

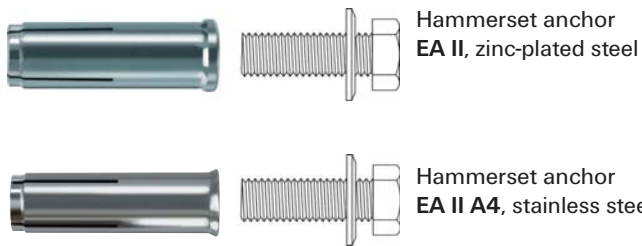


Hammerset anchor EA II

Proven a million times over – now with rim.

High performance
steel anchors

OVERVIEW



Approved for:

- Non-cracked concrete B25 to B55 and C20/25 to C50/60
- Use as (redundant) multiple fixings of non-structural systems in cracked concrete C12/15 to C50/60



Also suitable for:

- Concrete B15
- Natural stone with dense structure



For fixing of:

- Pipelines
- Ventilation pipes
- Sprinkler systems
- Gratings
- Cable trays
- Suspended ceilings



DESCRIPTION

- Hammerset anchor with internal thread for pre-positioned installation.
- When driving in the expansion cone with the impact setting tool EAW H Plus, the anchor sleeve is spread and thus expanded against the drill hole wall.
- Design EA II made from stainless steel A4 for outdoor applications and in wet rooms.

Advantages/benefits

- Maximum load-bearing capacity: the EA II uses the maximum load-bearing capacity of the (non-cracked) concrete. The EA II thus has the maximum possible safety reserves.
- Suitable for all screws or threaded bolts with metric thread.
- Low setting depth reduces drilling time and facilitates cost-effective mounting.
- Surface-flush anchor permits multiple releasing and fixing of the fixture.
- So far common test loadings are no longer necessary.
- Machine setting tool EA II S-SDS for time-saving serial installation.

EA II - ADVANTAGES AT A GLANCE

Simple setting check:

When the hammerset tool EAW H Plus is used for mounting, the EA II is spread apart and the rim is automatically given an easily visible embossing.

The **internal thread** facilitates the use of threaded rods or screws with metric thread.



The **unit of anchor sleeves and inner spread cone** results in maximum load-bearing capacities in non-cracked concrete. The anchor sleeve is forged, making it particularly resistant.

The **moulded rim** prevents the anchor slipping down if the drillhole has been drilled too deeply and ensures that the fixation point looks better.



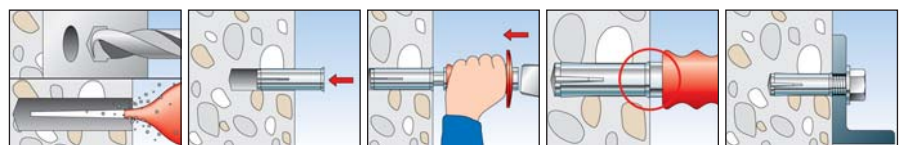
INSTALLATION

Type of installation

- Pre-positioned installation

Installation tips

- When selecting the screw, the minimum and maximum screw-in depth needs to be observed.
- For the fixation of core drilling machines and diamond saws, use the special EA II M 12 D (see page 152) with stronger anchor sleeve or the special fixing device FDBB (see page 168).
- The EA II M 10 x 30 for M 10 thread diameter and reduced drill depth (e.g. because of probable reinforcement hits)
- Type EA II M 8 x 40 with bigger anchorage depth, especially for (single) fixings for them a well-priced M8 thread diameter is sufficient, but a bigger load bearing capacity is needed.



FIXING PRINCIPLES

In detail: The general principles for installation, the correct drilling procedure and much more on page 26.

STANDARDS

You will find everything that has standards on page 34 under the keyword approvals.

REDUNDANT

More information about redundant systems see „Approval specifications for fixings“ page 35.

Hammerset anchor EA II

TECHNICAL DATA

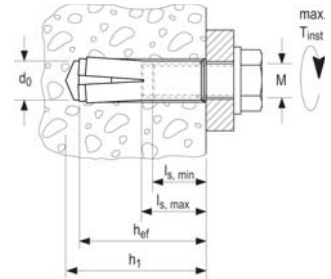


Hammerset anchor **EA II**, zinc-plated steel. **Not suitable for core drilling machines and diamond saws.**



Hammerset anchor **EA II A4**, stainless steel. **Not suitable for core drilling machines and diamond saws.**

Type	Art.-No.	ID approval	drill	min. drill hole depth	effect. anchoring depth	anchor length	thread	min. bolt penetration	max. bolt penetration	Qty. per box
		ETA	d_0	h_1	h_{ef}	l	M	$l_{s, min}$	$l_{s, max}$	pcs.
			[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	
EA II M 6	48264	3	8	32	30	30	M 6	8	12	100
EA II M 8	48284	1	10	33	30	30	M 8	10	13	100
EA II M 8 x 40	48323	7	10	43	40	40	M 8	10	13	50
EA II M 10 x 30	48332	9	12	33	30	30	M 10	12	12	50
EA II M 10	48339	8	12	43	40	40	M 10	12	16	50
EA II M 12	48406	7	15	54	50	50	M 12	14	22	25
EA II M 16	48408	1	20	70	65	65	M 16	18	28	20
EA II M 20	48409	8	24	85	80	80	M 20	23	34	10
EA II M 6 A4	48410	4	8	32	30	30	M 6	8	12	100
EA II M 8 A4	48411	1	10	33	30	30	M 8	10	13	100
EA II M 8 x 40 A4	48412	8	10	43	40	40	M 8	10	13	50
EA II M 10 A4	48414	2	12	43	40	40	M 10	12	16	50
EA II M 12 A4	48415	9	15	54	50	50	M 12	14	22	25
EA II M 16 A4	48416	6	20	70	65	65	M 16	18	28	20
EA II M 20 A4	48417	3	24	85	80	80	M 20	23	34	10
EA II M 6 A4 (1.4571)	45711	5	8	32	30	30	M 6	8	12	100
EA II M 8 A4 (1.4571)	45712	2	10	33	30	30	M 8	10	13	100
EA II M10 A4 (1.4571)	45713	9	12	43	40	40	M 10	12	16	50



Hammerset anchor **EA II M12 D**, zinc-plated steel. **Suitable for core drilling machines and diamond saws.**

Type	Art.-No.	ID	drill	min. drill hole depth	effect. anchoring depth	anchor length	thread	min. bolt penetration	max. bolt penetration	Qty. per box
			d_0	h_1	h_{ef}	l	M	$l_{s, min}$	$l_{s, max}$	pcs.
			[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	
EA II M 12 D	48407	4	16	54	50	50	M 12	12	22	25



Machine setting tool **EA II S-SDS**

Type	Art.-No.	ID	clamping system of hammer drill	fits	Qty. per box
					pcs.
EA II S-SDS 6	1) 48065	6	SDS plus	EA II M6*, EA M 6 N	1
EA II S-SDS 8	1) 48066	3	SDS plus	EA II M 8*, EA M 8 N	1
EA II S-SDS 8 x 40	1) 48067	0	SDS plus	EA II M 8 x 40*	1
EA II S-SDS 10 x 30	1) 48068	7	SDS plus	EA II M 10 x 30	1
EA II S-SDS 10	1) 48070	0	SDS plus	EA II M 10*, EA M 10 N	1
EA II S-SDS 12	1) 48071	7	SDS plus	EA II M 12 D*, EA II M 12, EA M 12 N	1
EA II S-SDS-m 16	1) 48072	4	SDS max	EA II M 16*, EA M 16 N	1
EA II S-SDS-m 20	1) 48073	1	SDS max	EA II M 20*, EA M 20 N	1

1) without embossing tool

* zinc-plated and stainless steel



Setting tool **EAW H Plus** with hand impact protection for your safety and embossing tool.

Type	Art.-No.	ID	fits	Qty. per box
				pcs.
EAW H 6 Plus	44630	0	EA II M6*, EA M 6 N	1
EAW H 8 Plus	44631	7	EA II M 8*, EA M 8 N	1
EAW H 8 x 40 Plus	44632	4	EA II M 8 x 40*	1
EAW H 10 Plus	44633	1	EA II M 10*, EA M 10 N	1
EAW H 10 x 30 Plus	48487	6	EA II M 10 x 30	1
EAW H 12 Plus	44634	8	EA II M 12*, EA II M 12 D, EA M 12 N	1
EAW H 16 Plus	44635	5	EA II M 16*, EA M 16 N	1
EAW H 20 Plus	44636	2	EA II M 20*, EA M 20 N	1

* zinc-plated and stainless steel

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Hammerset anchor EA II with large spacing and edge distance

Anchor type	EA II M6 ⁽²⁾				EA II M8 ⁽²⁾				EA II M8 x 40				EA II M10 x 30 ⁽¹⁾				EA II M10																		
	gvz				A4	gvz				A4	gvz				A4	gvz				A4															
Quality of the used screw	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70										
Effective embedment depth h_{ef} [mm]	30					30					40					30					40														
Drill hole depth $h_1 \geq$ [mm]	32					33					43					33					43														
Nominal drill hole diameter d_0 [mm]	8					10					10					12					12														
Mean ultimate loads N_U and V_U [kN]																																			
Tensile 0° N_U [kN]	8.0*	10.1*	11.1	11.1		11.1				11.1	14.6*				17.1				17.1				11.1				11.1				17.1				17.1
Shear 90° V_U [kN]	4.0*	5.0*	6.8*	7.7*	7.3*		8.6*			9.8*	7.3*				8.6*				9.8*				10.9*				12.4*				10.9*				12.4*
Design resistant loads N_{Rd} and V_{Rd} [kN]																																			
Tensile 0° N_{Rd} [kN]	4.0	5.1	5.5	5.5		5.5				5.5	7.3				8.5				8.5				5.5				5.5				8.5				8.5
Shear 90° V_{Rd} [kN]	2.0	3.0	4.0	5.4	4.5	4.4		5.5			5.5	4.4	5.5	6.9	7.8				5.5				5.5	6.9			8.5				8.5				
Recommended loads N_{rec} and V_{rec} [kN]																																			
Tensile 0° N_{rec} [kN]	2.9	3.6	3.9	3.9		3.9				3.9	5.2				6.1				6.1				3.9				3.9				6.1				6.1
Shear 90° V_{rec} [kN]	1.7	2.1	2.9	3.9	3.2	3.1		3.9			3.9	3.1	3.9	4.9	5.6				3.9				3.9	5.0			6.1				6.1				
Recommended bending moment M_{rec} [Nm]																																			
M_{rec} [Nm]	2.6	3.3	4.3	6.9	5.0	6.4	8.1	10.9	17.1	11.9	6.4	8.1	10.9	17.1	11.9	12.8	15.8	21.1	34.3	23.8	12.8	15.8	21.1	34.3	23.8	12.8	15.8	21.1	34.3	23.8					
Anchor characteristics																																			
Characteristic spacing $s_{cr, N}$ [mm]	= 3 x h_{ef}																																		
Characteristic edge distance $c_{cr, N}$ [mm]	= 1,5 x h_{ef}																																		
Minimum spacing ¹⁾ s_{min} [mm]	65					95					95					85					95														
Minimum edge distance ¹⁾ c_{min} [mm]	115					140					140					140					160														
Minimum structural component thickness h_{min} [mm]	100					100					100					120					120														
Minimum screw penetration depth $min l_s$ [mm]	6					8					8					10					10														
Maximum screw penetration depth $max l_s$ [mm]	13					13					13					13					17														
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	7					9					9					12					12														
Maximum torque $max T_{inst}$ [Nm]	4					8					8					15					15														

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Anchor type	EA II M12				EA II M12 D				EA II M16				EA II M20																	
	gvz				A4	gvz				A4	gvz				A4	gvz				A4										
Quality of the used screw	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70					
Effective embedment depth h_{ef} [mm]	50					50					65					80														
Drill hole depth $h_1 \geq$ [mm]	54					54					70					85														
Nominal drill hole diameter d_0 [mm]	15					16					20					25														
Mean ultimate loads N_U and V_U [kN]																														
Tensile 0° N_U [kN]	23.9					23.9				23.9				35.4				35.4				48.3				48.3				
Shear 90° V_U [kN]	16.9*	19.8*				22.6*	16.9*			21.1*				30.4*	31.3			32.4*				36.9*	49.0*			51.4*				58.6*
Design resistant loads N_{Rd} and V_{Rd} [kN]																														
Tensile 0° N_{Rd} [kN]	11.9					11.9				11.9				17.6				17.6				24.0				24.0				
Shear 90° V_{Rd} [kN]	10.1	11.9				11.9	10.1			11.9				11.9	18.6	23.4		52.6				29.6	29.3	36.5		40.8				47.2
Recommended loads N_{rec} and V_{rec} [kN]																														
Tensile 0° N_{rec} [kN]	8.5					8.5				8.5				12.6				12.6				17.2				17.2				
Shear 90° V_{rec} [kN]	7.2	8.5				8.5	7.2			8.5				8.5	13.3	16.7		18.3				21.1	21.0	26.1		29.1				33.7
Recommended bending moment M_{rec} [Nm]																														
M_{rec} [Nm]	22.2	28.2	37.7	60.0	42.1	22.2	28.2	37.7	60.0	42.1	56.9	71.0	94.9	152.0	106.2	110.8	138.6	185.1	295.4	207.9										
Anchor characteristics																														
Characteristic spacing $s_{cr, N}$ [mm]	= 3 x h_{ef}																													
Characteristic edge distance $c_{cr, N}$ [mm]	= 1,5 x h_{ef}																													
Minimum spacing ¹⁾ s_{min} [mm]	145					142					180					190														
Minimum edge distance ¹⁾ c_{min} [mm]	200					200					240					280														
Minimum structural component thickness h_{min} [mm]	120					120					160					200														
Minimum screw penetration depth $min l_s$ [mm]	12					12					16					20														
Maximum screw penetration depth $max l_s$ [mm]	22					22					28					34														
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	14					14					18					22														
Maximum torque $max T_{inst}$ [Nm]	35					35					60					120														

All values apply for concrete C20/25 without edge or spacing influences.
 Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.
 Recommended loads: material safety factor γ_M and safety factor for load $\gamma_L = 1.4$ are included.

* Steel failure decisive.

¹⁾ For minimum spacing and minimum edge distance the above described loads have to be reduced (See "fischer Technical Handbook" or design software "CC-COMPUFIX")!

²⁾ Use restricted to anchoring of structural components which are statically indeterminate.

Hammerset anchor EA II

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Hammerset anchor EA II for a multiple fixing with large spacing and edge distance

Anchor type	EA II M6					EA II M8					EA II M8 x 40					
	gvz				A4	gvz				A4	gvz				A4	
Quality of the used screw	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	
Effective embedment depth h_{ef} [mm]	30					30					40					
Drill hole depth $h_1 \geq$ [mm]	32					33					43					
Nominal drill hole diameter d_0 [mm]	8					10					10					
Mean ultimate load $F_u^{(1)}$ of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_u [kN]	7,6				7,6	7,6				7,6	11,6				11,6	
Design resistant load F_{Rd} of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_{Rd} [kN]	1,4				1,4	2,3				2,3	2,3				2,3	
Recommended load $F_{rec}^{(1)}$ of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_{rec} [kN]	1,0				1,0	1,7				1,7	1,7				1,7	
Recommended bending moment M_{rec} [Nm]																
M_{rec} [Nm]	2,6	3,3	4,3	6,9	5,0	6,4	8,1	10,9	17,1	11,9	6,4	8,1	10,9	17,1	11,9	
Anchor characteristics																
Characteristic spacing s_{cr} [mm]	90					90					120					
Characteristic edge distance c_{cr} [mm]	45					45					60					
Minimum structural component thickness h_{min1} [mm]	100 ⁽²⁾					100 ⁽²⁾					100 ⁽²⁾					
Minimum spacing ⁽¹⁾ s_{min1} [mm]	65 ⁽²⁾					95 ⁽²⁾					95 ⁽²⁾					
Minimum edge distance ⁽¹⁾ c_{min1} [mm]	115 ⁽²⁾					140 ⁽²⁾					140 ⁽²⁾					
Minimum structural component thickness h_{min2} [mm]	80 ⁽²⁾					80 ⁽²⁾					80 ⁽²⁾					
Minimum spacing ⁽¹⁾ s_{min2} [mm]	200 ⁽²⁾					200 ⁽²⁾					200 ⁽²⁾					
Minimum edge distance ⁽¹⁾ c_{min2} [mm]	150 ⁽²⁾					150 ⁽²⁾					150 ⁽²⁾					
Minimum screw penetration depth $min l_s$ [mm]	6					8					8					
Maximum screw penetration depth $max l_s$ [mm]	13					13					13					
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	7					9					9					
Maximum torque $max T_{inst}$ [Nm]	4					8					8					

Anchor type	EA II M10 x 30					EA II M10					EA II M12					
	gvz				A4	gvz				A4	gvz				A4	
Quality of the used screw	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	4,6	5,6	5,8	8,8	A4-70	
Effective embedment depth h_{ef} [mm]	30					40					50					
Drill hole depth $h_1 \geq$ [mm]	33					43					54					
Nominal drill hole diameter d_0 [mm]	12					12					15					
Mean ultimate load $F_u^{(1)}$ of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_u [kN]	7,6				7,6	11,6				11,6	16,3				16,3	
Design resistant load F_{Rd} of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_{Rd} [kN]	2,3				2,3	3,5				3,5	5,0				5,0	
Recommended load $F_{rec}^{(1)}$ of a single anchor of a multiple fixing without edge influence																
Tension, shear or combined tension and shear F_{rec} [kN]	1,7				1,7	2,5				2,5	3,6				3,6	
Recommended bending moment M_{rec} [Nm]																
M_{rec} [Nm]	12,8	15,8	21,1	34,3	23,8	12,8	15,8	21,1	34,3	23,8	22,2	28,2	37,7	60,0	42,1	
Anchor characteristics																
Characteristic spacing s_{cr} [mm]	90					200					300					
Characteristic edge distance c_{cr} [mm]	45					100					150					
Minimum structural component thickness h_{min1} [mm]	120 ⁽²⁾					120 ⁽²⁾					120 ⁽²⁾					
Minimum spacing ⁽¹⁾ s_{min1} [mm]	85 ⁽²⁾					95 ⁽²⁾					145 ⁽²⁾					
Minimum edge distance ⁽¹⁾ c_{min1} [mm]	140 ⁽²⁾					160 ⁽²⁾					200 ⁽²⁾					
Minimum structural component thickness h_{min2} [mm]	80 ⁽²⁾					80 ⁽²⁾					100 ⁽²⁾					
Minimum spacing ⁽¹⁾ s_{min2} [mm]	200 ⁽²⁾					250 ⁽²⁾					300 ⁽²⁾					
Minimum edge distance ⁽¹⁾ c_{min2} [mm]	150 ⁽²⁾					200 ⁽²⁾					300 ⁽²⁾					
Minimum screw penetration depth $min l_s$ [mm]	10					10					12					
Maximum screw penetration depth $max l_s$ [mm]	13					17					22					
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	12					12					14					
Maximum torque $max T_{inst}$ [Nm]	15					15					35					

All values apply for single anchors of a multiple fixing of a non-structural component in cracked and non-cracked concrete C20/25 to C50/60 without edge or spacing influences.

Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.

Recommended loads: material safety factor γ_M and safety factor for load $\gamma_L = 1.4$ are included.

⁽¹⁾ For minimum spacing and minimum edge distance the above described loads have to be reduced (See European technical approval ETA-07/0142)!

⁽²⁾ The minimum structural component thickness h_{min1} are valid along with the minimum spacing and edge distance s_{min1} bzw. c_{min1} ; the minimum structural component thickness h_{min2} are valid along with the minimum spacing and edge distance s_{min2} bzw. c_{min2} .