

Bolt anchor MAX

Strong express anchor bolt for a wide range of applications. Approved for concrete, seismic, and fire protection.

Long Description

The Upat express anchor bolt MAX is the master of its class in the realm of bolt anchors. This steel anchor is particularly suitable for fastening medium to heavy loads in cracked and uncracked concrete as well as dense natural stone. The Upat express anchor bolt MAX is commonly used for fastening balcony railings, stair railings and steel beams, for example.

Characteristics

- Certification/Approval: ETA Option 1 cracked concrete, ETA Option 7 uncracked concrete, ETA seismic, fire test, VdS CEA guidelines compliant
- Load Range: Tension load 2.6-23.4 kN, shear load 7.8-60.7 kN
- Material: Stainless Steel (R), zinc plated steel (Zp)
- Variant: Standard, short (K), large washer (GS)
- Feature: Thread M8-M20, usable length 10-300mm
- Accessories: Blow-out pump UPM AB

Applications

- Balcony railings
- Stair railings
- Steel beams
- Support feet
- Bridge railings
- High racks
- Stadium seats
- Beam anchorage
- Façade construction
- Silos

Advantages

- Comprehensive approval package: ETA approval Option 1 for concrete, seismic, as well as fire resistance and sprinkler systems
- High load level: Due to the optimal interaction of expansion clip properties and cone area
- Flexible installation: Variable anchorage depths enable versatile use of the anchor bolts
- Near-edge fastening: The unit of cone and expansion clip allows for minimal edge and axial distances
- Installation-friendly: Shaft with optimized diameter for low insertion energy

Materials

Approved for:

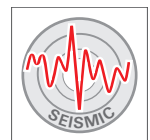
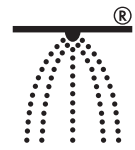
- Concrete C20/25 to C50/60, cracked and uncracked

Also suitable for:

- Concrete C80/95
- Natural stone with dense structure



Steel fixings

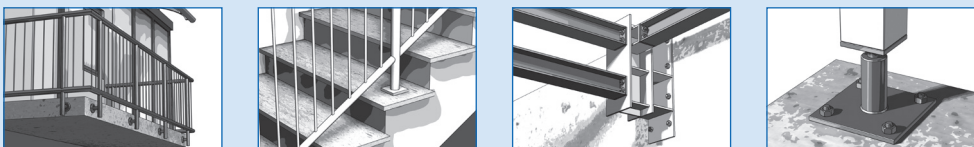


Straight to the product

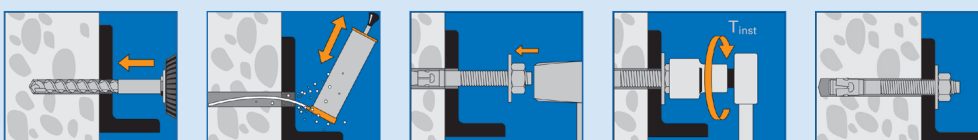


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Application examples



Assembly



Bolt anchor MAX

Product variants

Product	Art.-No. (zp)	Art.-No. (R)	Anchor length	Drill diameter	Thread	Installation torque	Max. usa- ble length $h_{ef,stand}/$ $h_{ef,min.}$	Min. drill hole depth for through fixings	Width across nut	Seismic Approval	Anchoring depth $h_{ef,stand}/$ $h_{ef,min.}$	Fire resistance	ETA approval	VDS approval	Sales unit (zp)	Sales unit (R)
MAX 8/10	509071	508992	75	8	M8	20	10 / 20	65	13	C1	45 / 35	R120	✓	Ja	100	50
MAX 8/30	509072	508993	95	8	M8	20	30 / 40	85	13	C1	45 / 35	R120	✓	Ja	100	50
MAX 8/50	509073	508994	115	8	M8	20	50 / 60	105	13	C1	45 / 35	R120	✓	Ja	100	50
MAX 10/10	508977	508995	95	10	M10	45	10 / 30	85	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 10/20	508978	508996	105	10	M10	45	20 / 40	95	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 10/30	508979	508997	115	10	M10	45	30 / 50	105	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 10/50	508980	508998	135	10	M10	45	50 / 70	125	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 10/80	521265	-	165	10	M10	45	80 / 100	155	17	C1 / C2	60 / 40	R120	✓	Ja	40	-
MAX 10/100	508981	508999	185	10	M10	45	100 / 120	175	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 12/10	508982	509000	110	12	M12	60	10 / 30	100	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/20	508983	509001	120	12	M12	60	20 / 40	110	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/30	508984	509002	130	12	M12	60	30 / 50	120	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/50	508985	509003	150	12	M12	60	50 / 70	140	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/80/180	521266	-	180	12	M12	60	80 / 100	170	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/100	508986	509004	200	12	M12	60	100 / 120	190	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/120/220	512357	-	220	12	M12	60	120 / 140	210	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/160	512358	-	260	12	M12	60	160 / 180	250	19	—	70 / 50	R120	✓	Ja	10	-
MAX 12/200	512359	-	300	12	M12	60	200 / 220	290	19	—	70 / 50	R120	✓	Ja	10	-
MAX 16/25	508987	509005	148	16	M16	110	25 / 45	135	24	C1 / C2	85 / 65	R120	✓	Ja	20	20
MAX 16/50	508988	509006	173	16	M16	110	50 / 70	160	24	C1 / C2	85 / 65	R120	✓	Ja	20	20
MAX 16/100	508989	521268	223	16	M16	110	100 / 120	210	24	C1 / C2	85 / 65	R120	✓	Ja	10	10
MAX 16/160	512361	-	283	16	M16	110	160 / 180	270	24	C1 / C2	85 / 65	R120	✓	Ja	10	-
MAX 16/200	512362	-	323	16	M16	110	200 / 220	310	24	—	85 / 65	R120	✓	Ja	10	-
MAX 16/250	512363	-	373	16	M16	110	250 / 270	360	24	—	85 / 65	R120	✓	Ja	10	-
MAX 16/300	512364	-	423	16	M16	110	300 / 320	410	24	—	85 / 65	R120	✓	Ja	10	-
MAX 20/30	508990	521269	172	20	M20	200	30	155	30	C1 / C2	100	R120	✓	Ja	10	10
MAX 20/60	521267	521270	202	20	M20	200	60	185	30	C1 / C2	100	R120	✓	Ja	10	10
MAX 8/10 GS	535283	535295	75	8	M8	20	10 / 20	65	13	C1	—	R120	✓	Ja	50	50
MAX 8/30 GS	535284	535296	95	8	M8	20	30 / 40	85	13	C1	—	R120	✓	Ja	50	50
MAX 10/10 GS	535285	535297	95	10	M10	45	10 / 30	85	17	C1 / C2	60 / 40	R120	✓	Ja	50	50
MAX 10/30 GS	535286	535298	115	10	M10	45	30 / 50	105	17	C1 / C2	60 / 40	R120	✓	Ja	25	50
MAX 12/10 GS	535287	535299	110	12	M12	60	10 / 30	100	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/10 K GS	535315	-	90	12	M12	60	10	80	19	C1	50	R120	✓	Ja	20	-
MAX 12/20 GS	535288	-	120	12	M12	60	20 / 40	110	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/30 GS	535289	535300	130	12	M12	60	30 / 50	120	19	C1 / C2	70 / 50	R120	✓	Ja	20	20
MAX 12/50 GS	535290	-	150	12	M12	60	50 / 70	140	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/100 GS	535291	-	200	12	M12	60	100 / 120	190	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/120 GS	535292	-	220	12	M12	60	120 / 140	210	19	C1 / C2	70 / 50	R120	✓	Ja	20	-
MAX 12/160 GS	-	535301	260	12	M12	60	160 / 180	250	19	—	70 / 50	R120	✓	Ja	-	20
MAX 16/160 GS	535293	535302	283	16	M16	110	160 / 180	270	24	C1 / C2	85 / 65	R120	✓	Ja	10	4
MAX 16/200 GS	535294	-	323	16	M16	110	200 / 220	310	24	—	85 / 65	R120	✓	Ja	10	-
MAX 10/10 K	535303	535307	75	10	M10	45	10	65	17	C1	40	R120	✓	Ja	50	50
MAX 10/20 K	535304	535308	85	10	M10	45	20	75	17	C1	40	R120	✓	Ja	25	50
MAX 12/10 K	535305	535309	90	12	M12	60	10	80	19	C1	50	R120	✓	Ja	20	20
MAX 12/20 K	535306	535310	100	12	M12	60	20	90	19	C1	50	R120	✓	Ja	20	20
MAX 10/10 K GS	535314*	-	75	10	M10	45	10	65	17	C1	40	R120	✓	Ja	50	-

Stainless steel (R/A4): For fastening outdoors or in damp rooms

Galvanised steel (zp/gvz): For fastening in dry indoor areas

Short (K): The short version of the bolt anchor reduces the drill hole depth and the risk of hitting reinforcement, enabling quick installation while saving costs

Large washer (GS): The large washer protects the surface of the attachment and prevents cutting into wood.

* Note: Available upon request. Not part of the standard product range.

Bolt anchor MAX

Load table

Permissible loads of a single anchor¹⁾ in normal concrete of strength class C20/25

For the design the complete current assessment ETA-10/0170 has to be considered.

Type	Material / surface ²⁾	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Installation torque T_{inst} [Nm]	Cracked concrete				Non-cracked concrete			
					Permissible Tension (N_{perm}), Shear loads (V_{perm}), minimum spacing (s_{min}) and edge distances (c_{min})				Permissible Tension (N_{perm}), Shear loads (V_{perm}), minimum spacing (s_{min}) and edge distances (c_{min})			
					$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{3)}$ [mm]	$c_{min}^{3)}$ [mm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{3)}$ [mm]	$c_{min}^{3)}$ [mm]
MAX 8	zp	35	80	20	2.6	7.8	35	40	4.9	7.8	40	40
	zp	45	90	20	3.8	7.8	35	40	6.7	7.8	40	40
	R	35	80	20	2.6	9.5	35	40	4.9	9.6	40	40
	R	45	90	20	3.8	9.6	35	40	6.7	9.6	40	40
MAX 10	zp	40	90	45	4.1	12.2	40	45	5.9	12.2	40	45
	zp	60	110	45	6.2	12.2	40	45	9.5	12.2	40	45
	R	40	90	45	4.1	13.3	40	45	5.9	15.1	40	45
	R	60	110	45	6.2	15.1	40	45	9.5	15.1	40	45
MAX 12	zp	50	100	60	5.8	17.5	50	55	8.3	17.5	50	55
	zp	70	120	60	9.5	17.5	50	55	10.5	17.5	50	55
	R	50	100	60	5.8	18.6	50	55	8.3	21.9	50	55
	R	70	120	60	9.5	21.9	50	55	10.5	21.9	50	55
MAX 16	zp	65	140	110	8.6	31.4	60	65	12.3	31.4	65	65
	zp	85	140	110	12.9	31.4	60	65	18.4	31.4	65	65
	R	65	140	110	8.6	25.8	60	65	12.3	36.8	65	65
	R	85	140	110	12.9	38.6	60	65	18.4	39.9	65	65
MAX 20	zp	100	170	200	16.4	42.6	95	85	23.4	46.5	95	95
	R	100	170	200	16.4	42.6	95	85	23.4	60.7	95	95

¹⁾ Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$. Accurate data see ETA.

²⁾ Further steel grades, versions and technical data see ETA, e.g. for dry internal conditions, galvanised steel zp; for damp interior stainless steel R and exterior conditions, e.g. material 1.4362, 1.4401.

³⁾ In the case of combinations of tensile and shear loads, bending moments and reduced edge and axial spacings (anchor groups), the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018. We recommend to use our anchor design software DesignFix.