

Injection mortar UPM44

Universal injection mortar for a wide range of applications. Approved for concrete, masonry, seismic, fire protection, and post-installed rebar connections.

Long Description

The two-component vinylsterhybrid chemical anchor injection system UPM 44 is a professional fastening system designed for particularly high loads in all relevant building materials. When used with anchor rods UPM-A/ASTA or internal threaded anchors UPM-I/IST, UPM 44 boasts a comprehensive approval package for chemical fixings in perforated brick, solid brick, concrete, and aerated concrete. Moreover, this injection mortar stands out due to its multitude of approved system components and its approval for reinforcement connections.

Characteristics

- Certification/Approval: ETA Option 1 cracked and uncracked concrete, masonry, post-installed rebar connection, seismic, fire resistance, hammer drilling, hollow drilling, water-filled borehole
- Load range in concrete: Tension load 3.9-150.1kN, Shear load 6-90.2kN
- Load range in masonry: Tension load 0.34-3.43kN, Shear load 0.26-3.28kN
- System component: Anchor rod ASTA/UPM-A, Internal threaded anchor IST/UPM-I, perforated sleeve UPM-SH, concrete reinforcement, commercial threaded rods with 3.1 certificate of compliance
- Temperature in anchoring base: -5°C to +40°C

Applications

- Balcony railings
- Steel beams
- Fire escapes
- Beam anchorage
- Bridge railings
- High racks
- Support feet
- Stair railings
- Roof structures
- Windows

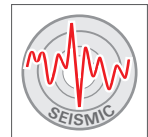
Advantages

- Comprehensive approval package: ETA concrete approval option 1, masonry, retroactive reinforcement connection, seismic and fire protection testing
- High loads: Universal hybrid mortar with high load-bearing capacity thanks to optimised mortar formula
- Carefree working: Suitable for use in water-filled drill holes
- Efficient in perforated bricks: The sieve sleeve for use in perforated brick masonry bridges the plaster and minimises mortar consumption
- Fastening close to edges: The expansion pressure-free fastening allows for small edge and centre distances and prevents installation damage in the edge area

Materials

Approved for:

- Concrete C20/25 to C50/60, cracked and uncracked
- Hollow blocks made of lightweight concrete
- Hollow blocks made of concrete
- Perforated bricks
- Calcium silicate perforated bricks
- Calcium silicate solid bricks
- Aerated concrete
- Solid bricks

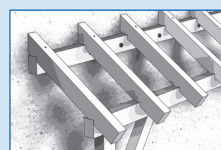
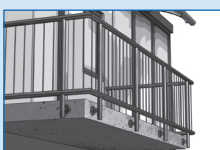


Straight to the product



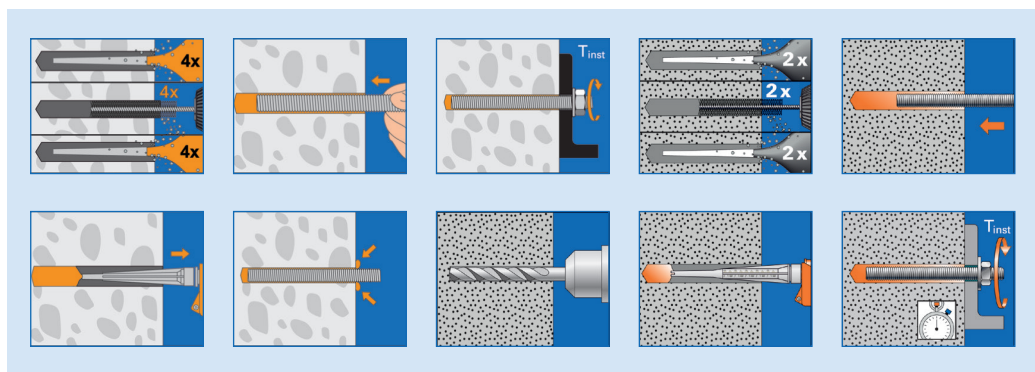
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Application examples



Injection mortar UPM44

Assembly



Product variants

Product	Art-No.	Contents	Content
BOX UPM 44-360*	547553	360	12 x cartridges 360 ml, 24 x static mixers, 1 x metal dispensing gun, 1 x craftsman's case
UPM 44-360 in Craftsman's box (HWK)	000710	360	20 x cartridges 360 ml, 40 x static mixers, 1 x craftsman's case
UPM 44 CX 150	000506	150	1 x cartridge 145 ml, 2 x static mixers
UPM 44 PROFI-BOX	000299	360	5 x cartridges 360 ml, 10 x static mixers, 1 x blow-out pump, 1 x brush set, 1 x professional dispensing gun, 1 x professional case
UPM 44-300	561442	300	1 x cartridge 300 ml, 2 x static mixers
UPM 44-360	000856	360	1 x cartridge 360 ml, 2 x static mixers

Cartridge Pro (360/390 ml): For long storage life and series installation

Cartridge Standard (300 ml): For use with standard caulking guns

Cartridge Compact (150 ml): For individual fastenings

Profi case (Profi Box): For practical transport and professional organisation, with removable inserts and compartments

Craftsman's box (HWK): For safe storage, robust and stackable

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

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Load table

Permissible loads of a single anchor¹⁾ ²⁾ in normal concrete of strength class C20/25.

For the design the complete current assessment ETA-02/0022 has to be considered.

Type	Material / surface ³⁾	Effective anchor- ogedepth h_{ef} [mm]	Minimum- member- thickness h_{min} [mm]	Maximum in- stallation- torque $T_{inst,max}$ [Nm]	Cracked concrete				Non-cracked concrete			
					Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
					$N_{perm}^{4)}$ [kN]	$V_{perm}^{4)}$ [kN]	$s_{min}^{4)}$ [mm]	$c_{min}^{4)}$ [mm]	$N_{perm}^{4)}$ [kN]	$V_{perm}^{4)}$ [kN]	$s_{min}^{4)}$ [mm]	$c_{min}^{4)}$ [mm]
UPM-A/ASTA M8	5.8	60	100	10	3.9	6.3	40	40	7.9	6.3	40	40
UPM-A/ASTA M8	5.8	80	110	10	5.3	6.3	40	40	9	6.3	40	40
UPM-A/ASTA M8	5.8	160	190	10	9	6.3	40	40	9	6.3	40	40
UPM-A/ASTA M8	R-70	60	100	10	3.9	6	40	40	7.9	6	40	40
UPM-A/ASTA M8	R-70	80	110	10	5.3	6	40	40	9.9	6	40	40
UPM-A/ASTA M8	R-70	160	190	10	9.9	6	40	40	9.9	6	40	40
UPM-A/ASTA M10	5.8	60	100	20	5.4	9.7	45	45	9.9	9.7	45	45
UPM-A/ASTA M10	5.8	90	120	20	8.1	9.7	45	45	13.8	9.7	45	45
UPM-A/ASTA M10	5.8	200	230	20	13.8	9.7	45	45	13.8	9.7	45	45
UPM-A/ASTA M10	R-70	60	100	20	5.4	9.2	45	45	9.9	9.2	45	45
UPM-A/ASTA M10	R-70	90	120	20	8.1	9.2	45	45	14.8	9.2	45	45
UPM-A/ASTA M10	R-70	200	230	20	15.7	9.2	45	45	15.7	9.2	45	45
UPM-A/ASTA M12	5.8	70	100	40	7.5	14.3	55	55	13.7	14.3	55	55
UPM-A/ASTA M12	5.8	110	140	40	11.8	14.3	55	55	20.5	14.3	55	55
UPM-A/ASTA M12	5.8	240	270	40	20.5	14.3	55	55	20.5	14.3	55	55
UPM-A/ASTA M12	R-70	70	100	40	7.5	13.7	55	55	13.7	13.7	55	55
UPM-A/ASTA M12	R-70	110	140	40	11.8	13.7	55	55	21.7	13.7	55	55
UPM-A/ASTA M12	R-70	240	270	40	22.5	13.7	55	55	22.5	13.7	55	55
UPM-A/ASTA M16	5.8	80	120	60	11.5	23	65	65	16.8	26.9	65	65
UPM-A/ASTA M16	5.8	125	170	60	18	26.9	65	65	29.9	26.9	65	65
UPM-A/ASTA M16	5.8	320	360	60	37.6	26.9	65	65	37.6	26.9	65	65
UPM-A/ASTA M16	R-70	80	120	60	11.5	23	65	65	16.8	25.2	65	65
UPM-A/ASTA M16	R-70	125	170	60	18	25.2	65	65	29.9	25.2	65	65
UPM-A/ASTA M16	R-70	320	360	60	42	25.2	65	65	42	25.2	65	65
UPM-A/ASTA M20	5.8	90	140	120	14	28	85	85	20	40	85	85
UPM-A/ASTA M20	5.8	170	220	120	28	42.3	85	85	48.3	42.3	85	85
UPM-A/ASTA M20	5.8	400	450	120	58.6	42.3	85	85	58.6	42.3	85	85
UPM-A/ASTA M20	R-70	90	140	120	14	28	85	85	20	39.4	85	85
UPM-A/ASTA M20	R-70	170	220	120	28	39.4	85	85	48.3	39.4	85	85
UPM-A/ASTA M20	R-70	400	450	120	65.7	39.4	85	85	65.7	39.4	85	85
UPM-A/ASTA M24	5.8	96	160	150	15.4	30.8	105	105	22	44.1	105	105
UPM-A/ASTA M24	5.8	210	270	150	33.9	60.6	105	105	67.9	60.9	105	105
UPM-A/ASTA M24	5.8	480	540	150	77.6	60.6	105	105	84.3	60.9	105	105
UPM-A/ASTA M24	R-70	96	160	150	15.4	30.8	105	105	22	44.1	105	105
UPM-A/ASTA M24	R-70	210	270	150	33.9	56.8	105	105	67.9	56.8	105	105
UPM-A/ASTA M24	R-70	480	540	150	77.6	56.8	105	105	94.3	56.8	105	105
UPM-A/ASTA M30	5.8	120	190	300	21.5	43.1	140	140	30.8	61.6	140	140
UPM-A/ASTA M30	5.8	280	350	300	50.3	96	140	140	106.8	96	140	140
UPM-A/ASTA M30	5.8	600	670	300	107.7	96	140	140	133.8	96	140	140
UPM-A/ASTA M30	R-70	120	190	300	21.5	43.1	140	140	30.8	61.6	140	140
UPM-A/ASTA M30	R-70	280	350	300	50.3	90.2	140	140	106.8	90.2	140	140
UPM-A/ASTA M30	R-70	600	670	300	107.7	90.2	140	140	150.1	90.2	140	140

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⁾ The specified loads are valid for anchorages in dry and damp concrete. For temperatures in the anchoring substrate up to 50 °C (resp. short term up to 80 °C). Drill hole cleaning as per specification in the ETA. The factor Ψ_{sus} for sustained load was taken into account with 1.0.

³⁾ Further steel grades, versions and technical data see ETA, e.g. for dry internal conditions, galvanised steel (zp/gvz); for damp interiors and for outdoor use, stainless steel (R).

⁴⁾ In the case of combinations of tension and shear loads, bending moments with reduced or minimum spacing and edge distances (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 using our anchor design software DesignFIX.

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Load table

Permissible loads of a single anchor¹⁾ ²⁾ in normal concrete of strength class C20/25.

For the design the complete current assessment ETA-02/0022 has to be considered.

Type	Screw Material ³⁾	Effective anchor- ogedepth	Minimummember thickness	MaximumInstallation- torque	Permissible tension (N_{perm}) and shear loads (V_{perm}), minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
		h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	$N_{perm}^{4)}$ [kN]	$V_{perm}^{4)}$ [kN]	$s_{min}^{4)}$ [mm]	$c_{min}^{4)}$ [mm]
IST M8	5.8	90	120	10	9,0	5,3	55	55
IST M8	8.8	90	120	10	13,8	8,3	55	55
IST M8	R-70	90	120	10	9,9	5,9	55	55
IST M10	5.8	90	130	20	13,8	8,3	65	65
IST M10	8.8	90	130	20	19,0	13,3	65	65
IST M10	R-70	90	130	20	15,7	9,3	65	65
IST M12	5.8	125	170	40	20,5	12,1	75	75
IST M12	8.8	125	170	40	23,8	19,3	75	75
IST M12	R-70	125	170	40	22,5	13,5	75	75
IST M16	5.8	160	210	80	35,7	22,4	95	95
IST M16	8.8	160	210	80	35,7	35,8	95	95
IST M16	R-70	160	210	80	35,7	25,1	95	95
IST M20	5.8	200	260	120	54,8	35,4	125	125
IST M20	8.8	200	260	120	54,8	42,9	125	125
IST M20	R-70	200	260	120	54,8	39,4	125	125

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⁾ The specified loads are valid for anchorages in dry and damp concrete. For temperatures in the anchoring substrate up to 50 °C (resp. short term up to 80 °C). Drill hole cleaning as per specification in the ETA. The factor Ψ_{sus} for sustained load was taken into account with 1.0.

³⁾ Further steel grades, versions and technical data see ETA, e.g. for dry internal conditions, galvanised steel (zp/gvz); for damp interiors and for outdoor use, stainless steel (R).

⁴⁾ In the case of combinations of tension and shear loads, bending moments with reduced or minimum spacing and edge distances (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 using our anchor design software DesignFiX.

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Load table

Permissible loads¹⁾ 2) for a single anchor in masonry for pre-positioned installation.

For the design the complete current assessment ETA-15/0555 has to be considered.

Type	Compressive brick strength f_b [N/mm ²]	Brick raw density ρ [kg/dm ³]	Minimum brick dimensions ³⁾ (L x B x H) [mm]	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Maximum installation torque $T_{inst. max}$ [Nm]	Permissible tensile load ⁴⁾ N_{perm} [kN]	Permissible shear load ⁴⁾ V_{perm} [kN]	Minimum spacing ⁵⁾ $s_{min} \parallel / s_{min} \perp$ [mm]	Characteristic resp. minimum edge distance ⁵⁾ $c_{cr} = c_{min}$ [mm]
Solid brick Mz, NF, acc. to EN 771-1										
M6	≥ 12	³ 1,8	240 x 115 x 71	³ 50	115	4	1,14	0,71	240 / 75	100
M8	≥ 12	³ 1,8	240 x 115 x 71	³ 50	115	10	1,14	0,71	240 / 75	100
M10	≥ 12	³ 1,8	240 x 115 x 71	80	115	10	1,42	1,14	240 / 75	100
M10	≥ 12	³ 1,8	240 x 115 x 71	200	240	10	3,43	2,43	240 / 75	100
M12	≥ 12	³ 1,8	240 x 115 x 71	80	115	10	1,57	1,14	240 / 75	100
M12	≥ 12	³ 1,8	240 x 115 x 71	200	240	10	2,29	3,28	240 / 75	100
Solid sand-lime brick KS, acc. to EN 771-2										
M6	³ 12	³ 1,8	240 x 115 x 71	50	115	3	1,14	0,42	80 / 150	60
M6	³ 12	³ 1,8	240 x 115 x 71	100	115	3	1,57	0,89	80 / 300	60
M8	³ 12	³ 1,8	240 x 115 x 71	50	115	5	1,14	0,42	80 / 150	60
M8	³ 12	³ 1,8	240 x 115 x 71	100	115	5	2,29	0,89	80 / 300	60
M10	³ 12	³ 1,8	240 x 115 x 71	100	115	15	1,57	0,57	80 / 300	60
M10	³ 12	³ 1,8	240 x 115 x 71	200	240	15	3,42	0,57	80 / 600	60
M12	³ 12	³ 1,8	240 x 115 x 71	100	115	15	1,28	0,57	80 / 300	60
M12	³ 12	³ 1,8	240 x 115 x 71	200	240	15	3,42	0,57	80 / 600	60
M16	³ 12	³ 1,8	240 x 115 x 71	100	115	25	1,57	0,57	80 / 300	60
M16	³ 12	³ 1,8	240 x 115 x 71	200	240	25	3,42	0,57	80 / 600	60
Vertically perforated brick Hlz, acc. to EN 771-1³⁾										
M6 / M8 with UPM-SH 12x85 K	³ 12	³ 1,0	370 x 240 x 237	85	240	2	0,34	0,43	100 / 100	100
M8 / M10 with UPM-SH 16x130 K	³ 12	³ 1,0	370 x 240 x 237	130	240	2	0,86	0,57	100 / 100	100
M12 / M16 with UPM-SH 20x130 K	³ 12	³ 1,0	370 x 240 x 237	130	240	2	1,14	0,57	100 / 100	100
Perforated sand-lime brick KSL, acc. to EN 771-2³⁾										
M6 / M8 with UPM-SH 12x85 K	³ 12	≥ 1,4	240 x 175 x 113	85	175	2	0,71	0,71	100 / 115	60
M8 / M10 with UPM-SH 16x130 K	³ 12	≥ 1,4	240 x 175 x 113	130	175	2	1,00	1,29	100 / 115	80
M12 / M16 with UPM-SH 20x85 K	³ 12	≥ 1,4	240 x 175 x 113	85	175	2	1,00	1,14	100 / 115	80
Lightweight concrete hollow block Hbl, acc. EN 771-3³⁾										
M6 / M8 with UPM-SH 12x85 K	³ 2	³ 1,0	362 x 240 x 240	85	240	2	0,43	0,26	100 / 240	60
M6 / M8 with UPM-SH 12x85 K	³ 4	³ 1,0	362 x 240 x 240	85	240	2	0,86	0,57	100 / 240	60
M8 / M10 with UPM-SH 16x85 K	³ 2	³ 1,0	362 x 240 x 240	85	240	2	0,43	0,26	100 / 240	60
M8 / M10 with UPM-SH 16x85 K	³ 4	³ 1,0	362 x 240 x 240	85	240	2	0,86	0,57	100 / 240	60
M12 / M16 with UPM-SH 20x200 K	³ 2	³ 1,0	362 x 240 x 240	200	240	2	0,71	0,26	100 / 240	60
M12 / M16 with UPM-SH 20x200 K	³ 4	³ 1,0	362 x 240 x 240	200	240	2	1,57	0,57	100 / 240	60
Aerated concrete acc. to EN 771-4⁶⁾										
M8	³ 2	³ 0,35	-	100	130	1	0,54	0,43	250 / 250	100
M8	³ 4	³ 0,50	-	200	230	8	1,07	0,71	80 / 80	100
M10	³ 2	³ 0,35	-	100	130	2	0,54	0,43	250 / 250	100
M10	³ 4	³ 0,50	-	200	230	12	1,79	0,71	80 / 80	100
M12	³ 2	³ 0,35	-	100	130	2	0,71	0,54	250 / 250	100
M12	³ 4	³ 0,50	-	200	230	16	1,79	0,71	80 / 80	100
M16	³ 2	³ 0,35	-	100	130	2	0,71	0,43	250 / 250	100
M16	³ 4	³ 0,50	-	200	230	20	1,79	0,71	80 / 80	100

¹⁾ The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered. Load values are valid for zinc-plated steel, stainless steel R and highly corrosion resistant steel HCR. In perforated bricks and hollow blocks threaded rod UPM-A/ASTA in combination with perforated sleeve UPM-SH.

²⁾ The given loads are valid for installation and use of fixations in dry masonry - use category d/d - for temperatures in the substrate up to 50 °C (resp. short term up to 80 °C) and drill hole cleaning according to assessment. The given brick types in combination with the permissible loads are an extract of the assessment.

³⁾ More information about, e.g. hole patterns, assortment of perforated sleeves UPM-SH see assessment.

⁴⁾ 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 assessment.

⁵⁾ Minimum feasible spacing resp. edge distance. Details as well as to the distances to joints see assessment.

⁶⁾ Cylindrical drill hole.