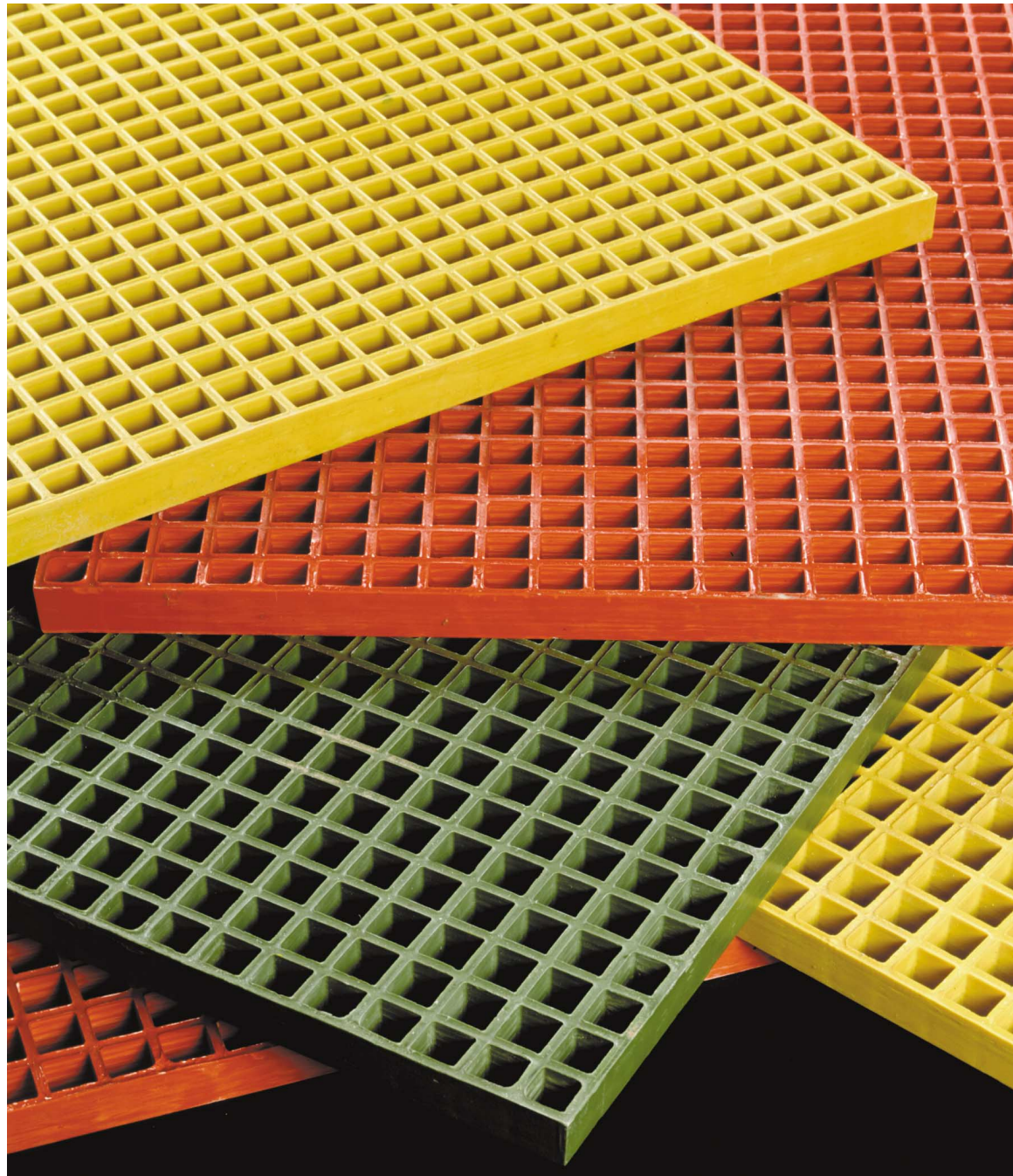


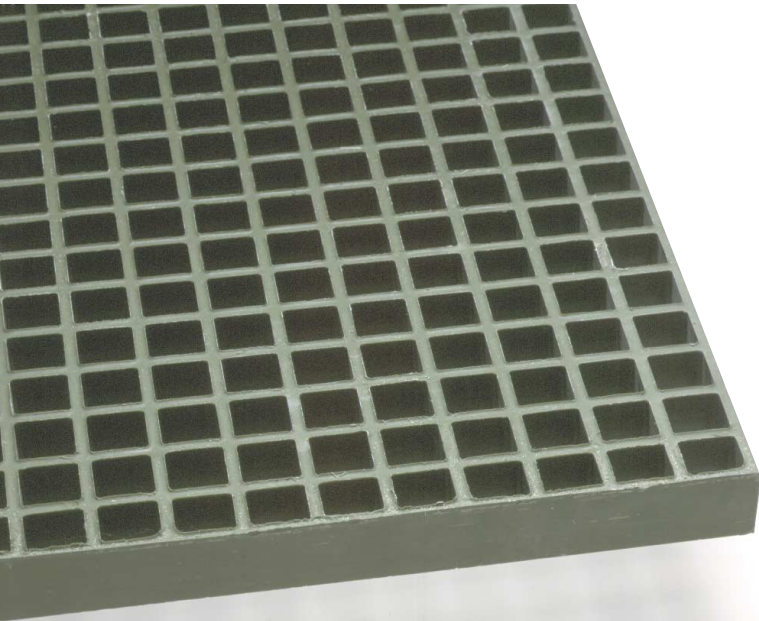
**STRONGWELL**

**DURAGRATE<sup>®</sup>**

**MOLDED FIBERGLASS GRATING**



# Molded Fiberglass Grating



## Features

DURAGRATE® molded fiberglass grating is a strong mesh grating panel which allows efficient on-site cutting to minimize grating waste. Molded in one piece with a plain concave non-slip walking surface, DURAGRATE® is the chemical resistant flooring choice for many industrial applications. Load bearing bars in both directions allow for use without continuous side support.

Molded fiberglass grating is significantly lighter in weight than metallic gratings. The high resin content (65%) provides long maintenance free performance. A higher safety factor is achieved by designing in a higher glass content at the bottom of the grating for greater tensile strength.

DURAGRATE® molded fiberglass grating has the following inherent features:

- Corrosion Resistant
- Fire Retardant
- Maintenance Free
- Lightweight
- Easy To Install
- Uniform Appearance
- Easy To Fabricate
- Impact Resistant
- Non-Conductive
- Bidirectional Load Bearing
- Cost Effective

## Materials of Construction

DURAGRATE® molded fiberglass grating is composed of fiberglass rovings combined with a choice of five thermosetting resin systems.

Standard DURAGRATE® grating has a concave profile on the upper surface for skid resistance. Grit tops are available upon request.



The Exide Battery Plant in Manchester, Iowa installed corrosion resistant DURAGRATE® around its tanks of sulfuric acid.

## Standard Resin Systems Available

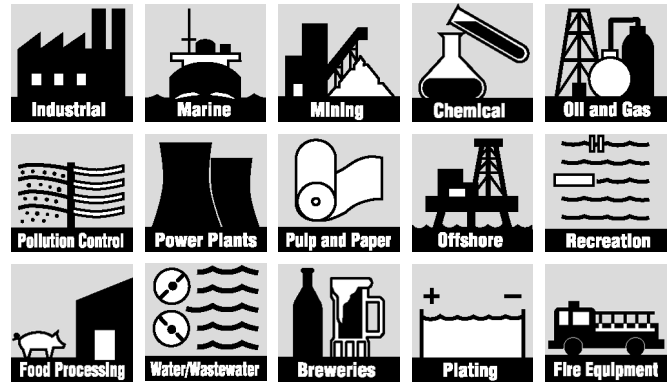
| Resin Code | Description                        | Resin Base    | Corrosion Resistance | Standard Color*     | Flame Spread Rating** |
|------------|------------------------------------|---------------|----------------------|---------------------|-----------------------|
| VE         | Chemical Proof Fire Retardant      | Vinyl Ester   | Excellent            | Orange or Dark Gray | Class 1<br>25 or less |
| XVE        | Chemical Proof Fire Retardant      | Vinyl Ester   | Excellent            | Dark Gray           | Class 1<br>10 or less |
| PP         | Industrial Grade Fire Retardant    | Isophthalic   | Very Good            | Green or Yellow     | Class 1<br>25 or less |
| GP         | Architectural Grade Fire Retardant | Orthophthalic | Good                 | Yellow              | Class 1<br>25 or less |
| FF         | Food Grade Fire Retardant          | Isophthalic   | Very Good            | Light Gray          | Class 2<br>30 or less |

\*Custom Colors Available Upon Request.

\*\* Flame Spread Rating per ASTM E-84 Tunnel Test



# Technical Data



## Shapes, Sizes and Availability

| Typical DURAGRATE® Panels |                         |                                       |
|---------------------------|-------------------------|---------------------------------------|
| THICKNESS                 | MESH PATTERN            | PANEL SIZES                           |
| 1"                        | 1-1/2" Square           | 3' x 10', 4' x 8', 4' x 12'           |
| 1"                        | 1" x 4" Rectangular     | 3' x 10', 4' x 12'                    |
| 1-1/2"                    | 3/4" x 3/4" MiniGrid    | 4' x 12'                              |
| 1-1/2"                    | 1-1/2" x 6" Rectangular | 4' x 12'                              |
| 1-1/2"                    | 1-1/2" Square           | 3' x 10', 4' x 8', 4' x 12', 5' x 10' |
| 2"                        | 2" Square               | 4' x 12'                              |

NOTE: All panel sizes available in VE, XVE, PP, GP or FF resin systems. Custom panel sizes and resins available upon request.

## How to Specify

The molded fiberglass grating shall be DURAGRATE® as supplied by Strongwell. Grating panels shall be (pick one from chart for thickness, mesh pattern, resin code) molded grid pattern. The grating shall be one-piece construction with the tops of the bearing bars and cross bars in the same plane. Color shall be (green) (orange) (yellow) (dark gray) (light gray). Surface shall be (concave top) (gritted).

## Stair Treads

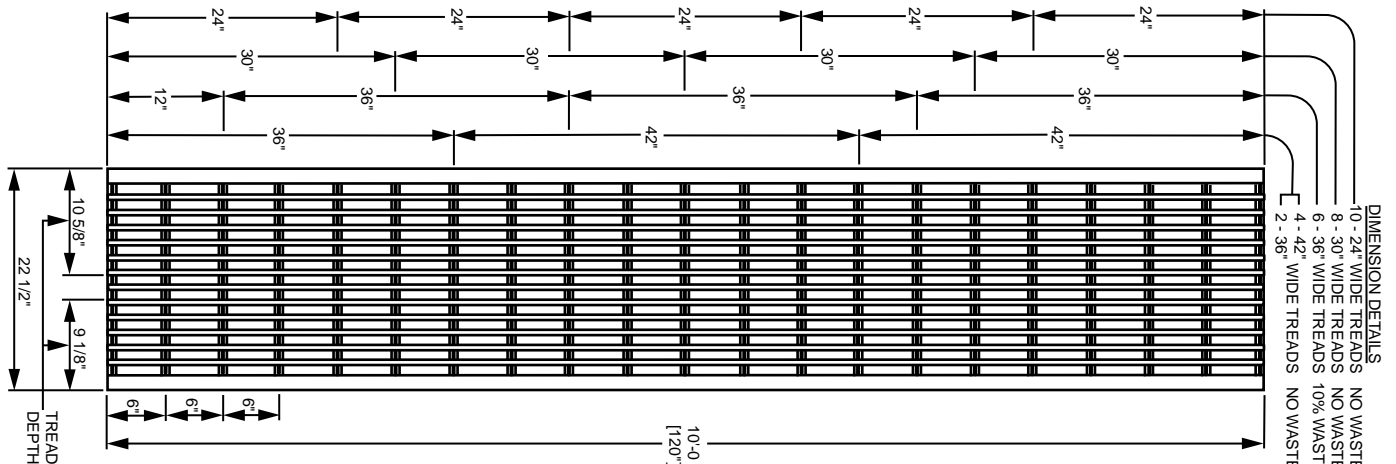
DURAGRATE® molded fiberglass stairtreads are available in a 1-1/2" thick 1-1/2" x 6" rectangular mesh pattern. The standard panel size is 22-1/2" x 10'. Stairtreads can be produced in any of the standard DURAGRATE® resin systems. The stairtread panel comes complete with anti-slip nosing.

## Load Table

### DURAGRATE® STAIRTREAD

| Thickness | Mesh        | Panel Size    | Maximum Span for 300 lbs. at MidSpan |                         | Panel Weight | Open Area |
|-----------|-------------|---------------|--------------------------------------|-------------------------|--------------|-----------|
|           |             |               | 1/8" or less deflection              | 1/4" or less deflection |              |           |
| 1-1/2"    | 1-1/2" x 6" | 22-1/2" x 10' | 30"                                  | 38"                     | 60 lbs.      | 67%       |

## Stairtread Panel Cutting Diagram

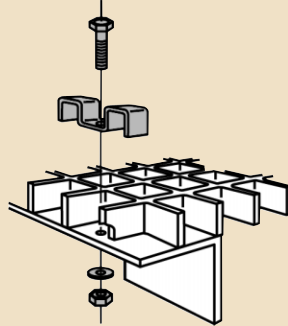


# Accessories

## Panel Installation

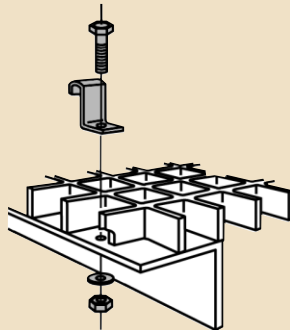
### Type M Clips

For attaching grating to supports.



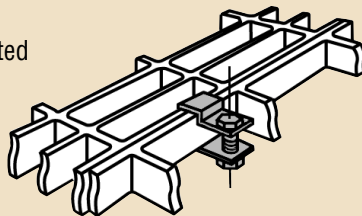
### Type J Clips

For attaching grating to supports for moderate loads.



### Type C Clips

For joining two unsupported edges if needed.



## Sealing Kits

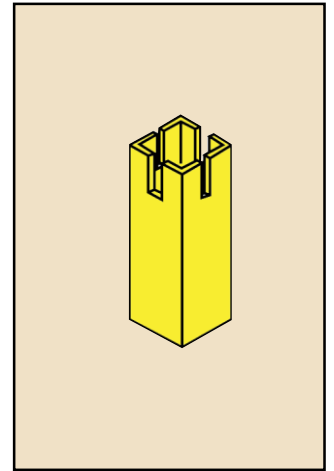
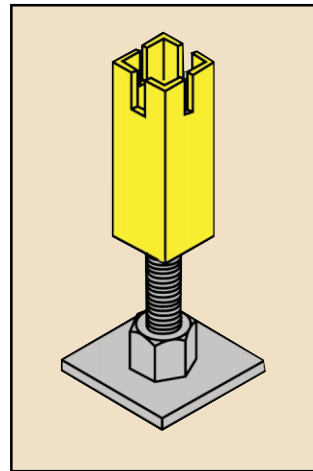
To maintain corrosion resistance and structural integrity, standard resin sealing kits are available to protect the exposed ends of cut panels and other components.

## Solid Surface

DURAGRATE® is available with an integral cover bonded to the top surface with a slip resistant grit surface.

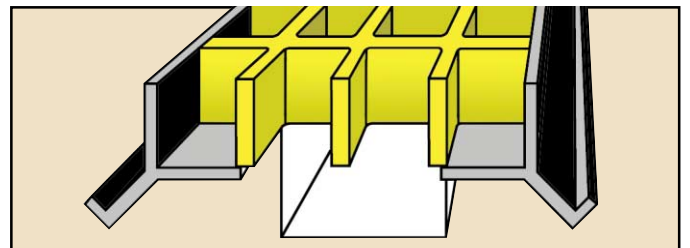
## Elevated Floor System

Fixed and adjustable legs for molded grating are available to provide sturdy support for elevated flooring. Contact Strongwell with your exact requirements.



## Curb Angle

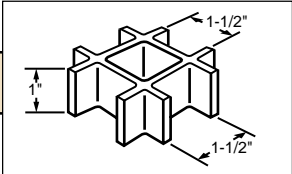
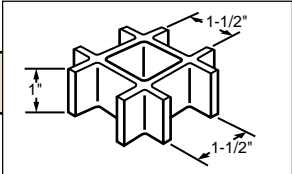
Fiberglass Curb Angle provides a strong, firm base for bearing bars and is pultruded from the same material and in the same manner as other DURADEK®/DURAGRID® products. Corrosion resistant, non-conducting Curb Angle is available in three sizes, gray, fire retardant vinyl ester.



# Load Tables

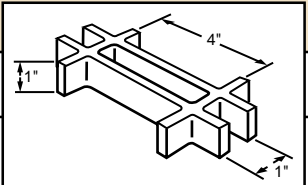
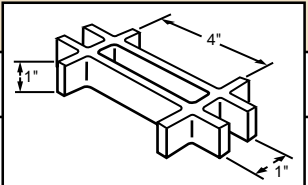
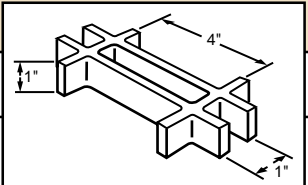
## 1" THICK 1-1/2" SQUARE MESH DURAGRATE®

A=1.71 in.<sup>2</sup>/ft. of width    S=0.29 in.<sup>3</sup>/ft. of width    I=0.14 in.<sup>4</sup>/ft. of width  
 No. Bars per foot = 8    Open Space = 70%    Approx. Weight = 2.6 lbs/sq. ft.

| SPAN INCHES |    | LOAD  |       |  |       |       |       |  |       | SAFE LOAD 5:1 SAFETY FACTOR | DEFLECTION | E x 10 <sup>6</sup> PSI |
|-------------|----|-------|-------|--|-------|-------|-------|--|-------|-----------------------------|------------|-------------------------|
|             |    | 50    | 100   | 150  | 200   | 250   | 300   | 400  | 500   |                             |            |                         |
| 12          | Δu | 0.004 | 0.008 | 0.013  | 0.017 | 0.021 | 0.025 | 0.034  | 0.042 | 1360                        | 0.115      | 1.90                    |
|             | Δc | 0.007 | 0.014 | 0.020  | 0.027 | 0.034 | 0.041 | 0.054  | 0.068 |                             |            |                         |
| 18          | Δu | 0.021 | 0.041 | 0.062  | 0.082 | 0.103 | 0.123 | 0.164  | 0.205 | 660                         | 0.271      | 1.98                    |
|             | Δc | 0.022 | 0.044 | 0.066  | 0.088 | 0.110 | 0.131 | 0.175  | 0.219 |                             |            |                         |
| 24          | Δu | 0.064 | 0.128 | 0.192  | 0.256 | 0.320 | 0.384 | 0.512  | 0.640 | 380                         | 0.486      | 2.01                    |
|             | Δc | 0.051 | 0.102 | 0.154  | 0.205 | 0.256 | 0.307 | 0.409  | 0.512 |                             |            |                         |
| 30          | Δu | 0.155 | 0.309 | 0.464  | 0.619 | 0.495 | 0.594 |  |       | 240                         | 0.742      | 2.03                    |
|             | Δc | 0.099 | 0.198 | 0.297  | 0.396 |       |       |  |       |                             |            |                         |
| 36          | Δu | 0.318 | 0.635 |  |       |       |       | 160  | 1.016 | 2.05                        |            |                         |
|             | Δc | 0.169 | 0.339 |  |       |       |       |  |       |                             | 0.508      | 0.677                   |

## 1" THICK 1" x 4" RECTANGULAR MESH DURAGRATE®

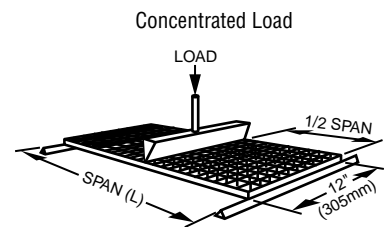
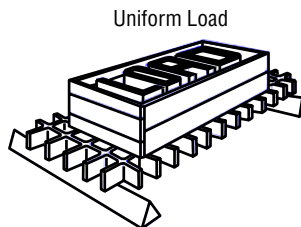
A=2.57 in.<sup>2</sup>/ft. of width    S=0.43 in.<sup>3</sup>/ft. of width    I=0.22 in.<sup>4</sup>/ft. of width  
 No. Bars per foot = 12    Open Space = 69%    Approx. Weight = 2.8 lbs/sq. ft.

| SPAN INCHES |    | LOAD  |       |  |  |       |       |  |       | SAFE LOAD 5:1 SAFETY FACTOR | DEFLECTION | E x 10 <sup>6</sup> PSI |
|-------------|----|-------|-------|--|--|-------|-------|--|-------|-----------------------------|------------|-------------------------|
|             |    | 50    | 100   | 150  | 200  | 250   | 300   | 400  | 500   |                             |            |                         |
| 12          | Δu | 0.003 | 0.006 | 0.008  | 0.011  | 0.014 | 0.017 | 0.022  | 0.028 | 1960                        | 0.108      | 1.85                    |
|             | Δc | 0.004 | 0.009 | 0.013  | 0.018  | 0.022 | 0.027 | 0.035  | 0.044 |                             |            |                         |
| 18          | Δu | 0.012 | 0.025 | 0.037  | 0.049  | 0.062 | 0.074 | 0.099  | 0.123 | 960                         | 0.237      | 2.10                    |
|             | Δc | 0.013 | 0.026 | 0.039  | 0.053  | 0.066 | 0.079 | 0.105  | 0.131 |                             |            |                         |
| 24          | Δu | 0.037 | 0.074 | 0.112  | 0.149  | 0.186 | 0.223 | 0.298  | 0.372 | 560                         | 0.417      | 2.20                    |
|             | Δc | 0.030 | 0.060 | 0.089  | 0.119  | 0.149 | 0.179 | 0.238  | 0.298 |                             |            |                         |
| 30          | Δu | 0.088 | 0.176 | 0.264  | 0.352  | 0.440 | 0.528 |  |       | 340                         | 0.598      | 2.27                    |
|             | Δc | 0.056 | 0.113 | 0.169  | 0.225  | 0.282 | 0.338 |  |       |                             |            |                         |
| 36          | Δu | 0.176 | 0.353 | 0.529  |  |       |       |  | 240   | 0.846                       | 2.35       |                         |
|             | Δc | 0.094 | 0.188 | 0.282  |  |       |       |  |       |                             |            | 0.376                   |
| 42          | Δu | 0.316 | 0.632 |  |  |       |       | 180  | 1.137 | 2.43                        |            |                         |
|             | Δc | 0.144 | 0.289 |  |  |       |       |  |       |                             | 0.433      | 0.577                   |

NOTE: Rectangular grating tables are for loading in the crosswise orientation.

- c IS CONCENTRATED LOAD LBS/FT OF WIDTH
- Δc IS DEFLECTION UNDER CONCENTRATED LOAD
- u IS UNIFORM LOAD LBS/FT<sup>2</sup>
- Δu IS DEFLECTION UNDER UNIFORM LOAD

NOTE: ALL TABLE VALUES ARE TYPICAL

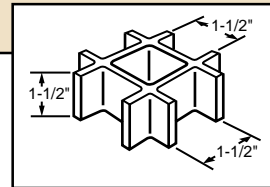


# Load Tables

## 1-1/2" THICK 1-1/2" SQUARE MESH DURAGRATE®

A=2.85 in.<sup>2</sup>/ft. of width    S=0.65 in.<sup>3</sup>/ft. of width    I=0.51 in.<sup>4</sup>/ft. of width  
 No. Bars per foot = 8    Open Space = 70%    Approx. Weight = 3.8 lbs/sq.ft.

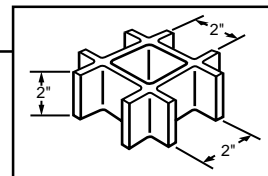
| SPAN<br>INCHES |    | LOAD  |       |       |       |       |       |       |       | SAFE<br>LOAD<br>5:1<br>SAFETY<br>FACTOR | DEFLECTION | E x 10 <sup>6</sup><br>PSI |
|----------------|----|-------|-------|-------|-------|-------|-------|-------|-------|---|------------|----------------------------|
|                |    | 50    | 100   | 150   | 200   | 250   | 300   | 400   | 500   |   |            |                            |
| 12             | Δu | 0.002 | 0.004 | 0.005 | 0.007 | 0.009 | 0.011 | 0.014 | 0.018 | 2080                                    | 0.074      | 1.24                       |
|                | Δc | 0.003 | 0.006 | 0.009 | 0.011 | 0.014 | 0.017 | 0.023 | 0.028 |   |            |                            |
| 18             | Δu | 0.007 | 0.014 | 0.021 | 0.028 | 0.036 | 0.043 | 0.057 | 0.071 | 1380                                    | 0.196      | 1.57                       |
|                | Δc | 0.008 | 0.015 | 0.023 | 0.030 | 0.038 | 0.046 | 0.061 | 0.076 |   |            |                            |
| 24             | Δu | 0.021 | 0.042 | 0.063 | 0.084 | 0.104 | 0.125 | 0.167 | 0.209 | 780                                     | 0.326      | 1.69                       |
|                | Δc | 0.017 | 0.033 | 0.050 | 0.067 | 0.084 | 0.100 | 0.134 | 0.167 |   |            |                            |
| 30             | Δu | 0.047 | 0.094 | 0.141 | 0.188 | 0.235 | 0.283 | 0.377 | 0.471 | 496                                     | 0.467      | 1.83                       |
|                | Δc | 0.030 | 0.060 | 0.090 | 0.121 | 0.151 | 0.181 | 0.241 | 0.301 |   |            |                            |
| 36             | Δu | 0.096 | 0.192 | 0.288 | 0.384 | 0.480 | 0.576 |       |       | 340                                     | 0.653      | 1.86                       |
|                | Δc | 0.051 | 0.102 | 0.154 | 0.205 | 0.256 | 0.307 | 0.410 | 0.512 |   |            |                            |
| 42             | Δu | 0.175 | 0.350 | 0.525 |       |       |       |       |       | 250                                     | 0.876      | 1.89                       |
|                | Δc | 0.080 | 0.160 | 0.240 | 0.320 | 0.400 | 0.480 | 0.641 | 0.801 |   |            |                            |
| 48             | Δu | 0.287 | 0.573 |       |       |       |       |       |       | 170                                     | 0.975      | 1.97                       |
|                | Δc | 0.115 | 0.229 | 0.344 | 0.459 | 0.573 | 0.688 |       |       |   |            |                            |



## 2" THICK 2" SQUARE MESH DURAGRATE®

A=2.88 in.<sup>2</sup>/ft. of width    S=0.94 in.<sup>3</sup>/ft. of width    I=0.96 in.<sup>4</sup>/ft. of width  
 No. Bars per foot = 6    Open Space = 72%    Approx. Weight = 4.0 lbs/sq.ft.

| SPAN<br>INCHES |    | LOAD  |       |       |       |       |       |       |       | SAFE<br>LOAD<br>5:1<br>SAFETY<br>FACTOR | DEFLECTION | E x 10 <sup>6</sup><br>PSI |
|----------------|----|-------|-------|-------|-------|-------|-------|-------|-------|---|------------|----------------------------|
|                |    | 50    | 100   | 150   | 200   | 250   | 300   | 400   | 500   |   |            |                            |
| 12             | Δu | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 | 0.010 | 2000                                    | 0.041      | 1.15                       |
|                | Δc | 0.002 | 0.003 | 0.005 | 0.007 | 0.008 | 0.010 | 0.013 | 0.016 |   |            |                            |
| 18             | Δu | 0.004 | 0.008 | 0.012 | 0.016 | 0.020 | 0.024 | 0.032 | 0.040 | 1600                                    | 0.128      | 1.48                       |
|                | Δc | 0.004 | 0.009 | 0.013 | 0.017 | 0.021 | 0.026 | 0.034 | 0.043 |   |            |                            |
| 24             | Δu | 0.010 | 0.021 | 0.031 | 0.042 | 0.052 | 0.063 | 0.083 | 0.104 | 960                                     | 0.200      | 1.80                       |
|                | Δc | 0.008 | 0.017 | 0.025 | 0.033 | 0.042 | 0.050 | 0.067 | 0.083 |   |            |                            |
| 30             | Δu | 0.023 | 0.046 | 0.069 | 0.092 | 0.114 | 0.137 | 0.183 | 0.229 | 640                                     | 0.293      | 2.00                       |
|                | Δc | 0.015 | 0.029 | 0.044 | 0.059 | 0.073 | 0.088 | 0.117 | 0.146 |   |            |                            |
| 36             | Δu | 0.044 | 0.089 | 0.133 | 0.177 | 0.222 | 0.266 | 0.355 | 0.444 | 460                                     | 0.408      | 2.14                       |
|                | Δc | 0.024 | 0.047 | 0.071 | 0.095 | 0.118 | 0.142 | 0.189 | 0.237 |   |            |                            |
| 42             | Δu | 0.082 | 0.164 | 0.245 | 0.327 | 0.409 | 0.491 | 0.654 |       | 340                                     | 0.556      | 2.15                       |
|                | Δc | 0.037 | 0.075 | 0.112 | 0.150 | 0.187 | 0.224 | 0.299 | 0.374 |   |            |                            |
| 48             | Δu | 0.135 | 0.270 | 0.405 | 0.541 |       |       |       |       | 260                                     | 0.703      | 2.22                       |
|                | Δc | 0.054 | 0.108 | 0.162 | 0.216 | 0.270 | 0.324 | 0.432 | 0.541 |   |            |                            |
| 54             | Δu | 0.210 | 0.420 | 0.630 |       |       |       |       |       | 200                                     | 0.839      | 2.29                       |
|                | Δc | 0.075 | 0.149 | 0.224 | 0.298 | 0.373 | 0.448 | 0.597 |       |   |            |                            |



**STRONGWELL**

ISO-9001 Certified Manufacturing Plants

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