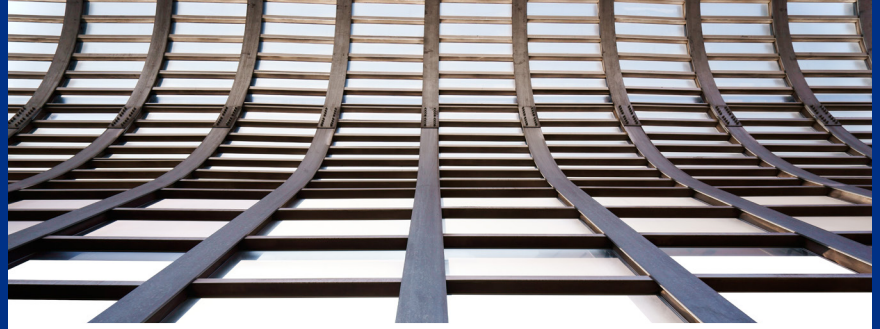

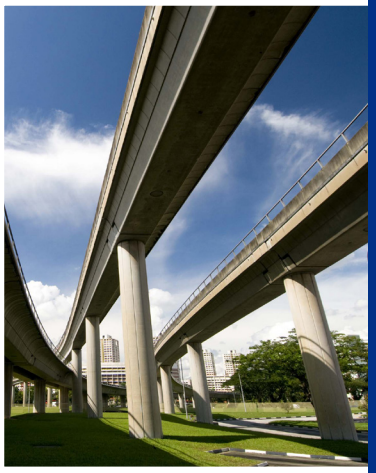

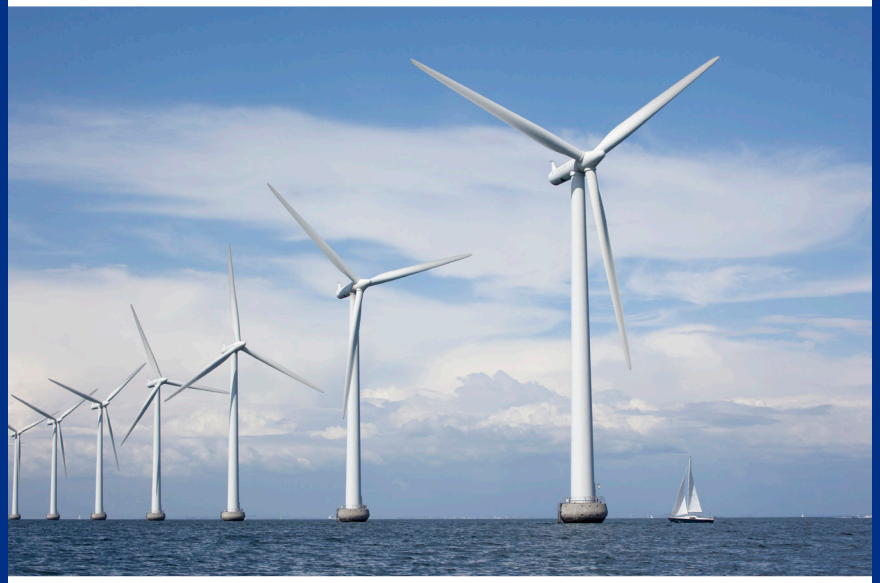

Applications

ZOLTEK PX35 pultrusion is ideal for a variety of structural applications. For more information, please visit www.zoltek.com.

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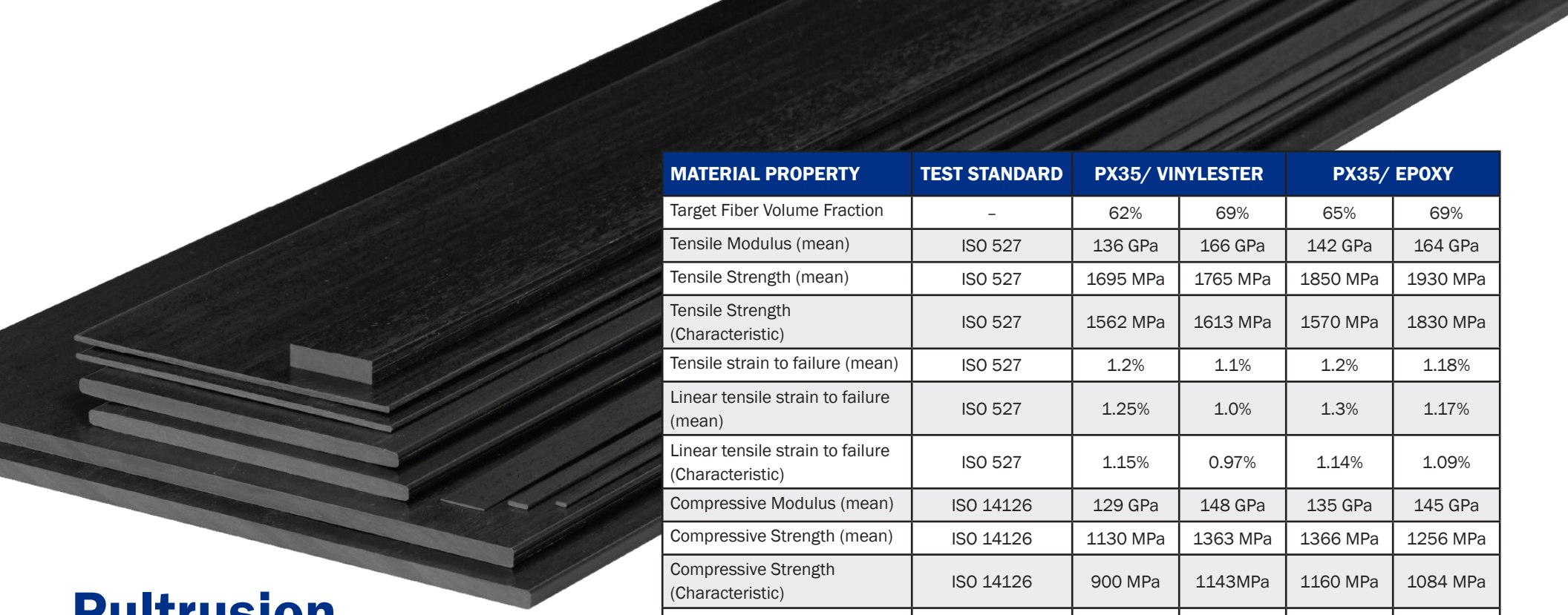
ZOLTEK PX35 PULTRUSION

ZOLTEK
Toray Group



Pultrusion

ZOLTEK™ PX35 pultrusion is ideal structural reinforcement applications. Available in a variety of thicknesses and complex shapes, our pultrusion products deliver optimized properties with high fiber volumes, nearly zero void content, and locked-in filament alignment.

ZOLTEK PX35 carbon fiber tows are fed into our proprietary impregnation and curing process which creates smooth carbon fiber laminates resulting in efficient laydown when building thickness. The specific fiber alignment achieved with pultrusion delivers consistently better overall properties in laminates than any other composite manufacturing process. Depending on the end application, these pultruded profiles are typically produced with a thermoset epoxy or vinyl ester resin in a proprietary low-cost, high-throughput process.

Pultruded profiles are production-ready carbon composites for infrastructure applications, deep sea exploration, wind energy, and other applications benefiting from the unique properties of pultruded carbon fiber parts.

MATERIAL PROPERTY	TEST STANDARD	PX35/ VINYLESTER		PX35/ EPOXY	
Target Fiber Volume Fraction	–	62%	69%	65%	69%
Tensile Modulus (mean)	ISO 527	136 GPa	166 GPa	142 GPa	164 GPa
Tensile Strength (mean)	ISO 527	1695 MPa	1765 MPa	1850 MPa	1930 MPa
Tensile Strength (Characteristic)	ISO 527	1562 MPa	1613 MPa	1570 MPa	1830 MPa
Tensile strain to failure (mean)	ISO 527	1.2%	1.1%	1.2%	1.18%
Linear tensile strain to failure (mean)	ISO 527	1.25%	1.0%	1.3%	1.17%
Linear tensile strain to failure (Characteristic)	ISO 527	1.15%	0.97%	1.14%	1.09%
Compressive Modulus (mean)	ISO 14126	129 GPa	148 GPa	135 GPa	145 GPa
Compressive Strength (mean)	ISO 14126	1130 MPa	1363 MPa	1366 MPa	1256 MPa
Compressive Strength (Characteristic)	ISO 14126	900 MPa	1143MPa	1160 MPa	1084 MPa
Compressive strain to failure (mean)	ISO 14126	1.01%	1.07%	1.14%	1.01%
Linear Compressive strain to failure (mean)	ISO 14126	0.88%	0.92%	1.00%	0.88%
Linear compressive strain to failure (Characteristic)	ISO 14126	0.69%	0.78%	0.84%	0.76%
Flexural Modulus (mean)	ASTM D6272	152 GPa	170 GPa	155 GPa	161 GPa
Flexural Strength (Characteristic)	ASTM D6272	1321 MPa	1450 MPa	1540 GPa	1350 GPa
Flexural Strain (mean)	ASTM D6272	1.10%	1.15%	1.27%	1.20%
Flexural Strain (Characteristic)	ASTM D6272	0.97%	0.94%	1.04%	1.00%
Transverse Flexural Strength (Characteristic)	ASTM D790	57 MPa	55 MPa	75 MPa	108 MPa
Interlaminar Shear Strength (Characteristic)	ISO 14130	64 MPa	60 MPa	69 MPa	71 MPa

* Typical data based on 5mm thick pultruded profiles

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