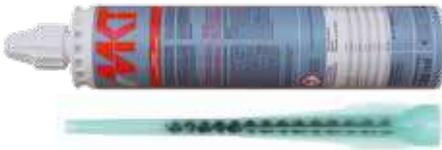


# Injection Adhesive VM-PY



**Cartridge VM-PY 300**  
Foil tube cartridge  
suitable for silicon guns  
Content: 300ml



**Cartridge VM-PY 410**  
Coaxial cartridge  
Content: 410ml

**Range of loading: 0,3 kN - 39,4 kN**

**Concrete quality: C20/25 - C50/60**

**Masonry: Solid and perforated brickwork**

### Description

The Injection Adhesive is a polyester-resin based Injection Adhesive for bonding threaded rods and reinforcing steel in concrete, masonry or natural stone.

Both components are contained in the cartridge and mixed when dispensed through the static mixer. The Injection Adhesive is injected directly into the drilled hole or perfo sleeve with a dispenser gun. The anchoring element is inserted into the filled hole (perfo sleeve) by hand. After the adhesive has cured, the anchoring element can have the load applied.

### Advantages

- Suitable for most construction base materials as concrete, masonry, natural stone
- Can be used as a repair adhesive
- Sealed drill-hole
- Opened cartridges can be re-used with a new static mixer
- Suitable for many anchoring elements e.g. threaded rods, female-thread sleeves, concrete steel, hooks, screws etc.



### Injection Cartridge VM-PY



- For universal use in most base materials
- For solid and perforated brickwork, concrete

Description	Ref. No.	Content ml	Content of master box pcs	Weight per master box kg	Weight per piece kg
Cartridge VM-PY 300	28252801	300	12	6,40	0,53
Cartridge VM-PY 410	28256002	410	12	9,95	0,83
Static mixer VM-X	28305111	-	12	0,12	0,01
Mixer extension VM-XE 10/200 (200mm)	28306011	-	12	-	-

One static mixer comes with each cartridge.  
Usable length of static mixer see page 106.

## Threaded Stud for applications in non-cracked concrete and brickwork

### Threaded Stud VMU-A

Steel, zinc plated 5.8  
Dimensions see page 107



- For use in structures subject to dry internal conditions
- Steel, zinc plated 8.8 on demand

### Threaded Stud VMU-A A4

Stainless steel A4  
Dimensions see page 107



- For use in structures subject to dry internal conditions or external atmospheric exposure
- Stainless steel HCR on demand

### Threaded Stud V-A

Steel, zinc plated 5.8/ Steel, zinc plated 8.8  
Dimensions see page 144



- For use in structures subject to dry internal conditions

### Threaded Stud V-A A4

Stainless steel A4  
Dimensions see page 144



- For use in structures subject to dry internal conditions or external atmospheric exposure

### Threaded Stud V-A fvz

Steel, hot dip galvanized 5.8  
Dimensions see page 144



- For use in structures subject to dry internal conditions
- Steel hot dip galvanized 8.8 on demand

### Threaded Stud V-A HCR

Stainless steel HCR  
Dimensions see page 144



- For use in particularly corrosive environments
- High corrosion resistant steel 1.4529 (HCR)

### Threaded stud VM-A

Steel 5.8, zinc plated  
Dimensions see page 108



- Threaded studs, of 1 meter length, to be cut to the required length
- Comes with manufacturer's certificate (3.1 EN 10204) in every package

### Threaded stud VM-A

Stainless steel A4  
Dimensions see page 108

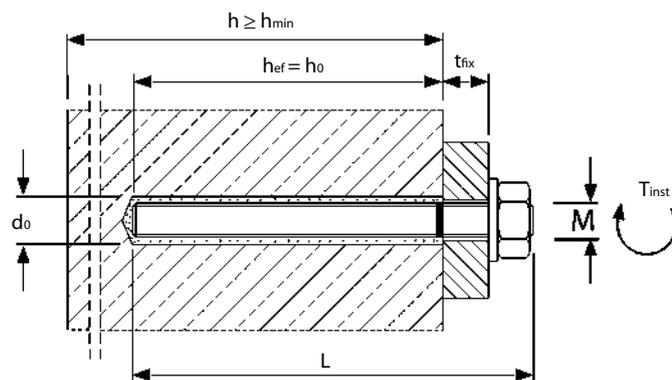


- Threaded studs, of 1 meter length, to be cut to the required length
- Comes with manufacturer's certificate (3.1 EN 10204) in every package

Recommended loads for single anchor without influence of spacing and edge distance for temperature range -40°C to +50°C/+80°C<sup>1)</sup>.  
Total safety factor as per ETAG included ( $\gamma_M$  and  $\gamma_p$ ).

Loads and performance data	Injection Adhesive VM-PY with Threaded Studs V-A/VM-A/VMU-A in concrete		non-cracked concrete				
			M8	M 10	M 12	M 16	M20
Rec. loads, tension (Steel 5.8)	$\geq C20/25$	rec. N [kN]	4,4	6,7	9,5	10,7	18,3
Rec. loads, shear (Steel 5.8)	$\geq C20/25$	rec. V [kN]	5,1	8,6	12,0	22,3	34,9
Rec. bending moments (Steel 5.8)		rec. M [Nm]	10,9	21,1	37,1	94,9	185,1
Rec. loads, tension (A4)	$\geq C20/25$	rec. N [kN]	4,4	6,7	9,5	10,7	18,3
Rec. loads, shear (A4)	$\geq C20/25$	rec. V [kN]	6,0	9,2	13,7	25,2	39,4
Rec. bending moments (A4)		rec. M [Nm]	11,9	23,8	42,1	106,2	207,9
<b>Spacing and edge distance</b>							
Effective anchorage depth	$h_{ef}$	[mm]	80	90	110	125	170
Characteristic spacing	$s_{cr,N}$	[mm]	160	180	220	250	340
Characteristic edge distance	$c_{cr,N}$	[mm]	80	90	110	125	170
Minimum thickness of concrete slab	$h_{min}$	[mm]	110	120	140	161	218
Minimum spacing	$s_{min}$	[mm]	40	50	60	80	100
Minimum edge distance	$c_{min}$	[mm]	40	50	60	80	100
<b>Installation parameters</b>							
Drill hole diameter	$d_o$	[mm]	10	12	14	18	24
Clearance hole in the fixture	$d_f$	[mm]	9	12	14	18	22
Depth of drill hole	$h_o$	[mm]	80	90	110	125	170
Installation torque	$T_{inst}$	[Nm]	10	20	40	60	120
Width across nut	SW	[mm]	13	17	19	24	30
Amount of adhesive per drill hole		[ml]	5,2	7,3	10,8	17,1	45,4
Drill holes per cartridge VM-PY 410		[pcs.]	71	50	34	21	8

<sup>1)</sup> max. long term temperature +50°C / max. short term temperature +80°C

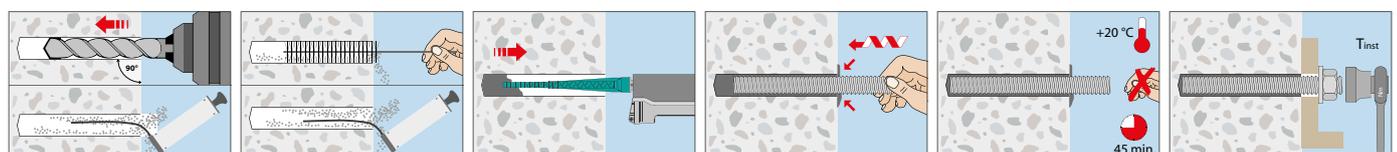


**Curing Time Injection Adhesive VM-PY**

→ Cartridge temperature when installing min. + 5°C.

Temperature (°C) of base material	working time	curing time
+5°C	25 min	2:00 h
+10°C	15 min	1:20 h
+20°C	6 min	45 min
+30°C	4 min	25 min
+35°C	2 min	20 min

**Installation in Concrete**



## Accessories for Injection Systems

### Int. Threaded Sleeve VM-IG



- Steel, zinc plated
- Installation in hollow base materials

Description	Ref. No.	Suitable for perfo sleeve	Internal thread	Outer-ø mm	Length mm	Package content pcs.	Weight per package kg
VM-IG M 6	28101001	VM-SH 12 / 16	M 6	8	45	10	0,11
VM-IG M 8	28102001	VM-SH 16 / 22	M 8	12	80	10	0,38
VM-IG M 10	28103001	VM-SH 20 / 22	M 10	14	80	10	0,45
VM-IG M 12	28104001	VM-SH 22	M 12	16	80	10	0,52

### Int. Threaded Sleeve V-IG



- Steel, zinc plated grade 5.8
- Fixture easy to remove; sealed drill hole

Description	Ref. No.	Drill hole Ø x depth mm	Thread Ø x length mm	Package content pcs.	Weight per package kg
V-IG M 8	24105101	14x90	M8x25	10	0,50
V-IG M 10	24205101	16x90	M10x30	10	0,65
V-IG M 12	24305101	18x100	M12x35	10	1,00
V-IG M 16	24505101	25x120	M16x40	10	1,65

### Int. Threaded Sleeve V-IG A4



- Stainless steel A4/316
- Fixture easy to remove; sealed drill hole

Description	Ref. No.	Drill hole Ø x depth mm	Thread Ø x length mm	Package content pcs.	Weight per package kg
V-IG M 8 A4	24105501	14x90	M8x25	10	0,50
V-IG M 10 A4	24205501	16x90	M10x30	10	0,65
V-IG M 12 A4	24305501	18x100	M12x35	10	1,00
V-IG M 16 A4	24505501	25x120	M16x40	10	1,65

### Perfo Sleeve VM-SH

Polypropylen



- Polypropylene
- Installation in hollow base materials

Description	Ref. No.	Drill hole Ø x depth mm	For threaded studs	For internally threaded sleeves	Suitable for cleaning brush	Package content	Weight per package
			mm			pcs.	kg
VM-SH 12 x 50	28151001	13 x 55	M8	-	RB 12 M6	10	0,01
VM-SH 12 x 80	28151201	12 x 85	M8	-	RB 12 M6	10	0,02
VM-SH 16 x 85	28152001	16 x 90	M8 / M10	VMU-IG M6 x 80	RB 16 M6	10	0,03
VM-SH 16 x 130	28153001	16 x 135	M8 / M10	-	RB 16 M6	10	0,04
VM-SH 20 x 85	28154001	20 x 90	M12 / M16	VMU-IG M8 x 80/VMU-IG M10 x 80	RB 20 M6	10	0,04
VM-SH 20 x 130	28154301	20 x 135	M12 / M16	-	RB 20 M6	10	0,07
VM-SH 20 x 200	28154601	20 x 205	M12 / M16	-	RB 20 M6	10	0,10

### Perfo Sleeve VM-SH



- Steel, zinc plated
- Metal, to be cut to required length
- Installation in hollow base materials

Description	Ref. No.	Drill hole Ø mm	Suitable for		Amount of mortar per 100 mm drill hole depth ml	Package content pcs.	Weight per package kg
			Threaded Studs	Threaded Sleeve			
VM-SH 12 x 1000	28403001	12	M6-M8	VM-IG M6	20,4	50	2,88
VM-SH 16 x 1000	28404001	16	M10	VM-IG M6-M8	36,2	50	3,38
VM-SH 22 x 1000	28405001	22	M12-M16	VM-IG M8-M12	68,4	25	2,70

### Centering Sleeve VM-ZR



- Plastic
- Avoid sliding of Threaded Stud in drill hole.

Description	Ref. No.	For Threaded Studs	Package content pcs.
VM-ZR M 8	28201001	M 8	10
VM-ZR M 10	28202001	M 10	10
VM-ZR M 12	28203001	M 12	10

### Cleaning Brush RB M6



RB M6, with connection thread M6



RBL M6, with internal and external thread M6



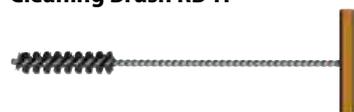
RBL M6 SDS, with internal thread M6

→ With connection thread M6 – extension for large depths of drill hole and/or for through-setting installation

→ For drilling machines with keyed chuck or with SDS plus adaptor for SDS plus drill holders

Description	Ref. No.	For drill hole Ø mm	Total length of brush mm	Base material	Suitable for Threaded stud	Pkg. cont. pcs	Weight per piece kg
RB 10 M6	33510101	10	130	concrete	M8	1	0,05
RB 12 M6	33512101	12	140	concrete	M10	1	0,05
RB 14 M6	33514101	14	180	concrete	M12	1	0,05
RB 18 M6	33518101	18	200	concrete	M16	1	0,05
RB 24 M6	33524101	24	250	concrete	M20	1	0,06
RB 28 M6	33528101	28	260	concrete	M24	1	0,06
RB 32 M6	33532101	32	350	concrete	M27	1	0,06
RB 35 M6	33535101	35	350	concrete	M30	1	0,08
RBL M6	33968101	Brush extension 150mm with connection thread M6				1	0,09
RBL M6 SDS	33350101	SDS Plus adapter with internal thread M6				1	0,06

### Cleaning Brush RB-H



RB-H 18 Nylon, with handle

→ Drill hole cleaning in solid and hollow base material

Description	Ref. No.	For drill hole Ø mm	Base material	Pkg. cont. pcs	Weight per piece kg
RB-H 12/250	29914501	8-12	brickwork	1	0,04
RB-H 18/250	29918501	10-18	brickwork	1	0,04
RB-H 18/400	33618101	10-18	brickwork	1	0,05
RB-H 28/280	29928501	20-28	brickwork	1	0,05

### Blow-out pump VM-AP



→ Drill hole cleaning by hand

Description	Ref. No.	Length mm	For drill hole Ø mm	For depth of drill hole mm	Pkg. cont. pcs	Weight per piece kg
Blow-out pump VM-AP 270	29990002	270	≤ 20	≤ 200	1	0,22
Blow-out pump VM-AP 360	33200101	360	≤ 20	≤ 300	1	0,27

### Air gun VM-ABP



→ Drill hole cleaning with compressed air

Description	Ref. No.	Nozzle-Ø mm	For drill hole Ø mm	Max. drill hole depth <sup>1)</sup> mm	Pkg. cont. pcs.	Weight per piece kg
VM-ABP 200	33090101	5	6-20	240	1	0,55
VM-ABP 250	33100101	16	18-40	240	1	1,00
VM-ABP 500	33106101	16	18-40	480	1	1,30

### Air gun VM-ABP



→ Drill hole cleaning with compressed air for holes up to one meter

→ For best drill hole cleaning the nozzle of the air-gun must reach to the bottom of the drill hole

Description	Ref. No.	Nozzle Ø mm	For Drill hole depth mm	For drill hole Ø mm	Pkg. cont. pcs	Weight per piece kg
VM-ABP 1000	85806101	14	≤ 1000	16-40	1	0,32

### Retaining Washer VM-IA



- For bubble-free filling of the drill hole
- Suitable for extension pipes VM-XE and VM-XLE

Description	Ref. No.	Suitable for drill hole Ø mm	Color	Suitable for		Pkg. cont. pcs.	Weight per pkg. kg
				Threaded stud	Rebar		
VM-IA 14	85914201	14	black	M12	Ø10	20	0,02
VM-IA 16	85916201	16	black	-	Ø12	20	0,02
VM-IA 18	85918201	18	black	M16	Ø14	20	0,02
VM-IA 20	85920201	20	black	-	Ø16	20	0,06
VM-IA 24	85924101	24	black	M20	Ø20	20	0,06
VM-IA 25	85925201	25	black	-	Ø20	20	0,06
VM-IA 28	85928101	28	black	M24	Ø22	20	0,08
VM-IA 32	85932201	32	black	M27	Ø24, 25	20	0,08
VM-IA 35	85935201	35	black	M30	Ø28	20	0,08
VM-IA 40	85938201	40	black	-	Ø32	20	0,08

### Extension Tubes



- Extension tubes for deeper drill holes
- Two diameters available

Description	Ref. No.	Length mm	Ø mm	To use in conjunction with	Pkg. cont. pcs.	Weight per pkg. kg
VM-XE 10/500	85951101	500	10	VM-XL, VM-X	10	0,20
VM-XLE16/250	85959101	250	16	VM-XL	10	0,30
VM-XLE16/1000	85956101	1000	16	VM-XL	10	1,15

### Dispenser VM-P Profi



- Professional dispenser with an ideal center of gravity for more comfortable working
- Automatic pressure release for minimum adhesive overrun

Description	Ref. No.	Suitable for cartridge	Pkg. cont. pcs.	Weight per piece kg
VM-P 345 Profi	28350511	150ml, 280ml, 300ml, 345ml also suitable for silicone cartridges	1	1,00
VM-P 380 Profi	28351001	380ml, 410ml, 420ml	1	1,10

### Dispenser VM-P Standard



- For occasional use, metal version
- Piston rod with adjusting screw

Description	Ref. No.	Suitable for cartridge	Pkg. cont. pcs.	Weight per piece kg
VM-P 345 Standard	28350505	150ml, 280ml, 300ml, 345ml also suitable for silicone cartridges	1	1,00
VM-P 380 Standard	28353005	380ml, 410ml, 420ml	1	1,15

### Dispenser VM-P Pneumatic



- Professional air tool with an optimum center of gravity and quick cartridge exchange
- Automatic pressure release system reduces adhesive overrun to a minimum
- Single-hand pressure regulation to adjust the piston speed
- With compressed air connection nipple

Description	Ref. No.	Suitable for cartridge	max. working pressure	Pkg. cont. pcs.	Weight per piece kg
VM-P 345 Pneumatic	28350601	345ml	8 bar, 40l/min	1	2,41
VM-P 380 Pneumatic	28352002	380ml, 410ml, 420ml	8 bar, 40l/min	1	2,00

### Dispenser VM-P Akku



<sup>1)</sup> with Akku 18V/2,0 Ah

- Professional, solid battery cartridge dispenser in a plastic case
- Repeat function, for retrieving the last fill quantity
- Stepless variable pressing speed
- Overrun-quantity-stop by automatic return after release of the dispensing switch

Description	Ref. No.	Suitable for cartridge	Press-out force kN	Weight <sup>1)</sup> kg	Dimensions <sup>1)</sup> L x B x H mm	Pkg. cont. pcs.	Weight per piece kg
VM-P 345 Akku	28350801	345ml	5,0	3,53	395 x 180 x 285	1	7,72
VM-P 380 Akku	28352601	380ml, 410ml, 420ml	3,95	3,62	375 x 180 x 285	1	7,80
Accessories (for all models)							
Replacement battery	28352411			18 V/2,0 Ah		1	1,00
Shoulder strap	28359991			adjustable		1	0,02