

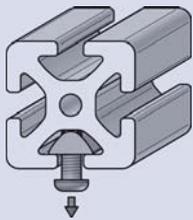


## PROFILE MATERIAL

Short description:	AlMgSi 0.5 F25
Material number:	3.3206.72
Condition:	heat tempered
Hardness:	approx. 75 HB
Tolerances:	according to DIN EN 12020 part 2
Tensile strength:	at least 245 N/mm <sup>2</sup>
Density:	2.7 kg/dm <sup>3</sup>
Surface:	E6/EV1 nature anodised
Anodising strength:	at least 10 $\leftrightarrow$ m
Anodising hardness:	approx. 250 HV
Linear extension:	$\Delta l = 0.0000238 \times l \times \Delta t$ $\Delta l$ = linear extension in mm $l$ = profile length in mm $\Delta t$ = temperature change

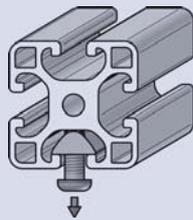
## TRACTION LOADS / PRESTRESSING

PROFILE RANGE 40  
HEAVY



**F=5000N**

PROFILE RANGE 40  
LIGHT



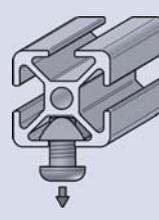
**F=2500N**

PROFILE RANGE 40  
EXTRA LIGHT



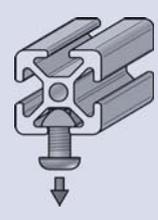
**F=1750N**

PROFILE RANGE 30

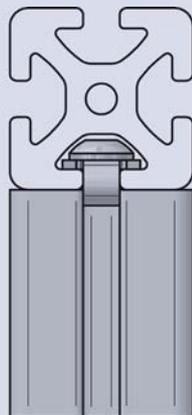
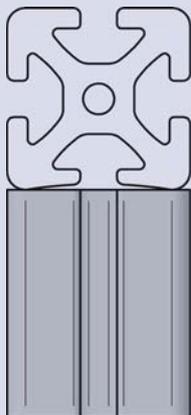


**F=1000N**

PROFILE RANGE 20



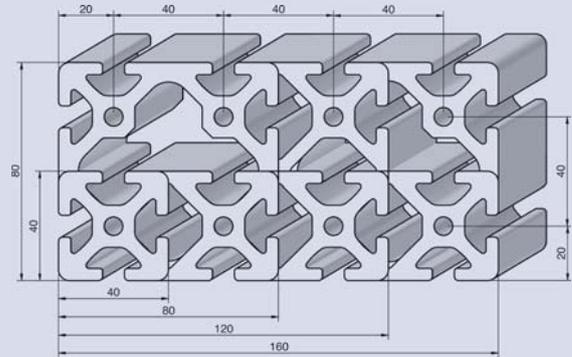
**F=500N**



Initial load: due to the special contour of the profiles, there is always a natural initial load of the connection elements which represents protection against vibration.

## PROFILE RANGE 40

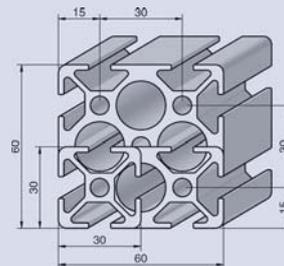
Slot width 8mm  
Tap hole for M8



## PROFILE RANGE 30

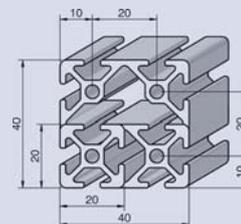
Slot width 8mm  
Tap hole for M8

Profile series can be mixed among each other with restrictions. Not all accessory parts of the profile series 40 and the profile series 30 can be used (see various groove bar heights).

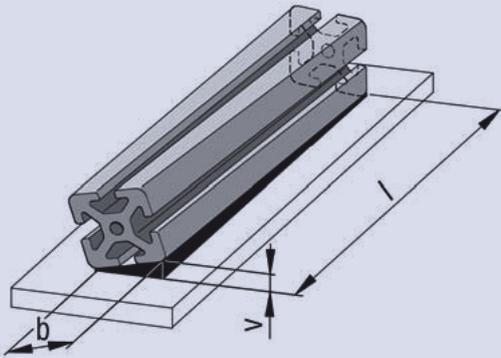


## PROFILE RANGE 20

Slot width 5mm  
Tap hole for M5



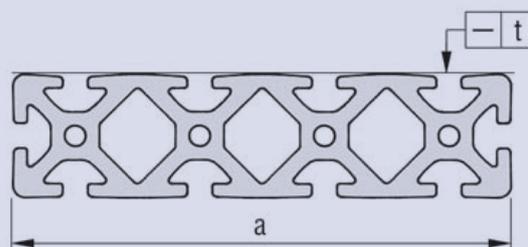
## TWISTING



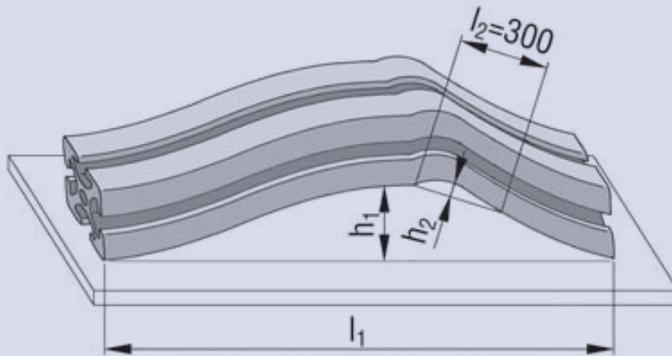
b [mm]		Tolerance of twisting (v) for length (l) [mm]					
over	to	to 1,000	to 2,000	to 3,000	to 4,000	to 5,000	to 6,000
-	25	1.0	1.5	1.5	2.0	2.0	2.0
25	50	1.0	1.2	1.5	1.8	2.0	2.0
50	75	1.0	1.2	1.2	1.5	2.0	2.0
75	100	1.0	1.5	1.8	2.2	2.5	3.0
100	125	1.2	1.5	1.8	2.2	2.5	3.0
125	150	1.2	1.5	1.8	2.2	2.5	3.0
150	200	1.5	1.8	2.2	2.6	3.0	3.5
200	300	1.8	2.5	3.0	3.5	4.0	4.5
300	320	2.0	2.0	3.5	4.0	4.5	5.0

## STRAIGHTNESS TOLERANCE, TRANSVERSE

Width (a) [mm]		Straightness tolerance
over	to	t [mm]
0	80	0.3
80	120	0.4
120	160	0.5
160	240	0.7
240	320	1.0



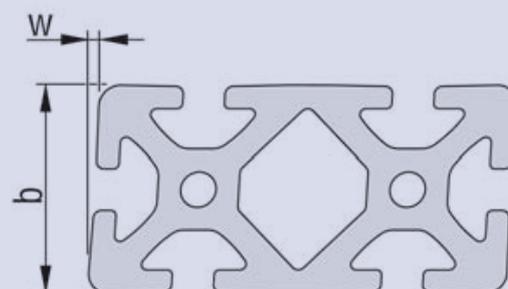
## STRAIGHTNESS TOLERANCE, LONGITUDINAL



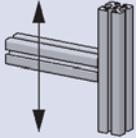
Length $l_1$ [mm]	$h_1$ [mm]	Tolerance $h_2$
to 1,000	0.7	
to 2,000	1.3	For each longitudinal
to 3,000	1.8	section $l_2 = 300$ mm the
to 4,000	2.2	deviation
to 5,000	2.6	$h_2$ must not exceed 0.3
to 6,000	3.0	mm

## ANGLE TOLERANCE

Width (b) [mm]		Angle tolerance $w \pm$ [mm]
over	to	
0	20	0.2
20	40	0.4
40	80	0.6
80	120	0.8
120	200	1.2
200		1.5



# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.138   Screw in connector set 5	20					
	S.51   Screw in connector set 8 30	30	++	++	++	no	yes
	S.51   Screw in connector set 24mm	40					
	S.52   Automatic connector set	40	++	++	+	no	yes
	S.55   Bayonet connector	40	++	++	+	no	yes
	S.46   Connector set 8 30 double	30					
	S.47   Connector set 8 60 double	30	++	++	++	yes	yes
	S.48   Connector set 40 double	40					
	S.48   Connector set 80 double	40					
	S.46   Connector set 8 30 single	30	++	0	++	yes	yes
	S.47   Connector set 40 single	40					
	S.53   Direct connector set double	40	+	++	++	yes 1 Gew	no
	S.53   Direct connector set simple	40	+	++	++	yes 1 Gew	no
	S.54   Mega connector ZAK	40	+	0	+	yes	yes
	S.54   Central connector	40	+	0	++	yes 1 Gew	no

++ very good

+ good

0 conditionally recommended

- not recommended

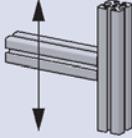
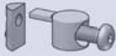
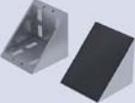
\* depending on range and profile design

TB = Threaded bore

SB = Stepped bore

THB = Through bore

# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.139   Universal connector set 5 S.56   Universal connector set	20 40	++	++	++	yes je 1 StuBo	yes
	S.65   Central connector w. horizontal Hammer S.65   Central connector w. vertical Hammer (see figure)	40 40	0	0	0	yes 2 StuBo	yes
	S.140   Angle set 5 20x20 ZN S.141   Angle set 5 40x40 ZN	20 20	++	++	++	no	yes
	S.71   Angle set 8 30x30 ZN S.71   Angle set 40x40 ZN S.72   Angle set 80x80 ZN	30 40 40	++	++	++	no	yes
	S.72   Angle set 80x80x80Zn	80	++	++	++	no	yes
	S.70   Angle 8 30x30 3 St S.70   Angle 40x40 5 St	40 40	+	+	+	no	yes
	S.74   Angle 160x160	80	++	++	++	no	yes

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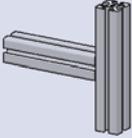
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# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.138   Central plate set 5	20				yes	
	S.50   Central plate set 8 30	30	++	+	+	1 DuBo	no
	S.50   Central plate set	40				1 Gew	
	S.138   Screw in connector set 5	20					
	S.51   Screw in connector set 8 30	30	++	++	++	no	yes
	S.51   Screw in connector set 24mm	40					
	S.52   Automatic connector set	40	++	++	+	no	yes
	S.55   Bayonet connector	40	++	++	+	no	yes
	S.46   Connector set 8 30 double	30					
	S.47   Connector set 8 60 double	30	++	++	++	yes	yes
	S.48   Connector set 40 double	40					
	S.48   Connector set 80 double	40					
	S.46   Connector set 8 30 single	30	++	++	++	yes	yes
	S.47   Connector set 40 single	40					
	S.53   Direct connector set double	40	+	++	++	yes 1 Gew	no
	S.53   Direct connector set simple	40	+	++	++	yes 1 Gew	no
	S.54   Mega connector ZAK	40	+	0	+	yes	yes

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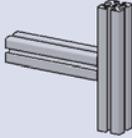
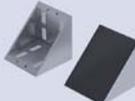
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# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.54   Central connector	40	+	0	++	yes 1 Gew	no
	S.139   Universal connector set 5 S.56   Universal connector set	20 40	++	++	++	yes je 1 StuBo	yes
	S.65   Central connector w. horizontal Hammer S.65   Central connector w. vertical Hammer (see figure)	40 40	0	0	0	yes 2 StuBo	yes
	S.140   Angle set 5 20x20 ZN S.141   Angle set 5 40x40 ZN	20 20	++	++	++	no	yes
	S.71   Angle set 8 30x30 ZN S.71   Angle set 40x40 ZN S.72   Angle set 80x80 ZN	30 40 40	++	++	++	no	yes
	S.72   Angle set 80x80x80Zn	80	++	++	++	no	yes
	S.70   Angle 8 30x30 3 St S.70   Angle 40x40 5 St	30 40	+	+	+	no	yes
	S.74   Angle 160x160	80	++	++	++	no	yes

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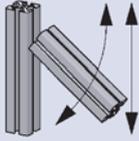
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	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.55   Cross connector set	40	+	+	+	yes	yes
	S.73   Angle element 140x40 45° S.73   Angle element 140x80 45°	40 40	++	+	+	no	yes
	S.75   Joint 8 30x30 S.76   Joint 40x40	30 40	+	-		no	yes
	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.75   Joint 8 30x30 S.76   Joint 40x40	30 40	+	-		no	yes

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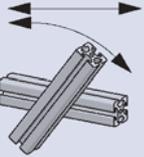
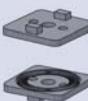
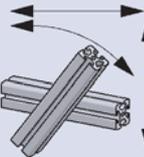
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# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.65   Parallel connector 8	40	+	+	+	no	no
	S.79   Locking square set	40	+	+	+	no	yes
	S.78   Joint square set	40	+	+	+	no	yes
	S.64   Position connector set	40	+	+	+	no	yes
	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.65   Parallel connector 8	40	+	++	+	no	no
	S.79   Locking square set	40	+	+	+	no	yes
	S.78   Joint square set	40	+	+	+	no	yes

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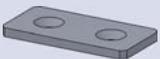
- not recommended

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	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.139   Universal butt connector set 5 S.56   Universal butt connector set	20 40	+	+	+	yes	no
	S.58   Butt connector set 40 double S.58   Butt connector set 80 double	40 80	++	++	++	yes	no
	S.57   Screw in butt connector set	40	+	+	0	no	yes
	S.58   Automatic butt connector set	40	+	+	0	no	yes
	S.58   Mitre butt connector set	40	0	0	0	yes	no
	S.59   Butt connector 8 M8x12	40	+	+	+	yes	yes
	S.69   Bracket 8 60x30x3 St S.69   Bracket 80x40x5 St	30 40	+	+	+	no	yes
	S.69   Bracket 160x80x5 St	40	+	+	+	no	yes

++ very good

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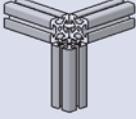
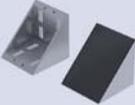
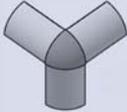
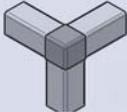
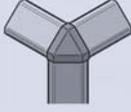
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# TECHNICAL BASICS

	Catalog Page   Description	Profile Range	Displacement force	Torsion moment *	Bending moment *	Profile machining	Can be retrofitted into existing construction
	S.140   Angle set 5 20x20 ZN S.141   Angle set 5 40x40 ZN	20 20	++	++	++	no	yes
	S.71   Angle set 8 30x30 ZN S.71   Angle set 40x40 ZN S.72   Angle set 80x80 ZN	30 40 40	++	++	++	no	yes
	S.72   Angle set 80x80x80Zn	80	++	++	++	no	yes
	S.70   Angle 8 30x30 3 St S.70   Angle 40x40 5 St	30 40	+	+	+	no	yes
	S.74   Angle 160x160	80	++	++	++	no	yes
	S.60   Connector set 8 R30 90° S.63   Connector set R40 90°	30 40	++	0	0	yes 3 Gew	
	S.60   Connector set 8 30x30x30 S.62   Connector set 40x40x40	30 40	++	0	0	yes 3 Gew	
	S.62   Connector set 40x40x45°	40	++	0	0	yes 3 Gew	
	S.61   Cube connector 30 3D	30	++	+	++	yes 3 Gew	

++ very good

+ good

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- not recommended

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