



Declaration of Performance

N°CHIMFORTKEM_VEA_01A_EN

DoP num. kemepoxyacrylate

Bonded anchor resin in cartridge



1. Identification of the product: **KEM Vinylester-Epoxyacrylate – KEM Vea**

2. Identification code (art. 11.4), for the batch or serial number see packaging:

Type of Cartridge	Format	Cod.
Coaxial	280 - 380 ml	344 612 000 – 344 613 000
Silicon gun	310 - 380 ml	344 586 000 – 344 596 000

3. Intended use:

Generic type	Bonded anchor for anchorage of threaded rod
Material of threaded rod and Durability	- Galvanised steel cl. 4.6 mm to 8.8 acc. to EN ISO898 for dry internal conditions - stainless steel cl. A4-70 acc. to EN ISO3506 for dry internal conditions, external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal conditions if no particular aggressive conditions exist - High resistant stainless steel HCR-70 acc. to EN ISO3506 for all conditions
Loading	Static, quasi-static
Temperature Range	40°C to +40°C max long term temperature +24°C and max short term temperature +40°C - 40°C to +80°C max long term temperature +50°C and max short term temperature +80°C
Fire Reaction	A1 according to EN 13501-1
ETA-16/0074	
Base Material	Non-cracked Concrete C20/25 to C50/60 acc. to EN206-1 - size M8÷M24
Use category	- Installation in dry, wet or flooded holes Concrete - Overhead installation allowed
ETA-16/0058	
Base Material	Solid or hollow Masonry acc. to EN771 - size M8÷M16
Use category	- d/d Installation and use in dry Masonry - w/w Installation and use in wet Masonry

4. Manufacturer (art. 11.5): **Friulsider SpA via trieste,1 - 33048 San Giovanni al Natisone (UD) - Italy**

5. Authorised representative (art. 12.2): **Not Relevant**

6. System of Assessment AVCP (annex V): **System 1**

7/8. Harmonised Specification & Notified Body:

	Name of Body	System of Assessment	Reference	EAD / hEN Document
Technical Specification Document	TZUS _[TAB]	1	ETA-16/0074	ETAG001 p.1-5 & TR029
Constancy of Performance & FPC	TUSM nr.1343 _[NB]	1	1343-CPR-M 527-3	ETAG001 p.1-5
Technical Specification Document	TZUS _[TAB]	1	ETA-16/0058	ETAG029
Constancy of Performance & FPC	TUSM nr.1343 _[NB]	1	1343-CPR-M 527-2	ETAG029

9. Declared Performance: **See Annexes**

10. The performance of the product identified in points 1 and 2 is in conformity with declared performance in point 9.

This declaration of performance is issued under the sole responsibility of ETANCO.

Signed for and behalf of the manufacturer by:

Function	Name	Signature	Place and date of issue
Chef de produits	Damien Loizelle		Le Pecq, 18.12.2018

ANNEX I°

Declared performances acc. to <u>ETA-16/0074</u> - ETAG001 p.1-5 Design method TR029 or CEN/TS1992-4								
ESSENTIAL CHARACTERISTICS			PERFORMANCE					
Installation parameters		Threaded rods	M8	M10	M12	M16	M20	M24
d ₀	Nominal diameter of drill bit	[mm]	10	12	14	18	24	28
d _b	<i>Diameter of steel brush</i>	[mm]	12	14	16	20	26	30
h _{ef,min}	Effective embedment depth min	[mm]	60	60	70	80	90	96
h _{ef,max}	Effective embedment depth max	[mm]	160	200	240	320	40	480
h _{min}	Minimum thickness of the concrete member	[mm]	h _{ef} + 30 ≥ 100			h _{ef} + 2d ₀		
T _{inst}	Torque moment (max)	[Nm]	10	20	40	60	120	160
s _{min}	Minimum spacing	[mm]	40	50	60	80	100	120
c _{min}	Minimum edge distance	[mm]	40	50	60	80	100	120
TENSION failure								
N _{Rk,s}	Tension Steel characteristic failure		A _s x f _{uk}					
Combined pull-out and concrete cone failure			M8	M10	M12	M16	M20	M24
τ _{Rk,ucr}	“DRY & WET”	Temperature range I°: 40°C/24 °C [MPa]	8,5	8	8	8	8	8
		Temperature range II°: 80°C/50 °C [MPa]	6,5	6	6	6	6	6
τ _{Rk,ucr}	“FLOODED HOLE”	Temperature range I°: 40°C/24 °C [MPa]	8,5	8	8	8	8	8
		Temperature range II°: 80°C/50 °C [MPa]	6,5	6	6	6	6	6
γ ₂	Installation safety factor	[-]	1,2					
ψ _c	Increasing factor for concrete	C30/37 [-]	1,08					
		C40/50 [-]	1,15					
		C50/60 [-]	1,19					
k ₈		Factor acc. to CEN/TS 1992-4-5 sec.6.2.2.3	[-]	10,1				
Concrete cone failure								
k _{ucr}	Factor acc. to CEN/TS 1992-4-5 sec.6.2.3.1	[-]	10,1					
c _{cr,N}	Critical edge distance	[mm]	1,5 x h _{ef}					
s _{cr,N}	Critical spacing	[mm]	3,0 x h _{ef}					
Splitting failure								
c _{cr,sp}	Critical edge distance (for splitting)	[mm]	1,0xh _{ef} ≤ 2xh _{ef} (2,5 – h / h _{ef}) ≤ 2,4xh _{ef}					
s _{cr,sp}	Critical spacing (for splitting)	[mm]	2xc _{cr,sp}					
γ ₂	Installation safety factor	[-]	1,2					
SHEAR failure			M8	M10	M12	M16	M20	M24
V _{Rk,s}	Characteristic Shear Steel failure without lever arm	[kN]	0,5 x A _s x f _{uk}					
k ₂	Factor acc. to CEN/TS 1992-4-5 sec.6.3.2.1	[-]	0,8					
M ⁰ _{Rk,s}	Characteristic Bending Moment with lever arm	[Nm]	1,2 x W _{el} x f _{uk}					
Concrete Pryout failure								
k ₃	Factor in equation 27 of CEN/TS 1992-4-5 sec.6.3.3	[-]	2					
k	Factor in equation 5.7 of TR029	[-]	2					
γ ₂	Installation safety factor	[-]	1,0					
Concrete Edge failure								
l _f	Effective length of anchor	[-]	l _f ≤ min(h _{ef} ; 8xd _{nom})					
d _{nom}	Outside diameter of anchor	[mm]	8	10	12	16	20	24
γ ₂	Installation safety factor	[-]	1,0					
Displacement under TENSION Load ¹⁾ in Non-cracked concrete C20/25			M8	M10	M12	M16	M20	M24
δ _{N0,ucr}	Short term displacement	40°/24°C [mm/MPa]	0,03	0,04	0,05	0,07	0,08	0,10
		80°/50°C [mm/MPa]	0,02	0,03	0,03	0,04	0,04	0,05
δ _{N∞,ucr}	Long term displacement	40°/24°C [mm/MPa]	0,07	0,08	0,08	0,08	0,08	0,10
		80°/50°C [mm/MPa]	0,15	0,17	0,17	0,17	0,17	0,17
¹⁾ Calculation of the displacement = δ _N * τ								
Displacement under SHEAR Load ²⁾ in Non-cracked concrete C20/25			M8	M10	M12	M16	M20	M24
δ _{V0,ucr}	Short term displacement	[mm/kN]	0,02	0,02	0,01	0,01	0,01	0,01
δ _{V∞,ucr}	Long term displacement		0,03	0,02	0,02	0,01	0,01	0,01

ANNEX II°

Declared performances acc. to [ETA-16/0058](#) - ETAG029

Design method ETAG029-Annex C

ESSENTIAL CHARACTERISTICS				PERFORMANCE							
Installation parameters <u>SOLID CLAY BRICK</u> ¹⁾				M8	M10	M12	M16				
d ₀	Nominal diameter of drill bit	[mm]		10	12	14	18				
d _b	Diameter of steel brush	[mm]		12	14	16	20				
h _{ef}	Effective embedment depth	[mm]		80	90	100	100				
T _{MAX}	Maximum torque moment	[Nm]		6	10	10	10				
Characteristic values for TENSION and SHEAR loads				Temperature Range 40°C / 24°C							
Type of solid clay Brick ¹⁾	density [Kg/dm³]	compress. [N/mm²]	Characteristic Resistance	M8	M10	M12	M16				
Clay solid brick Mz-DF	ρ ≥ 1,64	f _b ≥ 20	N _{RK} (tension) [kN]	2,5	2,5	2	3,5				
			V _{RK} (shear) [kN]	4,5	5,5	7,5	7,5				
	ρ ≥ 1,64	f _b ≥ 28	N _{RK} (tension) [kN]	3	3	2,5	4,5				
			V _{RK} (shear) [kN]	5,5	6,5	9,0	9,0				
γ _M	Partial safety factor [-]			2,5							
Installation parameters <u>HOLLOW CLAY BRICK “with sleeve”</u> ¹⁾				M8	M10	M12	M16				
d ₀	Nominal diameter of drill bit	[mm]		12	16	20	20				
d _b	Diameter of steel brush	[mm]		14	18	22	22				
h _{ef}	Effective embedment depth	[mm]		80	85	85	85				
T _{MAX}	Maximum torque moment	[Nm]		4							
Characteristic values for TENSION and SHEAR loads				Temperature Range 40°C / 24°C							
Type of hollow clay Brick ¹⁾	density [Kg/dm³]	compress. [N/mm²]	Characteristic Resistance	M8	M10	M12	M16				
Doppio UNI	ρ ≥ 0,92	f _b ≥ 20	N _{RK} (tension) [kN]	1,2	1,2	1,5	1,5				
			V _{RK} (shear) [kN]	3,0	3,0	3,0	3,0				
Blocco Leggero	ρ ≥ 0,55	f _b ≥ 6	N _{RK} (tension) [kN]	0,5	0,5	0,6	0,6				
			V _{RK} (shear) [kN]	2,0	2,0	2,0	2,0				
γ _M	Partial safety factor [-]			2,5							
Displacement under TENSION and SHEAR service loads				M8		M10		M12		M16	
				δ ₀	δ _∞	δ ₀	δ _∞	δ ₀	δ _∞	δ ₀	δ _∞
Solid clay brick Mz-DF	N = N _{rk} /1,4*γ _M [mm]			0,1	0,2	0,1	0,1	0,2	0,4	0,2	0,4
	V = V _{rk} /1,4*γ _M [mm]			2,3	3,4	0,7	1,1	0,4	0,6	0,4	0,6
Doppio UNI	N = N _{rk} /1,4*γ _M [mm]			0,5	1,1	0,2	0,3	0,2	0,3	0,2	0,3
	V = V _{rk} /1,4*γ _M [mm]			1,6	2,4	1,8	2,6	1,8	2,6	1,8	2,6
Blocco Leggero	N = N _{rk} /1,4*γ _M [mm]			0,3	0,6	0,3	0,5	0,3	0,5	0,3	0,5
	V = V _{rk} /1,4*γ _M [mm]			1,2	1,7	2,5	3,8	2,5	3,8	2,5	3,8
Characteristic bending moments				M8	M10	M12	M16				
M ⁰ _{RK,s}	cl. 4.8 [Nm]			15	30	52	133				
	cl. 5.8 [Nm]			19	37	66	166				
	cl. 8.8 [Nm]			30	60	105	266				
	A4-70 [Nm]			26	52	92	232				
Factor for job side testing under tension loading				Temperature Range 40°C / 24°C							
β _{factor}	Factor acc. to ETAG029 w/w and d/d use [-]			0,72							

¹⁾ See [ETA-16/0058](#) for other information, installation data, resistance and other type of Bricks.