

TECHNICAL DATASHEET

AnchorFast Styrene Free Chemical Anchor

Description & Uses

AlphaChem AnchorFast is a high quality, styrene free chemical anchor suited for a reliable fixing with high performance. It is CE approved Option 7 for application on non-cracked concrete, also having CE approval for application on masonry. Supplied in an easy to use cartridge, suitable for application in standard cartridge applicator guns.

Designed for heavy load applications where a high strength bond is required.

Benefits

- CE approved Option 7 for application with non-cracked concrete
- CE approved for the application with masonry.
- Styrene Free, without additives or solvents, dangerous to the environment and user.
- Can be used in closed spaces.
- Forms a water impermeable joint.
- Allows fixing close to the edges due to the no expansion effect.
- It does not modify the external appearance of the support.
- Also suitable as a repair resin or adhesive resin for concrete components.
- Class A+ for emission of organic compounds (VOC's) for inside spaces.

Application

- On solid supports, used with galvanized steel, hot-dip galvanized steel and stainless steel accessories. On semi-solid supports: stone, concrete, solid and hollow bricks. Ideal for window and door frames.
- Suitable for wood and metal carpentry, for fixings of facades, railings, grills, sanitary fittings, pipe connections, and for fixings of hinges for wood and aluminium doors and frame sections.

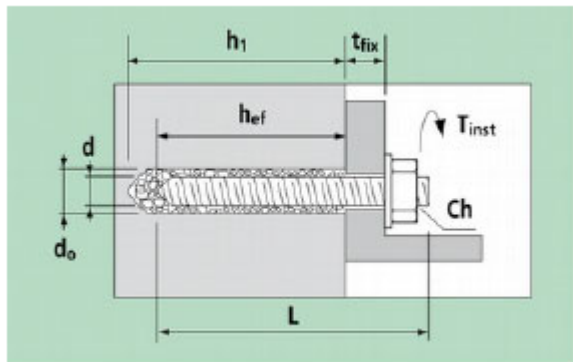
Directions

- Unscrew the cap and cut the top off the bag just under the metal clamp.
- Attach the mixer nozzle and place cartridge into an AlphaChem Professional Heavy Duty Applicator gun.
- Gradually press the trigger until the product starts to pass through the mixer nozzle. Once the product extruded from the nozzle is of an even colour (approx. 5.5 inches) it is ready to be used.
- Apply into holes as demonstrated on the application guide on the side of the packaging.



Time & Temperatures

Temperature of base material	Working Time	Full Curing
+5 to +9 °C	10 min	145 min
+10 to +14 °C	8 min	85 min
+15 to +19 °C	6 min	70 min
+20 to +29 °C	4 min	50 min
+30 to +34 °C	3 min	35 min
+35 to +39 C	3 min	20 min



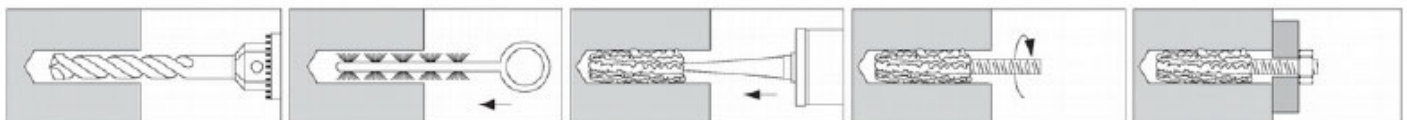
Key

- d = bar diameter
- L = bar length
- T_{fix} = fixable thickness
- d₀ = hole diameter
- h₁ = minimum hole depth
- h_{nom} = setting depth
- hef = effective anchorage depth
- T_{inst} = tightening torque

Use without sleeve: hef = h₁ = h_{nom}

Use on non-cracked concrete

Installation



Setting Parameters

Bar size		M8	M10	M12	M16	M20	M24
Hole diameter	d ₀ mm	10	12	14	18	22	28
Hole depth	hef _{min} mm	64	80	96	128	160	192
	hef _{max} mm	96	120	144	192	240	288
Minimum spacing	S _{min} mm	50	60	70	95	120	145
Minimum edge distance	C _{min} mm	50	60	70	95	120	145
Min. base mat. thickness	h _{min} mm	Hef +30 >= 100				hef + 2d ₀	
Tightening torque	T _{inst} mm	10	20	40	80	150	200

Strength data

Valid for a single anchor far from the edges, on a thick concrete member of class C20/25 with sparse reinforcing.

Characteristic resistance (kN)

Bar size		M8	M10	M12	M16	M20	M24
Embedment depth	Hef mm	80	90	110	128	170	210
Tension	N _{Rk} kN	16.1	19.8	29	45	74.78	95
Shear	V _{Rk} kN	9.2	14.5	21.1	39.3	61.3	88.3

Design resistance (kN)

Bar size		M8	M10	M12	M16	M20	M24
Embedment depth	Hef mm	80	90	110	128	170	210
Tension	N _{Rd} kN	10.7	13.2	19.4	30	49.8	63.3
Shear	V _{Rd} kN	7.3	11.6	16.9	31.4	49.0	70.6

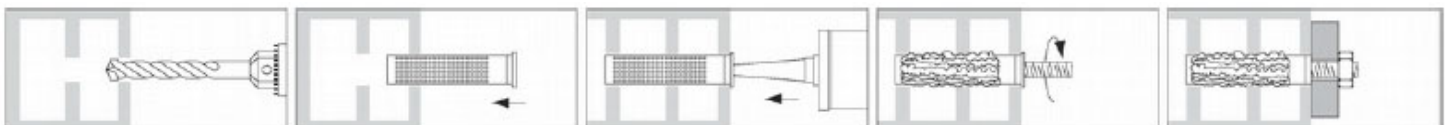
Recommended load (kN)

Bar size		M8	M10	M12	M16	M20	M24
Embedment depth	Hef mm	80	90	110	128	170	210
Tension	N _{rec} kN	7.7	9.4	13.8	21.4	35.6	45.2
Shear	V _{rec} kN	5.2	8.3	12.0	22.4	35.0	50.4

1kN = 100 kg

Steel failure , class 5.8

Use on Masonry Installation



Base Material

		Classification (acc. To EN 771-1)	L/W/H (mm)	Min. density ρ (kg/dm ³)	Min. compr. Strength F_b (N/mm ²)
Solid brick	Clay brick	MZ 12-2,0-NF	240/116/71	2.0	12
	Calcium silicate brick	KS 12-2-0-NF	240/115/70	2.0	12
Hollow brick	Hollow clay brick (c1)	HLZ 12-1,0-2DF	235/112/115	1.0	12
	Hollow clay brick (C2)	HLZW 6-0,7-8DF	250/240/240	0.8	6
	Hollow calcium silicate brick (C3)	KSL 12-1,4-3DF	240/175/113	1.4	12
	Hollow calcium silicate brick (C4)	KSL 12-1,4-8DF	250/240/237	1.4	12
	Lightweight concrete hollow brick (C5)	HBL 2-0,45-10DF	250/300/248	0.45	2
	Lightweight concrete hollow brick (C6)	HBL 4-0,7-8DF	250/240/248	0.7	4
	Concrete masonry unit	HBN 4-12DF	370/240/238	1.2	4

It is possible to use other bricks after job site tests conducted according to Annex ETAG 029

Setting parameters

Anchor rod in solid masonry without sleeve

Bar size		M8	M10	M12
Nominal diameter of drill bit	d_o mm	15	15	20
Effective anchorage depth	h_{ef} mm	85	85	85
Diameter of clearance hole in the fixture	d_{fix} mm	9	12	14
Depth of the drilling hole	h_1 mm	90	90	90
Maximum installation torque	T_{inst} Nm	2	2	2

Anchor rod in solid and hollow or perforated masonry with sleeve

Bar size		M8	M10	M12
sleeve		BR16x85	BR16x85	BR20x85
Nominal diameter of drill bit	d_o mm	16	16	20
Effective anchorage depth	h_{ef} mm	85	85	85
Installation depth of sleeve	h_{nom} mm	85	85	85
Diameter of clearance hole in the fixture	d_{fix} mm	9	12	14
Depth of drilling hole	h_1 mm	90	90	90
Maximum installation torque	T_{inst} Nm	2	2	2

Internal threaded socket in solid and hollow or perforated masonry with sleeve

Bar size		M8	M10	M12
Internal threaded socket		CBA10 – 12x80	CBA10 – 14x80	CBA12 - 16x80
Sleeve		BR16x85	BR20x85	BR20x85
Nominal diameter of drill bit	d ₀ mm	16	20	20
Effective anchorage depth	h _{ef} mm	80	80	80
Installation depth of sleeve	h _{nom} mm	85	85	85
Diameter of clearance hole in the fixture	d _{fix} mm	9	12	14
Depth of the drilling hole	h ₁ mm	90	90	90
Maximum installation torque	T _{inst} Nm	2	2	2

Minimum and critical spacing and distances – anchor rod

Bar size			M8	M10	M12
Clay brick	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	255	255	255
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	255	255	255
	Edge distance	C _{cr} = C _{min} mm	128	128	128
Calcium silicate brick	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	255	255	255
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	255	255	255
	Edge distance	C _{cr} = C _{min} mm	128	128	128
Hollow clay brick (c1)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	235	235	235
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	115	115	115
	Edge distance	C _{cr} = C _{min} mm	100	100	100
Hollow clay brick (c2)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	250	250	250
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	240	240	240
	Edge distance	C _{cr} = C _{min} mm	100	100	120
Hollow calcium silicate brick (c3)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	240	240	240
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	113	113	113
	Edge distance	C _{cr} = C _{min} mm	100	100	120
Hollow calcium silicate brick (c4)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	250	250	250
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	237	237	237
	Edge distance	C _{cr} = C _{min} mm	100	100	120
Lightweight concrete hollow block (c5)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	250	250	-
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	248	248	-
	Edge distance	C _{cr} = C _{min} mm	100	100	-
Lightweight concrete hollow block (c6)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	250	250	250
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	248	248	248
	Edge distance	C _{cr} = C _{min} mm	100	100	120
Concrete masonry unit (c7)	Spacing parallel to horizontal joint	S _{cr,II} = S _{min,II} mm	370	370	370
	Spacing perpendicular to horizontal joint	S _{cr,I} = S _{min,I} mm	238	238	238
	Edge distance	C _{cr} = C _{min} mm	100	100	120

Minimum and critical spacing and distances – internal threaded socket

Bar size			M8	M10	M12
Clay brick	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	255	255	255
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	255	255	255
	Edge distance	$C_{cr} = C_{min}$ mm	128	128	128
Calcium silicate brick	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	255	255	255
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	255	255	255
	Edge distance	$C_{cr} = C_{min}$ mm	128	128	128
Hollow clay brick (c1)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	235	235	235
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	115	115	115
	Edge distance	$C_{cr} = C_{min}$ mm	100	120	120
Hollow clay brick (c2)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	250	250	250
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	240	240	240
	Edge distance	$C_{cr} = C_{min}$ mm	100	120	120
Hollow calcium silicate brick (c3)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	240	240	240
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	113	113	113
	Edge distance	$C_{cr} = C_{min}$ mm	100	120	120
Hollow calcium silicate brick (c4)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	-	250	250
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	-	237	237
	Edge distance	$C_{cr} = C_{min}$ mm	-	120	120
Lightweight concrete hollow block (c5)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	250	250	250
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	248	248	248
	Edge distance	$C_{cr} = C_{min}$ mm	100	120	120
Lightweight concrete hollow block (c6)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	-	250	250
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	-	248	248
	Edge distance	$C_{cr} = C_{min}$ mm	-	120	120
Concrete masonry unit (c7)	Spacing parallel to horizontal joint	$S_{cr II} = S_{min II}$ mm	370	370	370
	Spacing perpendicular to horizontal joint	$S_{cr L} = S_{min L}$ mm	238	238	238
	Edge distance	$C_{cr} = C_{min}$ mm	100	120	120

Strength data

Valid for a single anchor far from the edges.

Characteristic resistance under tension and shear – anchor rod (kN)

Bar size		M8	M10	M12
Clay brick	$N_{Rk} = V_{Rk}$	1.5	1.5	3.0
Calcium silicate brick	$N_{Rk} = V_{Rk}$	0.75	0.9	1.5
Hollow clay brick (c1)	$N_{Rk} = V_{Rk}$	2.5	2.0	2.0
Hollow clay brick (c2)	$N_{Rk} = V_{Rk}$	1.2	1.2	0.9
Hollow calcium Silicate brick (c3)	$N_{Rk} = V_{Rk}$	0.75	1.2	0.5
Hollow calcium Silicate brick (c4)	$N_{Rk} = V_{Rk}$	0.75	1.2	0.5
Lightweight concrete hollow block (c5)	$N_{Rk} = V_{Rk}$	0.6	0.3	-
Lightweight concrete hollow block (c6)	$N_{Rk} = V_{Rk}$	0.6	1.5	1.2
Concrete masonry unit (c7)	$N_{Rk} = V_{Rk}$	2.5	1.5	2.5

Design resistance under tension and shear – anchor rod (kN)

Bar size		M8	M10	M12
Clay brick	$N_{Rd} = V_{Rd}$	0.6	0.6	1.2
Calcium silicate brick	$N_{Rd} = V_{Rd}$	0.3	0.36	0.6
Hollow clay brick (c1)	$N_{Rd} = V_{Rd}$	1.0	0.8	0.8
Hollow clay brick (c2)	$N_{Rd} = V_{Rd}$	0.48	0.48	0.36
Hollow calcium Silicate brick (c3)	$N_{Rd} = V_{Rd}$	0.3	0.48	0.2
Hollow calcium Silicate brick (c4)	$N_{Rd} = V_{Rd}$	0.3	0.48	0.2
Lightweight concrete hollow block (c5)	$N_{Rd} = V_{Rd}$	0.24	0.12	-
Lightweight concrete hollow block (c6)	$N_{Rd} = V_{Rd}$	0.24	0.6	0.48
Concrete masonry unit (c7)	$N_{Rd} = V_{Rd}$	1.0	0.6	1.0

Recommended load under tension and shear – anchor rod (kN)

Bar size		M8	M10	M12
Clay brick	$N_{rec} = V_{rec}$	0.43	0.43	0.86
Calcium silicate brick	$N_{rec} = V_{rec}$	0.21	0.26	0.43
Hollow clay brick (c1)	$N_{rec} = V_{rec}$	0.71	0.57	0.57
Hollow clay brick (c2)	$N_{rec} = V_{rec}$	0.34	0.34	0.26
Hollow calcium Silicate brick (c3)	$N_{rec} = V_{rec}$	0.21	0.34	0.14
Hollow calcium Silicate brick (c4)	$N_{rec} = V_{rec}$	0.21	0.34	0.14
Lightweight concrete hollow block (c5)	$N_{rec} = V_{rec}$	0.17	0.09	-
Lightweight concrete hollow block (c6)	$N_{rec} = V_{rec}$	0.17	0.43	0.34
Concrete masonry unit (c7)	$N_{rec} = V_{rec}$	0.71	0.43	0.71

1kN = 100kg

Characteristic resistance under tension and shear- internal threaded socket (kN)

Bar size		M8	M10	M12
Clay brick	$N_{Rk} = V_{Rk}$	2.0	3.0	4.0
Calcium silicate brick	$N_{Rk} = V_{Rk}$	2.0	1.5	0.9
Hollow clay brick (c1)	$N_{Rk} = V_{Rk}$	1.5	2.5	2.5
Hollow clay brick (c2)	$N_{Rk} = V_{Rk}$	0.9	1.5	0.6
Hollow calcium Silicate brick (c3)	$N_{Rk} = V_{Rk}$	0.6	0.75	0.9
Hollow calcium Silicate brick (c4)	$N_{Rk} = V_{Rk}$	-	0.75	0.4
Lightweight concrete hollow block (c5)	$N_{Rk} = V_{Rk}$	0.5	0.3	0.75
Lightweight concrete hollow block (c6)	$N_{Rk} = V_{Rk}$	-	0.4	0.6
Concrete masonry unit (c7)	$N_{Rk} = V_{Rk}$	0.6	1.2	0.9

Design resistance under tension and shear – internal threaded socket (kN)

Bar size		M8	M10	M12
Clay brick	$N_{Rd} = V_{Rd}$	0.8	1.2	1.6
Calcium silicate brick	$N_{Rd} = V_{Rd}$	0.8	0.6	0.36
Hollow clay brick (c1)	$N_{Rd} = V_{Rd}$	0.6	1.0	1.0
Hollow clay brick (c2)	$N_{Rd} = V_{Rd}$	0.36	0.6	0.24
Hollow calcium Silicate brick (c3)	$N_{Rd} = V_{Rd}$	0.24	0.3	0.36
Hollow calcium Silicate brick (c4)	$N_{Rd} = V_{Rd}$	-	0.3	0.16
Lightweight concrete hollow block (c5)	$N_{Rd} = V_{Rd}$	0.2	0.12	-
Lightweight concrete hollow block (c6)	$N_{Rd} = V_{Rd}$	-	0.16	0.24
Concrete masonry unit (c7)	$N_{Rd} = V_{Rd}$	0.24	0.48	0.36

Recommended load under tension and shear- internal threaded socket (kN)

Bar size		M8	M10	M12
Clay brick	$N_{rec} = V_{rec}$	0.57	0.86	1.14
Calcium silicate brick	$N_{rec} = V_{rec}$	0.57	0.43	0.26
Hollow clay brick (c1)	$N_{rec} = V_{rec}$	0.43	0.71	0.71
Hollow clay brick (c2)	$N_{rec} = V_{rec}$	0.26	0.43	0.17
Hollow calcium Silicate brick (c3)	$N_{rec} = V_{rec}$	0.17	0.21	0.26
Hollow calcium Silicate brick (c4)	$N_{rec} = V_{rec}$	-	0.21	0.11
Lightweight concrete hollow block (c5)	$N_{rec} = V_{rec}$	0.14	0.09	-
Lightweight concrete hollow block (c6)	$N_{rec} = V_{rec}$	-	0.11	0.17
Concrete masonry unit (c7)	$N_{rec} = V_{rec}$	0.17	0.34	0.76

1kN = 100kg

Characteristic resistances derive from the ETA 16/0595.

Load values derive from tests conducted according to international guidelines.

Storage

Store in cool, dry conditions, away from direct sunlight. Ideally store between +5°C & +25°C.

Cartridge temperature: between +5 and 25 °C

Installation temperature: between +5 and 30 °C

Work temperature: between -40 and + 40 °C (maximum short term temp. +40 C; long term +24 °C)

Shelf life

12 months (storage temp. +5 to +25 °C).

Limitations

As Cromar cannot know all the uses its products may be put to, it is the user's responsibility to ensure suitability for use. Consult Safety Data Sheet before use.

Further Information:

In the event of further queries or problems concerning the use of this product, please contact the address below, e-mail info@cromar.uk.com.

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