



■ light ■ stable ■ efficient

Innovative Customized UD Tapes from
A+ Composites:
Enhancing Manufacturing Efficiency and
Customer Satisfaction

A+ Composites – Company facts



Founded in 2015 from the Leibniz Institute for Composite Materials (IVW)



Manufacturer of UD tapes

Unique quality assurance system

Located in Rhineland-Palatinate

Customization of UD tapes

Slitting & preforming of UD tapes

Patented technology

Development of tailored UD-Tapes

Selection of material combination



Selection of geometry



Specification of additional properties



Optimal tape
More than
250 combinations



fiber (CF, GF, PF,AF)
polymer (PP, PE, PA,
PPS, PBT, PC)
Hybrids (GF+AF;
PP+PE)



width (3-104 mm)
thickness
(0.05-6 mm)
fibervol. (30-75%)



biocompatible
additives
coloring
flame-retardant



UD tapes - material grades

	PE	PP	PA6	PA12	PA66	PBT	PLA	PET	PC	PPS	PPA	PSU	PEI	PAEK
Carbon HT	Light	Light	Light	Light	Light	Light	Stable	Light	Light	Light	Stable	Light	Stable	Stable
Carbon IM	Stable	Stable	Light	Light	Light	Light	Stable	Light	Light	Light	Stable	Light	Stable	Stable
Carbon HM	Stable	Stable	Light	Light	Stable	Stable	Stable	Stable	Light	Stable	Stable	Stable	Stable	Stable
E Glas	Light	Light	Light	Light	Light	Light	Stable	Light	Light	Light	Stable	Stable	Stable	Stable
S Glas	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Basalt	Stable	Light	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Aramid	Stable	Light	Light	Light	Stable	Stable	Stable	Stable	Light	Stable	Stable	Stable	Stable	Stable
LCP	Stable	Stable	Light	Stable	Stable	Stable	Stable	Stable	Light	Stable	Stable	Stable	Stable	Stable
UHMWPE	Light	Light	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Metal	Stable	Light	Light	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Natural	Stable	Light	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Commercial grade	Commercial grade		R+D grade			Possible grade			Not possible grade					

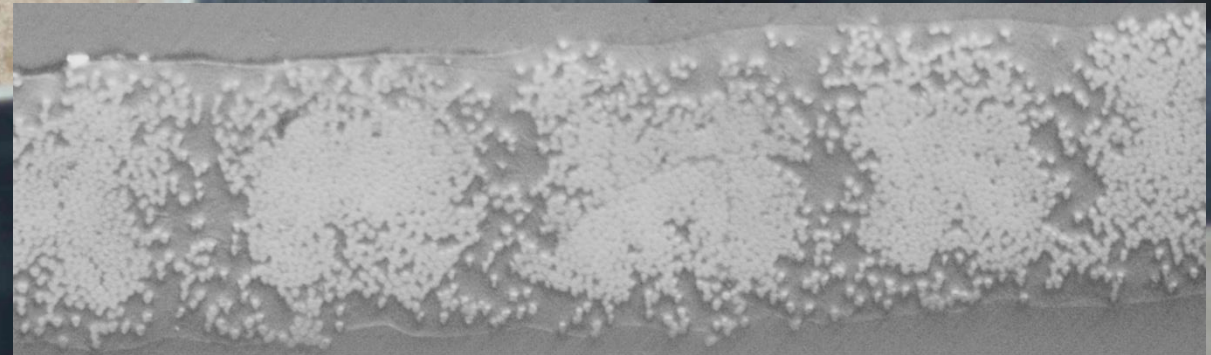
Optimal tape

Example: UD Tapes for automated fiber placement CF-PA6

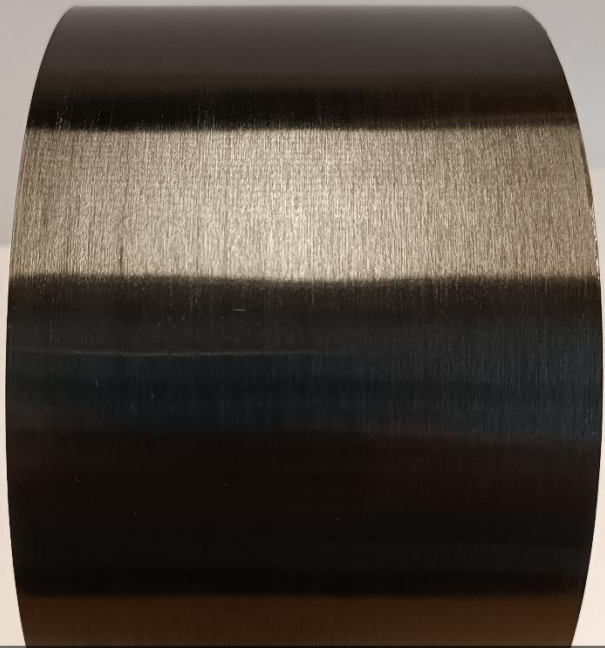


Thickness: 125 μm
Fiber content: 107 gsm
Resin content: 75 gsm
Tensile Modulus: 118 GPa
Tensile Strength: 1650 MPa
Bending Strength: 1150 MPa

Thickness: 250 μm
Fiber content: 215 gsm
Resin content: 149 gsm
Tensile Modulus: 118 GPa
Tensile Strength: 1600 MPa
Bending Strength: 1100 MPa

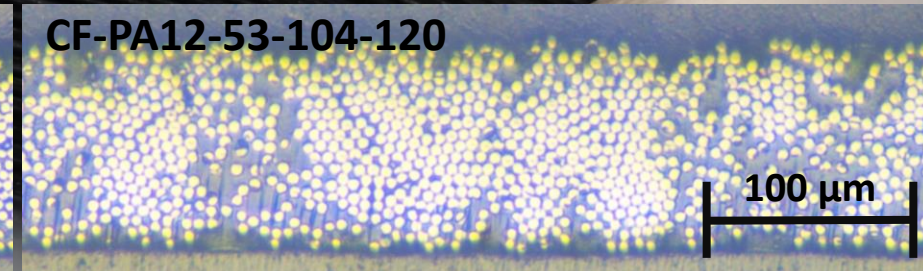
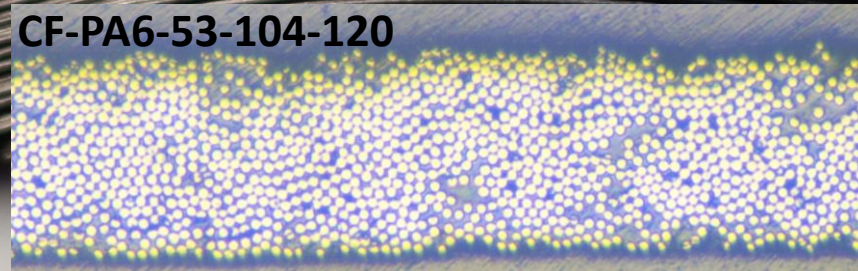
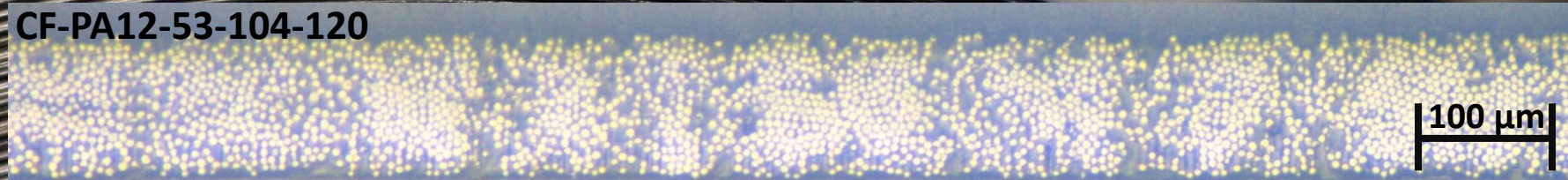


Example: Thin ply UD Tape - CF-PA



Thickness: 106 μm
Fiber content: 93 gsm
Resin content: 55 gsm

PROPERTY (Fiber content: 53%vol.)	VALUE
Tensile Modulus (0°)	125.2GPa
Tensile Strength (0°)	2610MPa



Testimonials for A+ Composites Tapes



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The strength of A+ Composites is the use of industrial grade 50k large tow carbon fiber for their tape products. Based on A+ Composites' proprietary manufacturing technology they can produce high performance tapes based on **industrial grade carbon fiber outperforming aerospace grade tapes.** A+ Composites is not only a technology leader in that field but also an enabler for getting thermoplastic tapes into high volume applications.

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Tobias Potyra

*Global Automotive Director
Zoltek / Toray Group*