

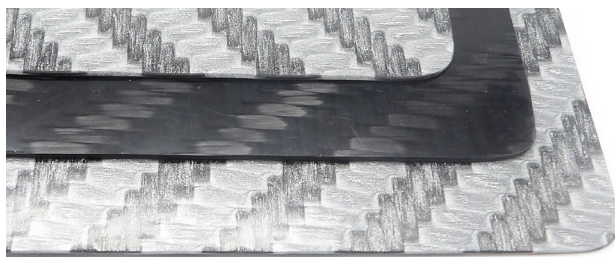
## PRODUCT DATA SHEET

### DESCRIPTION

Toray PMC CFRT® (TW-4000) 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-4000 laminate is available in a single-layer product; carbon in one direction and glass fibers at 90° orientation to the carbon. The TW-4000 laminate is thin, lightweight, and resilient for improved energy return.

### FEATURES

- › Twill weave of carbon fibers and glass fibers
- › Light weight, thin, single layer



### PRODUCT TYPE AND COMPOSITION

Carbon fiber content: 24%–26%  
 Glass fiber content: 24%–26%  
 Modified PMMA thermoplastic resin: 48%–52%  
 (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	1.5 ± 0.15 (calculated based upon material volume)
Thickness	0.85 mm (± 0.2 mm)
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)

### MECHANICAL PROPERTIES

Properties	Method	Results
Flexural Rigidity	ASTM D2344	> 110 N-cm*
Flexural Strength	ASTM D790-10	> 420 MPa*
Flexural Modulus	ASTM D790-10	> 20000 MPa*

\* Results per testing performed in carbon direction on nominal thickness material.