



CF 850




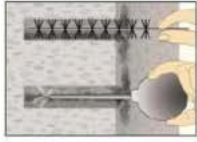


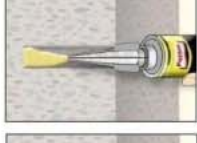

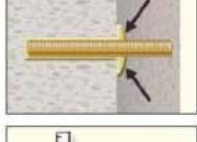


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Technical information

Reaction resin mortar, polyester-based styrene-free

CONCRETE / SOLID STONE

USAGE	USAGE INSTRUCTIONS
<p>1. AREAS OF APPLICATION</p> <ul style="list-style-type: none"> • Heavy load-carrying attachments in solid stone, concrete, porous concrete and light concrete • Suitable for attachment points close to the edge, since anchoring is free of expansion forces • Also suitable as repair mortar or adhesive mortar for concrete components • Attachment of anchor rods, threaded collars, reinforcement bars, profiles etc. <p>2. BENEFITS</p> <ul style="list-style-type: none"> • Can be used in various solid stones • Cartridge can be used up to the end of the validity date by replacing the static mixer or resealing cartridge with the sealing cap • Water-impermeable joint, i.e. no water can penetrate into the hole at the side of the adhesive compound • Galvanised steel, stainless steel, high-corrosion-resistant steel <p>3. PROPERTIES</p> <ul style="list-style-type: none"> • For use with special application gun and static mixers • Temperature resistant up to 80 °C • Application temperature of the cartridge should be at least 20 °C • Storage temperature from 5 °C up to max. 25 °C • Storage life: 12 months 	<p>UNDERSURFACE: Concrete, solid stone</p>          <ol style="list-style-type: none"> 1. Drill hole with percussion drill 2. Clean drill hole (blow out: 4x, brush out: 4x, blow out: 4x) 3. Screw mixer to cartridge 4. Squeeze out and discard approx. 10 cm of compound before use 5. Starting from the back end, fill hole completely with mortar 6. Push anchor up to base of hole whilst turning it slightly 7. Visual check of mortar filling 8. Observe hardening time 9. Install component, apply torque



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HOLLOW BRICK

USAGE

USAGE INSTRUCTIONS

1. AREAS OF APPLICATION

- Used for medium-load applications
- The injection plug can be used in hollow brick Hlz 4 to DIN 105, sand-lime hollow brick KSL 4 to DIN 106, hollow light concrete brick Hbl 2 to DIN 18 151 and hollow concrete brick Hbn 4 to DIN 18 153
- Suitable for attachment of façades, projecting roofs, wooden constructions, metal constructions, metal profiles, consoles, railings, grills, sanitary fittings, pipe connections, cable runs etc.

2. BENEFITS

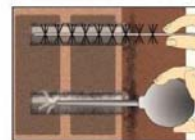
- Secure anchoring in hollow brick; high load-bearing capacity
- No expansion effect, allowing attachment points to be placed close to edges etc.
- Cartridge can be used up to the end of the validity date by replacing the static mixer or resealing cartridge with the sealing cap

3. PROPERTIES

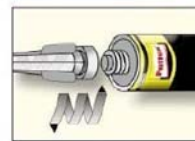
- Anchoring by composite form-fitting between injection mortar, sleeve collar, anchor rod and anchoring surface
- Galvanised steel, stainless steel, high-corrosion-resistant steel



1. Drill hole without percussion drill



2. Clean drill hole (blow out: 2x, brush out: 2x, blow out: 2x)



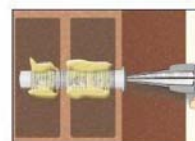
3. Screw mixer to cartridge



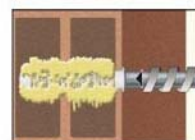
4. Squeeze out and discard approx. 10 cm of compound before use



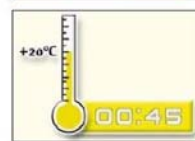
5. Insert perforated sleeve



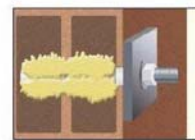
6. Starting from the back end, fill perforated sleeve with mortar



7. Push anchor up to base of sleeve whilst turning it slightly



8. Observe hardening time



9. Install component, apply torque

Reaction characteristics

Statikmischkartuschen Static cartridges Cartouches à empoût mélangeur	Aushärtebeginn Curing start Début du durcissement	Aushärteende Curing end Fin du durcissement
5° C	25 Min.	120 Min.
10° C	15 Min.	80 Min.
20° C	6 Min.	45 Min.
30° C	4 Min.	25 Min.
35° C	2 Min.	20 Min.



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PERFORMANCE DATA CONCRETE FOR STANDARD APPLICATION

design values

resin	Concrete		M 8	M 10	M 12	M 16	M 20
polyester styrene-free	≥ C20/25	N _{Rk} [kN]	11,9	17,8	25,2	28,3	47,3
		N _{Rd} [kN]	6,6	9,9	14,0	15,7	26,3
safety factor for tension loads 1,8 acc. to ETAG							
polyester styrene-free	steel quality 5.8	V _{Rk} [kN]	8,3	12,9	18,9	35,3	55,1
		V _{Rd} [kN]	5,3	8,3	12,1	22,6	35,3
		rec. torque	12,9	25,6	44,8	113,7	222,9
polyester styrene-free	steel quality A4	V _{Rk} [kN]	9,2	14,5	21,1	39,3	61,3
		V _{Rd} [kN]	5,9	9,3	13,5	25,2	39,3
		rec. torque	12,0	23,9	41,9	106,7	207,9

safety factor for share loads 1,56 acc. to ETAG

recommended loads

resin	Concrete		M 8	M 10	M 12	M 16	M 20
polyester styrene-free	≥ C20/25	F _{rec.} [kN]	4,7	7,1	10,0	11,2	18,8

installation parameters

edge distance	C _{cr,N} [mm]	80	90	110	130	170
min. edge distance	C _{min} [mm]	40	50	60	70	90
axial distance	S _{cr,N} [mm]	160	180	220	250	340
min. axial distance	S _{min} [mm]	80	90	110	125	170
anchorage depth	h _{ef} [mm]	80	90	110	125	170
minimum parthickness	h _{min} [mm]	130	140	160	175	220
thread diameter	d [mm]	8	10	12	16	20
drill diameter	d _B [mm]	10	12	14	18	24
hole diameter in part	d _{Bau} [mm]	9	11	13,5	17,5	22
tightening torque	T _{inst.} [Nm]	10	20	40	60	120



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PERFORMANCE DATA / HOLLOW BRICK

recommended loads			standard sleeve			
stone	strength class		M 6	M 8	M 10	M 12
hollow brick	Hlz 4	F_{rec} [kN]	0,3	0,3	0,3	0,3
	Hlz 6		0,4	0,4	0,4	0,4
	Hlz 12		0,7	0,8	0,8	0,8
sand-lime hollow brick	KSL 4	F_{rec} [kN]	0,3	0,4	0,4	0,4
	KSL 6		0,4	0,6	0,6	0,6
	KSL 12		0,7	0,8	0,8	0,8
sand-lime solid brick	KS 12	F_{rec} [kN]	0,5	1,7	1,7	1,7
solid brick	Mz 12	F_{rec} [kN]	0,5	1,7	1,7	1,7
light concrete hollow brick	Hbl 2	F_{rec} [kN]	0,3	0,3	0,3	0,3
	Hbl 4		0,5	0,6	0,6	0,6
concrete hollow brick	Hbn 4	F_{rec} [kN]	0,5	0,6	0,6	0,6
standard sleeve	12x50	[mm]	x			
	15x85			x	x	x
	15x130				x	x

installation parameters			standard sleeve			
axial distance plug group	$S_{cr,N}$	[mm]	Hlz, KSL, Mz, KS = 100 Hbl, Hbn = 200			
min. axial distance plug group	S_{min}	[mm]	Hlz, KSL, Mz, KS = 50 Hbl, Hbn = 200			
axial distance between single plugs	$S_{singl.}$	[mm]	250			
edge distance	$C_{cr,N}$	[mm]	250			
min. edge distance	C_{min}	[mm]	250			
drilling depth	h_{ef}	[mm]	55	90	90	90
drilling depth without sleeve	h_{ef}	[mm]	65	85	95	100
minimum partthickness	h_{min}	[mm]	110			
drill diameter	d_B	[mm]	13	16	16	16
hole diameter in part	d_{Bau}	[mm]	7	9	12	14
tightening torque	$T_{inst.}$	[Nm]	3	8	8	8



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CHARACTERISTIC PROPERTIES

as established by MPA Nordrhein-Westfalen

Bending tensile strength and compression strength

Sample preparation and testing carried out in accordance with EN 196 Part 1; strength determination

Bending tensile strength and compression strength were tested on three samples, size 40 x 40 x 160 mm.

Load increase to test bending tensile strength: (50 ± 10) N/s

Load increase to test compression strength: (2400 ± 200) N/s

The results are shown in Table 1 below.

Table 1: Bending tensile strength and compression strength

Sample no.	Age of sample on day of testing	Raw density [Kg/dm ³]	Bending tensile strength [N/mm ²]	Compression strength [N/mm ²]	
1	24 hours	1,66	58	103	116
2	24 hours	1,66	58	105	107
3	24 hours	1,66	52	110	111
Mean value		1,66	56	108	

Dynamic elasticity module

The dynamic elasticity module was determined on the basis of the resin proportion over the sound duration. The results are shown in Table 2 below.

Table 2: Dynamic elasticity module of samples 40 x 40 x 160 mm

Sample	Raw density [Kg/dm ³]	Edyn after 24 hours [N/mm ²]
1	1,64	3100
2	1,63	3550
3	1,63	3300
Mean value	1,63	3300



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CHARACTERISTIC PROPERTIES

as established by MPA Nordrhein-Westfalen

Energy at break

Sample preparation and testing carried out in accordance with EN 196 Part 1; strength determination.

Bending tensile strength and compression strength were tested on five samples, while at the same time determining the energy at break at the relevant maximum load.

Sample size 40 x 40 x 160 mm.

Test speed, in variance to DIN EN 196: 1 mm/min.

The results are shown in Table 3 below.

Table 3: Bending tensile strength and compression strength, energy at break

Age of sample at testing	Properties	Extreme values		Average value	Variation co-efficient %
24 hours	Bending tensile [N/mm ²]	43,90	47,30	46,10	3,03
	Energy at break at maximum force in bending trial [Nm]	8,29	10,57	9,74	7,00
	Compression [N/mm ²]	78,80	86,70	82,80	3,78
	Energy at break at maximum force in compression trial [Nm]	169,00	196,00	176,00	6,14

