

PRODUCT DATA SHEET



TENCATE PERFORMANCE COMPOSITES

TenCate TL-6000

PRODUCT TYPE

CFRT® (Continuous Fiber Reinforced Thermoplastic) composite with carbon fiber and modified Polymethylmethacrylate (acrylic) resin

TYPICAL APPLICATIONS

Orthosis knee and ankle bracing

SHELF LIFE

Stable indefinitely at 77°F (25°C)

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Page 1 of 1

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PRODUCT DESCRIPTION

TenCate Cetex® TL-6000 is continuous fiber reinforced thermoplastic (CFRT®) composite that blends the benefits of a thermoplastic polymer alloy with woven carbon fibers for enhanced performance (multi-layer ultra-thin, lightweight and resilient). Within the product range 2 layer (MOD1, 2L), 3 layer (3L) or 4 layer (4L) products are available, all ultra-thin, lightweight and resilient. Material can be drilled, ground, and polished and adjusted after forming with a heated gun. TenCate TL-6000 has a smooth high gloss finish and transparent surface to show woven carbon fiber.

PRODUCT BENEFITS/FEATURES

- High strength and stiffness
- High mechanical properties of "Thin & Light" (TL) laminates
- Carbon fiber weave shown with a high gloss and smooth finish
- Choice of 2, 3 or 4 multi-layers available.
- Core option available as MOD1 or with 4L



Composition:

Fibers..... Intermediate Modulus 12k carbon 3x1 twill weave.

Resin PMMA/acrylic impact modified proprietary thermoplastic resin.

Physical Attributes:

Thickness	
MOD1	0.115" nominal (2.92 mm)
2-layer	0.087" nominal (2.20 mm)
3-layer	0.118" nominal (3.0 mm)
4-layer	0.135" nominal (3.43 mm)
4-layer with 0.05" core	0.198" nominal (5.03 mm)

Color Natural (carbon)

Size Cut to customer specifications from sheet of 36 x 48 inches (910 x 1220 mm)

PROPERTIES: METHOD ASTM D790-10

Property	MOD 1	2 Layer	3 Layer	4 Layer
Specific Gravity (g/cc)	1.37	1.4	1.42	1.42
Flexural Rigidity (lbs/in ²)	84/1600	40/365	188/1434	303/2487
Flexural Rigidity with 0.05" core (lbs/in ²) / (N/cm ²)	---	---	---	984/2854
Flexural Modulus (Msi/Gpa)	5.6/29.0	7.8/17.2	4.5/28.6	4.1/28.3
Flexural Modulus with 0.05" core (Msi/Gpa)	---	---	---	4.2/29.0
Flexural Strength (ksi/Mpa)	51/302	87/376	51/335	68/454
Flexural Strength with 0.05" core (ksi/Mpa)	---	---	---	460/3175

Material must be maintained dry prior to heating/forming

Forming Temperature 390° to 420°F / 193°- 199°C

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