



AT-HP is a styrene free methacrylate resin suitable for high performance fixing applications in threaded rod and rebar concrete.



[ETA-14/0383](#), [ETA-13/0416](#), [UK-DoP-e14/0383](#), [UK-DoP-e13/0416](#), [FDS-ATHP-A+B\(1.5\)UK](#)

FEATURES



Material

- Styrene free methacrylate resin.
- Threaded rod: galvanised steel and stainless steel A4-70.

Benefits

- Fast curing.
- Low odour.
- Non-flammable.
- Easy to dispense.



APPLICATIONS

Header member

- Non-cracked concrete.
- Solid blocks.
- Hollow blocks.
- AAC Blocks.

For Use With

- Threaded rod and rebar connections.
- Racking.
- Balconies.
- Facades.

TECHNICAL DATA

Reference

References	Content [ml]
AT-HP + LMAS M8*	-
AT-HP + LMAS M10*	-
AT-HP + LMAS M12*	-
AT-HP + LMAS M16*	-
AT-HP + LMAS M20*	-
AT-HP + LMAS M24*	-
AT-HP + LMAS M27*	-
AT-HP + fer Ø8 x lbdmin	-
AT-HP + fer Ø10 x lbdmax	-
AT-HP + fer Ø14 x lbdmin	-
AT-HP + LMAS M30*	-
AT-HP + fer Ø8 x lbdmax	-
AT-HP + fer Ø12 x lbdmin	-
AT-HP + fer Ø14 x lbdmax	-
AT-HP + fer Ø10 x lbdmin	-
AT-HP + fer Ø12 x lbdmax	-
AT-HP + fer Ø16 x lbdmin	-
AT-HP + fer Ø16 x lbdmax	-
AT-HP + fer Ø20 x lbdmin	-
AT-HP + fer Ø20 x lbdmax	-
AT-HP + fer Ø25 x lbdmin	-
AT-HP + fer Ø25 x lbdmax	-
AT-HP + fer Ø28 x lbdmin	-
AT-HP + fer Ø28 x lbdmax	-
AT-HP + fer Ø32 x lbdmin	-
AT-HP + fer Ø32 x lbdmax	-

Recommended loads

References	Tension - Nrec [kN]							
	Concrete C20/25 [hef=h0=8d]	Concrete C20/25 [hef=h0=12d]	Masonry brick - RT 307 *	Hollow Brick - RT 301 *	Hollow Brick - POROTON	Hollow Brick - LS BGV THERMO	Hollow clay brick - HOLLOW BLOCKS *	Autoclaved aerated concrete blocks *
AT-HP + LMAS M8*	6.1	8.7	0.43	0.43	0.26	0.43	0.34	0.26
AT-HP + LMAS M10*	9	13.5	0.43	0.43	0.34	0.57	0.57	0.34
AT-HP + LMAS M12*	12.9	19.4	0.43	0.57	0.34	0.86	0.57	0.34
AT-HP + LMAS M16*	20.4	30.6	-	-	-	-	-	-
AT-HP + LMAS M20*	29.9	44.9	-	-	-	-	-	-
AT-HP + LMAS M24*	40.2	60.3	-	-	-	-	-	-
AT-HP + LMAS M27*	47.3	70.9	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	53.9	80.8	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-

References	Tension - Nrec [kN]							
	Concrete C20/25 [hef=h0=8d]	Concrete C20/25 [hef=h0=12d]	Masonry brick - RT 307 *	Hollow Brick - RT 301 *	Hollow Brick - POROTON	Hollow Brick - LS BGV THERMO	Hollow clay brick - HOLLOW BLOCKS *	Autoclaved aerated concrete blocks *
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-

Recommended loads

References	Shear - Vrec [kN]							Bending moment [Nm]
	Concrete C20/25	Masonry brick - RT 307 *	Hollow Brick - RT 301 *	Hollow Brick - POROTON	Hollow Brick - LS BGV THERMO	Hollow clay brick - HOLLOW BLOCKS *	Autoclaved aerated concrete blocks *	
AT-HP + LMAS M8*	5.3	0.57	0.43	0.43	0.43	0.34	0.26	10.7
AT-HP + LMAS M10*	8.3	0.57	0.43	0.43	0.57	0.57	0.34	21.4
AT-HP + LMAS M12*	12.1	0.57	0.43	0.57	0.86	0.57	0.34	37.4
AT-HP + LMAS M16*	22.5	-	-	-	-	-	-	95.1
AT-HP + LMAS M20*	35	-	-	-	-	-	-	185.4
AT-HP + LMAS M24*	50.5	-	-	-	-	-	-	320.7
AT-HP + LMAS M27*	65.6	-	-	-	-	-	-	475.5
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	80.2	-	-	-	-	-	-	642.9
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-

References	Shear - Vrec [kN]							Bending moment [Nm]
	Concrete C20/25	Masonry brick - RT 307 *	Hollow Brick - RT 301 *	Hollow Brick - POROTON	Hollow Brick - LS BGV THERMO	Hollow clay brick - HOLLOW BLOCKS *	Autoclaved aerated concrete blocks *	
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-

M16, M20, M24, M27 and M30 not covered by masonry ETA.

Load specifications for single anchor without influence of spacing and edge distances in the temperature range I in the use of threaded rods of quality 5.8.

* Masonry:

	Dimensions L x W x H [mm]	Compressive strength fb [N/mm ²]	Bulk density p [kg/m ³]
Solid clay brick RT 307 according to EN 771-1 – HD	≥228x108x54	≥22	≥1830
Hollow clay brick RT 301– Type 1 according to EN 771-1 – LD	≥228x108x54	≥22	≥1305
Hollow clay brick POROTON– Type 2 according to EN 771-1 – LD	≥248x365x249	≥8	≥650
Hollow clay brick POROTON– Type 2 according to EN 771-1 – LD	≥500x200x314	≥6	≥570
Hollow clay brick BLOCS CREUX – Type 4 according to EN 771-1 – LD	≥500x200x200	≥4	≥900
Autoclaved aerated concrete blocks according to EN 771 – 4	≥635x250x300	≥3	≥350

1) For combined tension and shear loads or anchor groups and/or in the case of edge influence, a calculation per ETAG 029, Annex C, design method A shall be performed. For details see the ETA- approval(s).

2) The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of $\gamma_f=1.4$.

3) Temperatur range I: -40°C to +80°C (max. long-term temperatur: +50°C; max. short-term temperatur: +80°C).

4) lunit: max. dimensions of the bricks

5) Non-bearing layers (eg. as plaster) have to be bridged.

6) The installation can be carried out in dry and wet base material.

7) The installation must be carried out in dry base material.

** Concrete:

The design resistances have been calculated using the partial safety factors for resistances stated in ETA- approvals(s).

The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-approval(s) and with a partial safety factor for actions of $\gamma_f=1.4$.

The load figures are valid for reinforced concrete with a rebar spacing ≥ 15 cm (any diameter) or with a rebar spacing ≥ 15 cm if the rebar diameter is 10mm or smaller.

The figures for shear are based on a single anchor without influence of concrete edges. For anchorages close to the edges ($c \leq \text{hef } 60d$) the concrete edge failure shall be calculated per EOTA Technical Report - TR 029 or acc. to CEN/TS 1992-4.

Concrete is considered non-cracked when the tensile stress within the concrete is $\sigma_L + \sigma_R \leq 0$. In the absence of detailed verification $\sigma_R = 3 \text{ N/mm}^2$ can be assumed (σ_L equals the tensile stress within the concrete induced by external loads, anchors loads included).

For combined tension and shear loads or anchor groups and/or in the case of edge influence, a calculation per EOTA Technical Report - TR 029 or acc. to CEN/TS 1992-4 shall be performed. For details see the ETA- approval(s).

Technical data for rebar

References	Ø rebar [mm]	Ø drilling diameter [mm]	Embedment depth [ldb] [mm]	Tension load in Concrete C20/25 [Rds,N] [kN]	Resin Volum [ml]
AT-HP + LMAS M8*	-	-	-	-	-
AT-HP + LMAS M10*	-	-	-	-	-
AT-HP + LMAS M12*	-	-	-	-	-
AT-HP + LMAS M16*	-	-	-	-	-
AT-HP + LMAS M20*	-	-	-	-	-
AT-HP + LMAS M24*	-	-	-	-	-
AT-HP + LMAS M27*	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	8	12	115	9.5	9
AT-HP + fer Ø10 x lbdmax	10	14	300	31	27
AT-HP + fer Ø14 x lbdmin	14	18	200	28.9	24
AT-HP + LMAS M30*	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	8	12	280	16.5	15
AT-HP + fer Ø12 x lbdmin	12	16	170	21.1	18
AT-HP + fer Ø14 x lbdmax	14	18	420	60.7	51
AT-HP + fer Ø10 x lbdmin	10	14	145	15	13
AT-HP + fer Ø12 x lbdmax	12	16	130	44.6	38
AT-HP + fer Ø16 x lbdmin	16	20	230	38	31
AT-HP + fer Ø16 x lbdmax	16	20	480	79.3	65
AT-HP + fer Ø20 x lbdmin	20	25	285	58.8	60
AT-HP + fer Ø20 x lbdmax	20	25	600	123.9	127
AT-HP + fer Ø25 x lbdmin	25	30	355	91.6	92
AT-HP + fer Ø25 x lbdmax	25	30	750	193.5	194
AT-HP + fer Ø28 x lbdmin	28	35	840	173.4	249
AT-HP + fer Ø28 x lbdmax	28	35	1000	267.7	387
AT-HP + fer Ø32 x lbdmin	32	40	685	226.3	372
AT-HP + fer Ø32 x lbdmax	32	40	1000	330.3	543

Rebar resistance (Ha B500B) Ø8 to Ø32 mm. Embedment depth under static loads (Eurocode 2) according to ETA-11/0139. Minimum spacing =7x diameter and no influence of the edges.

INSTALLATION

Curing Schedule

Mortar temperature T _{mortar} [°C]	Base material temperature T _{base material} [°C]	Gel time (working time) in dry/wet concrete t _{gel} [min]	Curing time in dry/wet concrete t _{cure} [h; min]
+5°C	-5°C to -1°C	15min	9h
+5°C	0°C to 4°C	12min	4h
+5°C	5°C to 9°C	9min	1,5h
+10°C	10°C to 19°C	4min	60min
+20°C	20°C to 29°C	1min	30min
+30°C	30°C and above	<1min	20min

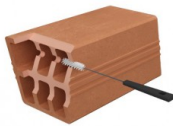
Concerning the version of the mortar with changing color proof, after the minimum curing time the blue colored injection mortar changed into grey. The curing color proof is available for standard version of the mortar only and the curing color proof is working above 5°C.

Drilling methods

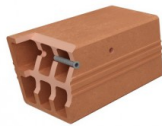
Solid brick/concrete	Percussion/hammer drilling
Hollow/perforated brick	Rotation drilling
Aerated concrete	Percussion/hammer drilling



Drill.



Brush.



Insert sieve.



Inject the resin.



Insert the rod,
turning slowly.



Once set, full
load capacity is
reached.



Drill.



Remove dust
by brushing and
blowing,



Fill the hole
to half or
two thirds,
Withdrawing
the nozzles with
each pump.



Insert the rod,
turning slowly.



Once set, full
load capacity is
reached.

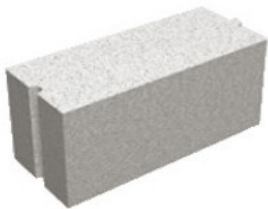
Installation parameters - Concrete



References	Ø drilling diameter [d0] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h0=hef=8d] [mm]	Depth of the drilling hole [h0=hef=12d] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Characteristic spacing (4) [scr,N] [mm]	Minimum spacing [smin]	Characteristic edge distance (4) [ccr,N] [mm]	Minimum edge distance [cmin] [mm]	Min member thickness - hef=8d [hmin] [mm]
AT-HP + LMAS M8*	10	9	64	96	13	10	175	40	88	40	100
AT-HP + LMAS M10*	12	12	80	120	17	20	213	50	106	50	110
AT-HP + LMAS M12*	14	14	96	144	19	40	255	60	128	60	126
AT-HP + LMAS M16*	18	18	128	192	24	80	330	80	165	80	164
AT-HP + LMAS M20*	22	22	160	240	30	150	400	100	200	100	204
AT-HP + LMAS M24*	28	26	192	288	36	200	447	120	223	120	248
AT-HP + LMAS M27*	30	30	216	324	41	270	503	135	251	135	276
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	35	33	240	360	46	300	537	150	268	150	310
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-	-	-	-

References	Ø drilling diameter [d0] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h0=hef=8d] [mm]	Depth of the drilling hole [h0=hef=12d] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Characteristic spacing (4) [scr,N] [mm]	Minimum spacing [smin]	Characteristic edge distance (4) [ccr,N] [mm]	Minimum edge distance [cmin] [mm]	Min member thickness - hef=8d [hmin] [mm]
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-	-	-	-

Installation parameters - Autoclaved areated concrete blocks



References	Ø drilling diameter [d0] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + LMAS M8*	10	9	85	13	4	80	160	50	80	50

References	Ø drilling diameter [d0] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + LMAS M10*	12	12	85	15	6	80	200	50	100	50
AT-HP + LMAS M12*	14	14	85	18	8	80	240	50	120	50
AT-HP + LMAS M16*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M20*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M24*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M27*	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-	-	-

Installation parameters - Solid brick



References	Ø drilling diameter [d0] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + LMAS M8*	10	9	85	13	4	80	160	50	80	50
AT-HP + LMAS M10*	12	12	85	15	6	80	200	50	100	50
AT-HP + LMAS M12*	14	14	85	18	8	80	240	50	120	50
AT-HP + LMAS M16*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M20*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M24*	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M27*	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-	-	-

Installation parameters - Hollow brick



References	Ø drilling diameter [d0] [mm]	Size of the Sieve [ds x ls] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + LMAS M8*	16	16 x 85 & 16 x 130	9	135	13	4	130	500	100	250	100
AT-HP + LMAS M10*	16	16 x 85 & 16 x 130	12	135	15	6	130	500	100	250	100
AT-HP + LMAS M12*	16	16 x 85 & 16 x 130	14	135	18	8	130	500	100	250	100
AT-HP + LMAS M16*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M20*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M24*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M27*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-	-	-	-

References	Ø drilling diameter [d0] [mm]	Size of the Sieve [ds x ls] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [SW]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-	-	-	-

Installation parameters - Hollow blocks



References	Ø drilling diameter [d0] [mm]	Size of the Sieve [ds x ls] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [Sw]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + LMAS M8*	16	16 x 130	9	135	13	4	130	500	100	250	100
AT-HP + LMAS M10*	16	16 x 130	12	135	15	6	130	500	100	250	100
AT-HP + LMAS M12*	16	16 x 130	14	135	18	8	130	500	100	250	100
AT-HP + LMAS M16*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M20*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M24*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M27*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + LMAS M30*	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø8 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø14 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø10 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø12 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø16 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø20 x lbdmax	-	-	-	-	-	-	-	-	-	-	-

References	Ø drilling diameter [d0] [mm]	Size of the Sieve [ds x ls] [mm]	Maximum diameter of hole in the fixture [df] [mm]	Depth of the drilling hole [h1] [mm]	Wrench Size [Sw]	Installation Torque [Tinst] [Nm]	Depth of the drilling hole [hef] [mm]	Characteristic spacing (4) - Scr,N [mm]	Minimum spacing - Smin [mm]	Characteristic edge distance (4) - Ccr,N [mm]	Minimum edge distance - Cmin [mm]
AT-HP + fer Ø25 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø25 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø28 x lbdmax	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmin	-	-	-	-	-	-	-	-	-	-	-
AT-HP + fer Ø32 x lbdmax	-	-	-	-	-	-	-	-	-	-	-