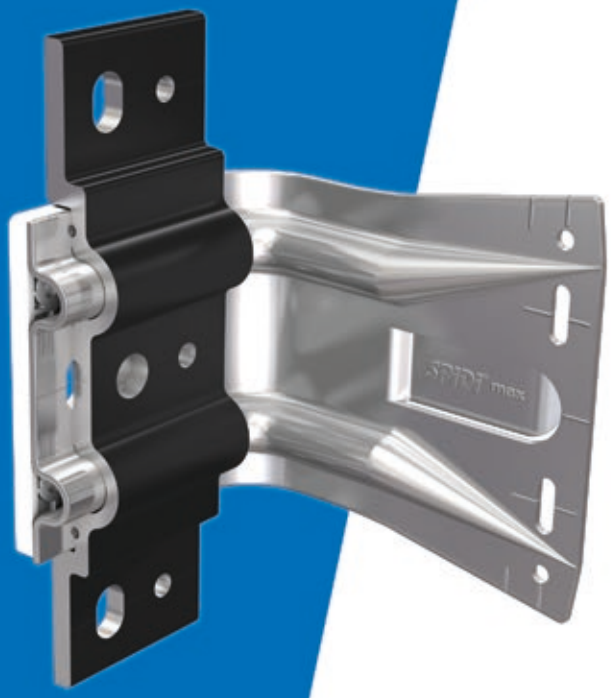
SPIDI® max

TORSION PLATE

SPIDI® max torsion plate

The SPIDI® max torsion plate provides you with a costeffective system extension for the safe load transfer of cladding with a high dead weight. You do not need a separate bracket for this, but can simply increase the vertical load-bearing capacity of the fixed point bracket in the SPIDI® max facade system using the proven modular principle.

By using the SPIDI® max torsion plate, you can specifically enhance the performance of your SPIDI® max brackets in the vertical load direction. It provides additional strength exactly where it is needed, particularly when supporting heavy cladding elements.



The SPIDI® max torsion plate is ideal for use at fixed points and can also be used at sliding points if required, especially on substrates with low load-bearing capacity, such as thin-walled steel and aluminium. Here, it ensures better dissipation of high tensile forces on the weak substrate.

Flexible mounting options

Option 1: Concrete mounting

- suitable for mounting on concrete surfaces
- use of the center round hole and the outer elongated holes
- fastening with two or three anchors (depending on static requirements)

Option 1a

Option 1b

Option 2: Wood and steel mounting

- suitable for mounting on wood and steel substrates
- use of the three round holes of the torsion plate
- fastening with three self-drilling screws

Option 2

Optimal load distribution

The SPIDI® max torsion plate absorbs all torsion from the eccentricity between load input and output: The forces generated at the self-drilling screws (load input) and anchors (load output) are absorbed directly in the bearing area. The result: The SPIDI® max bracket remains free of torsional moments around its longitudinal axis.

To ensure the longevity and flawless functionality of the materials used, the SPIDI® max torsion plate is black anodized on its contact surfaces. This effectively prevents contact corrosion between the substrate and the SPIDI® max torsion plate.

Two anchors on concrete (opt. 1a)

Fastening is carried out using two anchors and is statically sufficient in many design situations. One anchor is inserted through the bracket and the SPIDI® max torsion plate, the second anchor through the upper elongated hole of the SPIDI® max torsion plate.

Three anchors on concrete (opt. 1b)

For particularly high loads or high wind loads, fastening with three anchors may be necessary. The middle anchor is inserted through the SPIDI® max torsion plate and the bracket, and the other two anchors are inserted through the two outer elongated holes of the SPIDI® max torsion plate.

Three anchors on steel/aluminium/wood (opt. 2)

On steel, aluminium, or wood substrates, fastening must always be carried out with three self-drilling screws through the three round holes of the SPIDI® max torsion plate.

SPIDI® max torsion plate – two anchors on concrete (option 1a)

BRACKET [-]	t [mm]	γ_M [-]	FASTENING TYPE [-]	FASTENING POSITION [-]	+FxRd [1] [kN]	-FxRd [2] [kN]	FzRd [3] [kN]	Fb,Rd,Dü,LL [4] [kN]	Fb,Rd,TP,LL [5] [kN]
SPIDI MAX STEEL ALZN S280 GD	2.00	1.00	Fastening with 2 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		5.00	-5.00	2.50	6.34	4.60
SPIDI MAX ALUMINIUM EN AW 5052 H12	2.00	1.10	Fastening with 2 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		3.50	-3.50	1.65	4.03	4.60
SPIDI MAX STAINLESS STEEL A4 1.4404	2.00	1.10	Fastening with 2 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		4.50	-4.50	2.25	8.41	4.60
STAINLESS STEEL A2 1.4301	2.00	1.10			4.30	-4.30	2.15	8.43	4.60

SPIDI® max torsion plate – three anchors on concrete (option 1b)

BRACKET [-]	t [mm]	γ_M [-]	FASTENING TYPE [-]	FASTENING POSITION [-]	+FxRd [1] [kN]	-FxRd [2] [kN]	FzRd [3] [kN]	Fb,Rd,Dü,LL [4] [kN]	Fb,Rd,TP,LL [5] [kN]
SPIDI MAX STEEL ALZN S280 GD	2.00	1.00	Fastening with 3 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		6.00	-6.00	3.00	6.34	4.60
SPIDI MAX ALUMINIUM EN AW 5052 H12	2.00	1.10	Fastening with 3 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		4.00	-4.00	2.00	4.03	4.60
SPIDI MAX STAINLESS STEEL A4 1.4404	2.00	1.10	Fastening with 3 anchors ∅ = 8/10 mm and washer ∅ ≥ 16 mm + extruded torsion plate EN AW 6063-T66		5.50	-5.50	2.70	8.41	4.60
STAINLESS STEEL A2 1.4301	2.00	1.10			5.25	-5.25	2.55	8.43	4.60

SPIDI® max torsion plate – three anchors on steel/aluminium/wood (option 2)

BRACKET [-]	t [mm]	γ_M [-]	FASTENING TYPE [-]	FASTENING POSITION [-]	+FxRd [1] [kN]	-FxRd [2] [kN]	FzRd [3] [kN]	Fb,Rd,Dü,LL [4] [kN]	Fb,Rd,TP,LL [5] [kN]
SPIDI MAX STEEL ALZN S280 GD	2.00	1.00	Fastening with 3 self-drilling screws ∅ ≥ 5.5 mm with washer or screw head ∅ ≥ 10.5 mm + extruded torsion plate EN AW 6063-T66		5.00	-5.00	2.50	[-]	6.47
SPIDI MAX ALUMINIUM EN AW 5052 H12	2.00	1.10	Fastening with 3 self-drilling screws ∅ ≥ 5.5 mm with washer or screw head ∅ ≥ 10.5 mm + extruded torsion plate EN AW 6063-T66		3.50	-3.50	1.50	[-]	6.47
SPIDI MAX STAINLESS STEEL A4 1.4404	2.00	1.10	Fastening with 3 self-drilling screws ∅ ≥ 5.5 mm with washer or screw head ∅ ≥ 10.5 mm		4.50	-4.50	2.20	[-]	6.47
STAINLESS STEEL A2 1.4301	2.00	1.10	+ extruded torsion plate EN AW 6063-T66		4.30	-4.30	2.10	[-]	6.47

[1] Tensile strength [2] Compressive strength [3] Shear strength [4] Hole resistance of bracket base plate [5] Hole resistance in the torsion plate in the transverse direction

SPIDI® max TORSION PLATE

Upgrade of vertical load-bearing capacity for fixed point brackets: The SPIDI® max torsion plate revolutionizes load transfer in curtain-type rearventilated facades.

- proven modular design
- optimized for fixed points, can also be used at sliding points in special cases
- perfect for cladding with high dead weight
- targeted increase in load-bearing capacity
- durable thanks to anodized contact surfaces

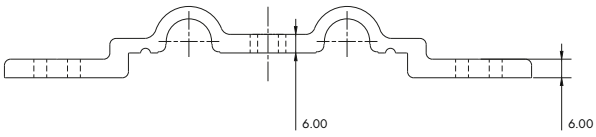
SPIDI® max torsion plate

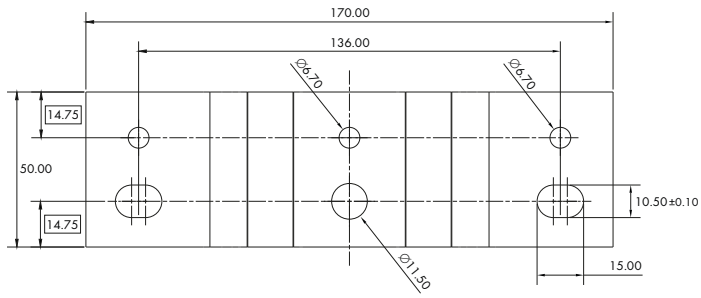
Material properties SPIDI® max torsion plate

Aluminium extrusion profile EN AW 6063-T66 according to DIN EN 1999-1-1

f_{ok}	200	[N/mm²]	Characteristic value of the 0.2% yield strength
f_{uk}	245	[N/mm²]	Characteristic value of tensile strength
f_{od}	181.82*	[N/mm²]	Design value of 0.2% yield strength
f_{ud}	222.73*	[N/mm²]	Design value of tensile strength
A	8	[%]	Minimum value of elongation at break
E	70,000	[N/mm²]	Modulus of elasticity
G	27,000	[N/mm²]	Shear modulus
ν	0.3	[-]	Transverse expansion coefficient
α	$23x10^{-6}$	[1/C°]	Linear coefficient of thermal expansion
ρ	2,700	[kg/m³]	Density
m	134.2	[g/pc]	Weight per piece

**based on γ_{m1}=1.1 in accordance with EN 1999-1-1. Please note: The partial safety factor may be defined differently depending on the national annex and should be checked!*





SPIDI® max torsion plate

41523096 SPIDI® max torsion plate aluminium 50x170x6mm — PU 50 pcs
hole pattern 6.7/10.5mm, suitable for SPIDI® max brackets from 85 mm in length

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