PROFILES

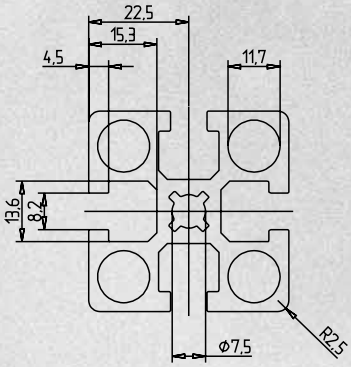
Material	Type:	Al Mg 0,7 Si EN-AW-6063 T66
	Specific weight:	2.75 g / cm^3
	Material no.:	3 3206.72 artificially aged
	min. Rm:	245 N / mm^2
	min. Rp 0,2:	200 N / mm^2
	Ductile yield A 5:	> 10%
	Ductile yield A 10:	> 8%
	Module of elasticity:	E: 70000 N / mm^2 G: 27000 N / mm^2
	Expansion hardness:	ca. 75 HB 2,5 / 187.5
	Heat extension:	23,8 · 10^{-6} K^{-1}
Surface		natural anodized E6/EV1
	Layer thickness:	approx. 10 µm
	Layer hardness:	250 - 350 HV
Tolerances		DIN EN 12020 Part 1 + 2
	Outer dimensions:	depending on size 0.2 to 0.4 mm
	Straightness deviation:	max. 1,5 mm / 2 m
	Flatness deviation:	max. 1,5 mm / 2 m
	Generally we confirm half the values according to the tolerances of DIN EN 12020 part 2.	
Core boring	uniform 7.5 - 0.3 mm	
	The thread M8 must be made by thread former, not by tap.	
	Core bore reborable up to M12.	
Modular Dimension	Standard 45 mm	
	All profiles are based on the same modular dimension.	
	All grooves are uniform.	
	All bores are uniform.	

GROOVE SYSTEM

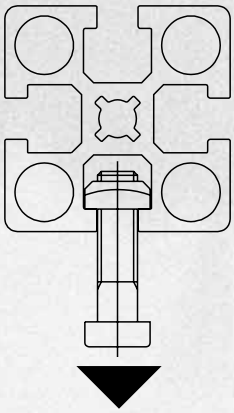
Grooves

Uniform in all profiles from 19 up to 180 mm
Width: 8,5 - 0,3 mm.
The grooves are sized for standard M8 with head Ø 13 mm and standard nuts with an outer dimension of 13 mm. Square and hexagonal nuts and screws cannot twist in the groove.

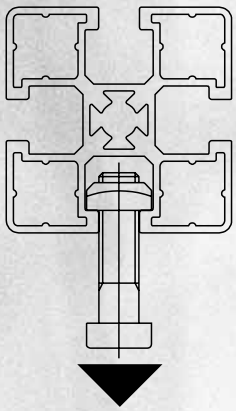
Basic dimensions



Load capacity

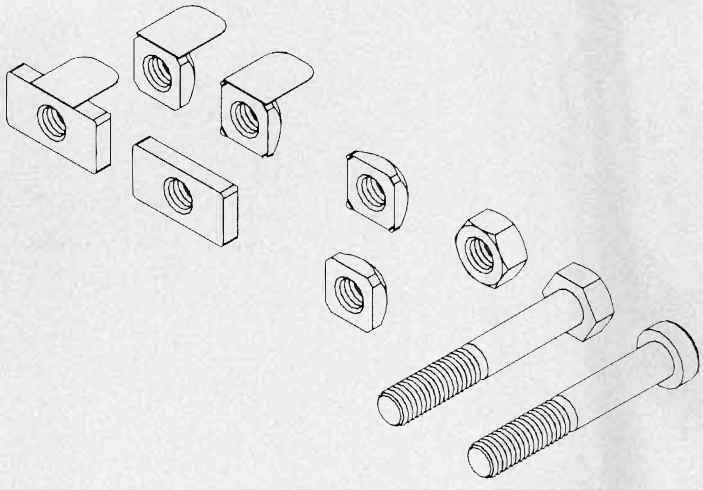


F = 6000 N



F = 4000 N

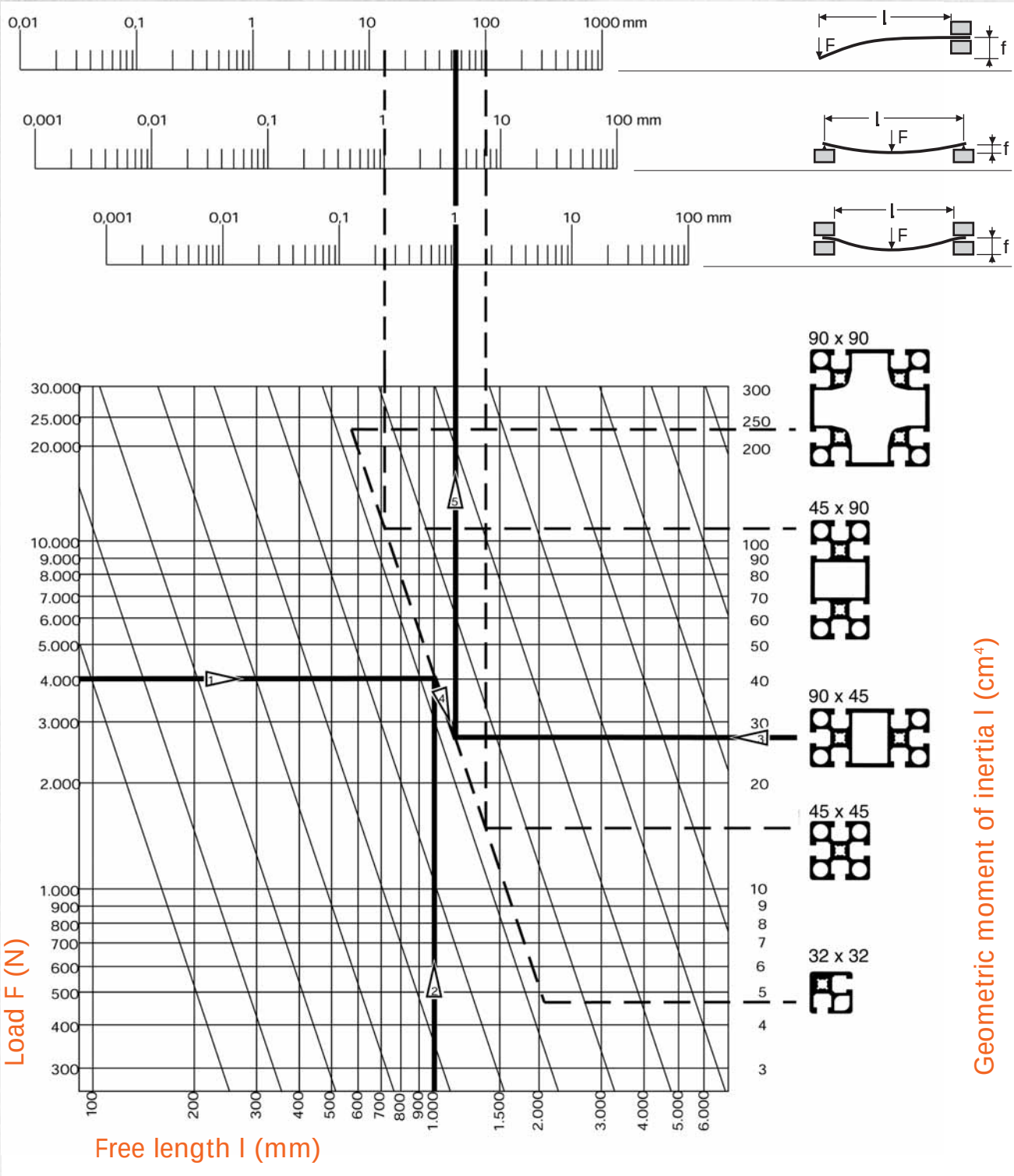
Useable screws and nuts



DEFLECTION OF MINITEC PROFILES

This mode of calculation is a function of our construction module for AutoCAD*

Deflection f (mm), calculated for static load in form of a point as shown below



* AutoCAD is a registered trade mark of AUTODESK, Inc.

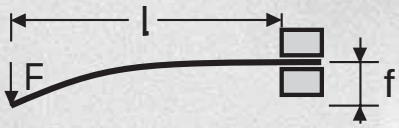
DEFLECTION OF MINITEC PROFILES

The following formulas and examples of calculation are for static load in the form of a point. For the determination of other load, please use the equations in the relevant literature. In particular we want to point out that reduced values should be used for dynamic loads.

Calculation of deflection of MiniTec profiles

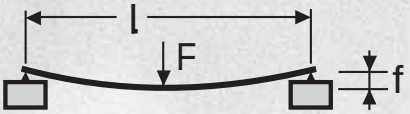
Example	f = Deflection	x mm
	F = Load	8 000 N
	L = Free length	700 mm
	I = Geom. moment of inertia	30.4 cm^4
	E = Modulus of elasticity	70 000 N / mm

Example 1



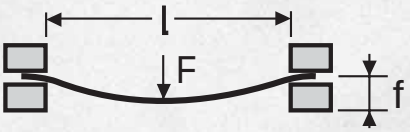
$$f = \frac{F \times L^3}{E \times I \times 3 \times 10^4} = 42{,}1 \text{ mm}$$

Example 2



$$f = \frac{F \times L^3}{E \times I \times 48 \times 10^4} = 2{,}7 \text{ mm}$$

Example 3

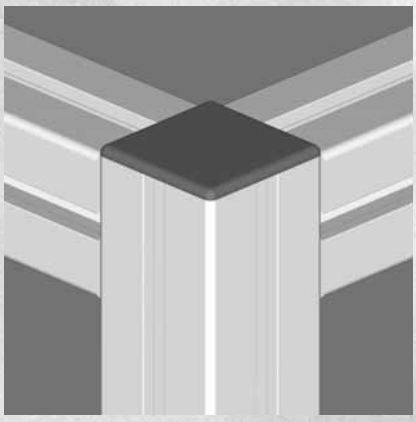


$$f = \frac{F \times L^3}{E \times I \times 192 \times 10^4} = 0{,}67 \text{ mm}$$

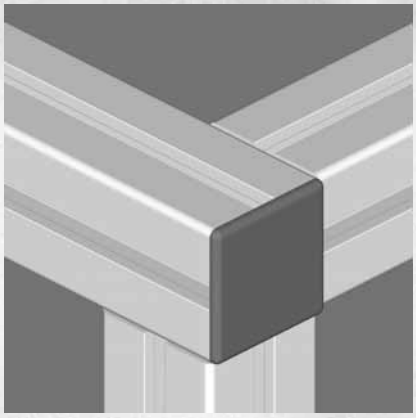
The above mentioned equations are easy to calculate using the diagram on the previous page.
Follow the steps in the given row for the respective value.

Deflection (f)	1	2	3	4	5
Max. load (F)	3	5	2	4	1
Profile determination	1	2	5	4	3
Free length (L)	3	5	1	4	2

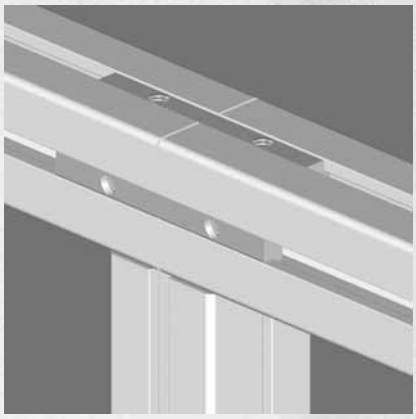
ASSEMBLY HINTS



Horizontal profiles should be assembled between vertical profiles running unbroken from bottom to top.

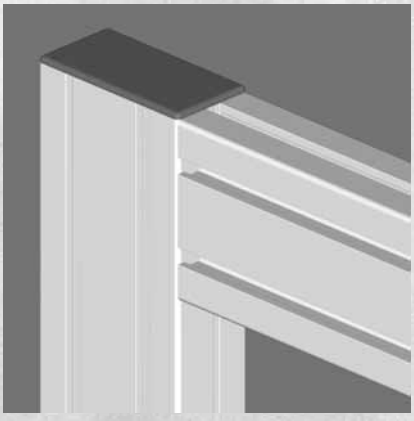


Make sure to assemble the vertical profiles an top of the horizontal profiles for higher loads.

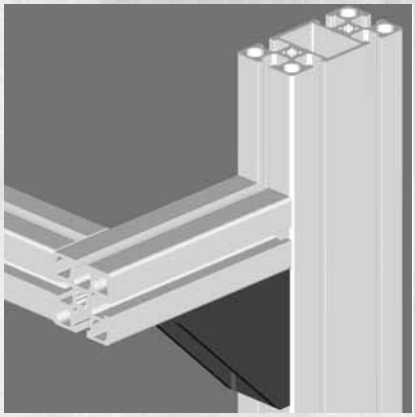


The joins of butt-fastened profiles should be supported.

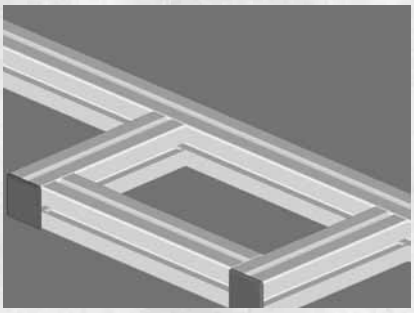
ASSEMBLY HINTS



Because of higher bending strength, profiles should be used edgewise.

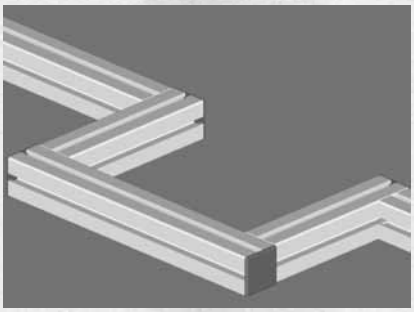


Torsional strain on connections should be avoided or supported by additional use of angles.



Right!

Supporting profiles must be built in as one piece to avoid interruptions!



Wrong!