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Wedge Anchor FWA

Wedge anchor (bolt anchor) in zinc-plated steel and hot-dipped galvanised steel with A2 clip.



FWA, zinc-plated steel



FWA, hot-dipped galvanised steel with A2-clip

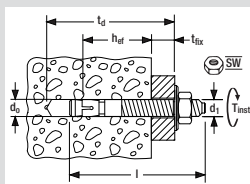


DESCRIPTION

- Anchor bolt for push-through installation.
- When the hexagon nut is tightened, the cone bolt is pulled into the expansion clip and expands it against the hole wall.
- Thread diameter 6 to 20 mm.
- Zinc-plated steel version for indoor use.
- Hot-dipped galvanised version for temporary outdoor use.

Suitable for:

- Non-cracked concrete \geq C20/25.
- Natural stone with dense structure.



Type	Art. No.	Thread	Nominal drill- \emptyset	Max. fixing thickness	Min. fixing thickness	Min. anchorage depth	Max. anchorage depth	Min. drill depth at push-through mode	Total length	Width across flat	Installation torque	Qty. per box
		d_1 M [mm]	d_0 [mm]	$t_{fix} \leq$ [mm]	$t_{fix} \leq$ [mm]	$h_{ef} \geq$ [mm]	$h_{ef} \geq$ [mm]	$t_d \geq$ [mm]	l [mm]	SW [mm]	T_{inst} [Nm]	[pcs.]
Zinc-plated steel												
FWA 6 x 40	45536	6	6	3	-	25	-	40	40	10	7.5	100
FWA 6 x 55	45582	6	6	15	5	25	35	55	55	10	7.5	100
FWA 6 x 70	45598	6	6	30	20	25	35	70	70	10	7.5	100
FWA 6 x 120	502920	6	6	80	60	25	35	120	120	10	7.5	50
FWA 8 x 50	45644	8	8	5	-	25	-	50	50	13	15	50
FWA 8 x 60	502893	8	8	15	-	25	-	60	60	13	15	50
FWA 8 x 65	45788	8	8	20	5	25	40	65	65	13	15	50
FWA 8 x 80	45789	8	8	35	20	25	40	80	80	13	15	50
FWA 8 x 95	45790	8	8	50	35	25	40	95	95	13	15	50
FWA 8 x 120	45791	8	8	75	60	25	40	120	120	13	15	50
FWA 10 x 60	502894	10	10	5	-	30	-	60	60	17	30	50
FWA 10 x 65	45645	10	10	10	-	30	-	65	65	17	30	50
FWA 10 x 80	45792	10	10	25	5	30	50	80	80	17	30	50
FWA 10 x 95	45793	10	10	40	20	30	50	95	95	17	30	50
FWA 10 x 115	45794	10	10	60	40	30	50	115	115	17	30	25
FWA 10 x 130	45646	10	10	75	55	30	50	130	130	17	30	25
FWA 10 x 140	503367	10	10	85	65	30	50	140	140	17	30	25
FWA 10 x 160	503368	10	10	105	85	30	50	160	160	17	30	25
FWA 10 x 180	503369	10	10	115	105	30	50	180	180	17	30	25
FWA 10 x 200	503370	10	10	135	115	30	50	200	200	17	30	25

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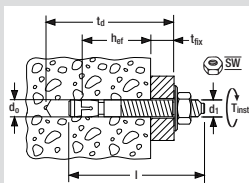
Wedge anchor (bolt anchor) in zinc-plated steel and hot-dipped galvanised steel with A2 clip.

Type	Art. No.	Thread	Nominal drill-Ø		Max. fixing thickness	Min. fixing thickness	Min. anchorage depth	Max. anchorage depth	Min. drill depth at push-through mode	Total length	Width across flat	Installation torque	Qty. per box
			d_j M [mm]	d_o [mm]									
FWA 12 x 80	45647	12	12	10	-	40	-	80	80	19	50	25	
FWA 12 x 100	45648	12	12	30	10	40	60	100	100	19	50	25	
FWA 12 x 120	45795	12	12	50	30	40	60	120	120	19	50	25	
FWA 12 x 150	45796	12	12	80	60	40	60	150	150	19	50	25	
FWA 12 x 160	503371	12	12	90	70	40	60	160	160	19	50	25	
FWA 12 x 180	503372	12	12	110	90	40	60	180	180	19	50	25	
FWA 12 x 200	503373	12	12	130	110	40	60	200	200	19	50	25	
FWA 12 x 220	503374	12	12	150	130	40	60	220	220	19	50	25	
FWA 12 x 240	503377	12	12	170	150	40	60	240	240	19	50	25	
FWA 16 x 105	45649	16	16	15	-	50	-	95	105	24	100	20	
FWA 16 x 125	502921	16	16	35	5	50	80	115	125	24	100	20	
FWA 16 x 140	45798	16	16	50	20	50	80	130	140	24	100	10	
FWA 16 x 180	45799	16	16	90	60	50	80	170	180	24	100	10	
FWA 16 x 200	503379	16	16	110	80	50	80	190	200	24	100	10	
FWA 16 x 240	503380	16	16	150	120	50	80	230	240	24	100	10	
FWA 16 x 300	503381	16	16	190	160	50	80	290	300	24	100	10	
FWA 20 x 160	45800	20	20	40	20	80	100	150	160	30	200	10	
FWA 20 x 200	503382	20	20	80	60	80	100	190	200	30	200	10	
FWA 20 x 220	56133	20	20	100	80	80	100	210	220	30	200	10	
FWA 20 x 240	503383	20	20	120	100	80	100	230	240	30	200	10	
FWA 20 x 300	503387	20	20	160	140	80	100	290	300	30	200	10	
FWA 24 x 200	503388	24	24	50	25	100	125	190	200	36	260	10	
FWA 24 x 250	503389	24	24	100	75	100	125	240	250	36	260	10	
FWA 24 x 300	503390	24	24	150	125	100	125	290	300	36	260	10	
Hot-dipped galvanised steel with A2 clip													
FWA 8 x 65 hdg	502922	8	8	20	5	25	40	65	65	13	15	50	
FWA 8 x 80 hdg	502923	8	8	35	20	25	40	80	80	13	15	50	
FWA 8 x 95 hdg	502924	8	8	50	35	25	40	95	95	13	15	50	
FWA 8 x 120 hdg	502925	8	8	75	60	25	40	120	120	13	15	50	
FWA 10 x 80 hdg	502926	10	10	25	5	30	50	80	80	17	30	50	
FWA 10 x 95 hdg	502927	10	10	40	20	30	50	95	95	17	30	50	
FWA 10 x 115 hdg	502928	10	10	60	40	30	50	115	115	17	30	25	
FWA 10 x 130 hdg	502929	10	10	75	55	30	50	130	130	17	30	25	
FWA 12 x 80 hdg	502972	12	12	10	-	40	-	80	80	19	50	25	
FWA 12 x 100 hdg	502973	12	12	30	10	40	60	100	100	19	50	25	
FWA 12 x 120 hdg	502974	12	12	50	30	40	60	120	120	19	50	25	
FWA 12 x 150 hdg	502975	12	12	80	60	40	60	150	150	19	50	25	
FWA 16 x 105 hdg	502976	16	16	15	-	50	-	95	105	24	100	20	
FWA 16 x 125 hdg	502977	16	16	35	5	50	80	115	125	24	100	20	
FWA 16 x 140 hdg	502978	16	16	50	20	50	80	130	140	24	100	10	
FWA 16 x 180 hdg	502979	16	16	90	60	50	80	170	180	24	100	10	
FWA 20 x 160 hdg	502980	20	20	40	20	80	100	150	160	30	200	10	

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Type	Art. No.	Thread	Nominal drill-Ø	Max. fixing thickness	Min. anchorage depth	Min. drill depth at push-through mode	Anchor length	Width across flat	Installation torque	Qty. per box
		d ₁ UNC [inch]	d ₀ [inch]	t _{fix} ≤ [inch]	h _{gef} ≥ [inch]	t _{ld} ≥ [inch]	l [inch]	SW [inch]	T _{inst} [Nm]	[pcs.]
Zinc-plated steel										
FWA 1/4 x 1-3/4	48934	1/4	1/4	0	1	1 1/2	1 3/4	7/16	7.5	100
FWA 1/4 x 2-1/4	48936	1/4	1/4	3/8	1 1/4	2 1/8	2 1/4	7/16	7.5	100
FWA 1/4 x 3	48937	1/4	1/4	1	1 1/4	2 3/4	3	7/16	7.5	100
FWA 1/4 x 3-1/4	48938	1/4	1/4	1 1/4	1 1/4	3 1/8	3 1/4	7/16	7.5	100
FWA 5/16 x 2	48939	5/16	5/16	0	1 1/4	1 7/8	2	1/2	15	50
FWA 5/16 x 2-3/4	48940	5/16	5/16	5/8	1 3/8	2 5/8	2 3/4	1/2	15	50
FWA 5/16 x 3-1/2	48941	5/16	5/16	1 3/8	1 3/8	3 3/8	3 1/2	1/2	15	50
FWA 5/16 x 5	48942	5/16	5/16	2 7/8	1 3/8	4 7/8	5	1/2	15	50
FWA 3/8 x 2-1/8	48943	3/8	3/8	0	1 3/8	2	2 1/8	9/16	30	50
FWA 3/8 x 2-1/4	48944	3/8	3/8	1/8	1 3/8	2 1/8	2 1/4	9/16	30	50
FWA 3/8 x 2-3/4	48945	3/8	3/8	1/4	1 1/2	2 5/8	2 3/4	9/16	30	50
FWA 3/8 x 3	48946	3/8	3/8	1/2	1 1/2	2 7/8	3	9/16	30	50
FWA 3/8 x 3-1/2	48947	3/8	3/8	1	1 1/2	3 3/8	3 1/2	9/16	30	50
FWA 3/8 x 3-3/4	48948	3/8	3/8	1 1/4	1 1/2	3 5/8	3 3/4	9/16	30	50
FWA 3/8 x 4-1/2	48949	3/8	3/8	2	1 1/2	4 3/8	4 1/2	9/16	30	20
FWA 3/8 x 5	48950	3/8	3/8	2 1/2	1 1/2	4 7/8	5	9/16	30	20
FWA 3/8 x 5-1/2	48951	3/8	3/8	3	1 1/2	5 3/8	5 1/2	9/16	30	20
FWA 1/2 x 2-3/4	48988	1/2	1/2	1/4	1 1/2	2 5/8	2 3/4	3/4	50	20
FWA 1/2 x 3-3/4	48992	1/2	1/2	1/2	2	3 5/8	3 3/4	3/4	50	20
FWA 1/2 x 4	48993	1/2	1/2	3/4	2	3 7/8	4	3/4	50	20
FWA 1/2 x 4-1/4	48995	1/2	1/2	1	2	4 3/8	4 1/4	3/4	50	20
FWA 1/2 x 5-1/2	48996	1/2	1/2	2 1/4	2	5 3/8	5 1/2	3/4	50	20
FWA 1/2 x 6-1/4	48999	1/2	1/2	3	2	4 3/8	6 1/4	3/4	50	20
FWA 1/2 x 7	49013	1/2	1/2	3 3/4	2	6 7/8	7	3/4	50	20
FWA 1/2 x 8-1/2	49020	1/2	1/2	5 1/4	2	8 3/8	8 1/2	3/4	50	10
FWA 1/2 x 10	49021	1/2	1/2	6 3/4	2	9 7/8	10	3/4	50	10
FWA 5/8 x 3-1/2	49022	5/8	5/8	1/4	2	3 3/8	3 1/2	15/16	100	10
FWA 5/8 x 4	49023	5/8	5/8	3/4	2	3 7/8	4	15/16	100	10
FWA 5/8 x 4-1/2	49025	5/8	5/8	1	2	4 3/8	4 1/2	15/16	100	10
FWA 5/8 x 5	49026	5/8	5/8	1	2 1/2	4 7/8	5	15/16	100	10
FWA 5/8 x 6	49031	5/8	5/8	2 1/8	2 1/2	5 7/8	6	15/16	100	10
FWA 5/8 x 7	49043	5/8	5/8	3 1/8	2 1/2	6 7/8	7	15/16	100	10
FWA 5/8 x 8-1/2	49080	5/8	5/8	4 1/2	2 1/2	8 3/8	8 1/2	15/16	100	10
FWA 5/8 x 10	49081	5/8	5/8	6	2 1/2	9 7/8	10	15/16	100	10
FWA 5/8 x 12	49082	5/8	5/8	8	2 1/2	11 7/8	12	15/16	100	10
FWA 5/8 x 15	49083	5/8	5/8	11	2 1/2	14 7/8	15	15/16	100	10
FWA 3/4 x 4-1/4	49084	3/4	3/4	1/4	2 1/2	4 3/8	4 1/4	1 1/8	200	10
FWA 3/4 x 4-3/4	49085	3/4	3/4	1/4	3	4 5/8	4 3/4	1 1/8	200	10
FWA 3/4 x 5-1/2	49086	3/4	3/4	1	3	5 3/8	5 1/2	1 1/8	200	10
FWA 3/4 x 6-1/4	49087	3/4	3/4	1 3/4	3	6 3/8	6 1/4	1 1/8	200	10

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Type	Art. No.	Thread	Nominal drill-Ø	Max. fixing thickness	Min. anchorage depth	Min. drill depth at push-through mode	Anchor length	Width across flat	Installation torque	Qty. per box
		d_f UNC [inch]	d_0 [inch]	t_{fix} ≤ [inch]	h_{ef} ≥ [inch]	t_d ≥ [inch]	l [inch]	SW [inch]	T_{inst} [Nm]	[pcs.]
FWA 3/4 x 7	49088	3/4	3/4	2 1/2	3	6 7/8	7	1 1/8	200	5
FWA 3/4 x 8-1/2	49089	3/4	3/4	4	3	8 3/8	8 1/2	1 1/8	200	5
FWA 3/4 x 10	49095	3/4	3/4	5 1/2	3	9 7/8	10	1 1/8	200	5
FWA 3/4 x 12	49107	3/4	3/4	7 1/2	3	11 7/8	12	1 1/8	200	5
FWA 7/8 x 6	49109	7/8	7/8	1/8	4	5 7/8	6	1 5/16	220	5
FWA 7/8 x 8	49116	7/8	7/8	2 1/8	4	7 7/8	8	1 5/16	220	5
FWA 1 X 6	49120	1	1	0	4	5 7/8	6	1 1/2	240	5
FWA 1 X 9	49122	1	1	3	4	8 7/8	9	1 1/2	240	5

Recommended loads for single anchors of fischer Wedge Anchor FWA with large spacing and edge distance.

Non-cracked concrete																	
Anchor size		M6	M6	M8	M8	M8	M10	M10	M10	M12	M12	M12	M16	M16	M20	M20	
Kind of steel		gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	gvz & hdg	
Effective anchorage depth	$h_{ef} \geq$ [mm]	25*	35	25	30*	40	30	40*	50	40	50*	60	50	65*	80	80*	100
Drill hole diameter	d_0 [mm]	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20
Recommended loads N_{rec} and V_{rec} [kN]																	
Tensile	0° N_{rec} [kN]	1.3	2.1	1.4	1.8	2.8	1.8	2.8	3.8	3.2	4.4	5.8	4.4	6.2	8.5	9.7	13.5
Shear	90° V_{rec} [kN]	1.3	2.1	1.4	1.8	2.8	1.8	2.8	3.8	3.2	4.4	5.8	4.4	6.2	8.5	9.7	13.5
Recommended bending moment M_{rec} [Nm]																	
	M_{rec} [Nm]	1.4	1.4	3.5	3.5	3.5	6.9	6.9	6.9	13.2	13.2	13.2	31.3	31.3	31.3	72.2	72.2
Component dimensions, minimum spacings and edge distances																	
Minimum edge distance	c_{min} [mm]	40	50	40	45	60	45	60	75	60	75	90	75	100	120	120	150
Minimum spacing	s_{min} [mm]	80	100	80	90	120	90	120	150	120	150	180	150	200	240	240	300
Minimum structural component thickness	h_{min} [mm]	100	100	100	100	100	100	100	100	100	100	120	100	130	160	160	200
Clearance-hole in the fixture to be attached ¹⁾	d_f [mm]	7	7	9	9	9	12	12	12	14	14	14	18	18	18	22	22

All load values apply for non-cracked concrete C20/25 without edge and spacing influences.

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

* preferred embedment depth

¹⁾ Values only suitable for pre-positioned installation mode. Using push-through installation 1 mm have to be added.

Installation

