

# 12 SPACE (3/4") RIVETED ALUMINUM GRATING LOAD TABLE

Use this table when evaluating spans and loads of the following types of aluminum grating: 12-AR-7, 12-AR-3.5

| Bearing Bar Size (inches) | Approx. Weight psf* | Maximum Pedestrian Span** | Unsupported Span |       |       |       |       |       |       |       |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|---------------------------|---------------------|---------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------|-------|-------|
|                           |                     |                           | 2I-0             | 2I-6  | 3I-0  | 3I-6  | 4I-0  | 4I-6  | 5I-0  | 5I-6  | 6I-0                                                                                                                                                                                                                                                                                                                                                                                                                | 6I-6                                                                                                                  | 7I-0  | 8I-0  |       |
| 3/4 x 3/16                | 3.7                 | 3'-3"                     | U                | 572   | 366   | 254   | 187   | 143   | 113   | 92    | All loads and deflections are theoretical and based upon the gross sections of the bearing bars, using a fiber stress of 12,000 psi.<br><br>The values are not intended to be absolute since the actual load capacity will be affected by the slight variations in mill and manufacturing tolerances.<br><br>Grating for spans to the left of the heavy line have a deflection ≤ 1/4" for uniform loads of 100 psf. |                                                                                                                       |       |       |       |
|                           |                     |                           | D                | 0.192 | 0.300 | 0.432 | 0.588 | 0.768 | 0.972 | 1.200 |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|                           |                     |                           | C                | 572   | 458   | 381   | 327   | 286   | 254   | 229   |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|                           |                     |                           | D                | 0.154 | 0.240 | 0.346 | 0.470 | 0.614 | 0.778 | 0.960 |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
| 1 x 3/16                  | 4.5                 | 4'-1"                     | U                | 1,017 | 651   | 452   | 332   | 254   | 201   | 163   |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|                           |                     |                           | D                | 0.144 | 0.225 | 0.324 | 0.441 | 0.576 | 0.729 | 0.900 |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|                           |                     |                           | C                | 1,017 | 813   | 678   | 581   | 508   | 452   | 407   |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
|                           |                     |                           | D                | 0.115 | 0.180 | 0.259 | 0.353 | 0.461 | 0.583 | 0.720 |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                       |       |       |       |
| 1-1/4 x 3/16              | 5.3                 | 4'-10"                    | U                | 1,589 | 1,017 | 706   | 519   | 397   | 314   | 254   | 210                                                                                                                                                                                                                                                                                                                                                                                                                 | U = uniform load in pounds/sq.ft.<br>C = concentrated load in pounds/ft. of grating width<br>D = deflection in inches |       |       |       |
|                           |                     |                           | D                | 0.115 | 0.180 | 0.259 | 0.353 | 0.461 | 0.583 | 0.720 | 0.871                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                       |       |       |       |
|                           |                     |                           | C                | 1,589 | 1,271 | 1,059 | 908   | 794   | 706   | 636   | 578                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                       |       |       |       |
|                           |                     |                           | D                | 0.092 | 0.144 | 0.207 | 0.282 | 0.369 | 0.467 | 0.576 | 0.697                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                       |       |       |       |
| 1-1/2 x 3/16              | 6.1                 | 5'-7"                     | U                | 2,288 | 1,464 | 1,017 | 747   | 572   | 452   | 366   | 303                                                                                                                                                                                                                                                                                                                                                                                                                 | 254                                                                                                                   | 217   |       |       |
|                           |                     |                           | D                | 0.096 | 0.150 | 0.216 | 0.294 | 0.384 | 0.486 | 0.600 | 0.726                                                                                                                                                                                                                                                                                                                                                                                                               | 0.864                                                                                                                 | 1.014 |       |       |
|                           |                     |                           | C                | 2,288 | 1,830 | 1,525 | 1,307 | 1,144 | 1,017 | 915   | 832                                                                                                                                                                                                                                                                                                                                                                                                                 | 763                                                                                                                   | 704   |       |       |
|                           |                     |                           | D                | 0.077 | 0.120 | 0.173 | 0.235 | 0.307 | 0.389 | 0.480 | 0.581                                                                                                                                                                                                                                                                                                                                                                                                               | 0.691                                                                                                                 | 0.811 |       |       |
| 1-3/4 x 3/16              | 6.8                 | 6'-3"                     | U                | 3,114 | 1,993 | 1,384 | 1,017 | 779   | 615   | 498   | 412                                                                                                                                                                                                                                                                                                                                                                                                                 | 346                                                                                                                   | 295   | 254   | 195   |
|                           |                     |                           | D                | 0.082 | 0.129 | 0.185 | 0.252 | 0.329 | 0.417 | 0.514 | 0.622                                                                                                                                                                                                                                                                                                                                                                                                               | 0.741                                                                                                                 | 0.869 | 1.008 | 1.317 |
|                           |                     |                           | C                | 3,114 | 2,491 | 2,076 | 1,779 | 1,557 | 1,384 | 1,246 | 1,132                                                                                                                                                                                                                                                                                                                                                                                                               | 1,038                                                                                                                 | 958   | 890   | 779   |
|                           |                     |                           | D                | 0.066 | 0.103 | 0.148 | 0.202 | 0.263 | 0.333 | 0.411 | 0.498                                                                                                                                                                                                                                                                                                                                                                                                               | 0.592                                                                                                                 | 0.695 | 0.806 | 1.053 |
| 2 x 3/16                  | 8.1                 | 6'-11"                    | U                | 4,067 | 2,603 | 1,808 | 1,328 | 1,017 | 803   | 651   | 538                                                                                                                                                                                                                                                                                                                                                                                                                 | 452                                                                                                                   | 385   | 332   | 254   |
|                           |                     |                           | D                | 0.072 | 0.113 | 0.162 | 0.221 | 0.288 | 0.365 | 0.450 | 0.545                                                                                                                                                                                                                                                                                                                                                                                                               | 0.648                                                                                                                 | 0.761 | 0.882 | 1.152 |
|                           |                     |                           | C                | 4,067 | 3,254 | 2,712 | 2,324 | 2,034 | 1,808 | 1,627 | 1,479                                                                                                                                                                                                                                                                                                                                                                                                               | 1,356                                                                                                                 | 1,252 | 1,162 | 1,017 |
|                           |                     |                           | D                | 0.058 | 0.090 | 0.130 | 0.176 | 0.230 | 0.292 | 0.360 | 0.436                                                                                                                                                                                                                                                                                                                                                                                                               | 0.518                                                                                                                 | 0.608 | 0.706 | 0.922 |
| 2-1/4 x 3/16              | 8.9                 | 7'-6"                     | U                | 5,148 | 3,295 | 2,288 | 1,681 | 1,287 | 1,017 | 824   | 681                                                                                                                                                                                                                                                                                                                                                                                                                 | 572                                                                                                                   | 487   | 420   | 322   |
|                           |                     |                           | D                | 0.064 | 0.100 | 0.144 | 0.196 | 0.256 | 0.324 | 0.400 | 0.484                                                                                                                                                                                                                                                                                                                                                                                                               | 0.576                                                                                                                 | 0.676 | 0.784 | 1.024 |
|                           |                     |                           | C                | 5,148 | 4,118 | 3,432 | 2,942 | 2,574 | 2,288 | 2,059 | 1,872                                                                                                                                                                                                                                                                                                                                                                                                               | 1,716                                                                                                                 | 1,584 | 1,471 | 1,287 |
|                           |                     |                           | D                | 0.051 | 0.080 | 0.115 | 0.157 | 0.205 | 0.259 | 0.320 | 0.387                                                                                                                                                                                                                                                                                                                                                                                                               | 0.461                                                                                                                 | 0.541 | 0.627 | 0.819 |
| 2-1/2 x 3/16              | 9.6                 | 8'-2"                     | U                | 6,355 | 4,067 | 2,825 | 2,075 | 1,589 | 1,255 | 1,017 | 840                                                                                                                                                                                                                                                                                                                                                                                                                 | 706                                                                                                                   | 602   | 519   | 397   |
|                           |                     |                           | D                | 0.058 | 0.090 | 0.130 | 0.176 | 0.230 | 0.292 | 0.360 | 0.436                                                                                                                                                                                                                                                                                                                                                                                                               | 0.518                                                                                                                 | 0.608 | 0.706 | 0.922 |
|                           |                     |                           | C                | 6,355 | 5,084 | 4,237 | 3,632 | 3,178 | 2,825 | 2,542 | 2,311                                                                                                                                                                                                                                                                                                                                                                                                               | 2,118                                                                                                                 | 1,955 | 1,816 | 1,589 |
|                           |                     |                           | D                | 0.046 | 0.072 | 0.104 | 0.141 | 0.184 | 0.233 | 0.288 | 0.348                                                                                                                                                                                                                                                                                                                                                                                                               | 0.415                                                                                                                 | 0.487 | 0.564 | 0.737 |

\* Weight per square foot based upon rivets spaced at 7" on center. Add .20 psf for aluminum products with 3-1/2" rivet centers.

\* Maximum pedestrian load is defined as a 100# uniform load with deflection  $\leq$  1/4 inch. The 1/4" maximum deflection criteria is considered consistent with pedestrian comfort, but may be exceeded for other loading conditions at the discretion of the specifying authority.