

Technical data sheet

SIMPSON
Strong-Tie

KEM HP Polyester Fast Cure Anchoring Adhesive

KEM HP is a polyester anchoring adhesive for medium to heavy weight applications. The fast curing formula provides good performances when anchoring threaded rods in uncracked concrete and masonry. Working temperature: from -40 up to +80°C short period and from -40 up to +50°C long period.



Features

Material

Polyester

Applications

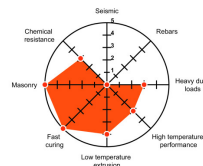
Applications

- Steel constructions
- Wood to concrete fixings
- Industrial construction
- Steel and metal construction (railings, brackets, etc.)
- Anchorages for gates and machines

Suitable for

- Threaded rods in uncracked concrete
- Threaded rods in masonry
- **Suitable base materials:**
 - Concrete**
 - Solid brick**
 - Honeycomb**
 - Cell like clay brick**
 - Light weight honeycomb brick**
 - Hollow dense aggregate block**
 - Hollow light aggregate block**
 - Aerated concrete (partially suitable)**
 - Solid stone1)**
 - Wood**
 - 1) For application on natural stone or marble, carry out test and wait 24/48 hours for any reactions

For installation instructions and information please refer to Technical Documents.



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KEM HP

References	Name	DB nr. [d ₀] [mm]	NOBB nr.	Color of resin	Content	Sanitary texts languages	Storage months	Packaging qty	Pcs./pallet
951040BH00000	KEM HP 951	2604114	60867578	Blue-to-Grey	300	EN, PL, DA, NO, SV, FI	18	12	1152
950070BH00000	KEM HP 950	-	-	Blue-to-Grey	400	PL, DA, NO, SV, IT	18	12	840

Spacing, edge distance and member thickness - Concrete

References	Spacing, edge distance and member thickness				
	BFK embedment depths				
	Characteristic spacing - scr,N	min. spacing - smin	Characteristic edge distance - ccr,N	min. edge distance - cmin	Min. member thickness - hmin
KEM HP + M8	240	40	120	40	110
KEM HP + M10	270	50	135	50	120
KEM HP + M12	330	60	165	60	140
KEM HP + M16	380	80	190	80	160
KEM HP + M20	510	100	255	100	220
KEM HP + M24	630	120	315	120	270

Characteristic resistance - Tension - NRk [kN] - Carbon Steel 5.8

References	embedment depth	Characteristic resistance – Carbon steel 5.8
	hef	Tension - NRk
		Non-cracked concrete
		C20/25
KEM HP + M8	80	17.1
KEM HP + M10	90	22.6
KEM HP + M12	110	33.2
KEM HP + M16	125	50.3
KEM HP + M20	170	85.5
KEM HP + M24	210	126.7

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Characteristic resistance - Shear - V_{Rk} [kN]

References	embedment depth	Characteristic resistance	
	hef	Shear - V_{Rk}	
		Static and quasi-static loads	
		Carbon steel 5.8	Stainless steel A4 70
KEM HP + M8	80	9.1	12.8
KEM HP + M10	90	14.5	20.3
KEM HP + M12	110	21.1	29.5
KEM HP + M16	125	39.3	55
KEM HP + M20	170	61.3	85.8
KEM HP + M24	210	88.3	123.6

Design resistance - Tension - N_{Rd} [kN] – Carbon steel 5.8

References	embedment depth	Design resistance – Carbon steel 5.8
	hef	Tension - N_{Rd}
		Non-cracked concrete
		C20/25
KEM HP + M8	80	9.5
KEM HP + M10	90	12.6
KEM HP + M12	110	18.4
KEM HP + M16	125	27.9
KEM HP + M20	170	47.5
KEM HP + M24	210	70.4

Design resistance - Shear - V_{Rd} [kN]

References	embedment depth	Design resistance	
	hef	Shear - V_{Rd}	
		Static and quasi-static loads	
		Carbon steel 5.8	Stainless steel A4 70
KEM HP + M8	80	7.3	8.2
KEM HP + M10	90	11.6	13
KEM HP + M12	110	16.9	18.9
KEM HP + M16	125	31.4	35.2
KEM HP + M20	170	49	55
KEM HP + M24	210	70.6	79.2

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Permissible resistance - Tension - N [kN] – Carbon steel 5.8

References	embedment depth	Permissible resistance – Carbon steel 5.8
	hef	Tension - N
		Non-cracked concrete
		C20/25
KEM HP + M8	80	6.8
KEM HP + M10	90	9
KEM HP + M12	110	13.2
KEM HP + M16	125	20
KEM HP + M20	170	33.9
KEM HP + M24	210	50.3

Permissible resistance - Shear - V [kN]

References	embedment depth	Permissible resistance	
	hef	Shear - V	
		Static and quasi-static loads	
		Carbon steel 5.8	Stainless steel A4 70
KEM HP + M8	80	5.2	5.9
KEM HP + M10	90	8.3	9.3
KEM HP + M12	110	12	13.5
KEM HP + M16	125	22.4	25.2
KEM HP + M20	170	35	39.3
KEM HP + M24	210	50.4	56.6

Masonry - Clay solid brick - $f_{bk} \geq 28 \text{ MPa}$ - $\rho \geq 1,6 \text{ kg/dm}^3$ EN 771-1

References	permissible tension and shearloads [kN] for a single anchor without effects of distances and spacings						
	embedment depth hef	drill hole d_0	Clay solid brick - $f_{bk} \geq 28 \text{ MPa}$ - $\rho \geq 1,6 \text{ kg/dm}^3$ EN 771-1		edge distance $C_{cr} =$ C_{min}	spacing $S_{cr} =$ S_{min}	max torque T_{inst} max
			Tension - N	Shear - V			
KEM HP + M8	80	10	0.9	1.6	120	240	6
KEM HP + M10	90	12	0.9	1.9	135	270	10
KEM HP + M12	100	14	0.7	2.6	150	300	10
KEM HP + M16	100	18	1.3	2.6	150	300	10

1kN $\approx$ 100 kgf

(1) Single anchor without influence from anchor spacing and edge distances

(2) Design method according to EOTA TR054

(3) The recommended loads N and V derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors $\gamma_f=1.4$ and γ_m

(4) Values valid for temperature 24°C on the long term and up to 40°C on the short term. For higher temperatures see the certification ETA

(5) For all other cases, more detailed information or different masonry please refer to ETA certification

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Masonry - Clay hollow brick double UNI - $f_{bk} \geq 20 \text{ MPa}$ - $\rho \geq 0,9 \text{ kg/dm}^3$ EN 771-1

References	permissible tension and shearloads [kN] for a single anchor without effects of distances and spacings							
	Clay hollow brick double UNI - $f_{bk} \geq 20 \text{ MPa}$ - $\rho \geq 0,9 \text{ kg/dm}^3$ EN 771-1					edge distance $C_{cr} = C_{min}$	spacing $S_{cr} = S_{min}$	max torque $T_{inst max}$
	min embedment depth h_{ef}	Stud diameter	drill hole d_0	Tension - N [Nm]	Shear - V [mm]			
KEM HP + BRP Ø12	50	M6 - M8	12	0.3	0.9	100	250	4
KEM HP + BRP Ø15	85	M8 - M10	16	0.3	0.9	100	250	4
KEM HP + BRP Ø20	85	M12 - M16	22	0.4	0.9	120	250	4

1kN $\approx$ 100 kgf

- (1) Single anchor without influence from anchor spacing and edge distances
- (2) Design method according to EOTA TR054
- (3) The recommended loads N and V derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors $\gamma_f=1.4$ and γ_m
- (4) Values valid for temperature 24°C on the long term and up to 40°C on the short term. For higher temperatures see the certification ETA
- (5) M6 stud not included in ETA certification
- (6) For all other cases, more detailed information or different masonry please refer to ETA certification

Masonry - Clay hollow brick - $f_{bk} \geq 6 \text{ MPa}$ - $\rho \geq 0,5 \text{ kg/dm}^3$ EN 771-1

References	permissible tension- and shearloads [kN] for a single anchor without effects of distances and spacings							
	Clay hollow brick - $f_{bk} \geq 6 \text{ MPa}$ - $\rho \geq 0,5 \text{ kg/dm}^3$ EN 771-1 [d_0] [mm]					edge distance $C_{cr} = C_{min}$ [mm]	spacing $S_{cr} = S_{min}$	max torque $T_{inst max}$
	min embedment depth h_{ef}	Stud diameter	drill hole d_0	Tension - N	Shear - V			
KEM HP + BRP Ø12	50	M6 - M8	12	0.1	0.6	100	250	4
KEM HP + BRP Ø15	85	M8 - M10	16	0.1	0.6	100	250	4
KEM HP + BRP Ø20	85	M12 - M16	22	0.1	0.7	120	250	4

1kN $\approx$ 100 kgf

- (1) Single anchor without influence from anchor spacing and edge distances
- (2) Design method according to EOTA TR054
- (3) The recommended loads N and V derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors $\gamma_f=1.4$ and γ_m
- (4) Values valid for temperature 24°C on the long term and up to 40°C on the short term. For higher temperatures see the certification ETA
- (5) M6 stud not included in ETA certification
- (6) For all other cases, more detailed information or different masonry please refer to ETA certification

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Installation

Installation parameters - Concrete

References	embedment depth	Installation parameters				
	hef	Ø drilling - d ₀	drilling depth (zyl.) - h ₀ ≥	Max. fixture hole Ø - d _f ≤	Wrench size DIN 934 (ISO 4032) - SW [mm]	Max installation torque - T _{inst,max}
KEM HP + M8	80	10	80	9	13	10
KEM HP + M10	90	12	90	12	17	20
KEM HP + M12	110	14	110	14	19	40
KEM HP + M16	125	18	125	18	24	80
KEM HP + M20	170	24	170	22	30	120
KEM HP + M24	210	28	210	26	36	160

Notes to the load charts of threaded rods on concrete:

1kN ≈ 100 kgf

(1) Single anchor without influence from anchor spacing and edge distances in concrete C20/25

(2) Design Method acc. to EN 1992-4:2018 ($\gamma_c = 1,5$; $\psi_{sus} = 1$)

(3) The design loads N_{rd} and V_{rd} derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors γ_m

(4) The recommended loads N and V derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors $\gamma_f = 1.4$ and γ_m

(5) Values valid for temperature 24°C on the long term and up to 40°C on the short term. For higher temperatures see the certification ETA

(6) Value of pure shear with distance from the edge $C \geq 10 \times h_{nom}$

(7) For all other cases and more detailed information please refer to Technical Sheet and ETA certifications

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Technical Notes

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