Toray CFRT® TW-1000



Toray Performance Materials Corporation

PRODUCT DATA SHEET

DESCRIPTION

Toray PMC CFRT® (TW-1000) is a reinforced thermoplastic composite laminate. It blends the benefits of a thermoplastic polymer matrix with woven carbon and glass fibers in a twill weave for enhanced shapes and performance. The TW-1000 style laminate is available in a single-layer product; carbon in one direction and glass fibers at a 90° orientation to the carbon. This product is ultra-thin, lightweight, and resilient for improved energy return.

FEATURES

- > Twill weave of carbon and glass fibers
- > Bi-directional reinforcement
- › Lightest weight, thin, single layer
- Available in stock and custom colors



PRODUCT TYPE AND COMPOSITION

Carbon fiber content: 26% Glass fiber content: 26%

Modified PMMA thermoplastic resin: 48%

(Noted: Percentages are by volume and are nominal values)

TYPICAL APPLICATIONS

- Footwear
- > Recreational equipment
- Skates

SHELF LIFE

Stable indefinitely at 25°C (77°F)

Materials must be dried prior to heating and thermoforming. Please refer to the TPMC Processing Instructions.

MATERIAL PARAMETERS

Specific Gravity	1.3 ± 0.15 (calculated based upon material volume)
Thickness	1.0 mm (± 0.2 mm) nominal
Size	Cut to customer specifications from sheet of 91 x 122 cm (36 x 48 inches)
Standard Colors	Silver, Charcoal, and Black
Forming Temperature	195° to 200°C (383°F–392°F)
Bonding Temperature	55°C to 60°C (131°F–140°F)

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Cost (Rated on a scale of 100)

MECHANICAL PROPERTIES

Properties	Method	Results
Flexural Rigidity	ASTM D790-10	> 45 N-cm
Flexural Strength	ASTM D790-10	> 148 MPa*
Flexural Modulus	ASTM D790-10	> 7445 MPa*

^{*}Results per testing performed in carbon direction.

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