

# TORAYCA™ T1100G Intermediate Modulus Carbon Fiber Data Sheet



Toray Composite Materials America, Inc.

## PRODUCT NOTES

Next-generation intermediate modulus fiber with excellent processability in traditional manufacturing methods (weaving, prepreg, etc). Manufactured in the U.S.

## PRODUCT DESIGNATION

| FIBER TYPE | TWIST | FILAMENT COUNT | SIZING TYPE | SURFACE TREATMENT | SIZING AMOUNT |
|------------|-------|----------------|-------------|-------------------|---------------|
| T1100G     | C*    | 12,000         | 7           | 1                 | E             |

\* C: Never twisted

## FIBER PROPERTIES

| PROPERTY          | ENGLISH   | METRIC                 | METHOD     |
|-------------------|-----------|------------------------|------------|
| Tensile Strength  | 1,017 Ksi | 7,000 MPa              | TY-030B-01 |
| Tensile Modulus   | 47.0 Msi  | 324 GPa                | TY-030B-01 |
| Strain at Failure |           | 2.2%                   | TY-030B-01 |
| Density           |           | 1.79 g/cm <sup>3</sup> | TY-030B-02 |
| Filament Diameter |           | 5 μm                   |            |
| Yield             | 12K       | 505 g/1000m            | TY-030B-03 |
|                   | 24K       | 1,010 g/1000m          | TY-030B-03 |

## FUNCTIONAL PROPERTIES

| PROPERTY                     | VALUE                         |
|------------------------------|-------------------------------|
| CTE                          | -0.5 α · 10 <sup>-6</sup> /°C |
| Specific Heat                | 0.749 J/g ·°C                 |
| Thermal Conductivity         | 0.130 J/cm ·s·°C              |
| Electric Resistivity         | 1.4 x 10 <sup>-3</sup> Ω·cm   |
| Chemical Composition: Carbon | >96%                          |
| Na + K                       | <50 ppm                       |

## RESIN SYSTEM COMPATIBILITY

| SIZING TYPE & AMOUNT | RESIN SYSTEM COMPATIBILITY              | METHOD     |
|----------------------|---|------------|
| 71E (0.6%)           | Epoxy, phenolic, polyester, vinyl ester | TY-030B-05 |

## COMPOSITE PROPERTIES

| PROPERTY                | ENGLISH | METRIC    | METHOD        |
|-------------------------|---------|-----------|---------------|
| Tensile Strength*       | 502 Ksi | 3,460 MPa | ASTM D3039    |
| Tensile Modulus*        | 27 Msi  | 185 GPa   | ASTM D3039    |
| Tensile Strain          |         | 1.82%     | ASTM D3039    |
| Compressive Strength*   | 271 Ksi | 1,870 MPa | SACMASRM1R-94 |
| Flexural Strength*      | 278 Ksi | 1,920 MPa | ASTM D790     |
| Flexural Modulus*       | 23 Msi  | 159 GPa   | ASTM D790     |
| ILSS                    | 15 Ksi  | 104.5 MPa | SACMASRM8R-94 |
| In Plain Shear Strength | 23 Ksi  | 160 MPa   | ASTM D3518    |
| 90° Tensile Strength    | 12 Ksi  | 80 MPa    | ASTM D3039    |

\* Normalized to 60% fiber volume. Cured with #2592 epoxy at 130 °C.

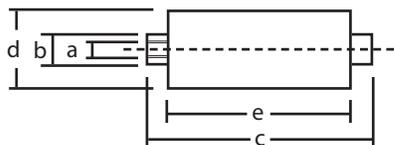
## PACKAGING

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 | BOBBIN NET WEIGHT (kg) | BOBBIN TYPE | BOBBIN SIZE (mm) |      |     |     |     | SPOOL PER CASE | CASE NET WEIGHT (kg) |
|-----------|------------------------|-------------|------------------|------|-----|-----|-----|----------------|----------------------|
|           |                        |             | a                | b    | c   | d   | e   |                |                      |
| 12K       | 2.0                    | III         | 76.5             | 82.5 | 280 | 130 | 252 | 12             | 24                   |
| 24K       | 4.0                    | III         | 76.5             | 82.5 | 280 | 160 | 252 | 6              | 24                   |

### Bobbin Type:

Type III



*Please refer to SDS for handling and disposal.*

The data listed herein are lot averages, for reference purposes only, and are offered AS-IS without warranty. The results are not intended for specification purposes. WARNING: This document may contain technical data whose export is restricted by the Export Administration Act of 1979, as amended, Title 50, U.S.C., App.2401 et seq. Violations of these export laws are subject to severe criminal penalties.

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