

Technical Data

DEFLECTION CALCULATIONS

Using the calculations below, find your approximate deflection* for a specific TSLOTS extrusion. See table below for variations.

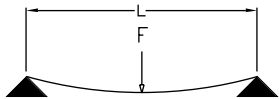
EQUATION VARIABLE UNITS RESPECTIVELY

- Max. Deflection is in inches
- "F" or Force is in pounds
- "L" or Length is in inches
- "E" or Modulus of elasticity is in pounds per inch squared
- "I" or Moment of Inertia is in inches⁴
- "W" or Weight is in pounds per inch

* For reference only.

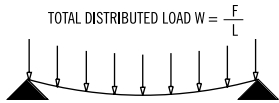
SUPPORTED LOADS

CONCENTRATED LOAD AT CENTER (*simply supported*)



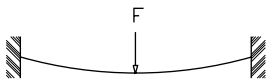
$$\text{MAX DEFLECTION} = \frac{FL^3}{48 EI}$$

UNIFORMLY DISTRIBUTED LOAD (*simply supported*)



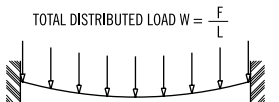
$$\text{MAX DEFLECTION} = \left(\frac{5}{384}\right) \left(\frac{WL^4}{EI}\right)$$

CONCENTRATED LOAD AT CENTER (*between fixed supports*)



$$\text{MAX DEFLECTION} = \frac{FL^3}{192 EI}$$

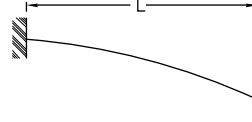
UNIFORMLY DISTRIBUTED LOAD (*between fixed supports*)



$$\text{MAX DEFLECTION} = \frac{WL^4}{384 EI}$$

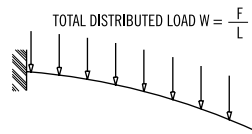
CANTILEVER LOADS

CONCENTRATED LOAD AT CENTER (*simply supported*)



$$\text{MAX DEFLECTION} = \frac{FL^3}{3 EI}$$

UNIFORMLY DISTRIBUTED LOAD (*simply supported*)



$$\text{MAX DEFLECTION} = \frac{WL^4}{8 EI}$$

EXTRUSION	(E) MODULUS OF ELASTICITY	(Ix) MOMENT OF INERTIA	(Iy) MOMENT OF INERTIA
TS10-10	10,000,000 lbs/sq. in	.046 in ⁴	.046 in ⁴
TS10-10QR	10,000,000 lbs/sq. in	.0435 in ⁴	.0435 in ⁴
TS10-20	10,000,000 lbs/sq. in	.087 in ⁴	.321 in ⁴
TS20-20	10,000,000 lbs/sq. in	.578 in ⁴	.578 in ⁴
TS15-15	10,000,000 lbs/sq. in	.266 in ⁴	.266 in ⁴
TS15-15L	10,000,000 lbs/sq. in	.194 in ⁴	.194 in ⁴
TS15-15QR	10,000,000 lbs/sq. in	.172 in ⁴	.172 in ⁴
TS15-30	10,000,000 lbs/sq. in	.502 in ⁴	1.877 in ⁴
TS15-30L	10,000,000 lbs/sq. in	.408 in ⁴	1.431 in ⁴
TS15-45	10,000,000 lbs/sq. in	.739 in ⁴	5.913 in ⁴
TS30-30	10,000,000 lbs/sq. in	3.379 in ⁴	3.379 in ⁴
TS30-60	10,000,000 lbs/sq. in	6.430 in ⁴	21.856 in ⁴

» Deflection calculations are for reference only - they are only approximate.