

Tough Materials for Wind Power

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Tough Materials for Wind Power

Elastocoat® C for Pultrusion

Elastocoat® C 6226 is a polyurethane (PU) resin used in pultrusion technology for high performance profiles. In contrast to other resins, these PU systems show significant advantages in

- pultrusion speed at low pull force
- very high interlaminar shear strength (ILSS)
- low emission and VOC values

BASF provides solutions for glass and carbon fiber profiles.



Pultruded Profiles; glass fiber on the left, carbon fiber on the right. Photo: BASF

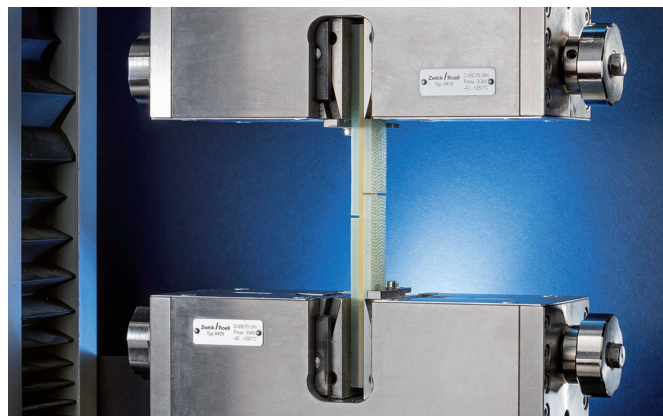
Properties	Test Standard	Elastocoat® C 6226/105 for glass fiber	Elastocoat® C 6226/106 for carbon or glass fiber
Neat resin			
Viscosity system	23 °C	240 mPas	85 mPas
Elongation	ISO 527-2	6 %	8 %
Laminat values			
Fiber		GF, Star Rov 907, Johns Manville	CF, Toho Tenax 48K, 3200 tex
Glass transition temperature	DMA, max tan _{delta}	115 °C	110 °C
ILSS	EN 2563	61 MPa	66 MPa
Bending modulus long.	ISO 14125	47 GPa	125 GPa
Bending modulus trans.	ISO 14125	13 GPa	7 GPa

The stated values for individual grades are typical test results and not limiting specification values.

Elastan® for Structural Wind Adhesives

The polyurethanes solution Elastan® 6581/133 is a new generation in structural adhesives for shear web blade designs. This product participates in the overall target and trend to lower the cost in blade manufacturing by

- enabling high dosing rate and good sag resistance
- faster curing, especially at lower temperature
- low exothermicity, hence low shrinkage
- excellent bonding properties and durability

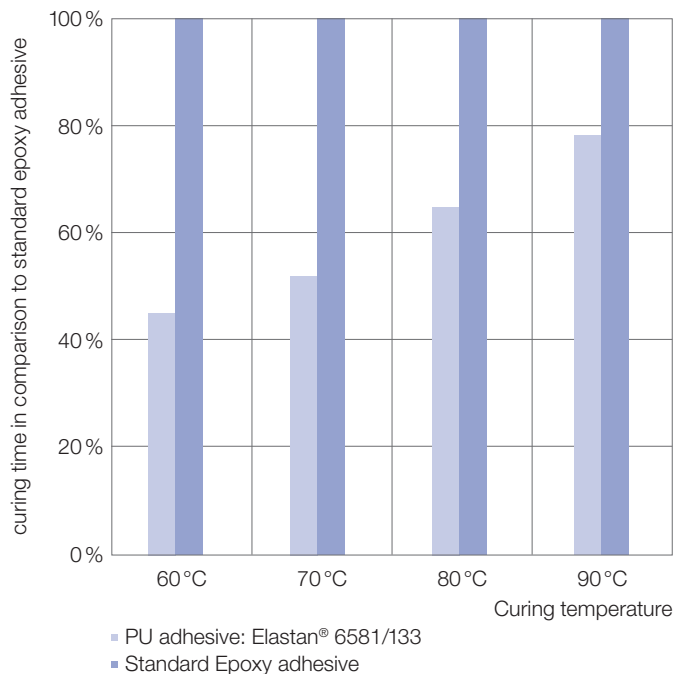


Single lap shear test. Photo: BASF

Properties	Test Standard	Figures
Viscosity 23 °C Polyol-Comp. Iso-Comp.	DIN 53019	< 10Pas/ < 1 Pas
Sag resistance	bead geometry 10x2x6.5cm ³	no sag at 25 °C
Density mixture	ISO 2811-1	1.17 g/cm ³
Density cured	ISO 1183-1	1.21 g/cm ³
Shrinkage	ISO 3521	3.4 %
Glass transition temperature	ISO 11357-2	72 °C
Tensile strength	ISO 527-2	51 MPa
E-Modulus _{tension}	ISO 527-2	3.5 GPa
Elongation	ISO 527-2	3.6 %
Critical stress intensity factor K_{IC}	ISO 13586	1.73 MPa · m ^{0.5}
Critical energy release rate G_{IC}	ISO 13586	0.92 kJ/m ²

The stated values for individual grades are typical test results and not limiting specification values.

Faster curing of Elastan® 6581/133 at different temperatures



Selected Literature:

- Tough Plastics for Agriculture
- Tough Plastics for the Mining Industry
- Tough Plastics for Wheels and Castors

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. (August 2016)

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www.polyurethanes.basf.de

**If you have technical questions on the products,
please contact the PU-Infopoint:**



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