Span Table Instructions

How to use the Span Tables:
Deflection will always become the limiting criteria when calculating for span lengths. Because of its elastic properties, plastic lumber will stretch and yield, (much like a rubber band), long before it breaks, or shears under a load. In all cases, span length is limited by the amount of deflection that is tolerated by the user. This is, plastic lumber has mechanical properties that exhibit a moderately low Modulus of Elasticity (MOE) (i.e. not very stiff) but fairly high Modulus of Rupture (MOR) (ie. fairly strong) in flexural strength (stress). Temperature also affects performance of plastic lumber. It is advisable to use the most conservative service temperature as referenced in each of the span tables provided.

Joist Mode Span Tables:
Since Deflection is always the limiting factor in design, use the Joist Mode Span Tables that show the L/360 Values and the L/240 Values. Use the chart that is acceptable for your design criteria. L/240 allows for slightly more deflection.

Each page of the charts represents a different joist spacing: 12" on-center, 16" on-center and 24" on-center. The Joist Mode Span Tables are for TRIMAX Structural Plastic Lumber only and should not be applied to EVOLVE or REVOLVE Decking.

Depending on the application, the Model Code and local jurisdiction may dictate the design loads. Typically, for deck construction for residential use, a minimum of 40 PSF is the design live load. Adding a dead load of 10 PSF is reasonable. For commercial or very stiff applications, 100 PSF is the typical design live load.

Follow the required design load across the chart and find your required span in inches. Follow up to the required member size for that span.

Plank Mode Span Tables:
Plank mode calculations will be used for any application where the plastic lumber member will be installed in a flat orientation. The plank mode span tables are broken down into two types, and are specific to TRIMAX Structural Plastic Lumber. The Plank Mode Span Tables are calculated using 1½" thick (2x) and 2½" thick (3x) boards.

The tables provide the allowable uniform load for several conditions. The conditions are Deflection short term and deflection under long term loading scenarios (creep effects). The table also provides two values for each condition, Simple Span and Multiple Span.

A simple span condition exists when the board is only spanning and fastened to 2 joists. A multiple span condition occurs when the deck board is fastened to three or more joists. Per ASTM, calculations for decking applications assume the boards are installed in the flat mode and continuous over two spans (two spans of boards and fastened to three joists). The multiple span conditions and application are recommended and preferred wherever possible to aid against long-term deflection and reduction in capacity. The numbers shown on the chart represent the allowable pounds per square foot based on noted deflection criteria. Please consult a design professional when designing a deck, pier, or any other structure. As in wood construction, safety is the number one priority and should not be compromised in design and/or construction.

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