# GRATING PACIFIC

# PERF-O GRIP® GRATING — GENERAL LOAD INFORMATION

## HOW TO READ LOAD TABLES

To select the proper size of Perf-O Grip® grating, determine load, clear span and deflection requirements.

Example — Clear span of 4'-0" with a concentrated load requirement of 600 lbs. at 0.25" maximum deflection, for a 10'-0" wide plank; Refer to the 5-Hole plank (10" width), then locate the clear span subheading for 4'-0" to find the first occurrence of 600 lbs. (or greater) concentrated load (C). In this example, the 13 gauge, 2" depth product (part number P52013) carries a load of 648 lbs. with a 0.10" deflection.

While this is one product which meets the minimum requirements, other options might be selected to carry greater loads. For economical selection, choose the greatest width that will support the load consistent with job requirements and choose deeper channels rather than heavier steel gauges.

## HOW LOAD TABLES WERE PREPARED

The values shown in the following tables are based on actual load tests. The tables have been prepared in accordance with the provisions of the AISI Specification for the Design of Cold-Formed Steel Structural Members, 1986 edition.

These load table values are based on consideration of side channel flexure only and do not consider grating surface performance. Side channel flexure occurs when the channels at mid-span of the plank deflect relative to support points. To verify the performance of the side channels, samples were loaded with concentrated and uniform loads at different spans (see figures 1 and 2). To approximate the most severe condition, there were no attachments between the channels and the supports.

Deflection values indicated in the tables are the mid-span side channel deflection produced when the allowable uniform or allowable concentrated load is placed at mid-span. Load data is based on yield strength of 33,000 psi for steel, 27,000 psi for aluminum, 35,000 psi for type 304 stainless steel, and 30,000 psi for type 316-2B stainless steel.

- (U) = Allowable uniform load (lbs./ft.²)
- (C) = Allowable concentrated load (lbs.) applied by 2" round bar across full width of grating
- (D) = Vertical deflection (inches) of side channels at mid span resulting from allowable load
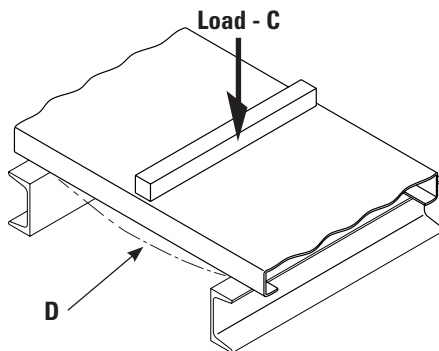
## LOAD AND DEFLECTION CONVERSION FORMULAS

In the elastic range, deflection is proportional to the applied load for both uniform and concentrated loads. This relationship can be used to determine the deflection that any load which is less than the allowable load will produce, (as shown in **Example A**.) If desired, the load which will produce a specific deflection can also be determined if the load is in the elastic range (as illustrated in **Example B**.)

### Example A
What deflection will a 300 lb. mid-span concentrated load produce on a plank spanning 5'-0" (part number P133011)

C = 1517 lbs. D = 0.09"

D @ 300 lbs. = 0.09" x (300 lbs. ÷ 1517 lbs.) = 0.02 inches

### Example B
If a plank (part number P132011) is spanning 7'-0", what mid-span concentrated load will produce a .25" deflection?

C = 598 lbs. D = 0.27"

C @ .25" = 598 lbs. x (0.25" ÷ 0.27") = 554 lbs.

## SPECIAL NOTE ON PLANKS

As width increases, grating surface performance becomes more critical. Thus, for Perf-O Grip grating widths greater than 12", use of the grating surface splice kit is recommended to mechanically join butt ends of plank sections.
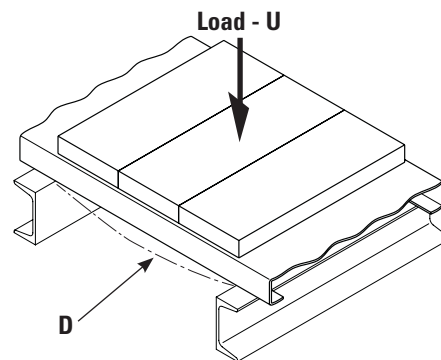


**Figure 1. Concentrated load**



**Figure 2. Uniform load**