

Toray Composite Materials America, Inc.

# T300

# STANDARD MODULUS CARBON FIBER

Baseline carbon fiber with a 40-year production history and is known for its balanced composite properties, high quality, consistency, reliability and suppliability. Excellent processability in traditional manufacturing methods (weaving, braiding, filament winding, prepreg, etc). Manufacturing locations include Japan and France.

### **PRODUCT DESIGNATION**

| T300       | В      | 3,000             | 4              | 0                    | В                |
|------------|--------|-------------------|----------------|----------------------|------------------|
| Fiber Type | Twist* | Filament<br>Count | Sizing<br>Type | Surface<br>Treatment | Sizing<br>Amount |

<sup>\*</sup> Blank: Twisted B: Untwisted

### **FIBER PROPERTIES**

| PROPERTY          | ENGLISH  | METRIC                 | METHOD     |
|-------------------|----------|------------------------|------------|
| Tensile Strength  | 512 ksi  | 3,530 MPa              | TY-030B-01 |
| Tensile Modulus   | 33.4 Msi | 230 GPa                | TY-030B-01 |
| Strain at Failure |          | 1.5%                   | TY-030B-01 |
| Density           |          | 1.76 g/cm <sup>3</sup> | TY-030B-02 |
| Filament Diameter |          | 7 μm                   |            |
| Yield             | 1K       | 66 g/1000m             | TY-030B-03 |
|                   | 3K       | 198 g /1000m           | TY-030B-03 |
|                   | 6K       | 396 g /1000m           | TY-030B-03 |
|                   |          |                        |            |

### **FUNCTIONAL PROPERTIES**

| PROPERTY                     | VALUE                         |
|------------------------------|-------------------------------|
| CTE                          | -0.41 α ·10 <sup>-6</sup> /°C |
| Specific Heat                | 0.777 J/g ⋅°C                 |
| Thermal Conductivity         | 0.105 J/cm ·s·°C              |
| Electric Resistivity         | 1.7 x 10⁻³ Ω·cm               |
| Chemical Composition: Carbon | >93%                          |
| Na + K                       | <50 ppm                       |

### **RESIN SYSTEM COMPATIBILITY**

| SIZING TYPE<br>& AMOUNT | RESIN SYSTEM COMPATIBILITY              | METHOD     |  |  |
|-------------------------|---|------------|--|--|
| 40A/B (1.0%)            | Ероху                                   | TY-030B-05 |  |  |
| 40D (0.7%)              | Ероху                                   | TY-030B-05 |  |  |
| 50A/B (1.0%)            | Epoxy, phenolic, polyester, vinyl ester | TY-030B-05 |  |  |

# **COMPOSITE PROPERTIES**

| PROPERTY                | ENGLISH | METRIC    | METHOD          |
|-------------------------|---------|-----------|-----------------|
| Tensile Strength*       | 264 ksi | 1,820 MPa | ASTM D-3039     |
| Tensile Modulus*        | 20 Msi  | 140 GPa   | ASTM D-3039     |
| Tensile Strain          |         | 1.26%     | ASTM D-3039     |
| Compressive Strength*   | 213 ksi | 1,470 MPa | SACMA SRM 1R-94 |
| Flexural Strength*      | 260 ksi | 1,790 MPa | ASTM D-790      |
| Flexural Modulus*       | 18 Msi  | 123 GPa   | ASTM D-790      |
| ILSS                    | 14 ksi  | 94.1 MPa  | SACMA SRM 8R-94 |
| In Plain Shear Strength | 14 ksi  | 95 MPa    | ASTM D-3518     |
| 90° Tensile Strength    | 11 ksi  | 76 MPa    | ASTM D-3039     |
|                         |         |           |                 |

\*Normalized to 60% fiber volume. Cured with #2500 epoxy at 130 °C.





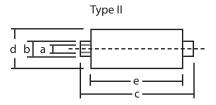


# **PACKAGING**

The table below summarizes the tow sizes, twists, sizing types, and packaging available for standard material. Other bobbin sizes may be available on a limited basis.

| TOW SIZES  | <b>BOBBIN NET</b> | BOBBIN TYPE |    | BOBBIN SIZE (mm) |     |     |     | SPOOL PER CASE | CASE NET    |
|------------|-------------------|-------------|----|------------------|-----|-----|-----|----------------|-------------|
| 101/ 31223 | WEIGHT (kg)       |             | a  | b                | c   | d   | е   | SPOOL PER CASE | WEIGHT (kg) |
| 1K         | 1.0               | II          | 76 | 82               | 192 | 132 | 156 | 12             | 12          |
| 3K         | 2.0               | ll .        | 76 | 82               | 192 | 157 | 156 | 12             | 24          |
| 6K         | 2.0               | II          | 70 | 70 02            | 192 | 157 | 150 | 12             | 24          |

# **Bobbin Type:**



Please refer to SDS for handling and disposal.