EJOT®

ETA Approved through-bolts

High performance anchoring into cracked and non-cracked concrete

Option 1 and Option 7

The Quality Connection www.ejot.co.uk

Next generation through-bolts
Option 1 and Option 7

High performance products with EJOT® technical support

The EJOT range of high performance through-bolts offers designers, engineers and installers the complete range of ETA approved products, manufactured to provide a safe and reliable solution for regular heavy-duty scenarios through to he most demanding applications in cracked and non-cracked concrete.

The second generation BA-Plus range has been engineered to provide vastly upgraded torque controlled efficiency, with Option 1 approval for the most critical cracked and non-cracked concrete scenarios - in the most demanding environmental situations.

In addition, the new BA-C NC zinc plated through-bolt comes with Option 7 approval for non-cracked concrete. That means safety and a cost-effective investment for virtually all indoor applications

Call 01977 687040
info@ejot.co.uk

EJOT UK is a manufacturing member of the CFA.
www.the-cfa.co.uk

ZAG -National Building and Civil Engineering Institute, Slovenia
ETA-18/0219
EAD 330232-00-0601

Seismic Resistance
ZAG -National Building & Civil Engineering Institute, Slovenia / Fobatec GmbH, Dortmund, Germany EOTA TR 045
BA-V Plus / BA-E Plus anchor size M8
C1 anchor size M10, M12, M16: C

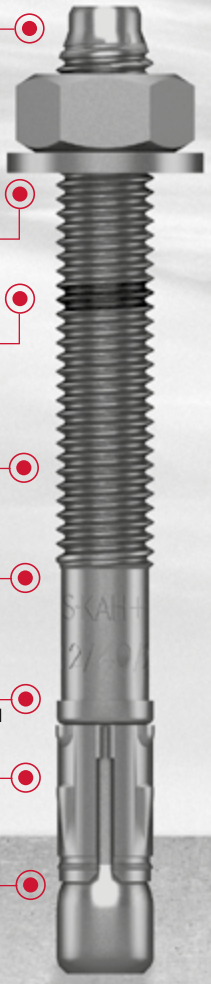
Fire Resistance
ZAG -National Building and Civil Engineering Institute, Slovenia / MFPA Institute for Materials Research and Testing, Leipzig, Germany
ETA-18/0219
EOTA TR 020 / EN 1992-4

Contents

Solutions-driven through-bolts for **performance-driven** designers.

EJOT has upgraded its BA through-bolt range to provide designers with a fully comprehensive choice of **ETA Option One** high performance anchors, ready and available for the most demanding applications in cracked and non-cracked concrete.

NEW ADVANCED BA-PLUS RANGE



BA-Plus through-bolt range

Option One approval for
cracked / non-cracked concrete

- TECHNICAL range for total performance
- M8 and M10: Offer installation into thinner concrete
- M10 and M12: Provide dual anchorage depths
- NEW Coloured depth-setting added to thread
- NEW Anchor length ID code added to head
- FEWER TURNS to reach specified installation torque
- CORROSION RESISTANT for harsh environments
- INCLUDES safety-critical, fire and seismic options

ETA-18/0219
Option One
Cracked / Non-cracked concrete

Call 01977 687040
www.ejot.co.uk/throughbolts

NEW TO THE EJOT RANGE: BA-C NC

BA-C NC through-bolt

Option Seven for non-cracked concrete

Not every ‘everyday’ anchor comes with its own ETA - but this one does! That’s because the new BA-C NC through-bolt is engineered to the same exacting standards as EJOT’s technical BA-Plus range, and manufactured in zinc plated carbon steel to provide a high performance solution for indoor applications into non-cracked concrete.

ETA-20/0286
Option Seven
Non-cracked concrete

BA-V PLUS
Zinc Plated
Carbon Steel

BA-F PLUS
Carbon Steel
Hot Dip Galv.

BA-C NC
Zinc Plated
Carbon Steel

Through-bolts range at a glance

BA-V Plus
Option 1

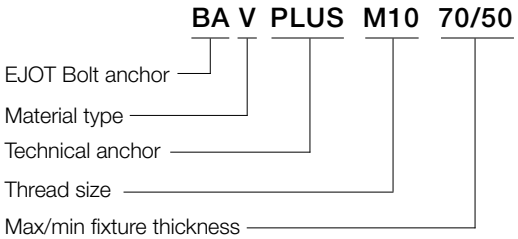
BA-F Plus
Option 1

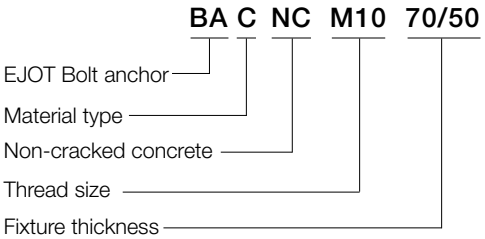
BA-E Plus
Option 1

BA-C NC
Option 7

	BA-V Plus Option 1	BA-F Plus Option 1	BA-E Plus Option 1	BA-C NC Option 7
Material	Carbon steel Zinc electroplated	Carbon steel Hot dip galvanized	Stainless steel A4	Carbon steel Zinc electroplated
Applications	Dry indoor conditions, indoor with temporary condensation	Humid indoor use, outdoor inland rural areas only in not safety relevant applications	For indoor, outdoor, industrial use and maritime climate.	Dry internal conditions
Base materials	Cracked concrete Non-cracked concrete	Cracked concrete Non-cracked concrete	Cracked concrete Non-cracked concrete	Non-Cracked concrete ≥ C20/25 ‚Option 7'
Thread size*	M8, M10, M12, M16	M8, M10, M12, M16	M8, M10, M12, M16	M8, M10, M12, M16
Tools	Setting tool BA	Setting tool BA	Setting tool BA	Setting tool BA
Technical data	F120 C1/C2	F120	F120 C1/C2	
Approvals	ETA-18/0219	ETA-18/0219	ETA-18/0219	ETA-20/0286

Note: Diameter M6 for multiple use for non-structural applications in concrete available on demand.





Through-bolt size range guide

Typical order descriptions

BA-V Plus (Option 1)

Through Bolt BA-V Plus 8/10

Through Bolt BA-E Plus 12/40/20

Through Bolt BA-F Plus 12/85/65

BA-C NC (Option 7)

BA-C 10/10 NC Through Bolt

Thread size	Type	t_{fix}	Length	BA-V Plus	BA-F Plus	BA-E Plus	BA-C-NC
M8	M8x50 (5)*	5	50	-	-	-	•
	M8/10	10	75	•	•	•	•
	M8/30	30	95	•	•	•	•
	M8/50	50	115	•	•	•	•
	M8/85	85	150	•	•	•	-
M10	M10/10/-	10	72	•	•	•	-
	M10/10	10	85	-	-	-	•
	M10/30/10	30/10	92	•	•	•	-
	M10/20	20	95	-	-	-	•
	M10/40/20	40/20	102	•	•	•	-
	M10/30	30	105	-	-	-	•
	M10/50/30	50/30	112	•	•	•	-
	M10/50	50	125	-	-	-	•
	M10/70/50	70/50	132	•	•	•	-
	M10/100/80	100/80	162	•	•	•	-
M12	M12/10/-	10	88	•	•	•	-
	M12/25/5	25/5	103	•	•	•	-
	M12/10	10	110	-	-	-	•
	M12/40/20	40/20	118	•	•	•	-
	M12/20	20	120	-	-	-	•
	M12/30	30	130	-	-	-	•
	M12/70/50	70/50	148	•	•	•	-
	M12/50	50	150	-	-	-	•
	M12/85/65	85/65	163	•	•	•	-
	M12/100/80	100/80	178	•	•	•	-
M16	M16/5	5	123	•	•	•	-
	M16/10	10	135	-	-	-	•
	M16/20	20	138	•	•	•	-
	M16/20	20	145	-	-	-	•
	M16/50	50	168	•	•	•	-
	M16/50	50	175	-	-	-	•
	M16/60	60	178	•	•	•	-

• BA-F Plus: Please request supply times.

* No ETA

Calculation software

EJOT's Anchor-fix dimensioning software is a goto tool to assist designers with pre-planning through to static requirements for critical building projects.

The program was developed for structural engineers, specifiers, engineers and technicians to calculate the load-carrying capacity of anchor bolts in concrete substrates - allowing data to be archived for reference.
In addition, also offers:

- Access to approval documents and product data sheets
- Language options for international use.
- Automatic updates

EJOT Anchor Fix can be downloaded here:
www.ejot.com/software-anchorfix

On site testing and support

When specifying outside of any standard technical parameters our technical team will recommend an on-site test report, carried out by a qualified EJOT engineer.

Whilst we can be sure of the technical performance of our products, no-one can second guess the integrity of substrates. Where high loadings into critical structural areas create potential risk, we want our customers to have absolute peace of mind and confidence in the match between fixing and substrate - and the correct installation process

Important note relating to all data

- Load figures include the partial safety factors as per approvals and a partial safety factor on the action of $\gamma F = 1.4$. Load figures apply for a rebar spacing $s \geq 15$
- If spacings or edge distances become smaller than the characteristic figures ($s_{cr,N}$ / $c_{cr,N}$) a calculation as per EOTA TR 055 needs to be carried out. For more details, see ETAs.
- Concrete is considered non-cracked when the value of tension within the concrete is $\sigma L + \sigma R \leq 0$. In the absence of detailed verification $\sigma R = 3$ N/mm² can be assumed (σL equals the tension within the concrete as a result of external loads, forces on anchor included; σR equals the tension coming from shrinkage or creep of the concrete, as well as displacements of supports or temperature variations).
- Shear load figures apply for an anchor without influence of a concrete edge. For shear loads close to an edge ($c \leq 10 \times h_{ef}$), concrete edge failure has to be checked as per EOTA TR 055.

Static and quasi-static loads

Characteristic resistances

			OPTION 1						OPTION 7				
Anchor size			**M8**	**M10**		**M12**		**M16**	**M8 x 50**	**M8**	**M10**	**M12**	**M16**
Effective anchorage depth h_{ef}		mm	48	40	60	50	70	85	23	43	50	70	85
Non-cracked concrete													
Tensile N_{Rk}	BA-V Plus / BA-F Plus	kN	11.0	12.0	19.0	17.4	25.0	36.0					
	BA-E Plus / BA-E Plus	kN	11.0	12.0	19.0	17.4	25.0	36.0					
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	4.3	11.0	13.0	17.0	22.0
Shear V_{Rk}	BA-V Plus / BA-F Plus	kN	12.6*	20.4*	20.4*	30.0*	30.0*	54.1*					
	BA-E Plus / BA-E Plus	kN	15.8*	20.4*	20.4*	34.4*	34.4*	68.6*					
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	5.4	7.0*	13.0	20.0	34.0
Cracked concrete													
Tensile N_{Rk}	BA-V Plus / BA-F Plus	kN	8.5	8.7	12.2	12.2	16.0	24.0					
	BA-E Plus / BA-E Plus	kN	8.5	8.7	12.2	12.2	16.0	24.0					
Shear V_{Rk}	BA-V Plus / BA-F Plus	kN	12.6*	20.4*	20.4*	34.6	30.0*	54.1*					
	BA-E Plus / BA-E Plus	kN	15.8*	20.4*	20.4*	34.6	34.4*	73.1					
*Failure mode = steel													

Design resistances

			OPTION 1						OPTION 7				
Anchor size			**M8**	**M10**		**M12**		**M16**	**M8 x 50**	**M8**	**M10**	**M12**	**M16**
Effective anchorage depth h_{ef}		mm	48	40	60	50	70	85	23	43	50	70	85
Non-cracked concrete													
Tensile N_{Rd}	BA-V Plus / BA-F Plus	kN	7.3	8.0	12.7	11.6	16.7	24.0	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	7.3	8.0	12.7	11.6	16.7	24.0	-	-	-	-	-
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	2.4	6.1	8.7	9.4	14.7
Shear V_{Rd}	BA-V Plus / BA-F Plus	kN	10.1*	16.3*	16.3*	24.0*	24.0*	43.3*	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	12.6*	16.3*	16.3*	27.5*	27.5*	54.9*	-	-	-	-	-
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	3.6	5.18*	8.68	15.82	22.68
Cracked concrete													
Tensile N_{Rd}	BA-V Plus / BA-F Plus	kN	5.7	5.8	8.0	8.1	10.7	16.0	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	5.7	5.8	8.0	8.1	10.7	16.0	-	-	-	-	-
Shear V_{Rd}	BA-V Plus / BA-F Plus	kN	10.1*	16.3*	16.3*	23.1	24.0*	43.3*	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	12.6*	16.3*	16.3*	23.1	24.0*	48.7	-	-	-	-	-
*Failure mode = steel													

The data of these tables is based on:

Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².

Installation has been done correctly (see page 17).

No influence of edge distances and spacings.

Accordance with minimum base material thickness (see page 16).

Static and quasi-static loads

Recommended loads

			OPTION 1						OPTION 7				
Anchor size			**M8**	**M10**		**M12**		**M16**	**M8 x 50**	**M8**	**M10**	**M12**	**M16**
Effective anchorage depth h_{ef}		mm	48	40	60	50	70	85	23	43	50	70	85
Non-cracked concrete													
Tensile N_{Rk}	BA-V Plus / BA-F Plus	kN	5.2	5.7	9.0	8.3	11.9	17.1	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	5.2	5.7	9.0	8.3	11.9	17.1	-	-	-	-	-
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	1.7	4.4	6.2	6.7	10.5
Shear V_{Rk}	BA-V Plus / BA-F Plus	kN	7.2*	11.7*	11.7*	17.1*	17.1*	30.9*	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	9.0*	11.7*	11.7*	19.7*	19.7*	39.2*	-	-	-	-	-
	BA-C NC (Option 7)	kN	-	-	-	-	-	-	2.6	3.7*	6.2	11.3	16.2
Cracked concrete													
Tensile N_{Rk}	BA-V Plus / BA-F Plus	kN	4.0	4.1	5.7	5.8	7.6	11.4	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	4.0	4.1	5.7	5.8	7.6	11.4	-	-	-	-	-
Shear V_{Rk}	BA-V Plus / BA-F Plus	kN	7.2*	11.7*	11.7*	16.5	17.1*	30.9*	-	-	-	-	-
	BA-E Plus / BA-E Plus	kN	9.0*	11.7*	11.7*	16.5	19.7*	34.8	-	-	-	-	-
*Failure mode = steel													

The data of these tables is based on:

Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².

Installation has been done correctly (see page 17).

No influence of edge distances and spacings.

Accordance with minimum base material thickness (see page 16).

Seismic resistance (Option 1 only - BA-Plus)

Design acc. EOTA TR 045: Performance category C1/C2

Characteristic resistances

			OPTION 1			
Anchor size			**M8 (C1)**	**M10 (C2)**	**M12 (C2)**	**M16 (C2)**
Effective anchorage depth h_{ef}		mm	48	60	70	85
Cracked Concrete						
Tensile $N_{Rk,\,seis}$	BA-V Plus	kN	8.5	2.7	2.8	10.2
	BA-E Plus	kN	8.4	3.2	3.3	11.1
Shear $V_{Rk,\,seis}$	BA-V Plus	kN	4.1*	4.3*	6.9*	15.4*
	BA-E Plus	kN	4.0*	4.7*	7.2*	15.4*

Design resistance

			OPTION 1			
Anchor size			**M8 (C1)**	**M10 (C2)**	**M12 (C2)**	**M16 (C2)**
Effective anchorage depth h_{ef}		mm	48	60	70	85
Cracked Concrete						
Tensile $N_{Rd,\,seis}$	BA-V Plus	kN	5.7	1.8	1.9	6.8
	BA-E Plus	kN	5.6	2.1	2.2	7.4
Shear $V_{Rd,\,seis}$	BA-V Plus	kN	3.2*	3.4*	5.5*	12.3*
	BA-E Plus	kN	3.2*	3.8*	5.8*	12.3*

Recommended loads

			OPTION 1			
Anchor size			**M8 (C1)**	**M10 (C2)**	**M12 (C2)**	**M16 (C2)**
Effective anchorage depth h_{ef}		mm	48	60	70	85
Cracked Concrete						
Tensile $N_{Rec,\,seis}$	BA-V Plus	kN	4.0	1.3	1.3	4.9
	BA-E Plus	kN	4.0	1.5	1.6	5.3
Shear $V_{Rec,\,seis}$	BA-V Plus	kN	2.3*	2.4*	3.9*	8.8*
	BA-E Plus	kN	2.3*	2.7*	4.1*	8.8*

α_{seis} and α_{gap} included as per EOTA TR 045. The values don't consider any filling of the annular gap between the anchor and the fixture
* Failure mode = steel

The data of these tables is based on:

Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².

Installation has been done correctly (see page 17).

No influence of edge distances and spacings.

Accordance with minimum base material thickness (see page 16).

Fire resistance (Option 1 only - BA-Plus)

Characteristic resistances

Anchor size			OPTION 1					
			M8	M10		M12		M16
Effective anchorage depth h_{ef}		mm	48	40	60	50	70	85
R30								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.31	1.82	2.09	3.05	3.05	5.69
	BA-E Plus / BA-E Plus	kN	2.13	1.82	3.00	3.18	4.00	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.31	1.82	2.09	3.05	3.05	5.69
	BA-E Plus / BA-E Plus	kN	2.87	1.82	6.66	3.18	10.25	19.09
R60								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.05	1.66	1.66	2.40	2.40	4.47
	BA-E Plus / BA-E Plus	kN	2.13	1.82	3.00	3.18	4.00	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.05	1.66	1.66	2.40	2.40	4.47
	BA-E Plus / BA-E Plus	kN	2.70	1.82	4.59	3.18	7.07	13.16
R90								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.80	1.24	1.24	1.74	1.74	3.25
	BA-E Plus / BA-E Plus	kN	1.48	1.82	2.52	3.18	3.88	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.80	1.24	1.24	1.74	1.74	3.25
	BA-E Plus / BA-E Plus	kN	1.48	1.82	2.52	3.18	3.88	7.23
R120								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.67	1.02	1.02	1.41	1.41	2.64
	BA-E Plus / BA-E Plus	kN	0.87	1.46	1.48	2.29	2.29	4.26
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.67	1.02	1.02	1.41	1.41	2.64
	BA-E Plus / BA-E Plus	kN	0.87	1.46	1.48	2.29	2.29	4.26
*Failure mode = steel								

The data of these tables is based on:

Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².

Installation has been done correctly (see page 17).

No influence of edge distances and spacings.

Accordance with minimum base material thickness (see page 16).

Fire resistance (Option 1 only - BA-Plus)

Recommended loads

			OPTION 1					
Anchor size			**M8**	**M10**		**M12**		**M16**
Effective anchorage depth h_{ef}		mm	48	40	60	50	70	85
R30								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.31	1.82	2.09	3.05	3.05	5.69
	BA-E Plus / BA-E Plus	kN	2.13	1.82	3.00	3.18	4.00	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.31	1.82	2.09	3.05	3.05	5.69
	BA-E Plus / BA-E Plus	kN	2.87	1.82	6.66	3.18	10.25	19.09
R60								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.05	1.66	1.66	2.40	2.40	4.47
	BA-E Plus / BA-E Plus	kN	2.13	1.82	3.00	3.18	4.00	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	1.05	1.66	1.66	2.40	2.40	4.47
	BA-E Plus / BA-E Plus	kN	2.70	1.82	4.59	3.18	7.07	13.16
R90								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.80	1.24	1.24	1.74	1.74	3.25
	BA-E Plus / BA-E Plus	kN	1.48	1.82	2.52	3.18	3.88	6.00
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.80	1.24	1.24	1.74	1.74	3.25
	BA-E Plus / BA-E Plus	kN	1.48	1.82	2.52	3.18	3.88	7.23
R120								
Tensile $N_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.67	1.02	1.02	1.41	1.41	2.64
	BA-E Plus / BA-E Plus	kN	0.87	1.46	1.48	2.29	2.29	4.26
Shear $V_{Rk\,fi}$	BA-V Plus / BA-F Plus	kN	0.67	1.02	1.02	1.41	1.41	2.64
	BA-E Plus / BA-E Plus	kN	0.87	1.46	1.48	2.29	2.29	4.26
*Failure mode = steel								

The data of these tables is based on:

In the absence of other national regulations the partial safety factor or resistance under fire exposure $\gamma_{M,fi}$ = 1.0 is recommended.

Concrete C20/25, $f_{ck,cube}$ = 25 N/mm².

Installation has been done correctly (see page 17).

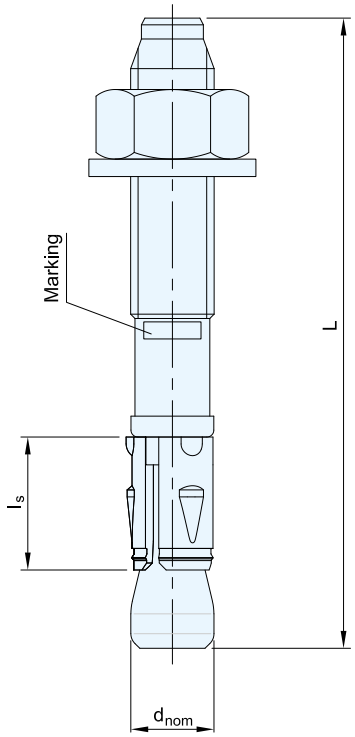
No influence of edge distances and spacings.

Accordance with minimum base material thickness (see page 16).

Material and dimensions

BA-Plus Anchor dimensions (Option 1)

Anchor size			M8	M10	M12	M16
Total length	L	mm	62-420	62-420	78-420	118-420
Sleeve length	L_s	mm	14.8	17.9	19.1	26.0
Bolt body	d_{nom}	mm	8	10	12	16



BA-C NC Anchor dimensions (Option 7)

Anchor size			M8	M10	M12	M16
Total length	L	mm	50-135	85-215	110-	135-
Sleeve length	L_s	mm	14.4	16.5	19.0	23.0
Bolt body	d_{nom}	mm	8	10	12	16

Mechanical properties

				OPTION 1				OPTION 7			
Specifications				**M8**	**M10**	**M12**	**M16**	**M8**	**M10**	**M12**	**M16**
Nominal tensile strength	$f_{uk,\,thread}$	BA-V Plus / BA-F Plus	N/mm^2	700	680	660	660	-	-	-	-
		BA-E Plus / BA-E Plus	N/mm^2	670	680	660	660	-	-	-	-
		BA-C NC (Option 7)	N/mm^2	-	-	-	-	≥550	≥670	≥630	≥600
Char. bending resistance	$M^0_{Rk,s}$	BA-V Plus / BA-F Plus	N/mm	26.3	51	90	219.8	-	-	-	-
		BA-E Plus / BA-E Plus	N/mm	25.1	51	90	214.8	-	-	-	-
		BA-C NC (Option 7)	N/mm					12.0	25.6	45.1	104.4
Design bending resistance	$M_{Rd,s}$	BA-V Plus / BA-F Plus	kN	21.0	40.8	72.0	175.8	-	-	-	-
		BA-E Plus / BA-E Plus	kN	20.1	40.8	72.0	171.8	-	-	-	-
		BA-C NC (Option 7)	kN	-	-	-	-	10.0	17.1	35.8	69.6
Recommended bending resistance	M_{Rec}	BA-V Plus / BA-F Plus	kN	15.0	29.1	51.4	125.6	-	-	-	-
		BA-E Plus / BA-E Plus	kN	14.3	29.1	51.4	122.7	-	-	-	-
		BA-C NC (Option 7)	kN	-	-	-	-	64	12.2	25.6	49.7

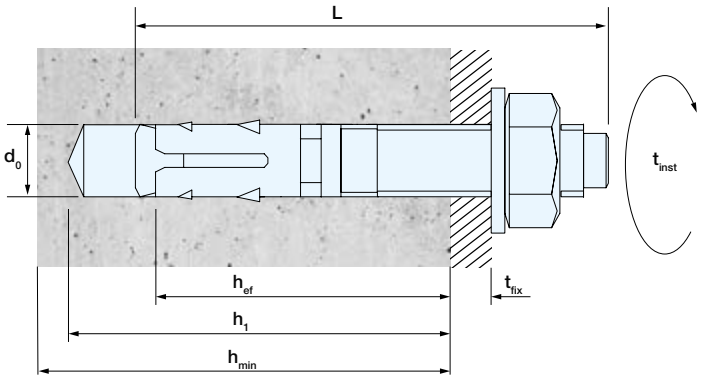
Installation instructions

Installation data

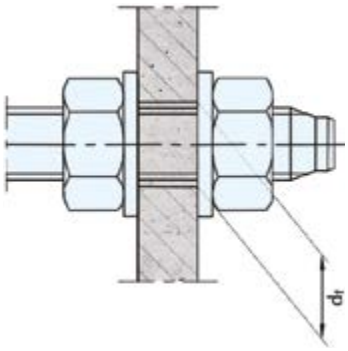
Specifications				OPTION 1				OPTION 7			
				M8	M10	M12	M16	M8	M10	M12	M16
Drill hole diameter	BA-Plus	d_0	mm	8	10	12	16	-	-	-	-
	BA-C NC (Option 7)		mm	-	-	-	-	8	10	12	16
Depth of drilled hole to deepest point	BA-Plus	$h_1 \geq$	mm	60	55 75	70 90	110	-	-	-	-
	BA-C NC (Option 7)		mm	-	-	-	-	63	69	92	109
Effective anchorage depth	BA-Plus	h_{ef}	mm	48	40	50 70	85	-	-	-	-
	BA-C NC (Option 7)		mm	-	-	-	-	43	50	70	85
Nominal anchorage depth	BA-Plus	h_{nom}	mm	53	48 68	61 81	97	-	-	-	-
Diameter of clearance hole in the fixture	BA-Plus	$d_f \geq$	mm	9	12	14	18	-	-	-	-
	BA-C NC (Option 7)		mm	-	-	-	-	9	12	14	18
Width across flats	BA-Plus	SW	mm	13	17	19	24	-	-	-	-
	BA-C NC (Option 7)		mm	-	-	-	-	13	17	19	24
Required torque	BA-V Plus / BA-F Plus	T_{inst}	Nm	15	30	60	110	-	-	-	-
	BA-E Plus / BA-E Plus		Nm	20	45	60	110	-	-	-	-
	BA-C NC (Option 7)		Nm	-	-	-	-	15	30	50	90

Installation methods

Through installation



Distance installation



Product and installed conditions

- L - through-bolt length
- d_0 - nominal drill bit diameter
- h_1 - depth of drill holes to deepest point
- h_{min} - minimum thickness of concrete member
- h_{ef} - effective anchorage depth
- t_{fix} - thickness of fixture

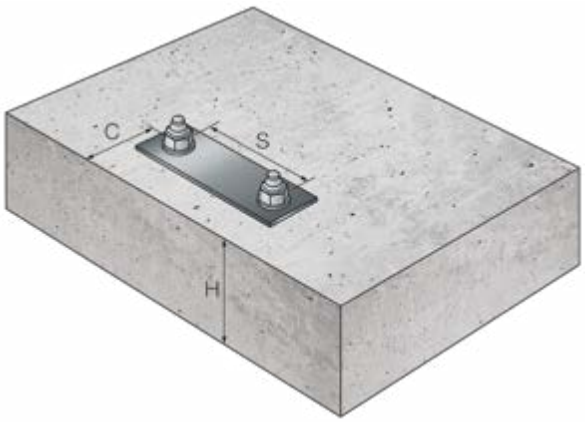
Installation parameters

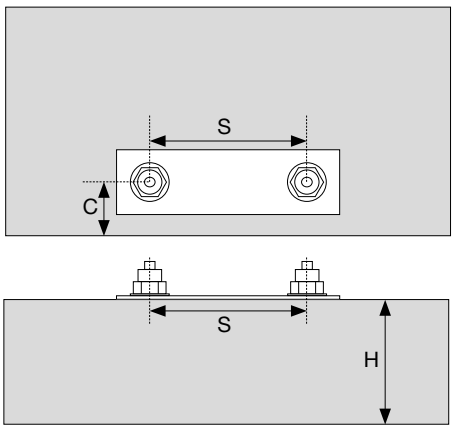
BA-Plus Range (Option 1)

Cracked and non-cracked concrete			Minimum thickness of concrete member, spacing and edge distance					
			M8	M10		M12		M16
Effective anchorage depth	h_{ef}	mm	48	40	60	50	70	85
Minimum thickness of base material	h_{min}	mm	100	100	120	100	140	170
	$h_{min\ red}$	mm	80	-	100	-	-	-
Minimum spacing for h_{min}	s_{min}	mm	35	50	40	55	60	65
	$c \geq$	mm	50	95	60	110	70	95
Minimum edge distance for h_{min}	c_{min}	mm	40	50	50	60	55	65
	$s \geq$	mm	55	190	100	215	110	150
Minimum spacing for $h_{min\text{-}red}$	s_{min}	mm	35	-	40	-	-	-
	$c \geq$	mm	55	-	100	-	-	-
Minimum edge distance for h_{min}	c_{min}	mm	40	-	60	-	-	-
	$S \geq$	mm	60	-	90	-	-	-
Critical spacing for splitting failure and concrete cone failure (in case characteristic loading affects)	$s_{cr,sp}$	mm	192	160	240	200	280	340
	$s_{cr,N}$	mm	144	120	180	150	210	254
Critical edge distance for splitting failure and concrete cone failure (in case characteristic loading affects)	$c_{cr,sp}$	mm	96	80	120	100	140	170
	$c_{cr,N}$	mm	72	60	90	75	105	127

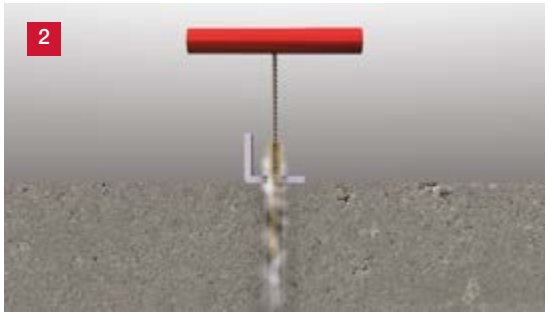
BA-C NC (Option 7)

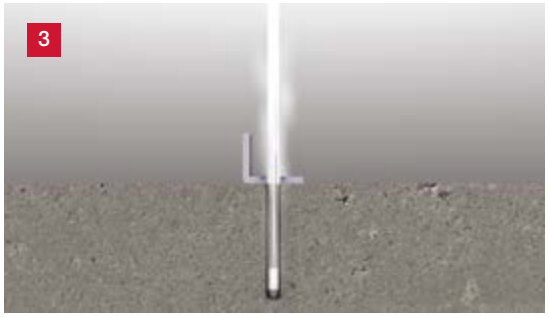
Non-cracked concrete (Option 7)			Minimum thickness of concrete member, spacing and edge distance			
			M8	M10	M12	M16
Effective anchorage depth	h_{ef}	mm	43	50	70	85
Minimum thickness of base material	h_{min}	mm	100	120	150	160
Minimum spacing for h_{min}	s_{min}	mm	50	100	120	140
Minimum edge distance for h_{min}	c_{min}	mm	50	90	100	125





Through-bolt setting instructions





Successful specification of critical fixings and product life performance relies upon correct installation and setting.

This five step best practice guide illustrates the essential stages that should be followed to achieve safe and correct performance.

Details of EJOT's specialist Setting Tool BA can be found with our accessories overview on the following page.

Installation

1. Drill a hole according to the product data.
2. Clean the hole using a metal brush.
3. Remove dust using a blow-out pump.
   Note: Repeat steps 2 & 3 at least three times.
4. Install anchor with a hammer or a setting tool.
5. Tighten the anchor to the specified installation torque.

As a guide to show user benefits and ease of installation of EJOT through-bolt products, you can view our Anchor Bolt installation animation on the EJOT UK YouTube Channel.

youtube.com/EJOTUK

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Installation tools and accessories

With the vast amount of research and development invested into the design and manufacture of all EJOT fastening systems, installation tools are of equal importance in achieving optimised performance and correct function of product.

These tools and accessories have been designed specifically for use with EJOT anchoring products to deliver correct installation features and to maximise efficiency for the installer.

SDS drill bits

Vortex-SDS dust reduction

Metal brushes

EJOT blow-out pump

Setting tool BA

Setting tool BA

Hammering tool to make through-bolt insatllation quicker and smoother

- Original EJOT through-bolts settingh tool with specially designed head that does not damage the top of the anchor and keeps the head from slipping
- Besides ensuring the most efficient and safe through-bolt installation in general, the setting tool also significantly saves time and energy in repetitive installation
- Compatible with all SDS+ drills

Product description:

Setting Tool BA for Through-bolt M6 - M10
Setting Tool BA for Through-bolt M2 - M16

For further information on specific installation accessories visit EJOT online or talk to a member of our technical sales team.

Call 01977 687040 info@ejot.co.uk

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EJOT U.K. Limited,
Hurricane Close,
Sherburn Enterprise Park,
Sherburn-in-Elmet,
Leeds LS25 6PB.
United Kingdom

Tel: 01977 68 70 40
Fax: 01977 68 70 41
Email: info@ejot.co.uk

www.ejot.co.uk

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