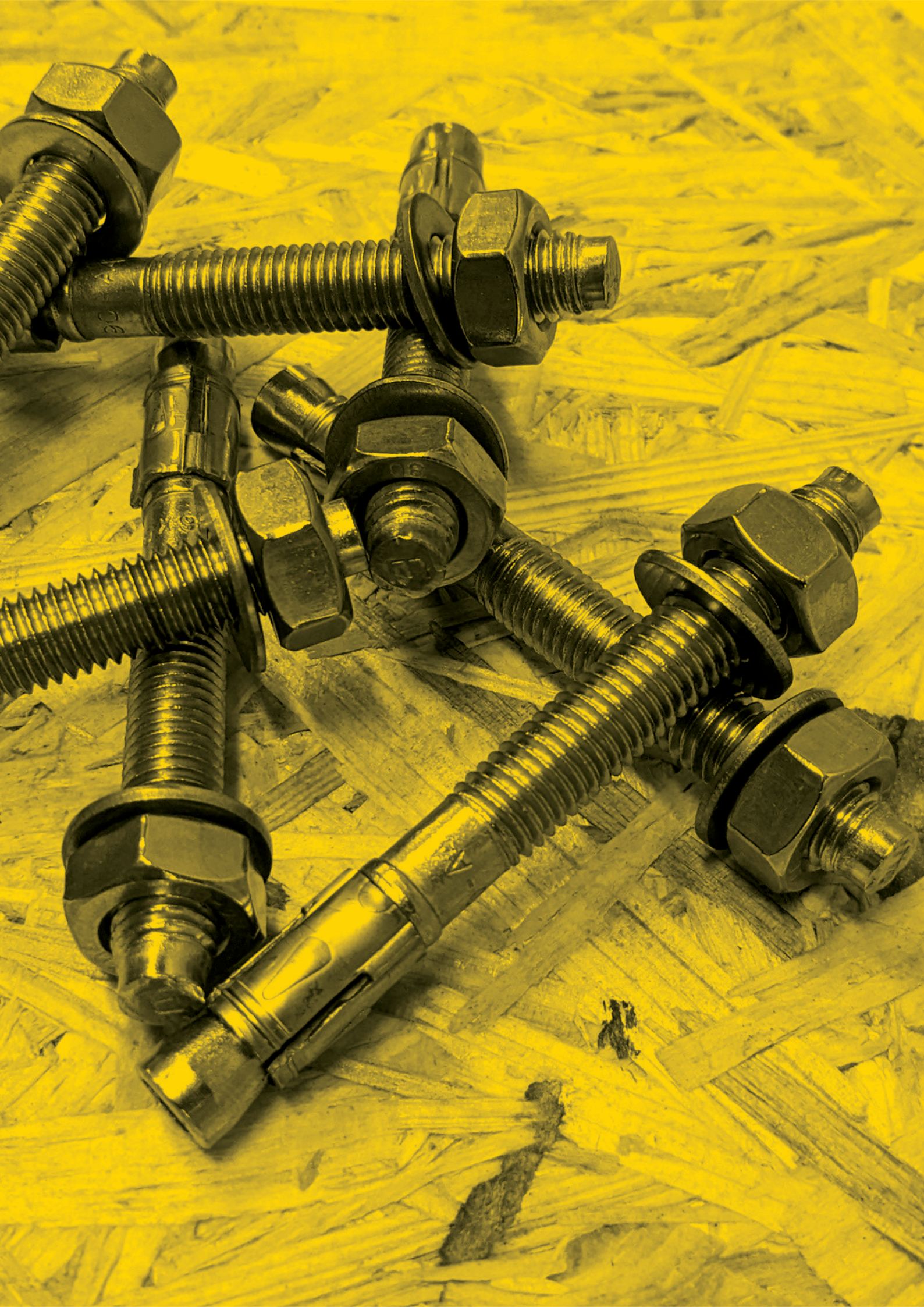


CELO

Bolt anchors







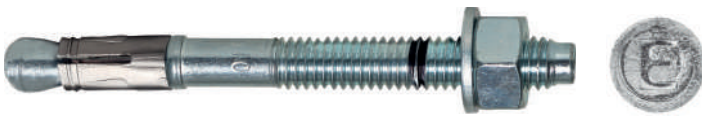
Bolt anchors	BAZ plus			BAZ2		BAZ-H	BA plus				
Coating / Material	zinc plated	stainless steel A4	high-corrosion resistant HCR	zinc plated	stainless steel A4	zinc plated	zinc plated	galvanisch verzinkt	stainless steel A4	stainless steel A2	hot-dipped HD
Assortment	M8 - M16	M8 - M16	M8 - M10	M6 - M16		M10 - M16	M6 - M20	M10 - M16	M8 - M16	M8 - M16	M6 - M16
											
 see assessment	✓			✓		✓	✗				
	✓ C1, C2			✓ C1, C2		✗	✗				
	✓ M8 - M16			✓ M8 - M16		✗	✗				
Suitable for outdoor applications	✗	✓	✓	✗	✓	✗	✗				
Setting depth marking	✓			✓		✗	✓				
Performance											
 Length marking on head	✓			✓		✗	✗				
Two setting depths	✓ M10 & M12			✗		✗	✗				
 With big washer for woodworking	✗			✗		✓	✗	✓	✗		
Page	4			7		10	12				

Bolt anchor

BAZ Plus

High-performance anchor with Option 1

Assortment



BAZ plus, zinc plated



BAZ plus A4, stainless steel A4



BAZ plus HCR, stainless steel, high corrosion resistant



Suitable building materials

Very suitable



• Concrete



Approvals and certificates

European Technical Assessment
Option 1 for cracked concrete

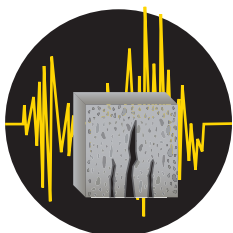
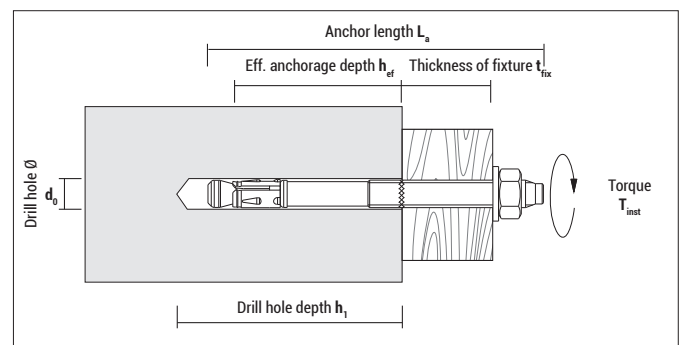
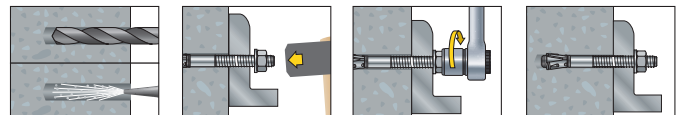
see assessment



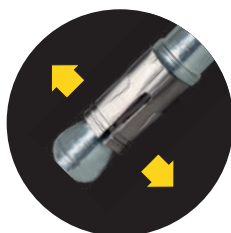
M8 - M16



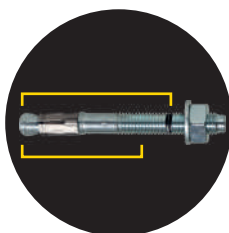
Mounting



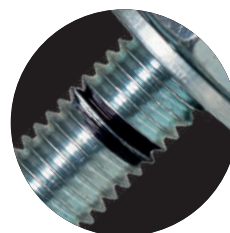
Outstanding performance
in cracked concrete and
for use under seismic
action (C1 and C2)



**Very small edge and
axial distances**
perfect for difficult
installation situations



**M10 and M12: Two
setting depths**
for higher appli-
cation flexibility



**Setting depth
marking ring** for
easy and quick
installation



Length marking
on top of the
bolt anchor



BAZ plus, zinc plated

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€/ 100 pcs	[pcs]	[pcs]
8x75/10	9875BAZP	8	60	48	75	10	M8	●		50	250
8x95/30	9895BAZP	8	60	48	95	30	M8	●		50	250
8x115/50	98115BAZP	8	60	48	115	50	M8	●		40	200
8x150/85	98150BAZP	8	60	48	150	85	M8	●		40	200
10x72/10	91072BAZP	10	55	40	72	10	M10	●		40	200
10x92/10	91092BAZP	10	55 / 75	40 / 60	92	30 / 10	M10	●		40	200
10x102/20	910102BAZP	10	55 / 75	40 / 60	102	40 / 20	M10	●		25	125
10x112/30	910112BAZP	10	55 / 75	40 / 60	112	50 / 30	M10	●		25	125
10x132/50	910132BAZP	10	55 / 75	40 / 60	132	70 / 50	M10	●		25	125
10x162/80	910162BAZP	10	55 / 75	40 / 60	162	100 / 80	M10	●		25	125
12x88/10	91288BAZP	12	70	50	88	10	M12	●		20	100
12x103/5	912103BAZP	12	70 / 90	50 / 70	103	25 / 5	M12	●		20	100
12x118/20	912118BAZP	12	70 / 90	50 / 70	118	40 / 20	M12	●		20	100
12x128/30	912128BAZP	12	70 / 90	50 / 70	128	50 / 30	M12	●		20	100
12x148/50	912148BAZP	12	70 / 90	50 / 70	148	70 / 50	M12	●		20	100
12x163/65	912163BAZP	12	70 / 90	50 / 70	163	85 / 65	M12	●		20	100
12x178/80	912178BAZP	12	70 / 90	50 / 70	178	100 / 80	M12	●		20	100
16x123/5	916123BAZP	16	110	85	123	5	M16	●		10	50
16x138/20	916138BAZP	16	110	85	138	20	M16	●		10	50
16x168/50	916168BAZP	16	110	85	168	50	M16	●		10	50
16x178/60	916178BAZP	16	110	85	178	60	M16	●		10	50



BAZ plus A4, stainless steel A4

A4
STAINLESS
STEEL

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€/ 100 pcs	[pcs]	[pcs]
8x75/10 A4	9X875BAZP	8	60	48	75	10	M8	●		50	250
8x95/30 A4	9X895BAZP	8	60	48	95	30	M8	●		50	250
8x115/50 A4	9X8115BAZP	8	60	48	115	50	M8	●		40	200
8x150/85 A4	9X8150BAZP	8	60	48	150	85	M8	●		40	200
10x72/10 A4	9X1072BAZP	10	55	40	72	10	M10	●		40	200
10x92/10 A4	9X1092BAZP	10	55 / 75	40 / 60	92	30 / 10	M10	●		40	200
10x102/20 A4	9X10102BAZP	10	55 / 75	40 / 60	102	40 / 20	M10	●		25	125
10x112/30 A4	9X10112BAZP	10	55 / 75	40 / 60	112	50 / 30	M10	●		25	125
10x132/50 A4	9X10132BAZP	10	55 / 75	40 / 60	132	70 / 50	M10	●		25	125
10x162/80 A4	9X10162BAZP	10	55 / 75	40 / 60	162	100 / 80	M10	●		25	125
12x88/10 A4	9X1288BAZP	12	70	50	88	10	M12	●		20	100
12x103/5 A4	9X12103BAZP	12	70 / 90	50 / 70	103	25 / 5	M12	●		20	100
12x118/20 A4	9X12118BAZP	12	70 / 90	50 / 70	118	40 / 20	M12	●		20	100
12x128/30 A4	9X12128BAZP	12	70 / 90	50 / 70	128	50 / 30	M12	●		20	100
12x148/50 A4	9X12148BAZP	12	70 / 90	50 / 70	148	70 / 50	M12	●		20	100
12x163/65 A4	9X12163BAZP	12	70 / 90	50 / 70	163	85 / 65	M12	●		20	100
12x178/80 A4	9X12178BAZP	12	70 / 90	50 / 70	178	100 / 80	M12	●		20	100
16x123/5 A4	9X16123BAZP	16	110	85	123	5	M16	●		10	50
16x138/20 A4	9X16138BAZP	16	110	85	138	20	M16	●		10	50
16x168/50 A4	9X16168BAZP	16	110	85	168	50	M16	●		10	50
16x178/60 A4	9X16178BAZP	16	110	85	178	60	M16	●		10	50



BAZ plus HCR, stainless steel, high corrosion resistant

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€ / 100 pcs	[pcs]	[pcs]
8x75/10 HCR	9HCR875BAZP	8	60	48	75	10	M8	●	on request	50	250
10x92/10 HCR	9HCR1092BAZP	10	55 / 75	40 / 60	92	30 / 10	M10	●	on request	40	200
10x112/30 HCR	9HCR10112BAZP	10	55 / 75	40 / 60	112	50 / 30	M10	●	on request	25	125

No stock item; only available on request

Installation parameters

BAZ plus Size		M8		M10		M12		M16	
BAZ plus Type		BAZ plus zinc plated	BAZ plus stainless steel A4 / HCR	BAZ plus zinc plated	BAZ plus stainless steel A4 / HCR	BAZ plus zinc plated	BAZ plus stainless steel A4 / HCR	BAZ plus zinc plated	BAZ plus stainless steel A4 / HCR
Torque	T _{inst} [Nm]	15	20	30	45	60		110	
Width across flats	SW [mm]	13		17		19		24	
Ø of clearance hole in fixture	d _i [mm]	9		12		14		18	
Washer outer Ø x thickness	[mm]	17 x 1,6		21 x 2,0		24 x 2,5		30 x 3,0	

Spacing and edge distance

BAZ plus Size		M8	M10		M12		M16
Effective anchorage depth	h_{ef} [mm]	48	40	60	50	70	85
Minimum edge distance	C_{min} [mm]	40	50	50	60	55	65
	for $S \geq$ [mm]	55	190	100	215	110	150
Minimum spacing	S_{min} [mm]	35	50	40	55	60	65
	for $C \geq$ [mm]	50	95	60	110	70	95
Characteristic edge distance	C_{cr} [mm]	72	60	90	75	105	127
Characteristic spacing	S_{cr} [mm]	144	120	180	150	210	254
Min. thickness of structural part	h_{min} [mm]	100	100	120	100	140	170
Reduced min. thickness of structural part ¹⁾	h_{minred} [mm]	80	—	100	—	—	—

If underrun the char. spacing or edge distance (C_{cr} or S_{cr}) the loads must be reduced. h_{min}, S_{min} and C_{min} must be observed.

¹⁾ Reduced min. thickness of structural part only in non-cracked concrete.

Permissible loads

BAZ plus Size		M8	M10	M12	M16		
Effective anchorage depth	h_{ef} [mm]	48	40	60	50	70	85
Permissible tension load ^{1), 2)} for single anchor without influence of spacing and edge distance in cracked concrete C20/25 ³⁾							
BAZ plus zinc plated	N_{per} [kN]	4,0	4,1	5,7	5,8	7,6	11,4
BAZ plus stainless steel A4 / HCR	N_{per} [kN]	4,0	4,1	5,7	5,8	7,6	11,4
Permissible tension load ^{1), 2)} for single anchor without influence of spacing and edge distance in non-cracked concrete C20/25 ³⁾							
BAZ plus zinc plated	N_{per} [kN]	5,2	5,7	9,0	8,3	11,9	17,1
BAZ plus stainless steel A4 / HCR	N_{per} [kN]	5,2	5,7	9,0	8,3	11,9	17,1
Permissible shear load ^{1), 2)} for single anchor without influence of spacing and edge distance in cracked concrete C20/25 ³⁾							
BAZ plus zinc plated	V_{per} [kN]	7,2	11,7	11,7	17,1	17,1	30,9
BAZ plus stainless steel A4 / HCR	V_{per} [kN]	9,0	11,7	11,7	17,2	19,7	36,4
Permissible shear load ^{1), 2)} for single anchor without influence of spacing and edge distance in non-cracked concrete C20/25 ³⁾							
BAZ plus zinc plated	V_{per} [kN]	7,2	11,7	11,7	17,1	17,1	30,9
BAZ plus stainless steel A4 / HCR	V_{per} [kN]	9,0	11,7	11,7	19,7	19,7	39,2
Permissible bending moment ^{1), 2)}							
BAZ plus zinc plated	M_{per} [Nm]	15,0	29,1	51,4	125,6		
BAZ plus stainless steel A4 / HCR	M_{per} [Nm]	14,3	29,1	51,4	122,7		

¹⁾ For further information please refer to the ETA assessment

²⁾ Load figures include the resistances' partial safety factors as per ETA assessments and a partial safety factor on the action of γ_F = 1,4.

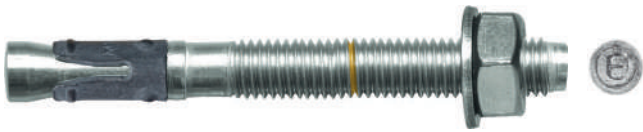
Load figures apply for a rebar spacing S ≥ 15 cm or alternatively for a rebar spacing S ≥ 10 cm in combination with a rebar diameter of d_s ≤ 10 mm..

³⁾ For higher concrete strengths up to C50/60 the values increase by max. 58%.

Bolt anchor BAZ2

Maximum security
for each project

Assortment



BAZ2, zinc plated



BAZ2 A4, stainless steel A4

Suitable building materials

Very suitable



- Concrete



Suitable to a limited extent

- Dense natural stone (up to M8)

Approvals and certificates



European Technical Assessment
Option 1 for cracked concrete



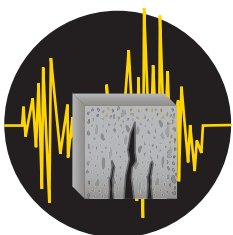
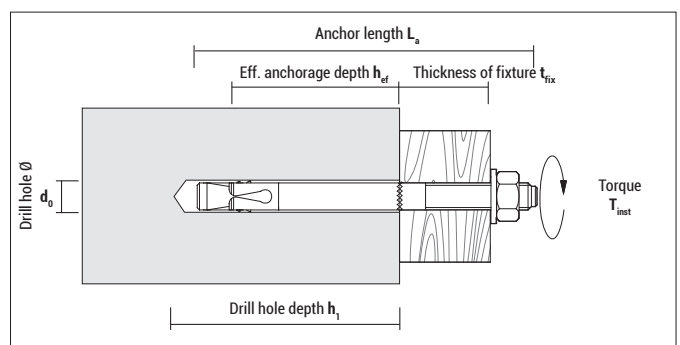
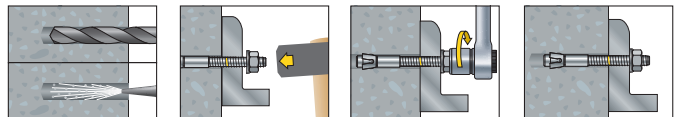
see assessment



M8 - M16



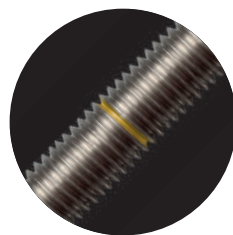
Mounting



Very high performance
in cracked concrete and
suitable for use under
seismic action [C1]



High load values
even with small edge
and axial distances



**Setting depth
marking ring** for
easy and quick
installation



Length marking
on top of the
bolt anchor

Bolt anchor BAZ2

Assortment & Technical values



BAZ2, zinc plated

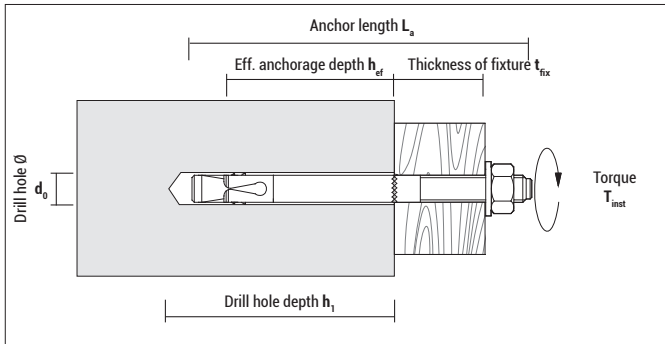
Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	Drive	ETA	€/ 100 pcs	[pcs]	[pcs]
6x50/2	9650BAZ2	6	44	34	50	2	M6	SW10	—		150	750
6x65/15	9665BAZ2	6	46	36	65	15	M6	SW10	—		100	500
8x50/2	9850BAZ2	8	42	30	50	2	M8	SW13	—		100	500
8x75/9	9875BAZ2	8	60	48	75	9	M8	SW13	●		50	250
8x95/29	9895BAZ2	8	60	48	95	29	M8	SW13	●		50	250
8x115/49	98115BAZ2	8	60	48	115	49	M8	SW13	●		40	200
8x150/84	98150BAZ2	8	60	48	150	84	M8	SW13	●		40	200
10x90/10	91090BAZ2	10	75	60	90	10	M10	SW17	●		40	200
10x100/20	910100BAZ2	10	75	60	100	20	M10	SW17	●		25	125
10x110/30	910110BAZ2	10	75	60	110	30	M10	SW17	●		25	125
10x130/50	910130BAZ2	10	75	60	130	50	M10	SW17	●		25	125
10x160/80	910160BAZ2	10	75	60	160	80	M10	SW17	●		25	125
12x100/4	912100BAZ2	12	85	70	100	4	M12	SW19	●		20	100
12x120/24	912120BAZ2	12	85	70	120	24	M12	SW19	●		20	100
12x130/34	912130BAZ2	12	85	70	130	34	M12	SW19	●		20	100
12x150/54	912150BAZ2	12	85	70	150	54	M12	SW19	●		20	100
12x160/64	912160BAZ2	12	85	70	160	64	M12	SW19	●		20	100
12x180/84	912180BAZ2	12	85	70	180	84	M12	SW19	●		20	100
16x125/8	916125BAZ2	16	105	85	125	8	M16	SW24	●		10	50
16x140/23	916140BAZ2	16	105	85	140	23	M16	SW24	●		10	50
16x170/53	916170BAZ2	16	105	85	170	53	M16	SW24	●		10	50
16x180/63	916180BAZ2	16	105	85	180	63	M16	SW24	●		10	50



BAZ2 A4, stainless steel A4

A4
STAINLESS
STEEL

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	Drive	ETA	€/ 100 pcs	[pcs]	[pcs]
8x50/2 A4	9X850BAZ2	8	42	30	50	2	M8	SW13	—		100	500
8x75/9 A4	9X875BAZ2	8	60	48	75	9	M8	SW13	●		50	250
8x95/29 A4	9X895BAZ2	8	60	48	95	29	M8	SW13	●		50	250
8x115/49 A4	9X8115BAZ2	8	60	48	115	49	M8	SW13	●		40	200
10x90/10 A4	9X1090BAZ2	10	75	60	90	10	M10	SW17	●		40	200
10x100/20 A4	9X10100BAZ2	10	75	60	100	20	M10	SW17	●		25	125
10x110/30 A4	9X10110BAZ2	10	75	60	110	30	M10	SW17	●		25	125
10x130/50 A4	9X10130BAZ2	10	75	60	130	50	M10	SW17	●		25	125
12x100/4 A4	9X12100BAZ2	12	85	70	100	4	M12	SW19	●		20	100
12x120/24 A4	9X12120BAZ2	12	85	70	120	24	M12	SW19	●		20	100
12x130/34 A4	9X12130BAZ2	12	85	70	130	34	M12	SW19	●		20	100
12x150/54 A4	9X12150BAZ2	12	85	70	150	54	M12	SW19	●		20	100
12x160/64 A4	9X12160BAZ2	12	85	70	160	64	M12	SW19	●		20	100
16x125/8 A4	9X16125BAZ2	16	105	85	125	8	M16	SW24	●		10	50
16x140/23 A4	9X16140BAZ2	16	105	85	140	23	M16	SW24	●		10	50
16x170/53 A4	9X16170BAZ2	16	105	85	170	53	M16	SW24	●		10	50



Installation parameters

BAZ2 Size		M6*	M8	M10 BAZ2 zinc plated BAZ2 A4	M12	M16
Torque	T_{inst} [Nm]	7	15	40 30	60	100
Width across flats	SW [mm]	10	13	17	19	24
Ø of clearance hole in fixture	d_f [mm]	7	9	12	14	18
Washer outer Ø x thickness	[mm]	12 x 1,6	17 x 1,6	21 x 2,0	24 x 2,5	30 x 3,0

* Not part of the approval

Spacing and edge distance

BAZ2 Size		M8 BAZ2 zinc plated BAZ2 A4		M10 BAZ2 zinc plated BAZ2 A4		M12 BAZ2 zinc plated BAZ2 A4		M16 BAZ2 zinc plated BAZ2 A4	
Effective anchorage depth	h_{ef} [mm]	48		60		70		85	
Minimum edge distance	C_{min} [mm]	45	47	45	52	55	62	70	75
Minimum spacing	S_{min} [mm]	40	42	40	47	60	57	65	75
Characteristic edge distance	C_{cr} [mm]	72		90		105		128	
Characteristic spacing	S_{cr} [mm]	144		180		210		255	
Min. thickness of structural part	h_{min} [mm]	80	100	90	120	105	140	130	170

If underrun the char. spacing or edge distance (C_{cr} or S_{cr}) the loads must be reduced. h_{min} , S_{min} and C_{min} must be observed.

Loads

BAZ2 Size		M8 BAZ2 zinc plated BAZ2 A4		M10 BAZ2 zinc plated BAZ2 A4		M12 BAZ2 zinc plated BAZ2 A4		M16 BAZ2 zinc plated BAZ2 A4	
BAZ2 Type		BAZ2 zinc plated	BAZ2 A4	BAZ2 zinc plated	BAZ2 A4	BAZ2 zinc plated	BAZ2 A4	BAZ2 zinc plated	BAZ2 A4
Permissible tension loads for single anchor without influence of spacing and edge distance ^{1), 2)}									
In cracked concrete C20/25 ³⁾	N_{zul} [kN]	2,8	4,1	5,2	6,7	7,1	7,5	12,9	10,7
In non-cracked concrete C20/25 ³⁾	N_{zul} [kN]	4,0	5,7	8,6	7,6	13,3	8,7	16,2	15,3
Permissible shear loads for single anchor without influence of spacing and edge distance ^{1), 2)}									
In cracked concrete C20/25	V_{zul} [kN]	5,5	5,4	9,9	10,8	14,5	15,7	25,7	25,7
In non-cracked concrete C20/25	V_{zul} [kN]	6,3	6,8	9,9	10,8	14,5	15,7	26,9	31,4
Zulässiges Biegemoment	M_{zul} [Nm]	12,9	15,0	25,6	29,9	44,9	52,4	114,2	133,2

¹⁾ For further information please refer to the ETA assessment

²⁾ Load figures include the resistances' partial safety factors as per ETA assessment and a partial safety factor on the action of $\gamma_F = 1,4$.

Load figures apply for a rebar spacing $S \geq 15$ cm or alternatively for a rebar spacing $S \geq 10$ cm in combination with a rebar diameter of $d_s \leq 10$ mm.

³⁾ For higher concrete strengths up to C50/60 the values increase by max. 58 %

Recommended loads for the not approved anchor sizes M6, M8

Type	Anchorage depth h_{ef} [mm]	non-cracked concrete C20/25 N_{empf} [kN]	non-cracked concrete C20/25 V_{empf} [kN]
BAZ2 6x50/2	34	1,6	2,0
BAZ2 6x65/15	36	1,8	2,0
BAZ2 8x50/2	30	2,6	2,6

N_{rec} : recommended tension load; V_{rec} : recommended shear load

Bolt anchor **BAZ-H**

High-performance anchor with Option 1 for wood construction

Assortment



BAZ-H, zinc plated with large washer according to ISO 7094 (DIN 440) for woodworking

Suitable building materials

Very suitable



• Concrete



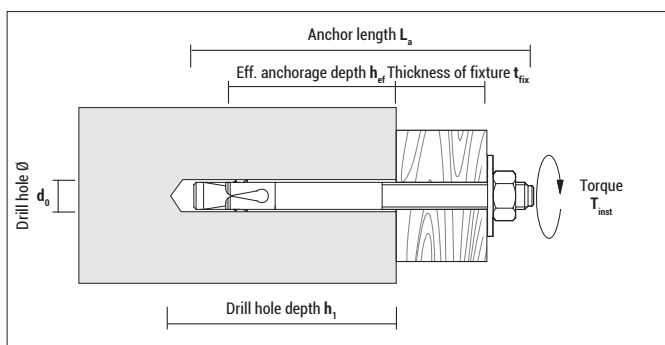
Approvals and certificates



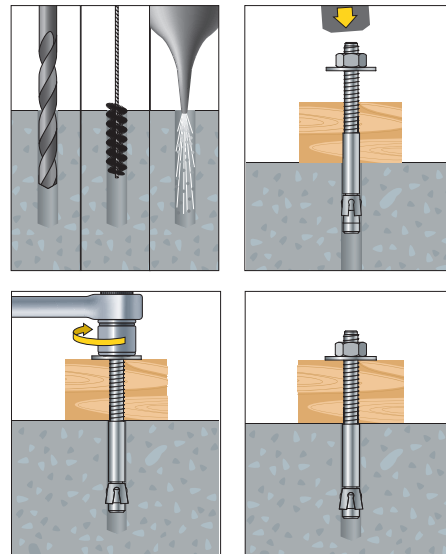
European Technical Assessment
Option 1 for cracked concrete



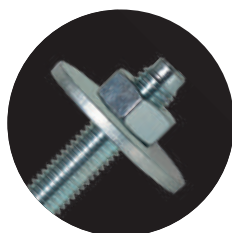
see assessment



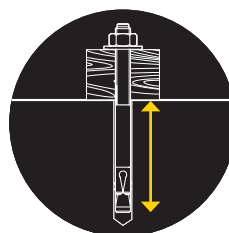
Mounting



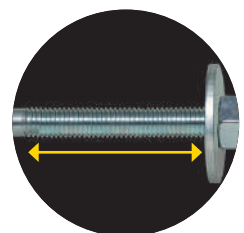
Very good load values
in cracked and non-cracked concrete
(ETA Option 1)



Bolt anchor with **large washer** according to ISO 7094 (DIN 440) for woodworking



Small setting depth
for quick assembly



Long thread for high mounting flexibility



BAZ-H, zinc plated

Type	Art-No	d_0 [mm]	$h_1 \geq$ [mm]	$h_{ef} \geq$ [mm]	L_0 [mm]	$t_{fix} \leq$ [mm]	Thread	ETA	€ / 100 pcs	[pcs]	[pcs]
10x210/140	910210BAZH	10	70	45	210	140	M10	●		20	80
12x203/113	912203BAZH	12	90	62	203	113	M12	●		15	60
12x220/130	912220BAZH	12	90	62	220	130	M12	●		15	60
12x243/153	912243BAZH	12	90	62	243	153	M12	●		15	60
12x258/168	912258BAZH	12	90	62	258	168	M12	●		15	60
12x280/190	912280BAZH	12	90	62	280	190	M12	●		10	40
12x320/230	912320BAZH	12	90	62	320	230	M12	●		10	40
16x220/100	916220BAZH	16	120	88	220	100	M16	●		10	40
16x280/160	916280BAZH	16	120	88	280	160	M16	●		5	20
16x323/203	916323BAZH	16	120	88	323	203	M16	●		5	20
16x370/250	916370BAZH	16	120	88	370	250	M16	●		5	20

Installation parameters

BAZ-H Size		M10	M12	M16
Torque	T_{inst} [Nm]	25	65	110
Width across flats	SW [mm]	17	19	24
Ø of clearance hole in fixture	d_f [mm]	12	14	18
Washer DIN 440 outer Ø x thickness	[mm]	34 x 3	44 x 4	56 x 5

Spacing and edge distance

BAZ-H Size		M10	M12	M16
Effective anchorage depth	h_{ef} [mm]	45	62	88
Minimum edge distance	C_{min} [mm]	70	85	70
Minimum spacing	S_{min} [mm]	60	70	60
Characteristic edge distance	C_{cr} [mm]	68	93	132
Characteristic spacing	S_{cr} [mm]	135	186	264
Min. thickness of structural part	h_{min} [mm]	120	140	160

If underrun the char. spacing or edge distance (C_{cr} or S_{cr}) the loads must be reduced. h_{min} , S_{min} and C_{min} must be observed.

Loads

BAZ-H Size		M10	M12	M16
Permissible centric tension load ^{1), 2)} for single anchor without influence of spacing and edge distance in cracked concrete C20/25 ³⁾				
BAZ-H zinc plated	N_{zul} [kN]	2,9	3,8	8,6
Permissible centric tension load ^{1), 2)} for single anchor without influence of spacing and edge distance in non-cracked concrete C20/25 ³⁾				
BAZ-H zinc plated	N_{zul} [kN]	5,2	8,6	11,9
Permissible shear load ^{1), 2)} for single anchor without influence of spacing and edge distance in cracked concrete C20/25 ³⁾				
BAZ-H zinc plated	V_{zul} [kN]	5,0	16,0	27,1
Permissible shear load ^{1), 2)} for single anchor without influence of spacing and edge distance in non-cracked concrete C20/25 ³⁾				
BAZ-H zinc plated	V_{zul} [kN]	7,1	21,4	32,4
Permissible bending moment ^{1), 2)}				
BAZ-H zinc plated	M_{zul} [Nm]	24,3	43,8	95,2

¹⁾ For further information please refer to the ETA assessment

²⁾ Load figures include the resistances' partial safety factors as per ETA assessment and a partial safety factor on the action of $\gamma_F = 1,4$.

Load figures apply for a rebar spacing $S \geq 15$ cm or alternatively for a rebar spacing $S \geq 10$ cm in combination with a rebar diameter of $d_s \leq 10$ mm.

³⁾ For higher concrete strengths up to C50/60 the values increase by max. 58%.

Bolt anchor **BA plus**

The standard anchor for fast installation in concrete

Assortment



BA plus, zinc plated



BA plus, zinc plated with large washer according to ISO 7094 (DIN 440) for woodworking



BA plus, stainless steel A4



BA plus, stainless steel A2



BA plus, hot-dipped HD

Suitable building materials

Very suitable



- Concrete



Suitable to a limited extent

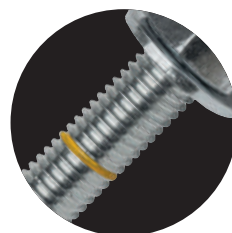
- Dense natural stone (up to M8)



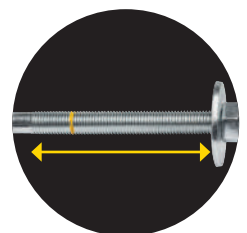
Excellent load values in non-cracked concrete



Wide range for wood-working with large washer according to ISO 7094 [DIN 440]



Setting depth marking ring for quick installation



Long thread for higher mounting flexibility



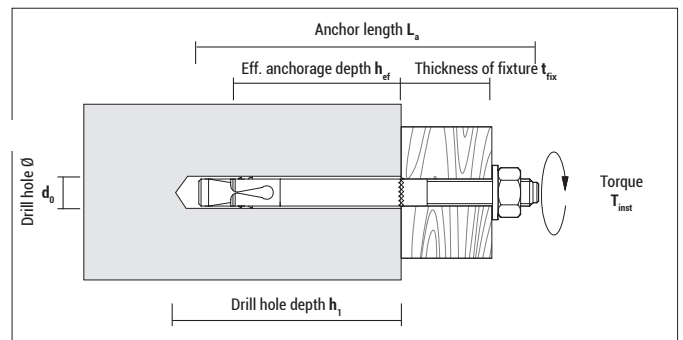
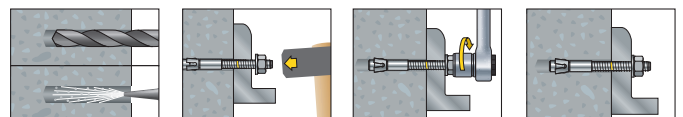
Approvals and certificates



European Technical Assessment
Option 7 for non-cracked concrete



Mounting





BA plus, zinc plated

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread		€ / 100 pcs	 [pcs]	 [pcs]
6x45/5	9645BAP	6	38	25	45	5	M6	—		100	500
6x60/10	9660BAP	6	48	35	60	10	M6	●		100	500
6x80/30	9680BAP	6	48	35	80	30	M6	●		100	500
6x100/50	96100BAP	6	48	35	100	50	M6	●		100	500
8x50/5	9850BAP	8	40	25	50	5	M8	—		100	500
8x60/10	9860BAP	8	45	30	60	10	M8	—		50	250
8x75/10	9875BAP	8	60	45	75	10	M8	●		50	250
8x85/20	9885BAP	8	60	45	85	20	M8	●		50	250
8x95/30	9895BAP	8	60	45	95	30	M8	●		50	250
8x115/50	98115BAP	8	60	45	115	50	M8	●		40	200
8x135/70	98135BAP	8	60	45	135	70	M8	●		40	200
10x60/10	91060BAP	10	42	27	60	10	M10	—		50	250
10x75/10	91075BAP	10	55	40	75	10	M10	—		50	250
10x85/10	91085BAP	10	65	50	85	10	M10	●		40	200
10x92/17	91092BAP	10	65	50	92	17	M10	●		40	200
10x105/30	910105BAP	10	65	50	105	30	M10	●		25	125
10x125/50	910125BAP	10	65	50	125	50	M10	●		25	125
10x145/70	910145BAP	10	65	50	145	70	M10	●		25	125
10x175/100	910175BAP	10	65	50	175	100	M10	●		25	125
12x70/2	91270BAP	12	58	38	70	2	M12	—		40	200
12x110/10	912110BAP	12	90	70	110	10	M12	●		20	100
12x120/20	912120BAP	12	90	70	120	20	M12	●		20	100
12x130/30	912130BAP	12	90	70	130	30	M12	●		20	100
12x150/50	912150BAP	12	90	70	150	50	M12	●		20	100
12x180/80	912180BAP	12	90	70	180	80	M12	●		20	100
16x95/10	91695BAP	16	75	50	95	10	M16	—		15	75
16x135/15	916135BAP	16	110	85	135	15	M16	●		10	50
16x150/30	916150BAP	16	110	85	150	30	M16	●		10	50
16x180/60	916180BAP	16	110	85	180	60	M16	●		10	50
16x200/80	916200BAP	16	110	85	200	80	M16	●		10	50
20x110/10	920110BAP	20	90	60	110	10	M20	—		10	40
20x160/20	920160BAP	20	130	100	160	20	M20	●		10	40
20x215/75	920215BAP	20	130	100	215	75	M20	●		6	24
20x270/130	920270BAP	20	130	100	270	130	M20	●		5	20



Blister BA plus, zinc plated

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread		€ / Blister	 [pcs]	 [Blister]
8x85/20	5885BA2	8	60	45	85	20	M8	●		2	10
10x92/17	51090BA2	10	65	50	92	17	M10	●		2	10
10x125/50	510120BA2	10	65	50	125	50	M10	●		2	10



BA plus with large washer according to ISO 7094 [DIN 440] for woodworking, zinc plated

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread		€ / 100 pcs	 [pcs]	 [pcs]
10x215/140	910215BAP	10	65	50	215	140	M10	●		25	100
12x200/100	912200BAP	12	90	70	200	100	M12	●		20	80
12x220/120	912220BAP	12	90	70	220	120	M12	●		20	80
12x240/140	912240BAP	12	90	70	240	140	M12	●		20	80
12x260/160	912260BAP	12	90	70	260	160	M12	●		20	80
12x300/200	912300BAP	12	90	70	300	200	M12	●		15	60
12x320/220	912320BAP	12	90	70	320	220	M12	●		15	60
16x220/100	916220BAP	16	110	85	220	100	M16	●		10	40
16x270/150	916270BAP	16	110	85	270	150	M16	●		10	40
16x320/200	916320BAP	16	110	85	320	200	M16	●		10	40

**BA plus, stainless steel A4**

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€ / 100 pcs	[pcs]	[pcs]
8x75/10 A4	9X875BAP	8	60	45	75	10	M8	●		50	250
8x95/30 A4	9X895BAP	8	60	45	95	30	M8	●		50	250
8x115/50 A4	9X8115BAP	8	60	45	115	50	M8	●		40	200
10x85/10 A4	9X1085BAP	10	65	50	85	10	M10	●		40	200
10x92/17 A4	9X1092BAP	10	65	50	92	17	M10	●		25	125
10x105/30 A4	9X10105BAP	10	65	50	105	30	M10	●		25	125
10x125/50 A4	9X10125BAP	10	65	50	125	50	M10	●		25	125
10x145/70 A4	9X10145BAP	10	65	50	145	70	M10	●		25	125
12x110/10 A4	9X12110BAP	12	90	70	110	10	M12	●		20	100
12x120/20 A4	9X12120BAP	12	90	70	120	20	M12	●		20	100
12x130/30 A4	9X12130BAP	12	90	70	130	30	M12	●		20	100
12x150/50 A4	9X12150BAP	12	90	70	150	50	M12	●		20	100
16x135/15 A4	9X16135BAP	16	110	85	135	15	M16	●		10	50
16x150/30 A4	9X16150BAP	16	110	85	150	30	M16	●		10	50

available from April 2025

**BA plus, stainless steel A2**

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€ / 100 pcs	[pcs]	[pcs]
8x75/10 A2	9SX875BAP	8	60	45	75	10	M8	●		50	250
8x95/30 A2	9SX895BAP	8	60	45	95	30	M8	●		50	250
10x92/17 A2	9SX1092BAP	10	65	50	92	17	M10	●		25	125
10x105/30 A2	9SX10105BAP	10	65	50	105	30	M10	●		25	125
10x125/50 A2	9SX10125BAP	10	65	50	125	50	M10	●		25	125
12x110/10 A2	9SX12110BAP	12	90	70	110	10	M12	●		20	100
12x130/30 A2	9SX12130BAP	12	90	70	130	30	M12	●		20	100
12x150/50 A2	9SX12150BAP	12	90	70	150	50	M12	●		20	100
16x150/30 A2	9SX16150BAP	16	110	85	150	30	M16	●		10	50

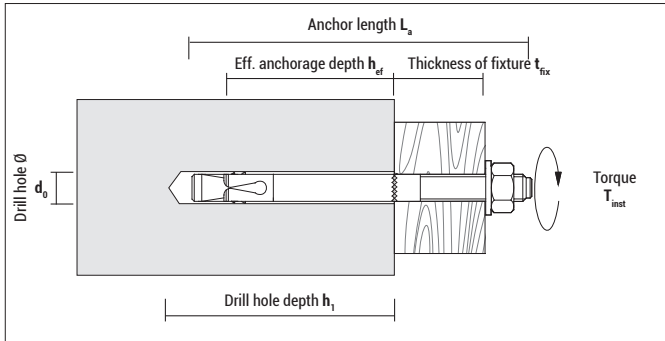
Delivery time on request

**BA plus, hot-dipped HD**

Type	Art-No	d ₀ [mm]	h ₁ ≥ [mm]	h _{ef} ≥ [mm]	L _a [mm]	t _{fix} ≤ [mm]	Thread	ETA	€ / 100 pcs	[pcs]	[pcs]
6x45/5 HD	9HD645BAP	6	38	25	45	5	M6	–		100	500
6x60/10 HD	9HD660BAP	6	48	35	60	10	M6	–		100	500
8x50/5 HD	9HD850BAP	8	40	25	50	5	M8	–		100	500
8x75/10 HD	9HD875BAP	8	60	45	75	10	M8	●		50	250
8x95/30 HD	9HD895BAP	8	60	45	95	30	M8	●		50	250
8x115/50 HD	9HD8115BAP	8	60	45	115	50	M8	●		40	200
8x135/70 HD	9HD8135BAP	8	60	45	135	70	M8	●		40	200
10x60/10 HD	9HD1060BAP	10	42	27	60	10	M10	–		50	250
10x85/10 HD	9HD1085BAP	10	65	50	85	10	M10	●		40	200
10x92/17 HD	9HD1092BAP	10	65	50	92	17	M10	●		40	200
10x105/30 HD	9HD10105BAP	10	65	50	105	30	M10	●		25	125
10x125/50 HD	9HD10125BAP	10	65	50	125	50	M10	●		25	125
10x175/100 HD	9HD10175BAP	10	65	50	175	100	M10	●		25	125
12x110/10 HD	9HD12110BAP	12	90	70	110	10	M12	●		20	100
12x120/20 HD	9HD12120BAP	12	90	70	120	20	M12	●		20	100
12x130/30 HD	9HD12130BAP	12	90	70	130	30	M12	●		20	100
12x150/50 HD	9HD12150BAP	12	90	70	150	50	M12	●		20	100
12x180/80 HD	9HD12180BAP	12	90	70	180	80	M12	●		20	100
16x135/15 HD	9HD16135BAP	16	110	85	135	15	M16	●		10	50
16x150/30 HD	9HD16150BAP	16	110	85	150	30	M16	●		10	50
16x180/60 HD	9HD16180BAP	16	110	85	180	60	M16	●		10	50

Bolt anchor BA plus

Technical values



Installation parameters

BA plus Size		M6	M8	M10	M12	M16	M20
Torque	T_{inst} [Nm]	8	15	30	50	110	180
Width across flats	SW [mm]	10	13	17	19	24	30
Ø of clearance hole in fixture	d_f [mm]	7	9	12	14	18	22
Washer outer Ø x thickness	[mm]	12 x 1,6	16 x 1,6	20 x 2 / 34 x 3	24 x 2,5 / 44 x 4	30 x 3 / 56 x 5	37 x 3

Loads, spacing and edge distance BA plus approved sizes M6 - M20

Type	Permissible loads in concrete ¹⁾²⁾³⁾				Permissible bending moment		Spacing ⁴⁾		Edge distance ⁴⁾		Min. thickness of structural part
	C 20/25				M _{per} [Nm]	S _{cr} [mm]	S _{min} [mm]	C _{cr} [mm]	C _{min} [mm]		
	Tension N _{per} [kN]		Shear V _{per} [kN]								
	zinc plated / HD	A2 / A4	zinc plated / HD	A2 / A4	zinc plated / HD	A2 / A4					
BA plus 6 ⁵⁾	3,6	–	3,1	–	6,1	–	105	50	53	50	100
BA plus 8	7,1	6,7	7,3	5,9	15,0	12,0	135	50	68	50	100
BA plus 10	7,6	7,6	12,2	9,3	28,6	24,0	150	120	75	90	120
BA plus 12	11,4	11,4	15,6	13,5	47,2	42,0	210	70	105	90	160
BA plus 16	12,7	12,7	28,6	25,2	109,4	106,7	255	100	128	100	200
BA plus 20 ⁵⁾	19,5	–	35,9	–	189,2	–	300	160	150	150	200

¹⁾ Permissible loads for single anchor without influence of spacing and edge distance.

²⁾ Load figures include the resistances' partial safety factors as per ETA assessment and a partial safety factor on the action of $v_F = 1,4$.

³⁾ For higher concrete strengths up to C50/60 the values increase by max. 55%.

⁴⁾ If underrun the char. spacing or edge distance (c_{cr} or s_{cr}) the loads must be reduced. h_{min} , s_{min} and c_{min} must be observed.

⁵⁾ Load capacities only valid for galvanized types

Recommended loads for the not approved anchor sizes in non-cracked concrete C20/25

Type	N_{empf} [kN]		V_{empf} [kN]		Eff. anchorage depth h_{ef} [mm]	
	zinc plated	HD	zinc plated	HD	zinc plated	HD
BA plus 6x45/5	1,5	2,5	1,5	2,0	25	35
BA plus 6x60/10	—	2,5	—	2,0	—	35
BA plus 8x50/5	1,5	1,5	1,5	1,5	25	25
BA plus 8x60/10	2,5	—	2,5	—	30	—
BA plus 10x60/10	1,8	1,8	1,8	1,8	27	27
BA plus 10x75/10	2,5	—	2,5	—	40	—
BA plus 12x70/2	2,4	—	2,4	—	38	—
BA plus 16x95/10	4,0	—	4,0	—	50	—
BA plus 20x110/10	6,0	—	6,0	—	60	—

N_{rec} : recommended tension load; V_{rec} : recommended shear load



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Small Things Matter

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