

Panduit®

# Wyr-Grid® Overhead Cable Tray System

Wyr-Grid® Cable Tray Load Rating Report

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## Wyr-Grid® Cable Tray Load Rating Report

Limits on deflection from cable loading are set forth in EN 61537:2007. The safe working load (SWL) is the evenly distributed load at which the transverse deflection of the cable tray is less than 1/100<sup>th</sup> of the span between supports in the longitudinal direction, as shown in Figure 1. Furthermore, the transverse deflection at the SWL must be less than 1/20<sup>th</sup> of the cable tray width at the SWL, as shown in Figure 2.

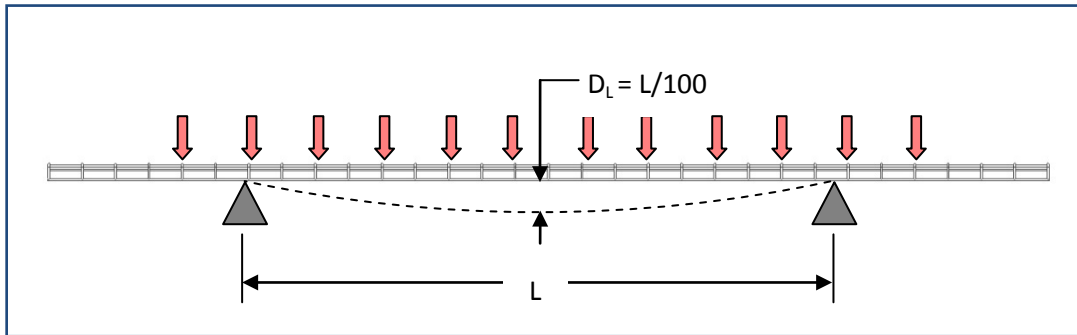


Figure 1: SWL Test Schematic, Side View

Longitudinal Mid-Span Deflection:  $D_L = L / 100$

L = Span between supports (see Table 1)

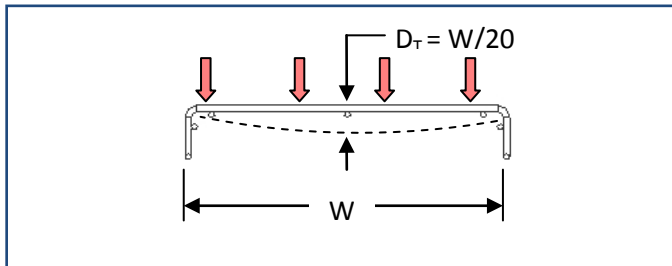


Figure 2: Transverse Deflection Schematic of Cable Tray, End View

Transverse Deflection:  $D_T = W / 20$

W = Width of Cable Tray

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Limits on the deflection of support brackets, such as trapeze and cantilever brackets, are also set forth in EN 61537:2007. The maximum deflection of support brackets is 1/20<sup>th</sup> of the support width. The maximum deflection of the trapeze bracket occurs in the center, as shown in Figure 3, while the maximum deflection of the cantilever bracket occurs at the end, as shown in Figure 4.

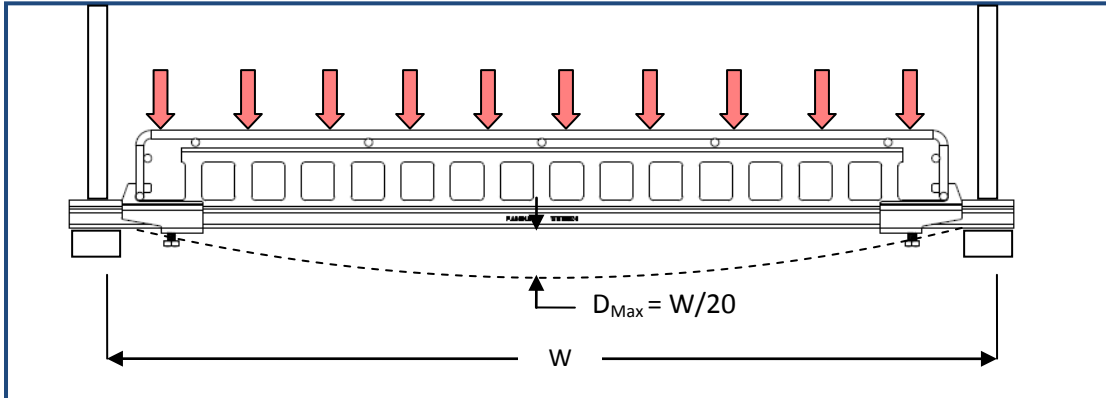


Figure 3: Trapeze Bracket Deflection

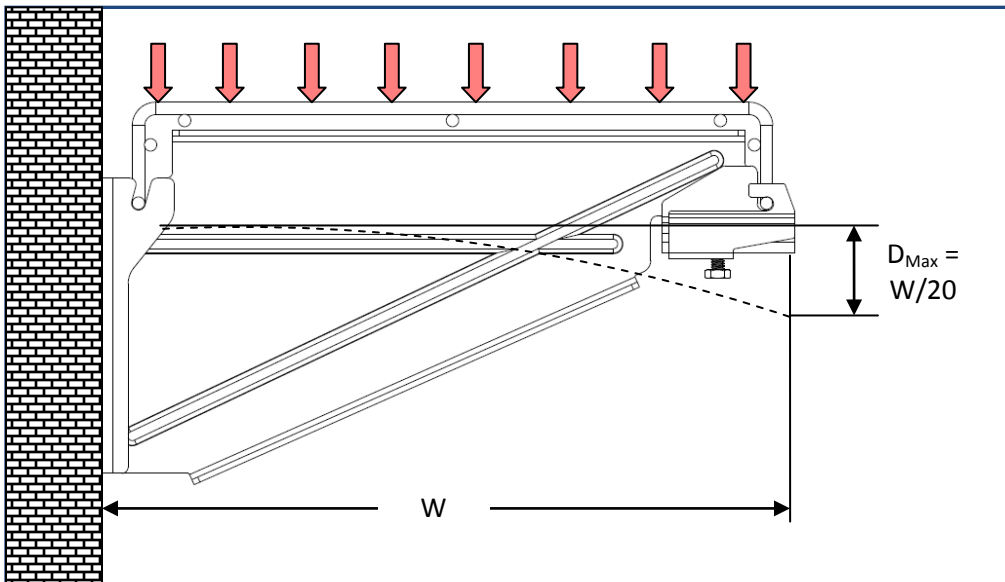


Figure 4: Cantilever Bracket Deflection

End Deflection:  $D_{Max} = W / 20$

W = bracket width

## Wyr-Grid® Cable Tray Load Rating Report

Table 1 outlines the Safe Working Load for each size of Wyr-Grid® Cable Tray based on internal testing. The SWL ratings in the table apply for Wyr-Grid® Cable Tray installed in any of the following configurations:

- Cable Tray only (no splices, see Figure 1)
- Straight splice (see Figure 5)
- Cross (see Figure 6) and T Intersections (see Figure 7)

| Panduit Part # | Tray Width | Safe Working Load (lbs/ft) |                 |                 |                 |                 |                 |
|----------------|------------|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                |            | 4' Support Span            | 5' Support Span | 6' Support Span | 7' Support Span | 8' Support Span | 9' Support Span |
| WG12**10       | 12"        | 113                        | 90              | 69              | 54              | 43              | 34              |
| WG18**10       | 18"        | 115                        | 90              | 67              | 52              | 41              | 31              |
| WG24**10       | 24"        | 116                        | 92              | 69              | 54              | 53              | 33              |
| WG30**10       | 30"        | 116                        | 92              | 69              | 54              | 53              | 33              |

Table 1: Safe Working Loads for Wyr-Grid® Cable Tray

Splices for straight section of cable tray should be positioned no more than 1/5<sup>th</sup> of the support span away from a support to maintain the SWL of the cable tray, as shown in Figure 5. The 12" and 18" wide Wyr-Grid® Cable Trays utilize the WG1218SPL\*\* splice kit, which consists of two side splices. The 24" and 30" wide Wyr-Grid® Cable Trays utilize the WG2430SPL\*\* splice kit, which consists of two side splices and two center splices.

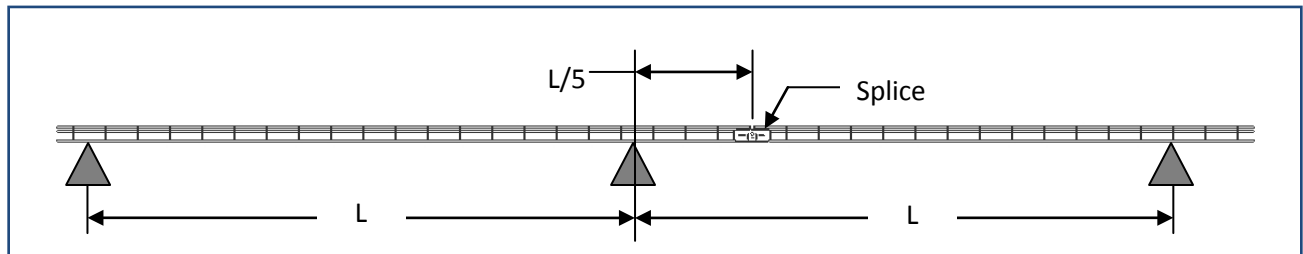


Figure 5: Splice Location in Relation to Supports, Side View

$L/5$  = Recommended maximum distance of splice to support

## Wyr-Grid<sup>®</sup> Cable Tray Load Rating Report

Typically, wire basket has a sidewall that must be removed to create intersections which significantly reduces the strength of the product. The downward sidewall (see Figure 2) of the Wyr-Grid<sup>®</sup> Cable Tray allows intersections to be constructed without sidewall removal, maintaining the integrity of the tray. Figures 6 and 7 show support recommendations for making intersections.

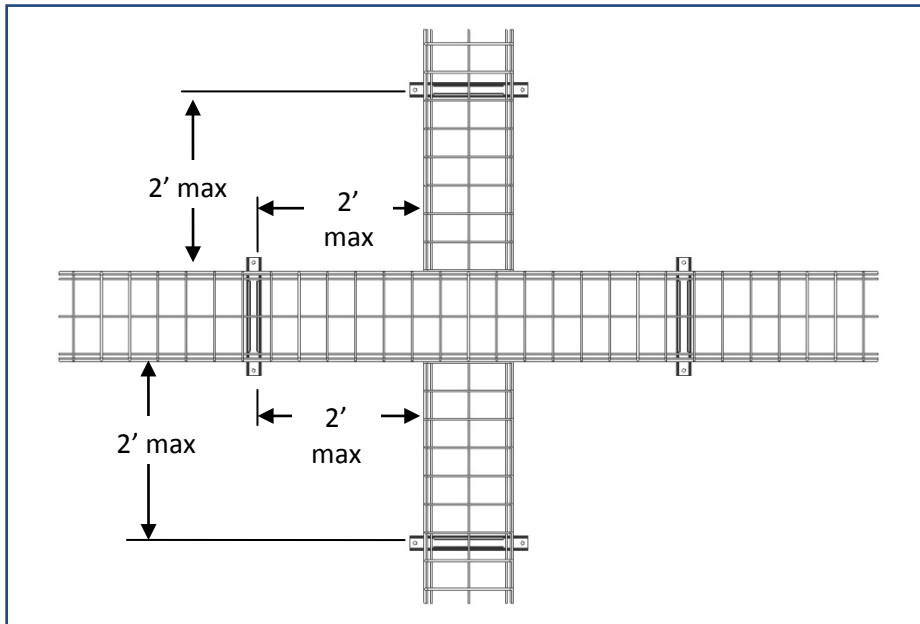


Figure 6: Support Recommendation for Horizontal Cross Intersections, Top View

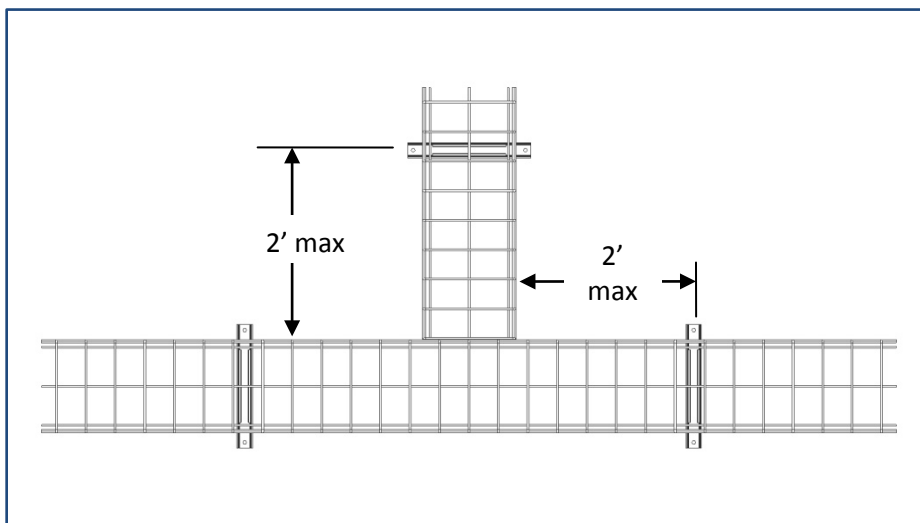


Figure 7: Support Recommendation for Horizontal Tee Intersections, Top View

## Wyr-Grid<sup>®</sup> Cable Tray Load Rating Report

Figure 8 shows support recommendations for making vertical level changes.

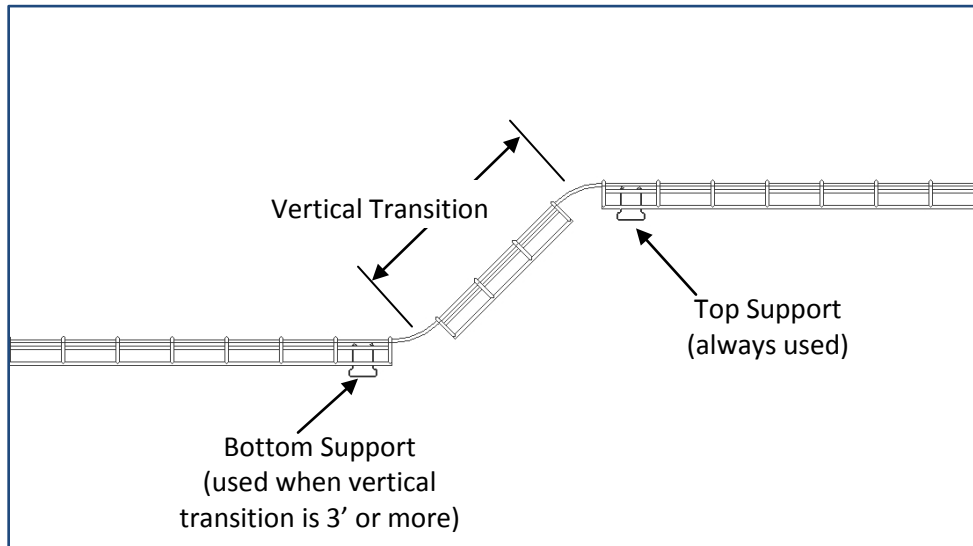


Figure 8: Support Recommendation for Vertical Level Change, Side View