

PRODUCT DATA SHEET



TENCATE PERFORMANCE COMPOSITES

TenCate TW-2000

PRODUCT TYPE

Carbon (12K) fiber content: 58%
Modified PMMA thermoplastic resin (42%)
(Noted: Percentages are by volume and are nominal values)

TYPICAL APPLICATIONS

- Footwear
- Skates
- Recreational equipment

SHELF LIFE

Stable Indefinitely at 77°F (25°C)
Materials must be dried prior to heating and thermoforming.
Please refer to the TCPC Processing Instructions.

Revised 05/2017

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PRODUCTS DESCRIPTION

TenCate Cetex® TW-2000 is a continuous fiber reinforced thermoplastic (CFRT®) composite laminate. It blends the benefits of a thermoplastic polymer alloy with woven carbon fibers in a twill weave for enhanced performance. The TW-2000 style laminate is available in a single or multi-layer product; carbon fiber reinforcement at 0° and 90° orientations that is ultra-thin, lightweight, and resilient for improved energy return.

PRODUCT BENEFITS/FEATURES

- Twill weave of 12K carbon fibers
- Bi-directional carbon reinforcement
- Lightest weight and thin
- Color: Black (natural carbon)
- Available with ENVIR-Bond® tie layers for injection over-molding.



Composition:

Fibers..... Woven 12K carbon fibers - twill weave, carbon fiber reinforcement at 0° and 90° orientations. Fiber Content 58%
Resin..... PMMA impact modified proprietary thermoplastic resin (42%).
(Noted: Percentages are by volume and are nominal values)

TENCATE TW-2000 MATERIAL PROPERTIES

Specific Gravity 1.44

Thickness: Available in single or multiple laminates (see table below)
Size: Cut to customer specifications from sheet of 91 x 122 cm (36 x 48 inches)

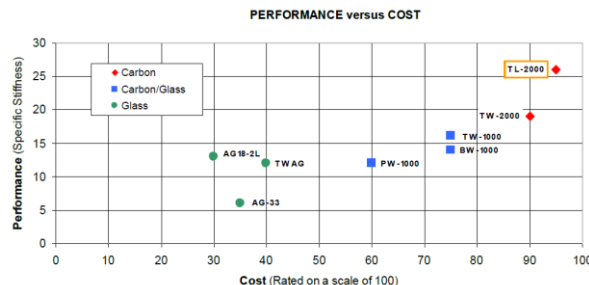
(Note: Material properties and thickness listed below are of the base panel without ENVIR-Bond® layers)

Property	Condition	Method	1L Results:	2L Results:
Flexural Rigidity	RTD	ASTM D790-10	13.2 N/cm ²	175.6 N/cm ²
Flexural Modulus	RTD	ASTM D790-10	22.8 GPa	36.5 GPa
Flexural Strength	RTD	ASTM D790-10	450.0 MPa	671.0 MPa
Thickness		*SI-QA-047	0.60 mm	1.30 mm

*SI-QA-047 is an internal TenCate inspection process.

TYPICAL CONSOLIDATION PARAMETERS OR PROCESSING INFO

Recommended Processing Temperatures.....Forming 195°C to 200°C (383°F - 392°F)
Bonding 55°C to 60°C (131°F - 140°F)



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