

Profile deflection (f)

For an approximate calculation of the deflection use following formulas on this page. The moments of inertia "I" of aluminium profiles are listed on the respective specification pages.

f deflection (mm)
F load (N)
L profile length (mm)
I moment of inertia (cm⁴)
E module of elasticity (N/mm²) = 70,000
m width of load (mm)
K load factor (mm)

$$f = \frac{F \times L^3}{3 \times E \times I \times 10^4}$$


Load 1

$$f = \frac{F \times L^3}{48 \times E \times I \times 10^4}$$

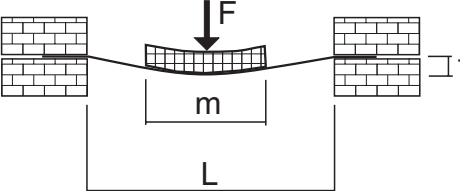

Load 2

$$f = \frac{F \times L^3}{192 \times E \times I \times 10^4}$$


Load 3

$$f = \frac{F \times L^3}{K \times E \times I \times 10^4}$$

K - load factor (mm)
 $K = 48 + \frac{29m}{L}$



Load 4

Example load 3 - profile 80x80

F = 2000

L = 3600

I = 125.52

E = 70,000

result approx. f = 6mm

Example load 4 - profile 40x80

F = 1000

L = 4000

I = 63.45

E = 70,000

m = 1000

K = 55.3

result approx. f = 26mm