Chemical Fixings

VY 300 SF

Made in Germany

Injection system ResiFIX VY 300 SF

Description

European Technical Approval Option 1 for cracked concrete

European Technical Approval Post-installed rebar connection

FIXING seismic

Fire resistance class R 120

European Technical Approval for masonry

Typical applications

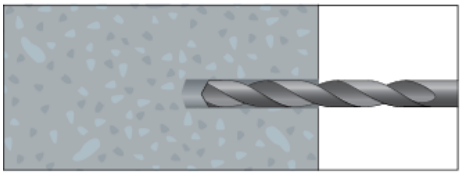
Steel constructions
Cantilevers
Facade substructures
Machines
Guard rails
Canopies
Distance mountings
Door and window frames
Wood constructions

Suitable building materials

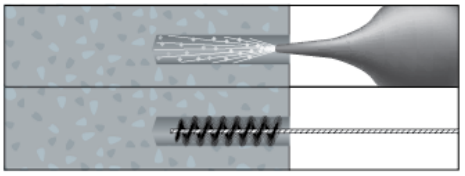
✓ Concrete
✓ Natural stone
✓ Solid brick
✓ Solid sand-lime brick
✓ Lightweight solid concrete blocks
✓ Aerated concrete
✓ Hollow brick
✓ Hollow sand-lime brick
✓ Lightweight hollow concrete blocks

Installation

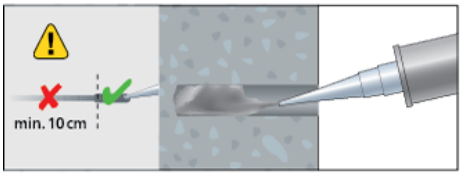
Mounting in concrete and solid brick



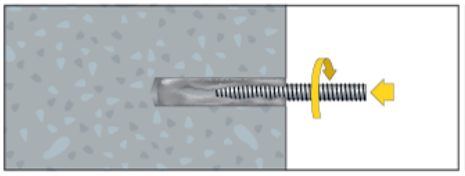
1. Drill hole



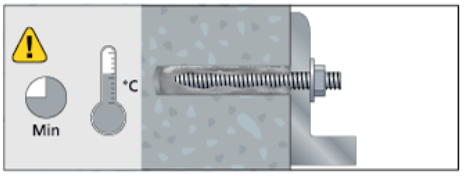
2. Clean hole (blow 4x, brush 4x)



3. Inject necessary amount of chemical mortar, (min. 2/3 of hole)

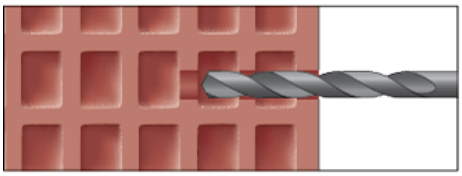


4. Push the anchor rod into the hole while turning

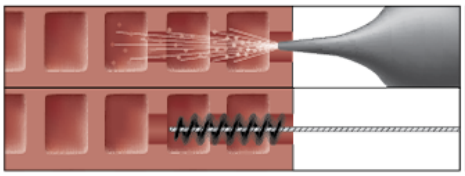


5. Respect curing time before applying any load or torque

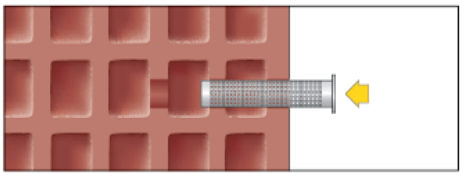
Mounting in hollow brick



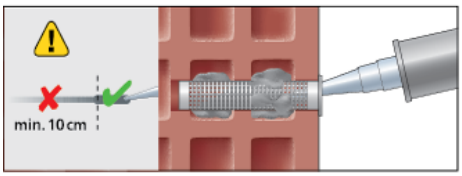
1. Drill hole



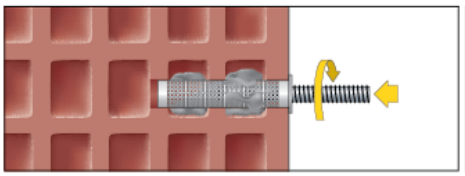
2. Clean hole (blow 2x, brush 2x)



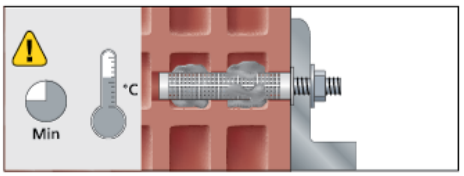
3. Insert anchor sleeve



4. Inject necessary amount of chemical mortar (fill sleeve completely)



5. Push the anchor rod into the hole while turning



6. Respect curing time before applying any load or torque

Assortment

VY 300 SF

VY 345 SF

VY 410 SF

FIXING seismic

European Technical Approval Option 7 for non-cracked concrete — M8 – M30, Ø8 – Ø32

European Technical Approval Option 1 for cracked concrete — M12 – M30, Ø12 – Ø32

European Technical Approval Post-installed rebar connection — Ø8 – Ø25

Fire resistance class R 120

European Technical Approval for masonry — M8, M10

Vinylester resin (styrene free)					Packing
Type	Art-No		Content	Nozzles included	
	new	old	[ml]	[pcs]	[pcs]
VY 300 SF	300VSF	504206	280	2	12
VY 345 SF	345VSF	504209	345	2	12
VY 410 SF	410VYSF	–	410	1	12

VY 300 SF

Vinylester resin Tropical (styrene free) extended curing time					Packing
Type	Art-No		Content	Nozzles included	
	new	old	[ml]	[pcs]	[pcs]
VT 300 SF	300VTSF	–	280	2	12

30 x 40 x 23 cm

European Technical Approval Option 7 for non-cracked concrete: M8 – M30, Ø8 – Ø32

European Technical Approval Option 1 for cracked concrete: M12 – M30, Ø12 – Ø32

European Technical Approval Post-installed rebar connection: Ø8 – Ø25

Fire resistance class R 120

European Technical Approval for masonry: M8, M10

FIXING seismic

Universal box with ResiFIX VY 300 SF, VY 345 SF

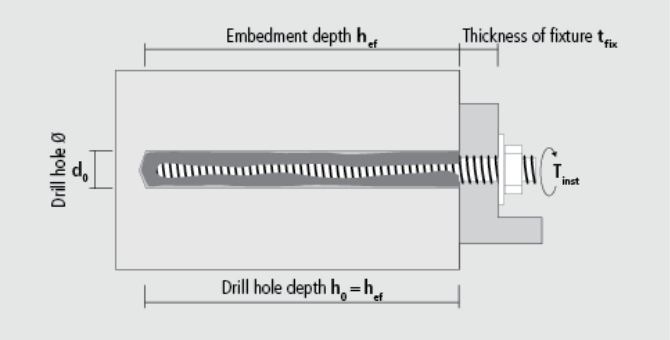
Type	Art-No	Content [cartridges]	Nozzles included [pcs]	Packing [pcs]
VY 300 SF in universal box	SYS300VSF20	20	40	1
VY 345 SF in universal box	SYS345VSF20	20	40	1

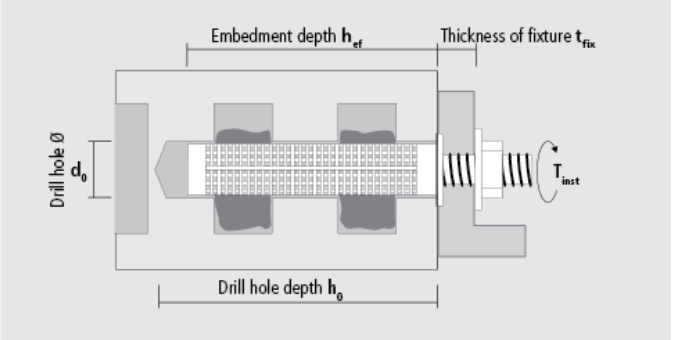
Curing time Vinylester resin VY 300 SF, VY 345 SF, VY 410 SF

Temperature of building material	[°C]	> -10 [1]	> -5	> 0	> +5	> +10	> +20	> +30	> +40
Min. working time	[min]	90	90	45	25	15	**6**	4	1,5
Min. curing time [2]	[min]	24h	14h	7h	2h	80	**45**	24	15

[1] Cartridge temp. min. 15 °C
[2] Double curing time in wet concrete

Note: For **Tropical version** working and curing times are **twice** as long.





Fastening in concrete the professional system Vinylester VYSF

Permissible loads F_{per} in [kN] in non-cracked (Option 7) concrete C20/25 and cracked (Option 1) concrete C20/25 for single anchor without influence of spacing and edge distance, installation parameters and unit dimensions. Total safety factors as per ETAG 001 included (γ_M und γ_F). Design according to TR029. See approval ETA-10/0134 for design and calculations.

Anchor rods RESI AST, VA AST		M8	M10	M12	M16	M20	M24	M30
Drill hole Ø	d_0 [mm]	10	12	14	18	24	28	35
Embedment depth	$h_{ef,min}/h_{ef,stand}/h_{ef,max}$ [mm]	60/80/160	60/90/200	70/110/240	80/125/320	90/170/400	96/210/480	120/280/600
Tension load [1) 2)] (24 °C / 40 °C) [3)] non-cracked concrete								
Zinc plated 5.8	N_{per} [kN]	7,2/8,6/8,6	9,0/13,5/13,8	11,7/19,7/20,0	14,3/28,0/37,1	17,1/44,4/58,1	18,8/61,0/83,8	26,3/93,4/133,3
Stainless steel A4	N_{per} [kN]	7,2/9,6/9,9	9,0/13,5/15,7	11,7/19,7/22,5	14,3/28,0/42,0	17,1/44,4/65,3	18,8/61,0/94,3	26,3/70,2/70,2
Tension load [1) 2)] (24 °C / 40 °C) [3)] cracked concrete								
Zinc plated 5.8	N_{per} [kN]	-	-	5,8/9,1/19,7	8,8/13,7/35,1	12,3/23,3/54,9	15,8/34,6/79,0	26,3/68,1/133,3
Stainless steel A4	N_{per} [kN]	-	-	5,8/9,1/19,7	8,8/13,7/35,1	12,3/23,3/54,9	15,8/34,6/79,0	26,3/68,1/70,2
Tension load [1) 2)] (50 °C / 80 °C) [3)] non-cracked concrete								
Zinc plated 5.8	N_{per} [kN]	5,4/7,2/8,6	6,7/10,1/13,8	9,4/14,8/20,0	14,3/22,4/37,6	17,1/38,1/58,6	18,8/53,4/83,8	26,3/68,1/133,3
Stainless steel A4	N_{per} [kN]	5,4/7,2/9,9	6,7/10,1/15,7	9,4/14,8/22,5	14,3/22,4/42,0	17,1/38,1/65,3	18,8/53,4/94,3	26,3/68,1/70,2
Tension load [1) 2)] (50 °C / 80 °C) [3)] cracked concrete								
Zinc plated 5.8	N_{per} [kN]	-	-	4,2/6,6/14,4	6,4/10,0/25,5	9,0/17,0/39,9	11,5/25,1/57,4	20,2/47,1/101,0
Stainless steel A4	N_{per} [kN]	-	-	4,2/6,6/14,4	6,4/10,0/25,5	9,0/17,0/39,9	11,5/25,1/57,4	20,2/47,1 /70,2
Shear load [1)] (24 °C / 40 °C, 50 °C / 80 °C) [3)] cracked and non-cracked concrete								
Zinc plated 5.8	V_{per} [kN]	5,1/5,1/5,1	7,2/8,3/8,3	9,4/12,0/12,0	11,9/22,6/22,6	14,7/35,1/35,1	16,6/50,3/50,3	24,0/66,1/80,0
Stainless steel A4	V_{per} [kN]	6,0/6,0/6,0	7,7/9,2 / 9,2	9,9 / 13,7 / 13,7	12,6/ 24,7 / 25,2	15,6/ 39,4 / 39,4	17,6/ 56,8 / 56,8	25,5/ 42,0 / 42,0
Bending moment (Zinc plated 5.8)	M_{per} [Nm]	10,9	21,1	37,1	94,9	185,1	320,0	641,7
Bending moment (Stainless steel A4)	M_{per} [Nm]	11,9	23,8	42,1	106,2	207,9	359,0	337,6
Spacing and edge distance								
Spacing [4)]	$s_{cr,N}$ [mm]	185	253	304	375	506	581	657
Edge distance [4)]	$c_{cr,N}$ [mm]	92	126	152	188	253	291	329
Minimum spacing distance	s_{min} [mm]	40	50	60	80	100	120	150
Minimum edge distance	c_{min} [mm]	40	50	60	80	100	120	150
Minimum thickness of concrete	h_{min} [mm]	$h_{ef}+30\,mm \geq 100\,mm$			$h_{ef}+2d_0$			
Maximum installation torque	$T_{inst} \leq$ [Nm]	10	20	40	80	120	160	200

[1)] Values are valid for $h_{ef,min}$ / $h_{ef,stand}$ / $h_{ef,max}$.
[2)] Increasing factors for non-cracked concrete C30/37 = 1,04, C40/50 = 1,08, C50/60 = 1,10.
[3)] Max. long term temperature / max. short term temperature after installation. For temperature range 72°C/120°C please see approval ETA-10/0134.
[4)] Depends on h_{ef}. Values are valid for $h_{ef,stand}$.

Fastening in masonry with Vinylester VYSF

Permissible loads in [kN], installation parameters and unit dimensions.

Fastenings in solid and hollow masonry (with and without sleeve)

Building materials	Density ρ [kg/dm³]	Compressive strength f_b [N/mm²]	Anchor rods RESI AST, VA AST Size	Sleeve Size	Min. embedment dept h_{ef} [mm]	Use category dry / dry 24°C/40°C [1] N_{per} [kN]	V_{per} [kN]	dry / dry 50°C/80°C [1] N_{per} [kN]	V_{per} [kN]	wet / wet 24°C/40°C [1] N_{per} [kN]	V_{per} [kN]	wet / wet 50°C/80°C [1] N_{per} [kN]	V_{per} [kN]
Solid sand-lime brick KSV	≥ 1,8	≥ 8	M8	without	80	1,1	1,1	0,9	0,9	0,9	0,9	0,7	0,7
			M10	without	90	1,4	1,4	1,3	1,3	1,1	1,1	1,0	1,0
Solid brick Mz	≥ 1,8	≥ 12	M8	without	80	1,1	1,1	0,9	0,9	1,0	1,0	0,9	0,9
			M10	without	90	1,4	1,4	1,3	1,3	1,4	1,4	1,1	1,1
Hollow sand-lime brick KSL (KSL-R 16DF)	≥ 1,2	≥ 12	M8	SH 13-100	80	1,0	0,7	1,0	0,7	0,9	0,6	0,9	0,6
Hollow sand-lime brick KSL (KSL 16DF)	≥ 1,2	≥ 12	M8	SH 13-100	80	0,7	0,6	0,7	0,6	0,6	0,4	0,6	0,4
			M10	SH 15-100	90	0,9	0,7	0,9	0,7	0,6	0,6	0,6	0,6
Hollow brick HLz Poroton (≥2DF acc. Z-17.1-383)	≥ 0,8	≥ 12	M8	SH 13-100	80	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
			M10	SH 15-100	90	0,6	0,7	0,6	0,7	0,6	0,7	0,6	0,7
Hollow brick HLz (HLz 16DF)	≥ 0,9	≥ 12	M8	SH 13-100	80	0,9	0,6	0,9	0,6	0,7	0,6	0,7	0,6

Permissible loads for M10 are recommended for M12 and M16. For KSL the outer wall must be min 30 mm.
[1] Long term temperature / short term temperature. Long term temperature is roughly constant over significant periods of time.
Short term elevated temperatures are those that occur over brief intervals, e.g. as a result of day / night cycle.

Spacing and edge distance

Building materials	Size	Sleeve	Min. edge distance $c_{min} = c_{cr}$ [mm]	Min. spacing parallel to the bearing joint $s_{min,\parallel} = s_{cr,\parallel}$ [mm]	Min. spacing perpendicular to the bearing joint $s_{min,\perp} = s_{cr,\perp}$ [mm]
Solid sand-lime brick KSV	M8	without	120	240	240
	M10	without	135	270	270
Solid brick Mz	M8	without	120	240	240
	M10	without	135	270	270
Hollow sand-lime brick KSL (KSL-R 16DF)	M8	SH 13-100	100	498	248
	M10	SH 15-100	100	498	248
Hollow sand-lime brick KSL (KSL 16DF)	M8	SH 13-100	100	498	238
	M10	SH 15-100	100	498	238
Hollow brick HLz Poroton	M8	SH 13-100	100	373	238
	M10	SH 15-100	100	373	238
Hollow brick HLz	M8	SH 13-100	100	373	238
	M10	SH 15-100	100	373	238

Bending moment

Steel			Anchor size M8	Anchor size M10
Zinc plated 5.8	M_{per}	[Nm]	10,8	21,2
Stainless steel A4	M_{per}	[Nm]	11,9	23,8