

TenCate Cetex® TC925 FST

PRODUCT TYPE

Polycarbonate (PC) thermoplastic resin system

SERVICE TEMPERATURE

<121°C (250°F)

TYPICAL APPLICATIONS

- Aircraft interiors

PRODUCT DESCRIPTION

TenCate Cetex® TC925 FST is a value oriented engineered thermoplastic composite, utilizing polycarbonate resin for good surface qualities, impact toughness and good fire resistance.

TenCate Cetex® is typically supplied in 3.66m x 1.22m (12ft x 4ft) pre-consolidated laminates (RTL) of varying ply thicknesses, specifically adhering to customer designated fibre selection, orientation and ply count.

The use of TenCate Cetex® as a reinforced thermoplastic laminate (RTL) composite significantly reduces the production cycle-time by eliminating the handling and assembly of traditional wet-lay materials, along with the potential for error. In addition, the thermoplastic forming time is calculated in minutes and seconds, not hours. Heating, forming and cooling can take less than 5 minutes for complex 3D geometry, and sandwich panels can now be realized in 15 minutes without the inconvenience of core read-through. Further optimization can be gained in secondary processing, due to the thermoplastic resin. These operations can include welding, folding, painting and printing.

TENCATE CETEX® TC925 FST PRODUCT BENEFITS / FEATURES

- Good FST performance (OSU <25/25)
- White colour option for visual aspect
- No freezer storage required
- Rapid processing with cycle times <3 min
- Low moisture absorption
- Translucent laminate offers good chemical resistance
- Value-oriented solutions for interiors

PRODUCT DATASHEET



TENCATE ADVANCED COMPOSITES

TenCate Cetex® TC925 FST

NEAT RESIN PROPERTIES - TENCATE CETEX® TC925 FST

Property	Test Methods	
Specific gravity	ISO 1183	1.32 g/cm ³
Glass transition temperature	-	153°C (307°F)
Vicat B/120 softening point	ISO 306	146°C (295°F)
Dielectric strength	ISO D150	2.9 kV/mm (oil, 23°C @ 1Hz)
Loss tangent	-	0.005
Moisture absorption	ISO 62	0.28%
Flammability	UL94	V-0, at 0.25 mm
Tensile strength (yield)	ISO R527	70 MPa (10 ksi)
Tensile strength (ultimate)		60 MPa (8.7 ksi)
Tensile modulus	ISO R527	2,200 MPa (319.1 Msi)
Elongation at break	ISO R527	100-155%
Poisson's Ratio	-	0.2
Compression strength	ASTM D695	1.8 MPa (12.5 ksi)
Compression modulus	ASTM D695	50 MPa (345 ksi)
Tear propagation	ASTM D1922	6 kN/m
Izod notched	ASTM D256	84 J/m
CTE	-	5.8°C ⁻¹
Thermal conductivity	-	0.2 W/m-°K
Fluid resistance	-	Not Skydrol/MEK

PHYSICAL / THERMAL PROPERTIES OF PREPREG - TENCATE CETEX® TC925 FST

Property	Value		
	Plain Weave (Glass 7628)	8H Satin weave (Glass 7581)	5H Satin weave (Carbon CD0286)
Mass of fabric	200g/m ² (5.9oz/yd ²)	300g/m ² (8.85oz/yd ²)	280g/m ² (8.26oz/yd ²)
Mass of fabric + resin	303g/m ² (8.94oz/yd ²)	456g/m ² (13.45oz/yd ²)	490g/m ² (14.45oz/yd ²)
Resin content by volume	50%	50%	50%
Resin content by weight	34%	34%	42.6%
Moisture pick up	0.35%	0.35%	0.35%
Ply thickness	0.16 mm (0.006 in)	0.24 mm (0.0094 in)	0.31 mm (0.0122 in)
Specific gravity	1.91g/cm ³ (119.3lb/ft ³)	1.91g/cm ³ (119.3lb/ft ³)	1.55g/cm ³ (96.8lb/ft ³)
Tg (DSC) (amorphous)	153°C (307°F)	153°C (307°F)	153°C (307°F)

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TENCATE ADVANCED COMPOSITES

TenCate Cetex® TC925 FST

MECHANICAL DATA - TENCATE CETEX® TC925 FST

Test	Condition	Methods	Result	
Tensile Strength	RTD	ISO 527 (type 3) EN 2747 (III)	463.2 MPa	67 ksi
Tensile Modulus	RTD	ISO 527 (type 3) EN 2747 (III)	23.7 GPa	3.4 Msi
Compressive Strength	RTD	ASTM D6641 EN 2850	446 MPa	65 ksi
Compressive Modulus	RTD	ASTM D6641 EN 2850	26.9 GPa	3.9 Msi
Flexural Strength	RTD	ISO 178	728.7 MPa	106 ksi
Flexural Modulus	RTD	ISO 178	26.4 GPa	3.8 Msi

7581 = Glass fabric 296gsm FAW, 8 Harness Satin weave
PC = Polycarbonate resin

FLAMMABILITY PROPERTIES - TENCATE CETEX® TC925 FST

Test	Specification	Criteria	1 ply of 7581 PC resin	2 plies of 7581 PC resin	2 plies of 7581 white PC resin
Flammability	60 second vertical burn FAR 25.853 (a)	152 mm	PASS	PASS	PASS
Smoke Emission	ABD0031 (F)	150/200	PASS	PASS	PASS
Toxicity	ABD0031 (F)	Ds Max 4 min (Flaming/Non-Flaming) = 150	PASS	PASS	PASS
Heat Release	FAR 25.853 (d)	2 min Total HR (kWmin/m²) = 65	19.2	20.4	25.1
		Peak HR (kW/m²) = 65	23.4	20.8	25.7

7581 = Glass fabric 296gsm FAW, 8 Harness Satin weave
PC = Polycarbonate resin

PRODUCT DATASHEET



TENCATE ADVANCED COMPOSITES

TenCate Cetex® TC925 FST

MECHANICAL DATA - TENCATE CETEX® TC925 FST

Test	Condition	Methods	Result	
Tensile Strength	RTD	ISO 527 (type 3) EN 2747 (III)	805 MPa	116.7 ksi
Tensile Modulus	RTD	ISO 527 (type 3) EN 2747 (III)	56.1 GPa	8.1 Msi
Compressive Strength	RTD	ASTM D6641 EN 2850	495.6 MPa	71.8 ksi
Compressive Modulus	RTD	ASTM D6641 EN 2850	50.9 GPa	7.3 Msi
Flexural Strength	RTD	ISO 178	916.7 MPa	132.9 ksi
Flexural Modulus	RTD	ISO 178	58.9 GPa	8.5 Msi

CD0286 = Carbon fabric 280gsm FAW, 5 Harness Satin weave
PC = Polycarbonate resin

FLAMMABILITY PROPERTIES - TENCATE CETEX® TC925 FST

Test	Spec	Criteria	2 plies of CD0286 PC resin
Flammability	60 second vertical burn FAR 25.853 (a)	152 mm	PASS
Smoke Emission	ABD0031 (F)	150/200	PASS
Toxicity	ABD0031 (F)	Ds Max 4 min (Flaming/Non-Flaming) = 150	PASS
Heat Release	FAR 25.853 (d)	2 min Total HR (kWmin/m²) = 65	28.3
		Peak HR (kW/m²) = 65	33.4

CD0286 = Carbon fabric 280gsm FAW, 5 Harness Satin weave
PC = Polycarbonate resin

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All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and TenCate Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties.

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