



SHIMTEQ™ TP CA140ST

Unidirectional Carbon Fiber Prepreg (CF/PA6)

SUMMARY

This is a narrow intermediate material made by slitting sheet of unidirectional carbon fiber tape with pre-impregnated polyamide 6 (PA6) resin. This material can be used for braiding or auto tape lay-up. It is able to be removed from the mold after the forming at a predetermined temperature and pressure also cooling to a predetermined temperature. The molded material has different mechanical and physical properties depending on the direction, enabling new product designs by developing unique properties such as strength and stiffness in a particular direction.

SPECIFICATIONS

Fiber tensile modulus [GPa]	230	Material configuration	Record or Traverse
Fiber areal weight [g/m ²]	40	Package configuration	Cardboard with 3" core
Resin areal weight [g/m ²]	23	Sheet length [m]	400
V _f [%]	53	Sheet width [mm]	3, 5, 10
RC [%]	36	Matrix resin Melting point [°C]	225
T _g [°C]	50	Thickness [μm]	42

MATERIAL CONFIGURATION

	Material	Configuration
Reinforcement	CF	Uni-direction
Matrix	PA6	N/A

Contact

SHINDO IM Division
Harajuku Duet Building 1-
10-32 Jingumae, Shibuya-
ku, Tokyo 150-0001 Japan



im-company @shindo.com



Fax: 03-5786-2113



www.shindo.com/jp/material



※All data in this document is for reference use only, the material property data depends on the reinforcement, impregnation and molding process conditions. SHINDO IM Division makes no warranty for any of the technical data or information contained in this document.

SHINDO Industrial Materials Division All Rights Reserved

SHINDO

APPLICATION EXAMPLES

Light-weight and/or high mechanical-/physical-strength-demanding fields (e.g., automotive and aerospace) molded by braiding, auto tape lay-up, press-molding or autoclaves.

MATERIAL PROPERTIES

Test condition: 23±3°C, 50±10%RH

Test items	Test Results	Test Method
0° tensile strength [MPa]	2300	JIS K 7165
0° tensile modulus [GPa]	120	JIS K 7165
Compression strength [MPa]	550	ASTM D 6641
Compression modulus [GPa]	105	ASTM D 6641

※This material properties is the value of the raw material CA140

MOLDING PROCESS (EXAMPLE OF PRESS MOLDING)

1. Materials are charged in a release-treated mold die.
2. The mold die is closed and pressured up to 3±0.1 MPa. Material-charged cavity is heated up to 260±5°C at a rate of 3–10°C/min.
3. Pressure is maintained for 10±5 min.
4. Mold die is cooled to <50°C while maintaining the pressure.

ATTENTION

- PA6 is an hygroscopic polymer. The material should be stored in a sealed bag to avoid hot and/or humid conditions. In cases where in the storage temperature is significantly below room temperature, the material should be kept in the package for a stabilization period (>12 h) to prevent condensation of any moisture. When drying is necessary, the conditioning temperature should be in the range of 80–90°C.
- Cooling shrinkage will occur because PA6 is crystalline polymer. The cooling process parameters of both temperature and pressure should be controlled because they will have an impact on the polymer crystallinity.

※ All data in this document is for reference use only, the material property data depends on the reinforcement, impregnation and molding process conditions. SHINDO IM Division makes no warranty for any of the technical data or information contained in this document.

SHINDO Industrial Materials Division All Rights Reserved

SHINDO