

Injection mortar UPM33

Cost-effective injection system for standard fixings. Approved for concrete, masonry, and fire protection.

Long Description

The economical injection mortar for standard fastenings. Suitable for concrete, solid and perforated building materials. For medium and high loads. Approved for concrete, masonry and fire protection. Available product variants Standard and 'fast-curing' (Express). Selectable product features Cartridge size 410/360/300/150 ml. Additional system components Anchor rods (UPM-A/ASTA) or internal thread anchors (UPM-I/IST). Used in push-through or through-hole installation. Characterised by secure anchoring, fastening close to the edge and efficiency in hollow bricks. Used, for example, for fastening steel beams, roof structures and canopies.

Characteristics

- Certification/Approval: ETA Option 1 cracked and uncracked concrete, masonry, fire resistance, hammer drilling
- Suitable for: Hollow drilling, water-filled borehole
- Load range in concrete: Tension load 3.4-150.1kN, Shear load 2.9-90.2kN
- Load range in masonry: Tension load 0.54-3.43kN, Shear load 0.43-3.29kN
- System component: Anchor rod ASTA/UPM-A, internal threaded anchor IST/UPM-I, perforated sleeve UPM-SH, commercial threaded rods with 3.1 certificate of compliance
- Variant: Standard, rapid-curing (Express)
- Temperature in anchoring base: -15°C to +40°C

Applications

- Steel beams
- Roof structures
- Canopy
- Carport
- Balcony railings
- Stair railings
- Bridge railings
- Beam anchorage
- Windows
- Façade construction

Advantages

- Secure anchoring: ETA approval for cracked concrete, ETA approval for masonry and fire protection testing
- Fastening close to edges: The expansion pressure-free fastening allows for small edge and centre distances and prevents installation damage in the edge area
- Efficiency in perforated bricks: The sieve sleeve for use in perforated brick masonry bridges the plaster and minimises mortar consumption
- Flexible working: By changing the static mixer, opened cartridges can be reused
- Fast-curing (Express): For a shorter curing time and fastenings at low temperatures

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

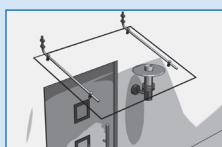
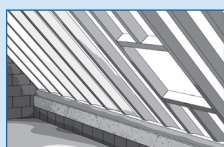


Straight to the product



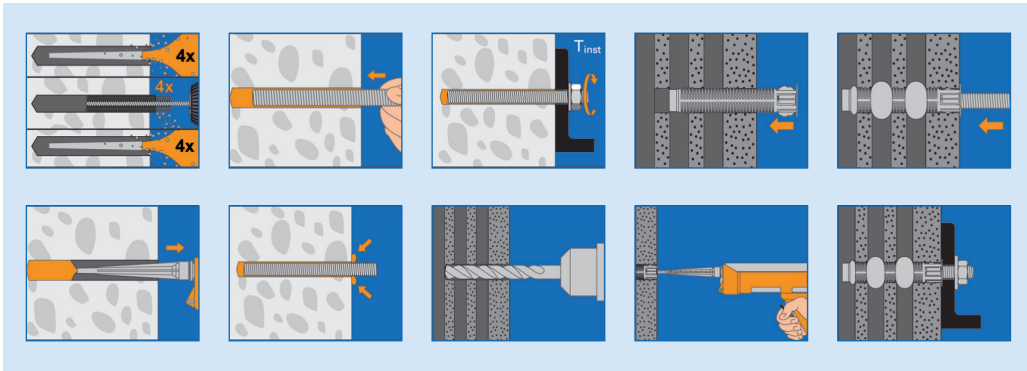
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Application examples



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Assembly



Product variants

Product	Art-No.	Shelf live [months]	Availability in countries	Content
UPM 33-360	509167	18	DE, EN, CS, SV, DA, SK	1 x cartridge 360 ml, 2 x static mixers
UPM 33-300	509168	12	DE, EN, CS, SV, DA, SK	1 x cartridge 300 ml, 2 x static mixers
UPM 33-150 CX	542403*	12	DE, EN, CS, SV, SK	1 x cartridge 145 ml, 2 x static mixers
UPM 33-410	578146	18	ES, PT, IT	1 x cartridge 410 ml, 2 x static mixers
UPM 33-300	578145	12	ES, PT, IT	1 x cartridge 300 ml, 2 x static mixers
UPM 33-360 Starter Box	572989	18		5 x 509167 injection mortar UPM 33x360, 1 x 551767 steel brush UP BS ø12, 1 x 551769 steel brush UP BS ø16/18, 1 x 001177 blow-out pump UPM AB, 1 x 512604 metal dispensing gun UPM AM
UPM 33-300 Starter Box	572990*	12		5 x 509168 injection mortar UPM 33-300, 1 x 551767 steel brush UP BS ø12, 1 x 551769 steel brush UP BS ø16/18, 1 x 001177 blow-out pump UPM AB, 1 x 512604 dispensing device metal UPM AM
BOX UPM 33-360	547535	18	DE, EN, CS, SV, DA, SK	12 x cartridges 360 ml, 24 x static mixers, 1 x professional dispensing gun, 1 x craftsman's case
BOX UPM 33-300	547524	12	DE, EN, CS, SV, DA, SK	17 x cartridges 300 ml, 34 x static mixers, 1 x professional dispensing gun, 1 x craftsman's case
UPM 33-360 HWK	512207	18	DE, EN, CS, SV, DA, SK	20 x cartridges 360 ml, 40 x static mixers, 1 x craftsman's case
UPM 33 Express 360	520257	18		1 x cartridge 360 ml, 2 x static mixers
UPM 33 Express 300	520256	12		1 x cartridge 300 ml, 2 x static mixers
UPM 33-360 Express HWK	551937*	18		20 x cartridges 360 ml, 40 x static mixers, 1 x craftsman's case

Cartridge Pro (360/410 ml): For long shelf life and series installation

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

Compact cartridge (150 ml): For individual fastenings

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 anchor^{1) 2)} in normal concrete of strength class C20/25.
For the design the complete current assessment ETA-10/0171 has to be considered.

Type	Material / surface ³⁾	Effective anchor-depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Maximum installation-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 M6	5.8	50	100	5	-	-	-	-	3.4	2.9	40	40
UPM-A/ASTA M6	5.8	60	100	5	-	-	-	-	4	2.9	40	40
UPM-A/ASTA M6	5.8	72	110	5	-	-	-	-	4.8	2.9	40	40
UPM-A/ASTA M6	R-70	50	100	5	-	-	-	-	3.4	3.2	40	40
UPM-A/ASTA M6	R-70	60	100	5	-	-	-	-	4	3.2	40	40
UPM-A/ASTA M6	R-70	72	110	5	-	-	-	-	4.8	3.2	40	40
UPM-A/ASTA M8	5.8	60	100	10	-	-	-	-	6.6	5.1	40	40
UPM-A/ASTA M8	5.8	80	110	10	-	-	-	-	8.8	5.1	40	40
UPM-A/ASTA M8	5.8	160	190	10	-	-	-	-	9	5.1	40	40
UPM-A/ASTA M8	R-70	60	100	10	-	-	-	-	6.6	6	40	40
UPM-A/ASTA M8	R-70	80	110	10	-	-	-	-	8.8	6	40	40
UPM-A/ASTA M8	R-70	160	190	10	-	-	-	-	9.9	6	40	40
UPM-A/ASTA M10	5.8	60	100	20	4.5	8.6	45	45	8.2	8.6	45	45
UPM-A/ASTA M10	5.8	90	120	20	6.7	8.6	45	45	12.3	8.6	45	45
UPM-A/ASTA M10	5.8	200	230	20	13.8	8.6	45	45	13.8	8.6	45	45
UPM-A/ASTA M10	R-70	60	100	20	4.5	9.2	45	45	8.2	9.2	45	45
UPM-A/ASTA M10	R-70	90	120	20	6.7	9.2	45	45	12.3	9.2	45	45
UPM-A/ASTA M10	R-70	200	230	20	15	9.2	45	45	15.7	9.2	45	45
UPM-A/ASTA M12	5.8	70	100	40	6.3	12	55	55	11.4	12	55	55
UPM-A/ASTA M12	5.8	110	140	40	9.9	12	55	55	18.1	12	55	55
UPM-A/ASTA M12	5.8	240	270	40	20.5	12	55	55	20.5	12	55	55
UPM-A/ASTA M12	R-70	70	100	40	6.3	13.7	55	55	11.4	13.7	55	55
UPM-A/ASTA M12	R-70	110	140	40	9.9	13.7	55	55	18.1	13.7	55	55
UPM-A/ASTA M12	R-70	240	270	40	21.5	13.7	55	55	22.5	13.7	55	55
UPM-A/ASTA M16	5.8	80	120	60	9.6	22.3	65	65	14	22.3	65	65
UPM-A/ASTA M16	5.8	125	170	60	15	22.3	65	65	24.9	22.3	65	65
UPM-A/ASTA M16	5.8	320	360	60	37.6	22.3	65	65	37.6	22.3	65	65
UPM-A/ASTA M16	R-70	80	120	60	9.6	23	65	65	14	25.2	65	65
UPM-A/ASTA M16	R-70	125	170	60	15	25.2	65	65	24.9	25.2	65	65
UPM-A/ASTA M16	R-70	320	360	60	38.3	25.2	65	65	42	25.2	65	65
UPM-A/ASTA M20	5.8	90	140	120	11.7	28	85	85	16.7	34.9	85	85
UPM-A/ASTA M20	5.8	170	220	120	23.3	34.9	85	85	40.3	34.9	85	85
UPM-A/ASTA M20	5.8	400	450	120	54.9	34.9	85	85	58.6	34.9	85	85
UPM-A/ASTA M20	R-70	90	140	120	11.7	28	85	85	16.7	39.4	85	85
UPM-A/ASTA M20	R-70	170	220	120	23.3	39.4	85	85	40.3	39.4	85	85
UPM-A/ASTA M20	R-70	400	450	120	54.9	39.4	85	85	65.7	39.4	85	85
UPM-A/ASTA M24	5.8	96	160	150	-	-	-	-	18.4	44.1	105	105
UPM-A/ASTA M24	5.8	210	270	150	-	-	-	-	56.5	50.9	105	105
UPM-A/ASTA M24	5.8	480	540	150	-	-	-	-	84.3	50.9	105	105
UPM-A/ASTA M24	R-70	96	160	150	-	-	-	-	18.4	44.1	105	105
UPM-A/ASTA M24	R-70	210	270	150	-	-	-	-	56.5	56.8	105	105
UPM-A/ASTA M24	R-70	480	540	150	-	-	-	-	94.3	56.8	105	105
UPM-A/ASTA M30	5.8	120	190	300	-	-	-	-	25.7	61.6	140	140
UPM-A/ASTA M30	5.8	280	350	300	-	-	-	-	89	80.6	140	140
UPM-A/ASTA M30	5.8	600	670	300	-	-	-	-	133.8	80.6	140	140
UPM-A/ASTA M30	R-70	120	190	300	-	-	-	-	25.7	61.6	140	140
UPM-A/ASTA M30	R-70	280	350	300	-	-	-	-	89	90.2	140	140
UPM-A/ASTA M30	R-70	600	670	300	-	-	-	-	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 anchor^{1) 2)} in normal concrete of strength class C20/25.

For the design the complete current assessment ETA-10/0171 has to be considered.

Type	Screw Material ³⁾	Effective anchor- age depth	Minimum member thickness	Maximum installation- 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	16.7	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	26.6	19.3	75	75
IST M12	R-70	125	170	40	22.5	13.5	75	75
IST M16	5.8	160	210	80	37.6	22.4	95	95
IST M16	8.8	160	210	80	39.5	30.9	95	95
IST M16	R-70	160	210	80	39.5	25.1	95	95
IST M20	5.8	200	260	120	55.2	35.4	125	125
IST M20	8.8	200	260	120	55.2	42.9	125	125
IST M20	R-70	200	260	120	55.2	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-15/0554 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 anchor- age depth h_{ef} [mm]	Minimum mem- ber thickness h_{min} [mm]	Maximum instal- lation 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. min- imum edge distance ⁵⁾ $c_{cr} = c_{min}$ [mm]
Solid brick Mz, NF, acc. to EN 771-1										
M8	≥ 12	≥ 1,8	240 x 115 x 71	≥ 50	115	10	1.14	0.71	240 / 75	100
M10	≥ 12	≥ 1,8	240 x 115 x 71	80	115	10	1.43	1.14	240 / 75	100
M10	≥ 12	≥ 1,8	240 x 115 x 71	200	240	10	3.43	2.43	240 / 75	100
M12	≥ 12	≥ 1,8	240 x 115 x 71	80	115	10	1.57	1.14	240 / 75	100
M12	≥ 12	≥ 1,8	240 x 115 x 71	200	240	10	2.29	3.29	240 / 75	100
Solid sand-lime brick KS, acc. to EN 771-2										
M8	≥ 12	≥ 1,8	240 x 115 x 71	50	115	5	1.14	0.43	80 / 150	60
M8	≥ 12	≥ 1,8	240 x 115 x 71	100	240	5	2.29	0.86	80 / 300	60
M10	≥ 12	≥ 1,8	240 x 115 x 71	100	240	15	1.57	0.57	80 / 300	60
M10	≥ 12	≥ 1,8	240 x 115 x 71	200	240	15	3.43	0.57	80 / 600	60
M12	≥ 12	≥ 1,8	240 x 115 x 71	100	240	15	1.29	0.57	80 / 300	60
M12	≥ 12	≥ 1,8	240 x 115 x 71	200	240	15	3.43	0.57	80 / 300	60
Perforated sand-lime brick KSL, acc. to EN 771-2³⁾										
M8 with UPM-SH 12x85 K	≥ 12	≥ 1,4	240 x 175 x 113	85	175	2	0.71	0.71	100 / 115	60
M8 / M10 with UPM-SH 16x85 K	≥ 12	≥ 1,4	240 x 175 x 113	85	175	2	0.86	1.29	100 / 115	80
M12 with UPM-SH 20x85 K	≥ 12	≥ 1,4	240 x 175 x 113	85	175	2	0.86	1.29	100 / 115	80
M8 / M10 with UPM-SH 16x130 K	≥ 12	≥ 1,4	240 x 175 x 113	130	175	2	0.86	1.29	100 / 115	80
Lightweight concrete hollow block Hbl, acc. EN 771-1³⁾										
M8 with UPM-SH 12x85 K	≥ 10	≥ 0,9	240 x 175 x 113	85	175	2	1.14	1.14	240 / 115	100
M8 / M10 with UPM-SH 16x85 K	≥ 10	≥ 0,9	240 x 175 x 113	85	175	2	1	1.57	240 / 115	100
M12 with UPM-SH 20x85 K	≥ 10	≥ 0,9	240 x 175 x 113	85	175	2	1.43	1.71	240 / 115	100
M8 / M10 with UPM-SH 16x130 K	≥ 10	≥ 0,9	240 x 175 x 113	130	175	2	1.43	1.57	240 / 115	100
M12 with UPM-SH 20x130 K	≥ 10	≥ 0,9	240 x 175 x 113	130	175	2	1.43	1.71	240 / 115	100
Aerated concrete acc. to EN 7714-4⁶⁾										
M8	≥ 2	≥ 0,35	-	≥ 100	130	1	0.54	0.43	250 / 250	100
M8	≥ 4	≥ 0,50	-	200	230	8	1.07	0.71	80 / 80	100
M10	≥ 2	≥ 0,35	-	≥ 100	130	2	0.54	0.43	250 / 250	100
M10	≥ 4	≥ 0,50	-	200	230	12	1.79	0.71	80 / 80	100
M12	≥ 2	≥ 0,35	-	≥ 100	130	2	0.71	0.54	250 / 250	100
M12	≥ 4	≥ 0,50	-	200	230	16	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.