on the required mold or mandrel
- A fast control system maintains the desired parameters such as process temperature, consolidation pressure and tape tension.
- The LATW process results in a composite component which is ready to use (**in-situ consolidation**)
- All process parameters are logged to be used for quality assurance.

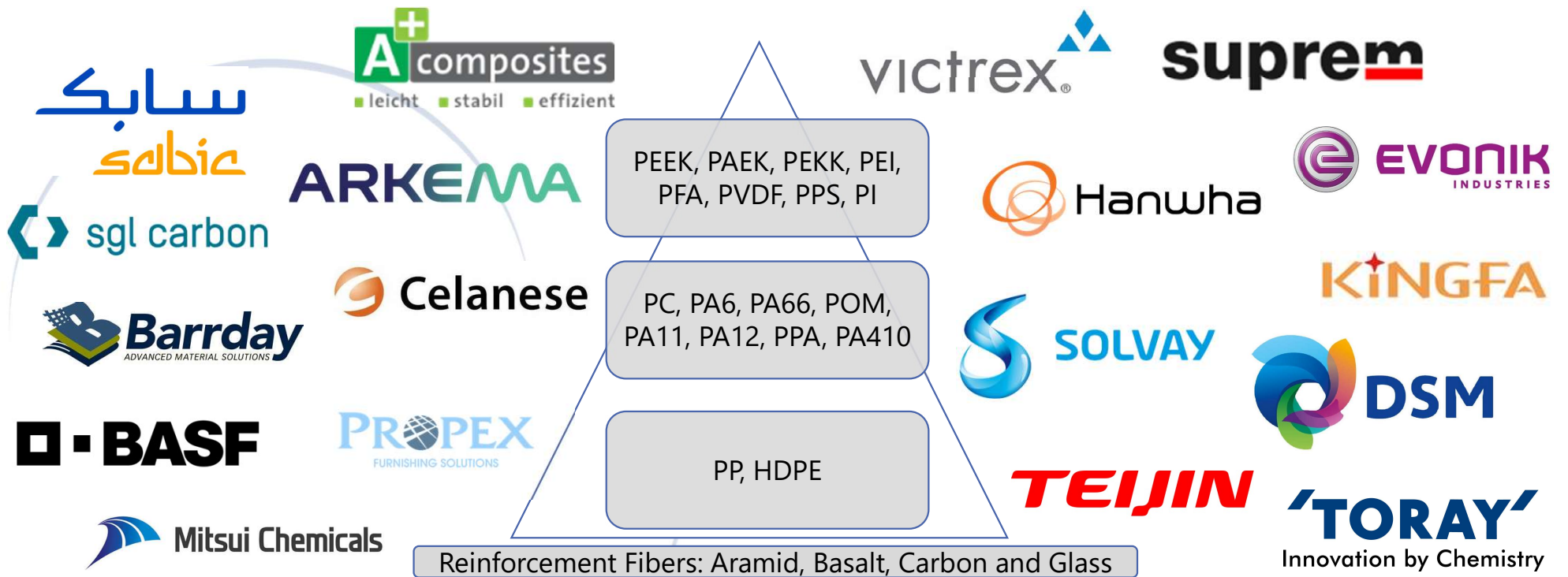


## Laser-Assisted Tape Deposition and The Thermoplastic Advantage



- + Low Density
- + Corrosion Resistant
- + High Impact Resistance
- + Dampening Properties
- + Re-Formable & 100% Recyclable
- + Low Energy Production
- + No chemical by-products

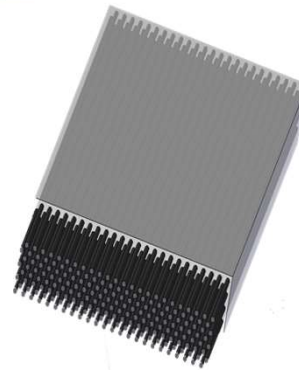
## Typical Fiber Reinforced Tape Materials and Manufacturers



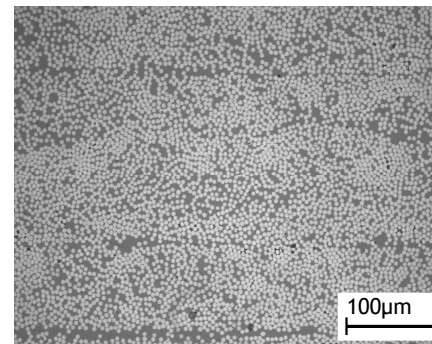


## Material Consolidation

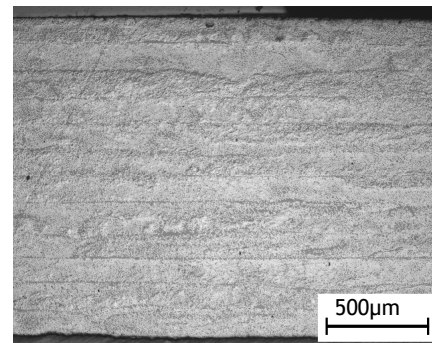
- Pre-impregnated tapes, consisting of unidirectional fibres which are responsible for high strength and stiffness of the composite material
- Controlled heating process generates constant high quality laminates
- Process keep the properties of the prepreg material
- Void content is determined by the tape material
- Process do not generate voids in the laminate



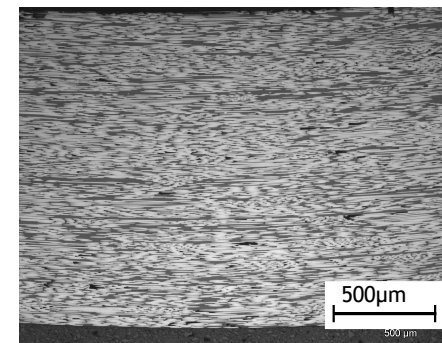
Perpendicular Cross Section



Parallel Cross Section



Longitudinal Grinding



## Primary Product Focus



Thin-Walled Inserts



Thick-Walled Structures

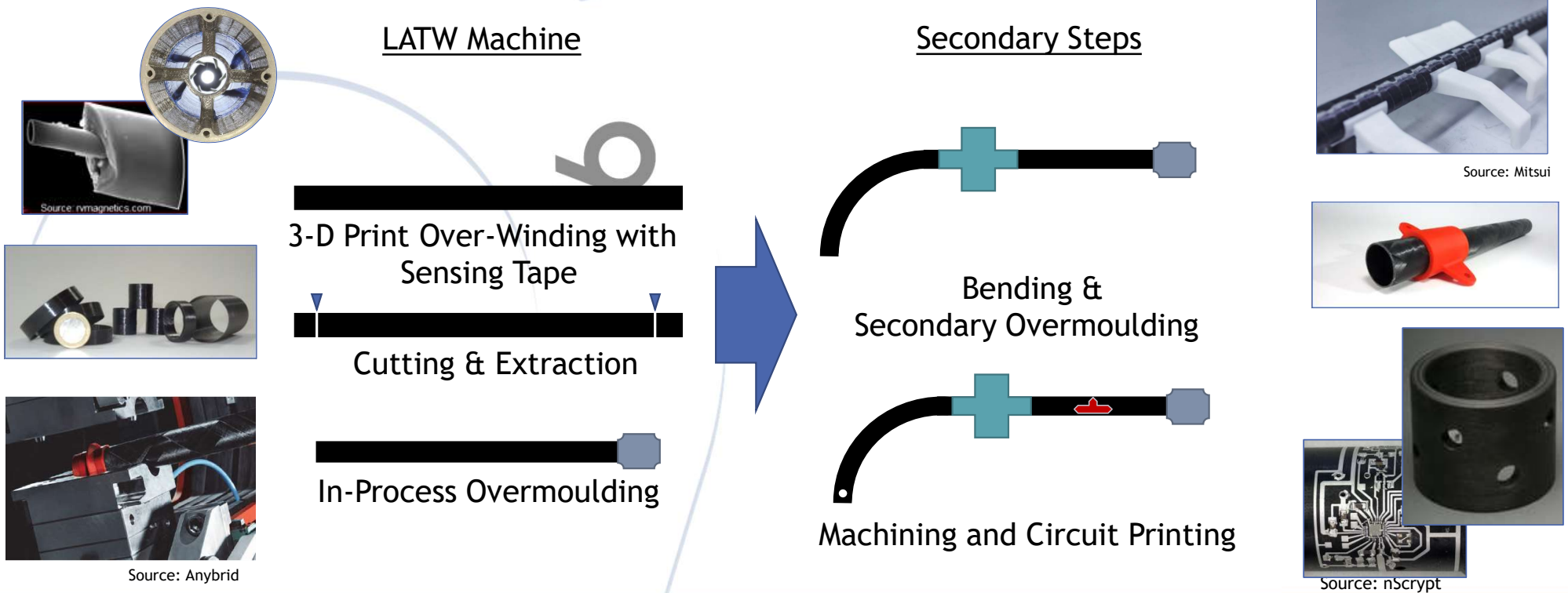


Pressure Vessels

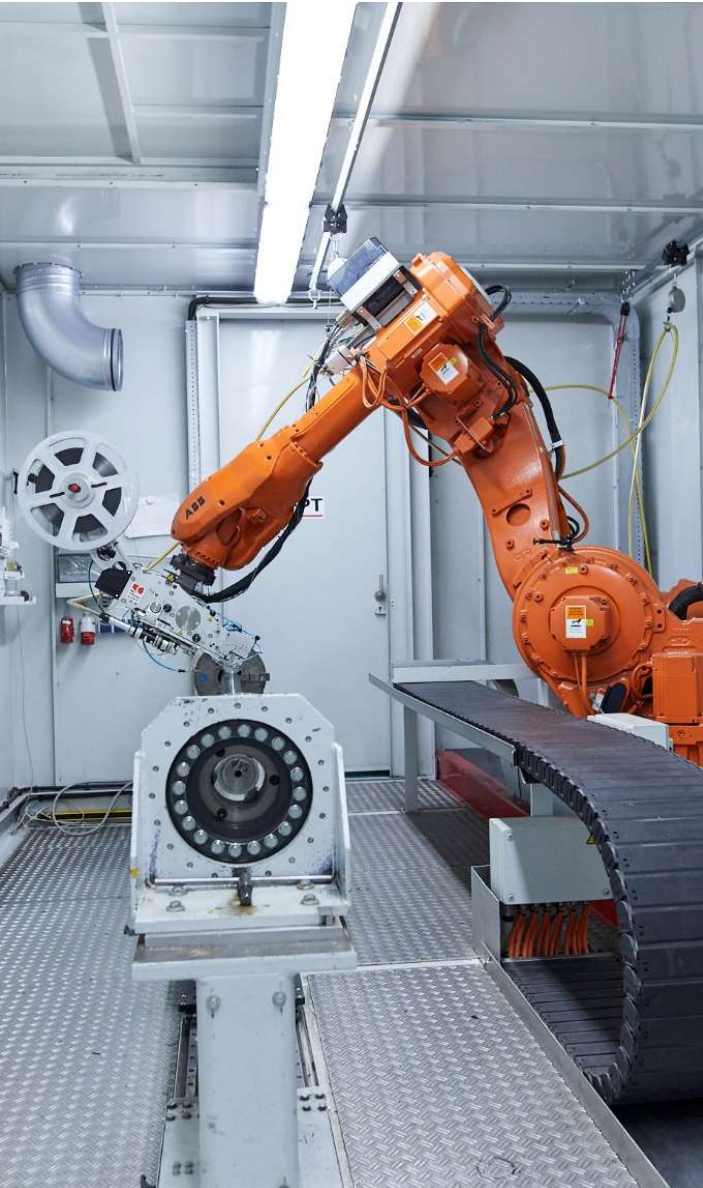


Functionalized Tubes

# Value-Add Potential of CFR Thermoplastic Products







# Questions?

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56281 Dörth, Germany

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Managing Director

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[www.linkedin.com/company/alformettubes](https://www.linkedin.com/company/alformettubes)