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An Indorama Ventures Company

Enka[®] TecTape Hybrid Roving

For the automated production of continuous fiber reinforced composites with thermoplastic matrix

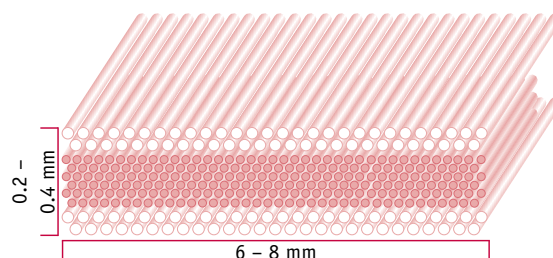
Enka® TecTape Hybrid Roving for the automated production of continuous fiber reinforced composites with thermoplastic matrix

Enka® TecTape Hybrid Roving combines twist free, aligned continuous glass fibers with thermoplastic multifilaments. Enka® TecTape Hybrid Roving provides the required flexibility and enables the manufacture of complex textile based reinforcements.

The short distance between reinforcement fibers and thermoplastic fibers provides short cycle times during the conversion of the hybrid based textile into a composite. Fiber reinforced parts made from Enka® TecTape Hybrid Roving can be moulded—as with organo sheets—and further enhanced by tape welding or injection moulding.

Composition of Enka® TecTape Hybrid Roving

● Glass Roving ○ Thermoplastic Multifilament Fibers



Enka® TecTape Parallel Hybrid Roving Sample



Enka® TecTape Parallel Hybrid Roving Technical Data

Type	Matrix material / colour	Linear density	Mass ¹ content	Volume ¹ content	Tensile strength ²	Tensile modulus ²	Bending strength ³	Bending modulus ³
		<i>tex</i>	<i>%</i>	<i>%</i>	<i>MPa</i>	<i>GPa</i>	<i>MPa</i>	<i>GPa</i>
Enka® TecTape GF-PA 1800tex 6733	PA 6 / natural & black	1855	67	46	790	38	660	30
Enka® TecTape GF-PP 1800tex 6733	PP / natural & black	1900	67	41	660	33	490	30
Enka® TecTape GF-PET 2000tex 6040	PET ⁴ / natural	2040	60	44	<i>n/a⁵</i>	<i>n/a⁵</i>	<i>n/a⁵</i>	<i>n/a⁵</i>

1 Glass Fiber

2 ISO 527-4

3 ISO 178

4 Various PET types available; low melting temperature, high glass transition temperature

5 Mechanical data depending on PET type

Enka® TecTape Parallel Hybrid Roving Advantages

Textile Processing:

- Twist free, no intermingling and flat
- Constant width and thickness
- Smooth surface, i.e. low friction
- Flexible for all kind of textile processes, e.g. weaving, braiding, tailored fiber placement etc.
- Specific local reinforcement of load path
- Zero waste production
- For automated and economic processing

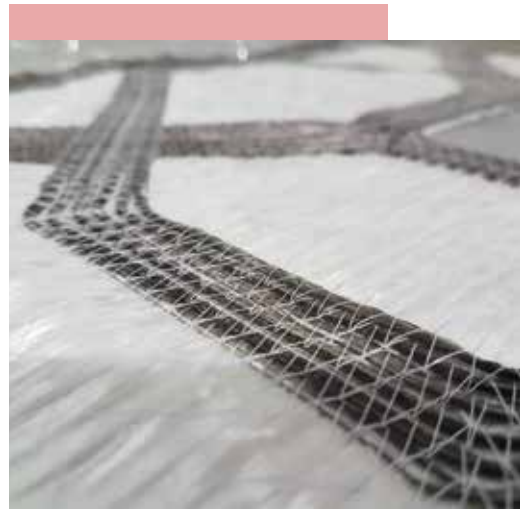
Consolidation:

- Constant ratio of glass fibers to matrix fibers
- Short melt flow distances
- No shrinkage for straight glass fiber alignment
- High melt flow polymers
- High compactness
- Consolidated parts are post-formable and over-mouldable

Applications:

Enka® TecTape Hybrid Roving for fiber reinforced composites in

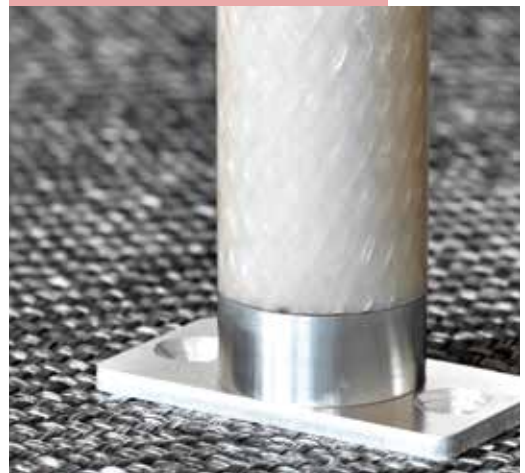
- Automotive structural components
- Thin walled organo sheets
- Light weight panels
- Pultruded reinforced profiles



Tailored fiber placement (picture with courtesy of Nobrak)



Thin walled organo sheets



Braided fiber reinforced tubes



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