# Design Guide

# Dynaform® Fiberglass Structural Shapes

*Corrosion Resistant*

*Fire Retardant*

*Low Maintenance*

*Light Weight*

*Long Service Life*

Fibergrate
Composite Structures

*High Performance Composite Solutions*

# Coupon Properties - Structural Shapes

The values listed below are test results from coupon tests performed in accordance with the noted ASTM Test.

| MECHANICAL PROPERTIES | ASTM | UNITS | VALUE |
|---|---|---|---|
| Tensile Stress, LW | D-638 | psi | 30,000 |
| Tensile Stress, CW | D-638 | psi | 7,000 |
| Tensile Modulus, LW | D-638 | $10^6$ psi | 2.5 |
| Tensile Modulus, CW | D-638 | $10^6$ psi | 0.8 |
| Compressive Stress, LW | D-695 | psi | 30,000 |
| Compressive Stress, CW | D-695 | psi | 15,000 |
| Compressive Modulus, LW | D-695 | $10^6$ psi | 2.5 |
| Compressive Modulus, CW | D-695 | $10^6$ psi | 1.0 |
| Flexural Stress, LW | D-790 | psi | 30,000 |
| Flexural Stress, CW | D-790 | psi | 10,000 |
| Flexural Modulus, LW | D-790 | $10^6$ psi | 1.8 |
| Flexural Modulus, CW | D-790 | $10^6$ psi | 0.8 |
| Modulus of Elasticity, E | Full Section | $10^6$ psi | 2.8 |
| Shear Modulus | --- | $10^6$ psi | 0.450 |
| Short Beam Shear | D-2344 | psi | 4,500 |
| Punch Shear | D-732 | psi | 10,000 |
| Bearing Stress, LW | D-953 | psi | 30,000 |
| Notched Izod Impact, LW | D-256 | ft-lbs/in | 25 |
| Notched Izod Impact, CW | D-256 | ft-lbs/in | 4 |

| PHYSICAL PROPERTIES | ASTM | UNITS | VALUE |
|---|---|---|---|
| Barcol Hardness | D-2583 | --- | 45 |
| 24 Hour Water Absorption | D-570 | % max | 0.45 |
| Density | D-792 | lbs/in$^3$ | .062-.070 |
| Coefficient of Thermal Expansion, LW | D-696 | $10^{-6}$ in/in/°C | 8 |

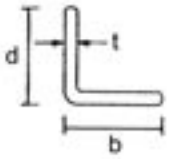
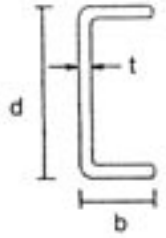
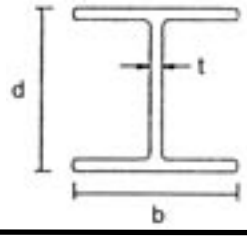
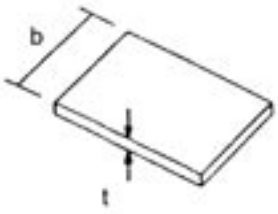
| ELECTRICAL PROPERTIES | ASTM | UNITS | VALUE |
|---|---|---|---|
| Arc Resistance, LW | D-495 | seconds | 120 |
| Dielectric Strength, LW | D-149 | kv/in | 35 |
| Dielectric Strength, PF | D-149 | volts/mil | 200 |
| Dielectric Constant, PF | D-150 | @60hz | 5 |

***ISOFR and VEFR Fire Retardant Structural Profiles:***

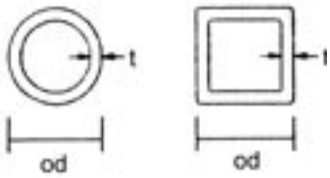
| FLAMMABILITY PROPERTIES | ASTM | UNITS | VALUE |
|---|---|---|---|
| Tunnel Test | E-84 | Flame Spread | 25 max |
| Flammability | D-635 | --- | Nonburning |

LW = Lengthwise CW = Crosswise PF = Perpendicular to Laminate Face

# Cross Sectional Tolerances

| SHAPE | DIMENSION | TOLERANCE | MAXIMUM OR MINIMUM TOLERANCES |
|---|---|---|---|
| **ANGLES**   | t = thickness | ± 10% | ± 0.010" minimum |
| | b = flange width | ± 5% | ± 0.094" maximum |
| | d = depth | ± 5% | ± 0.094" maximum |
| **CHANNELS**   | t = thickness | ± 10% | ± 0.010" minimum |
| | b = flange width | ± 5% | ± 0.094" maximum |
| | d = depth | ± 5% | ± 0.094" maximum |
| **WIDE FLANGE, I SHAPES**   | t = thickness | ± 10% | ± 0.010" minimum |
| | b = flange width | ± 5% | ± 0.094" maximum |
| | d = depth | ± 5% | ± 0.094" maximum |
| **FLAT SHEET**   | t = thickness | ± 10% | ± 0.040" maximum |
| | b = width | ± 3% | ± 0.094" maximum |

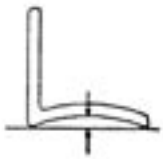
# Cross Sectional Tolerances

| SHAPE | DIMENSION | OUTSIDE DIMENSION CONDITION | TOLERANCES |
|---|---|---|---|
| **ROUND & SQUARE TUBE**   | t = thickness | Under 1" | ± 20% |
| | | 1" and up | ± 15 % |
| | od = outside dimension | Under 2" | ± 0.020" |
| | | 2" and up | ± 0.040" |
| **ROUND ROD & SQUARE BAR**   | od = outside dimension | Up to 3" | ± 0.010" |

## FLATNESS

Flatness is measured in the center with the weight of the profile minimizing the deviation by contact with a flat surface.

**STRUCTURAL SHAPES RODS, BARS, & SHEET**



| Allowable deviation from flat | |
|---|---|
| **Width** | **All Thicknesses** |
| Up to 1" | 0.008" |
| Over 1" | 0.008"/inch |

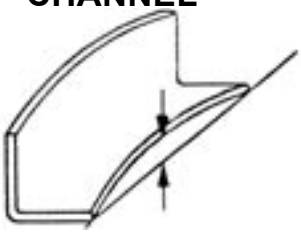
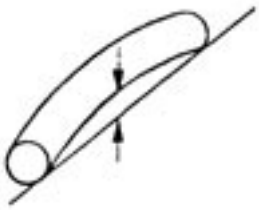
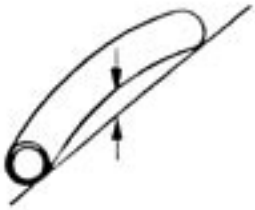
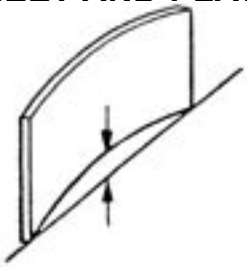
**HOLLOW SHAPES**

| Allowable deviation from flat | | |
|---|---|---|
| **Width** | **Thickness 0.125" to 0.188"** | **Thickness 0.189" and over** |
| Up to 1" | 0.012" | 0.008" |
| Over 1" | 0.012"/inch | 0.008"/inch |

# Cross Sectional Tolerances

## STRAIGHTNESS

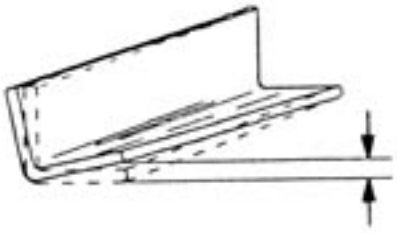
Straightness is measured in the center with the weight of the pultrusion minimizing the deviation by contact with a flat surface.

<table>
<tr><td rowspan="2">ANGLE, BEAM AND CHANNEL<br>  </td><td colspan="2">Allowable deviation from straight</td></tr>
<tr><td>All widths</td><td>0.050"/foot</td></tr>
<tr><td rowspan="4">RODS AND BARS<br>  </td><td colspan="2">Allowable deviation from straight</td></tr>
<tr><td>Diameter/Depth</td><td>Per Foot</td></tr>
<tr><td>Up to 1"</td><td>0.020"</td></tr>
<tr><td>Over 1"</td><td>0.040"</td></tr>
<tr><td rowspan="4">ROUND, SQUARE, AND RECTANGULAR TUBE<br>  </td><td colspan="2">Allowable deviation from straight</td></tr>
<tr><td>Diameter/Depth</td><td>Per Foot</td></tr>
<tr><td>Up to 2"</td><td>0.020"</td></tr>
<tr><td>Over 2"</td><td>0.030"</td></tr>
<tr><td rowspan="2">SHEET AND PLATE<br>  </td><td colspan="2">Allowable deviation from straight</td></tr>
<tr><td>All thicknesses and widths</td><td>0.025"/foot</td></tr>
</table>

# Cross Sectional Tolerances

## TWIST

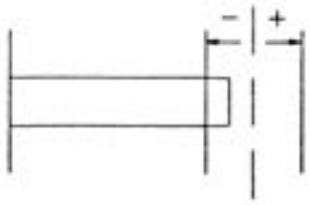
Twist is measured with the weight of the pultrusion minimizing the twist.

| ALL PROFILES | Allowable twist | | |
|---|---|---|---|
|  | **Width/Depth** | **Per Foot** | **Per Piece Max** |
| | Up to 1.499" | tan 1° x width | tan 7° x width |
| | 1.500" to 2.999" | tan 1/2° x width | tan 5° x width |
| | 3.000" and over | tan 1/3° x width | tan 3° x width |

## ANGULARITY

| ALL PROFILES | Allowable deviation from specific angle | |
|---|---|---|
| | thickness up to 3/4" | tan 1 1/2° x width of flange in inches |

## CUT LENGTHS

| ALL PROFILES | Allowable deviation from specific length | |
|---|---|---|
|  | Up to 20' | -0", + 1/2" |
| | Over 20' to 50' | -0", + 1" |

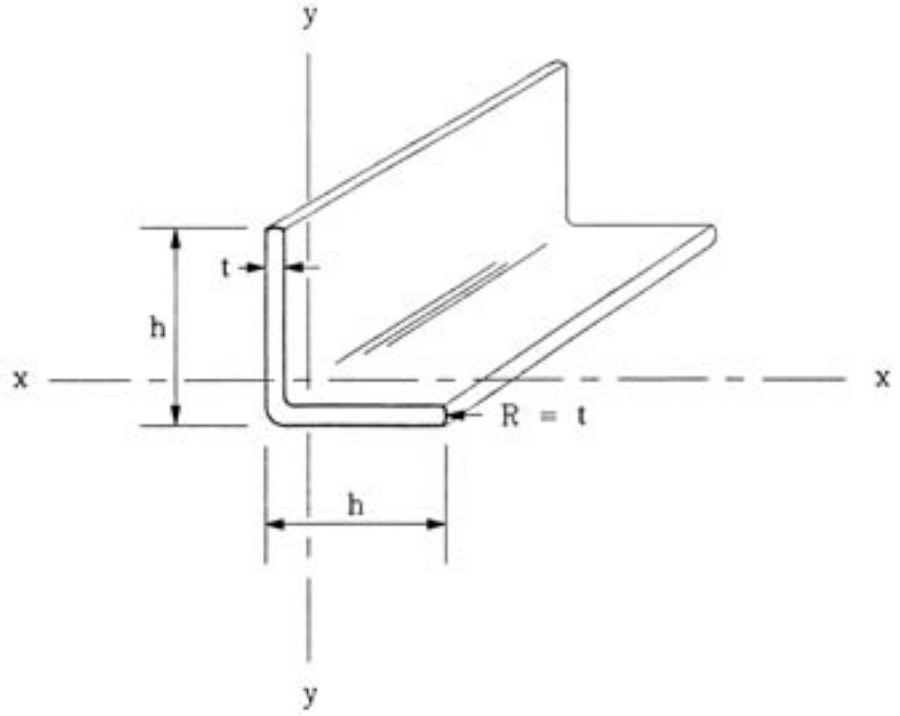
## SQUARENESS OF ENDCUT

| ALL PROFILES | Allowable deviation from square | |
|---|---|---|
| | All thicknesses | tan 1° x width in inches |

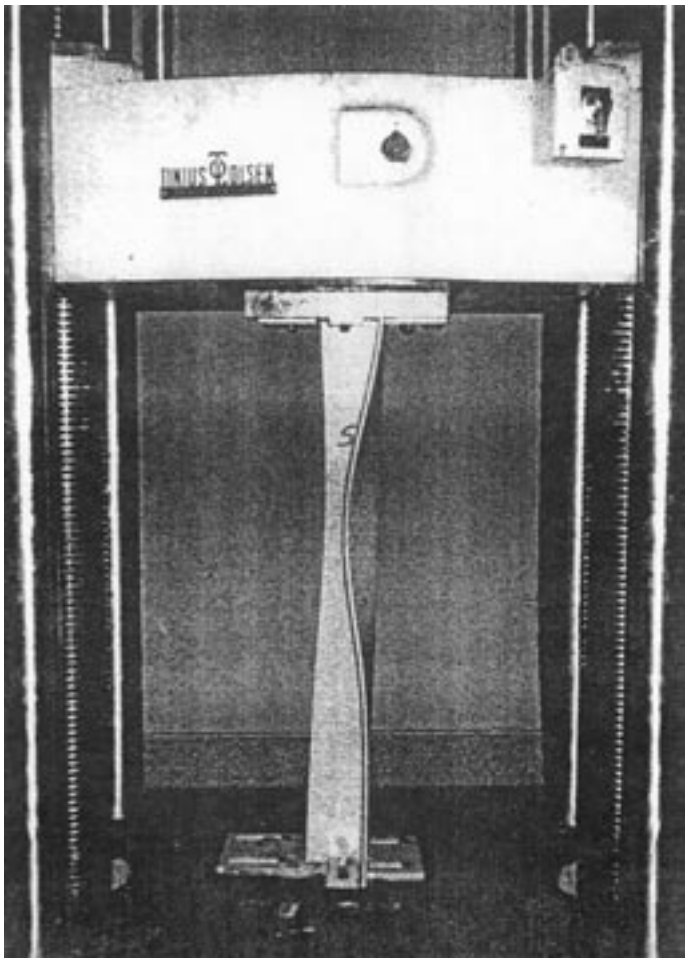
# Section Properties

## EQUAL LEG ANGLES

| SECTION DIMENSIONS | | | | SECTION PROPERTIES | | | |
|---|---|---|---|---|---|---|---|
| DEPTH | WALL | | | X - X / Y - Y | | | |
| h | t | A | Wt. | I | S | r | x/y |
| in. | in. | $in.^2$ | lb./ft. | $in.^4$ | $in.^3$ | in. | in. |
| 1.00 | 0.125 | 0.23 | 0.18 | 0.02 | 0.05 | 0.31 | 0.29 |
| 1.25 | 0.125 | 0.29 | 0.22 | 0.04 | 0.05 | 0.38 | 0.36 |
| 1.50 | 0.187 | 0.52 | 0.40 | 0.11 | 0.10 | 0.46 | 0.44 |
| 1.50 | 0.250 | 0.67 | 0.54 | 0.14 | 0.13 | 0.45 | 0.47 |
| 2.00 | 0.250 | 0.92 | 0.70 | 0.33 | 0.23 | 0.59 | 0.59 |
| 3.00 | 0.250 | 1.42 | 1.08 | 1.24 | 0.58 | 0.93 | 0.84 |
| 3.00 | 0.375 | 2.09 | 1.61 | 1.76 | 0.83 | 0.91 | 0.89 |
| 3.00 | 0.500 | 2.70 | 2.11 | 2.22 | 1.07 | 0.91 | 0.93 |
| 4.00 | 0.250 | 1.92 | 1.45 | 3.04 | 1.04 | 1.26 | 1.09 |
| 4.00 | 0.375 | 2.84 | 2.18 | 4.35 | 1.52 | 1.24 | 1.14 |
| 4.00 | 0.500 | 3.70 | 2.89 | 5.56 | 1.97 | 1.23 | 1.18 |
| 6.00 | 0.500 | 5.70 | 4.45 | 19.91 | 4.60 | 1.87 | 1.68 |



# Columns - Allowable Axial Load Tables



***8' long - 6" x 6" x 1/2" Angle***

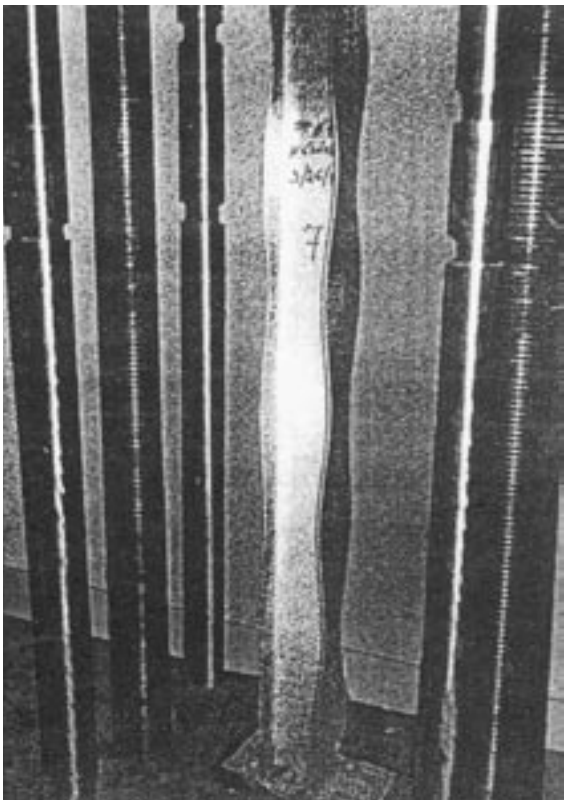
Full section column testing was conducted on equal leg angles, I and Wide Flange Shapes and Square Tubes. Ultimate values were generated through testing of elements with square cut ends placed between the table and the upper, moving platen of a universal testing machine. This test procedure closely simulates how FRP columns will generally be used in practice.

Comparison of test data versus theoretical Euler buckling capacity suggests that the "K" value as tested is approximately 0.70, representing a fixed-pinned condition. The values in the tables represent a FS = 3.0 for the tested condition. Should you feel, however, that your column end conditions closely approximate a pinned-pinned condition ("rounded" column ends are somewhat difficult to achieve in practice) we recommend you multiply the allowable values shown in the tables by the following values:

| SHAPE | To Obtain FS = 2.0 multiply by: | To Obtain FS = 3.0 multiply by: |
|---|---|---|
| I, W or Angle | 0.75 | 0.50 |
| Square Tube | 0.50 | 0.33 |

# Columns - Allowable Axial Load Tables

## Allowable Concentric Axial Stresses and Loads



*8' long - 6" x 3/8" WIDE FLANGE SHAPE*

### NOTATION

| | |
|---|---|
| $A$ | area ($in^2$) |
| $b$ | width of flange/leg/wall (in) |
| $t$ | thickness of flange (in) |
| $r$ | minimum radius gyration (in) |
| $l$ | length (in) |
| $K$ | effective column length factor |
| $F_a$ | allowable column concentric axial stress (psi) |
| $P_a$ | allowable column centric axial load (lbs) |

---

### ANGLE

Maximum allowable stress:

| | |
|---|---|
| b/t [ 8 | 4,862 psi |
| b/t = 10.7 | 4,194 psi |
| b/t = 12 | 3,620 psi |
| b/t = 16 | 2,758 psi |

### SQUARE TUBE (1/4" wall)

Maximum allowable stress:

| | |
|---|---|
| b/t [ 10 | 10,000 psi |
| b/t = 12 | 8,880 psi |
| b/t = 16 | 6,595 psi |

### WIDE FLANGE & I SHAPES

Maximum allowable stress:

| | | |
|---|---|---|
| | b/t [ 12 | 10,000 psi |
| | b/t = 13.3 | 8,747 psi |
| t = 1/4" | b/t = 16 | 7,208 psi |
| t > 1/4" | b/t = 16 | 6,233 psi |
| | b/t = 20 | 4,920 psi |
| | b/t = 21.3 | 4,483 psi |
| t =1/4" | b/t = 24 | 4,167 psi |
| t >1/4" | b/t = 24 | 3,608 psi |
| | b/t = 26.7 | 2,732 psi |

# Columns - Allowable Axial Load Tables

## 2 x 2 x 1/4 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 0.92 in.$^2$ r = 0.38 in. b/t = 8

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 4,862 | 4,473 |
| 1.0 | 2,807 | 2,582 |
| 1.5 | 2,077 | 1,911 |
| 2.0 | 1,684 | 1,549 |
| 2.5 | 1,416 | 1,303 |
| 3.0 | 1,211 | 1,114 |
| 3.5 | 1,079 | 993 |
| 4.0 | 988 | 909 |
| 4.5 | 891 | 820 |
| 5.0 | 833 | 766 |
| 5.5 | 752 | 692 |
| 6.0 | 667 | 614 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

## 3 x 3 x 1/4 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 1.42 in.$^2$ r = 0.90 in. b/t = 12

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 3,620 | 5,140 |
| 1.0 | 3,620 | 5,140 |
| 1.5 | 2,933 | 4,165 |
| 2.0 | 2,277 | 3,233 |
| 2.5 | 1,968 | 2,795 |
| 3.0 | 1,736 | 2,465 |
| 3.5 | 1,538 | 2,184 |
| 4.0 | 1,391 | 1,975 |
| 4.5 | 1,249 | 1,774 |
| 5.0 | 1,146 | 1,627 |
| 5.5 | 1,070 | 1,519 |
| 6.0 | 1,010 | 1,434 |
| 6.5 | 952 | 1,352 |
| 7.0 | 889 | 1,262 |
| 7.5 | 849 | 1,206 |
| 8.0 | 815 | 1,157 |
| 8.5 | 757 | 1,075 |
| 9.0 | 708 | 1,005 |
| 9.5 | 665 | 944 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

# Columns - Allowable Axial Load Tables

## 3 x 3 x 3/8 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 2.09 in.$^2$ r = 0.59 in. b/t = 8

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 4,862 | 10,162 |
| 1.0 | 4,862 | 10,162 |
| 1.5 | 2,933 | 6,130 |
| 2.0 | 2,277 | 4,759 |
| 2.5 | 1,968 | 4,113 |
| 3.0 | 1,736 | 3,628 |
| 3.5 | 1,538 | 3,214 |
| 4.0 | 1,391 | 2,907 |
| 4.5 | 1,249 | 2,610 |
| 5.0 | 1,146 | 2,395 |
| 5.5 | 1,070 | 2,236 |
| 6.0 | 1,010 | 2,111 |
| 6.5 | 952 | 1,990 |
| 7.0 | 889 | 1,858 |
| 7.5 | 849 | 1,774 |
| 8.0 | 815 | 1,703 |
| 8.5 | 757 | 1,582 |
| 9.0 | 708 | 1,480 |
| 9.5 | 665 | 1,390 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

## 3 x 3 x 1/2 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 2.70 in.$^2$ r = 0.59 in. b/t = 6

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 4,862 | 13,127 |
| 1.0 | 4,862 | 13,127 |
| 1.5 | 2,933 | 7,919 |
| 2.0 | 2,277 | 6,148 |
| 2.5 | 1,968 | 5,314 |
| 3.0 | 1,736 | 4,687 |
| 3.5 | 1,538 | 4,153 |
| 4.0 | 1,391 | 3,756 |
| 4.5 | 1,249 | 3,372 |
| 5.0 | 1,146 | 3,094 |
| 5.5 | 1,070 | 2,889 |
| 6.0 | 1,010 | 2,727 |
| 6.5 | 952 | 2,570 |
| 7.0 | 889 | 2,400 |
| 7.5 | 849 | 2,292 |
| 8.0 | 815 | 2,201 |
| 8.5 | 757 | 2,044 |
| 9.0 | 708 | 1,912 |
| 9.5 | 665 | 1,796 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

# Columns - Allowable Axial Load Tables

## 4 x 4 x 1/4 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 1.92 in.$^2$ r = 0.80 in. b/t = 16

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 2,758 | 5,295 |
| 1.0 | 2,758 | 5,295 |
| 1.5 | 2,758 | 5,295 |
| 2.0 | 2,758 | 5,295 |
| 2.5 | 2,393 | 4,595 |
| 3.0 | 2,133 | 4,095 |
| 3.5 | 1,914 | 3,675 |
| 4.0 | 1,760 | 3,379 |
| 4.5 | 1,603 | 3,078 |
| 5.0 | 1,482 | 2,845 |
| 5.5 | 1,379 | 2,648 |
| 6.0 | 1,283 | 2,463 |
| 6.5 | 1,187 | 2,279 |
| 7.0 | 1,123 | 2,156 |
| 7.5 | 1,064 | 2,043 |
| 8.0 | 1,020 | 1,958 |
| 8.5 | 980 | 1,882 |
| 9.0 | 933 | 1,791 |
| 9.5 | 889 | 1,707 |
| 10.0 | 860 | 1,651 |
| 10.5 | 834 | 1,601 |
| 11.0 | 802 | 1,540 |
| 11.5 | 759 | 1,457 |
| 12.0 | 727 | 1,396 |
| 12.5 | 693 | 1,331 |
| 13.0 | 660 | 1,267 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

## 4 x 4 x 3/8 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 2.84 in.$^2$ r = 0.79 in. b/t = 10.7

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 4,194 | 11,911 |
| 1.0 | 4,194 | 11,911 |
| 1.5 | 4,194 | 11,911 |
| 2.0 | 2,947 | 8,369 |
| 2.5 | 2,367 | 6,722 |
| 3.0 | 2,113 | 6,001 |
| 3.5 | 1,896 | 5,385 |
| 4.0 | 1,741 | 4,944 |
| 4.5 | 1,586 | 4,504 |
| 5.0 | 1,461 | 4,149 |
| 5.5 | 1,364 | 3,874 |
| 6.0 | 1,260 | 3,578 |
| 6.5 | 1,177 | 3,343 |
| 7.0 | 1,113 | 3,161 |
| 7.5 | 1,048 | 2,976 |
| 8.0 | 1,012 | 2,874 |
| 8.5 | 969 | 2,752 |
| 9.0 | 922 | 2,618 |
| 9.5 | 878 | 2,494 |
| 10.0 | 853 | 2,423 |
| 10.5 | 828 | 2,352 |
| 11.0 | 791 | 2,246 |
| 11.5 | 745 | 2,116 |
| 12.0 | 712 | 2,022 |
| 12.5 | 680 | 1,931 |
| 13.0 | 652 | 1,852 |

*The effective "K" value is 0.70.*

*See page 52 for additional information.*

# Columns - Allowable Axial Load Tables

## 6 x 6 x 3/8 ANGLE

**Allowable Concentric Axial Stresses and Loads**

A = 4.33 in.$^2$ r = 1.14 in. b/t = 16

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 2,758 | 11,942 |
| 1.0 | 2,758 | 11,942 |
| 1.5 | 2,758 | 11,942 |
| 2.0 | 2,758 | 11,942 |
| 2.5 | 2,758 | 11,942 |
| 3.0 | 2,758 | 11,942 |
| 3.5 | 2,427 | 10,509 |
| 4.0 | 2,229 | 9,652 |
| 4.5 | 2,060 | 8,920 |
| 5.0 | 1,911 | 8,275 |
| 5.5 | 1,802 | 7,803 |
| 6.0 | 1,684 | 7,292 |
| 6.5 | 1,585 | 6,863 |
| 7.0 | 1,503 | 6,508 |
| 7.5 | 1,416 | 6,131 |
| 8.0 | 1,354 | 5,863 |
| 8.5 | 1,289 | 5,581 |
| 9.0 | 1,211 | 5,244 |
| 9.5 | 1,167 | 5,053 |

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 10.0 | 1,121 | 4,854 |
| 10.5 | 1,079 | 4,672 |
| 11.0 | 1,041 | 4,508 |
| 11.5 | 1,015 | 4,395 |
| 12.0 | 988 | 4,278 |
| 12.5 | 955 | 4,135 |
| 13.0 | 922 | 3,992 |
| 13.5 | 892 | 3,862 |
| 14.0 | 872 | 3,776 |
| 14.5 | 851 | 3,685 |
| 15.0 | 833 | 3,607 |
| 15.5 | 813 | 3,520 |
| 16.0 | 782 | 3,386 |
| 16.5 | 752 | 3,256 |
| 17.0 | 729 | 3,157 |
| 17.5 | 706 | 3,057 |
| 18.0 | 680 | 2,944 |
| 18.5 | 660 | 2,858 |

*The effective "K" value is 0.70.* *See page 52 for additional information.*

## 6 x 6 x 1/2 ANGLE

**Allowable Concentric Axial Stresses and Loads**

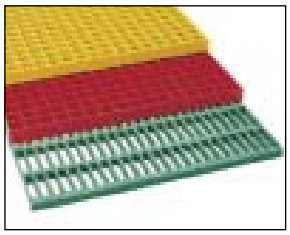
A = 5.70 in.$^2$ r = 1.19 in. b/t = 12

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 0.5 | 3,620 | 20,634 |
| 1.0 | 3,620 | 20,634 |
| 1.5 | 3,620 | 20,634 |
| 2.0 | 3,620 | 20,634 |
| 2.5 | 3,620 | 20,634 |
| 3.0 | 2,960 | 16,872 |
| 3.5 | 2,512 | 14,318 |
| 4.0 | 2,290 | 13,053 |
| 4.5 | 2,120 | 12,084 |
| 5.0 | 1,984 | 11,309 |
| 5.5 | 1,844 | 10,511 |
| 6.0 | 1,748 | 9,964 |
| 6.5 | 1,642 | 9,359 |
| 7.0 | 1,548 | 8,824 |
| 7.5 | 1,469 | 8,373 |
| 8.0 | 1,397 | 7,963 |
| 8.5 | 1,337 | 7,621 |
| 9.0 | 1,267 | 7,222 |
| 9.5 | 1,202 | 6,851 |
| 10.0 | 1,157 | 6,595 |

| True Length (ft) | $F_a$ (psi) | $P_a$ (lbs) |
|---|---|---|
| 10.5 | 1,117 | 6,367 |
| 11.0 | 1,076 | 6,133 |
| 11.5 | 1,033 | 5,888 |
| 12.0 | 1,015 | 5,786 |
| 12.5 | 989 | 5,637 |
| 13.0 | 958 | 5,461 |
| 13.5 | 927 | 5,284 |
| 14.0 | 896 | 5,107 |
| 14.5 | 873 | 4,976 |
| 15.0 | 855 | 4,874 |
| 15.5 | 839 | 4,782 |
| 16.0 | 822 | 4,685 |
| 16.5 | 794 | 4,526 |
| 17.0 | 765 | 4,361 |
| 17.5 | 737 | 4,201 |
| 18.0 | 717 | 4,087 |
| 18.5 | 699 | 3,984 |
| 19.0 | 672 | 3,830 |
| 19.5 | 655 | 3,734 |

*The effective "K" value is 0.70.* *See page 52 for additional information.*

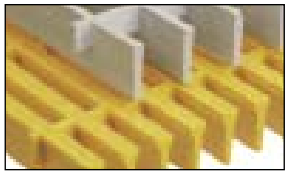
# Fibergrate Products & Services



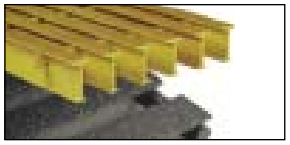
## Fibergrate® Molded Grating

Fibergrate molded gratings are designed to provide the ultimate in reliable performance, even in the most demanding conditions. Fibergrate offers the widest selection in the market with more than ten resins including Chemgrate CP-84 and more than twenty grating configurations available in many panel sizes and surfaces.

## RIGIDEX® Moltruded® Grating



RIGIDEX Moltruded gratings are the first fiberglass gratings to combine the corrosion resistance of molded grating with the longer span capacity of pultruded grating, all at the low cost of metal gratings.

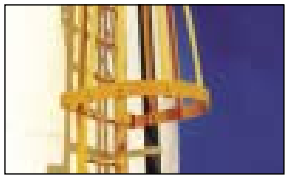


## Safe-T-Span® Pultruded Industrial and Pedestrian Gratings

Combining corrosion resistance, long-life and low-maintenance designs, Safe-T-Span provides unidirectional strength for industrial and pedestrian pultruded grating applications.

## Dynarail® Handrail

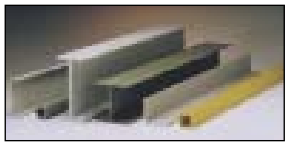
Easily assembled from durable prefabricated components or engineered to your specifications, Dynarail handrail meets or exceeds OSHA and strict building code requirements for safety and design.



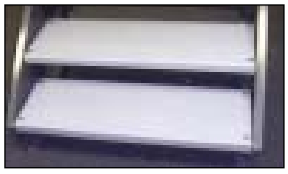
## Dynarail® Safety Ladder System

Easily assembled on site, Dynarail safety ladder systems meet or exceed OSHA requirements. Though less costly than prefabricated ladder systems, these safety ladders provide a custom fit to the supporting structure.

## Dynaform® Structural Shapes



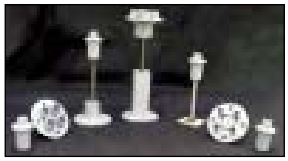
Fibergrate offers a wide range of pultruded structural components for industrial use, including bars, rods, tubes, beams, channels, leg angles and plates.



## Stair Solutions

Fibergrate offers a wide range of slip-resistant products to meet your stair safety needs. These durable products which include treads, tread covers and covered stair treads are a long-term, cost-efficient solution for your facility.

## Grating Pedestals



Uniquely designed adjustable single and quad head pedestals for square mesh molded grating are manufactured to provide safe and economical support for elevated flooring.

## Fabrication Services

Combining engineering expertise with an understanding of fiberglass applications, Fibergrate provides turnkey design and fabrication of fiberglass structures, including platforms, catwalks, stairways and test racks.



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