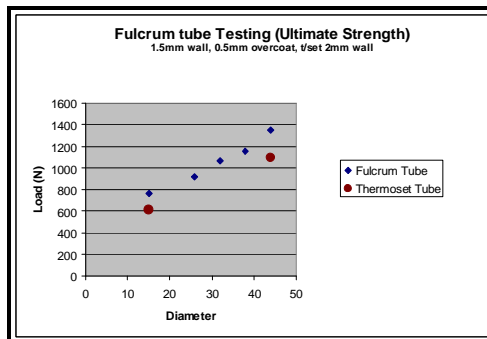


## Tubes and Rods Data Sheet

Fulcrum\* Thermoplastic Composite Tube and Rod Products are produced with a proprietary rigid engineering thermoplastic polyurethane matrix. The combination of ductile thermoplastic matrix with high strength continuous fibers results in excellent strength and stiffness combined with superior toughness. The resin offers excellent resistance to a broad range of chemicals, including acids, bases and organic liquids.

- **High strength and stiffness**
- **Excellent corrosion resistance**
- **Low weight**
- **Thermoformable**
- **High toughness**
- **Non-conductive**
- **Electromagnetic transparency**
- **Low thermal conductivity**
- **Easy to cut and fabricate**



Fulcrum tubes and rods are available to order in a range of standard sizes. Fulcrum tubes and rods can be supplied overcoated with a range of thermoplastics offering a wide variety of surface properties, independent of the properties of the composite:

- **Color**
- **Soft touch**
- **Abrasion resistance**
- **U/V stability**
- **Anti-static**
- **Special effects**
- **Surface texture**
- **Enhanced chemical resistance**

## Tube and Rod Sizes

### Tube sizes

| Product code | Outside Diameter |      | Outside Diameter with Over-extrusion |      | Inside Diameter |      |
|--------------|------------------|------|--------------------------------------|------|-----------------|------|
|              | inches           | mm   | inches                               | mm   | inches          | mm   |
| T46          | 0.181            | 4.6  | 0.197                                | 5.0  | 0.118           | 3.0  |
| T50          | 0.197            | 5.0  | 0.215                                | 5.45 | 0.118           | 3.0  |
| T76          | 0.299            | 7.6  | 0.315                                | 8.0  | 0.217           | 5.5  |
| T96          | 0.378            | 9.6  | 0.394                                | 10.0 | 0.285           | 7.5  |
| T104         | 0.409            | 10.4 | 0.433                                | 11.0 | 0.276           | 7.0  |
| T124-10      | 0.488            | 12.4 | 0.512                                | 13.0 | 0.394           | 10.0 |
| T124-9       | 0.488            | 12.4 | 0.512                                | 13.0 | 0.354           | 9.0  |
| T150         | 0.591            | 15.0 | 0.618                                | 15.7 | 0.472           | 12.0 |
| T250         | 0.984            | 25.0 | 1.024                                | 26.0 | 0.866           | 22.0 |
| T310         | 1.220            | 31.0 | 1.260                                | 32.0 | 1.102           | 28.0 |
| T370         | 1.457            | 37.0 | 1.496                                | 38.0 | 1.339           | 34.0 |
| T430         | 1.693            | 43.0 | 1.732                                | 44.0 | 1.575           | 40.0 |

### Rod sizes

| Product code | Diameter |      | Diameter with Over-extrusion |      | Other diameters, wall thicknesses and over-extrusion thicknesses can be produced on request. |
|--------------|----------|------|------------------------------|------|--|
|              | inches   | mm   | inches                       | mm   |  |
| R46          | 0.181    | 4.6  | 0.197                        | 5.0  |  |
| R50          | 0.197    | 5.0  | 0.215                        | 5.45 |  |
| R63          | 0.250    | 6.3  | NA                           | NA   |  |
| R76          | 0.299    | 7.6  | 0.315                        | 8.0  |  |
| R96          | 0.378    | 9.6  | 0.394                        | 10   |  |
| R127         | 0.500    | 12.7 | NA                           | NA   |  |

### Typical Properties

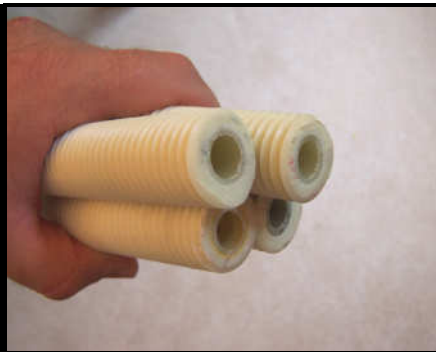
Tube and rod properties can be varied based on glass loading and overcoat materials. Typical values are Flexural Modulus 5-6 million psi (34-41 GPa) and 100,000-150,000 psi (700-1000 MPa) Flexural Strength. For more detail see properties Technical Data Sheet. As with all composite products the performance in the final application is influenced by a number of factors including – load, duration, temperature, environment. Further data is available on the effects of these factors however it remains the responsibility of the end user to determine the suitability of these products under end use conditions.

Threaded rod and tubes are also available as standard products.

*Threaded Rod*

*Hollow Threaded Rod*

*U Bolts*



**FULCRUM COMPOSITES, INC.**  
 1407 East Grove Street  
 Midland, Michigan 48640  
 USA  
 Tel: +1 989-636-1025  
 Fax: +1 989-837-1566  
[info@fulcrumcomposites.com](mailto:info@fulcrumcomposites.com)  
[www.fulcrumcomposites.com](http://www.fulcrumcomposites.com)

**TOP GLASS s.p.a.**  
 I-20096 Pioltello (MI)  
 Via Bergamo, 15  
 Italy  
 Tel +39 029291861  
 Fax +39 0292918620  
[info@topglass.it](mailto:info@topglass.it)