

DF-100

POLYESTER RESIN STYRENE FREE



DYMAFIX

CHEMICAL RESIN TECHNOLOGY

TECHNICAL DATA SHEET

DF-100 is an economical styrene free polyester resin anchor for load bearing anchoring applications in non-cracked concrete. Suitable for fixing bolts, threaded rods/bars, posts etc. into any solid substrates, and can also be used in hollow substrates with either a nylon or metal perforated sleeve.

Suitable for applications in:

- Non-cracked concrete
- Close to edge applications where mechanical anchors could cause cracking
- Medium loads with fast curing time
- Remedial wall ties in brick or blockwork
- Confined spaces and indoors as this is free from styrene
- Concrete, brick, hollow wall, masonry and other high strength materials
- Fast working times for time sensitive applications

Approvals list:

- ETA option 7 (non-cracked concrete) - M8 to M16
- ETAG 029 (hollow wall/masonry) - M8 to M12
- VOC (volatile organic content): A+ rating

Storage and conservation:

- Keep out of direct sunlight
- Store between +5°C and +30°C
- Shelf Life is 12 Months from manufacture date



Application on the following Materials:

- Concrete
- Stone
- Solid Brick
- Hollow Brick



Working & curing times:

Base Material Temperature	Working Time	Curing Time Dry or Wet Concrete
30°C	3 min	20 min
25°C	4 min	30 min
20°C	6 min	45 min
10°C	12 min	1 hr 30 min
5°C	15 min	2 hr
0°C	25 min	3 hr

Note: Minimum cartridge temperature for application is 5°C

Part Number	Description
CRT/DF100/400	DF-100 Polyester SF Chemical Resin, 400ml Cartridge

DymaFIX a subsidiary of Dymatec Ltd



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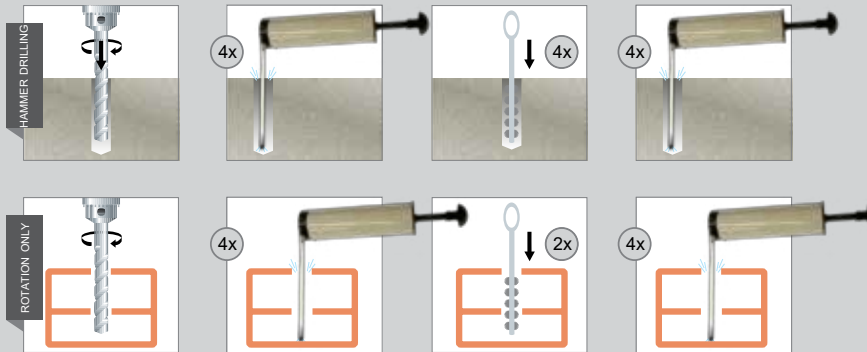
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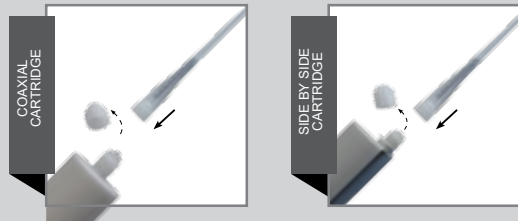
Installation Procedure

01



Drill the hole and check it is perpendicular. Blow the hole with an appropriate pump blower (or compressed air), clean the lateral surface of the hole with an appropriate steel brush, blow again in the hole until there is no dust and/or any residual material inside. We strongly recommend use of the steel brush to clean hole sides.

02



Unscrew the front cup, screw on the mixer and insert the cartridge in the gun. Use protections for hands and face.

03



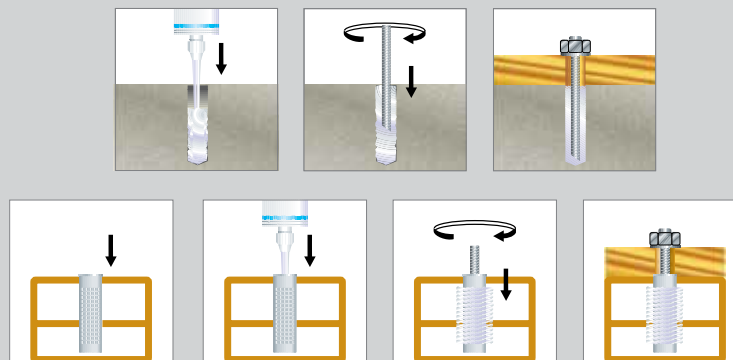
Before starting to use the cartridge, eject a small part of the product, being sure that:

- Through the mixer (transparent) you can see that the flow of product includes both the white colour and the black colour.
- The two components are completely mixed

The complete mixing is reached only after the resin extruded has reached a uniform colour.

Now the cartridge is ready to be used.

04



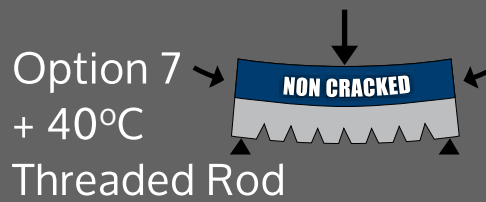
- 1) Inject resin into the hole to fill it 2/3rds (In hollow bricks use the plastic sleeve and inject the resin inside)
- 2) Use a threaded stud with 45° cut in the side to the hole. Before inserting the rod, verify that the element is dry and free from oil and other contaminants. Insert threaded stud turning back and forth to avoid the presence of air in the fitted hole.
- 3) For the installation and the following anchor load phase, respect the open time and curing time detailed in this technical data sheet.
- 4) Before loading the anchor, check the hardness of the product.
- 5) The cartridge can be used again by replacing the screw lid, and then and replacing the mixer when ready to use again. (Remember to eject a first part of the product, see step 3)

Load Data

Notes

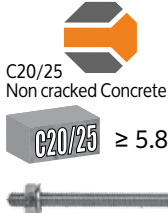
N_{Rum} (kN)	Average ultimate tension load
V_{Rum} (kN)	Average ultimate shear load
N_{RK} (kN)	Characteristic tension load
V_{RK} (kN)	Characteristic shear load
N_{rec} (kN)	Admissable tensile load
V_{rec} (kN)	Admissable shear load

- Loads for single anchor with no influence of spacing and edge distance and with $h \geq 2h_{ef}$
- Shear directed away from the edge
- General safety factor included
- Load increasing safety coefficient used is 1.4
- 1kN = 100 Kg



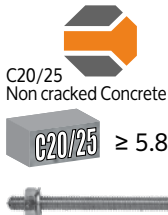
MIN Load data with MINIMUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	EFFECTIVE ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d(mm)	h_{ef} MIN(mm)	N_{Rum} (kN)	V_{Rum} (kN)	N_{RK} (kN)	V_{rk} (kN)	N_{rec} (kN)	V_{rec} (kN)
 C20/25 Non cracked Concrete ≥ 5.8	≥ 5.8	M 8	60	19,0	11,4	19,0	9,5	7,5	5,4
	≥ 5.8	M 10	70	30,2	18,1	27,4	15,1	10,9	8,6
	≥ 5.8	M 12	80	39,7	26,3	33,8	21,9	13,4	12,5
	≥ 5.8	M 16	100	56,4	48,9	47,0	40,8	18,6	23,3

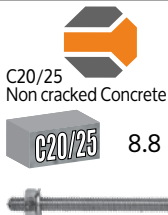
MED Load data with MEDIUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	EFFECTIVE ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d(mm)	h_{ef} MIN(mm)	N_{Rum} (kN)	V_{Rum} (kN)	N_{RK} (kN)	V_{rk} (kN)	N_{rec} (kN)	V_{rec} (kN)
 C20/25 Non cracked Concrete ≥ 5.8	≥ 5.8	M 8	80	19,0	11,4	19,0	9,5	9,0	5,4
	≥ 5.8	M 10	90	30,2	18,1	30,2	15,1	14,0	8,6
	≥ 5.8	M 12	110	43,8	26,3	43,8	21,9	18,4	12,5
	≥ 5.8	M 16	125	70,5	48,9	58,7	40,8	23,3	23,3

MAX Load data with MAXIMUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	EFFECTIVE ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d(mm)	h_{ef} MIN(mm)	N_{Rum} (kN)	V_{Rum} (kN)	N_{RK} (kN)	V_{rk} (kN)	N_{rec} (kN)	V_{rec} (kN)
 C20/25 Non cracked Concrete ≥ 8.8	≥ 8.8	M 8	160	29,2	17,5	29,2	14,6	13,9	8,3
	≥ 8.8	M 10	200	46,4	27,8	46,4	23,2	22,1	13,2
	≥ 8.8	M 12	240	67,4	40,4	67,4	33,7	32,1	19,2
	≥ 8.8	M 16	320	125,0	75,0	125,0	62,5	59,5	35,7

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Load Data




MATERIAL	TYPE OF ROD	ROD DIAMETER	ADMISSIBLE TENSILE LOAD		ADMISSIBLE SHEAR LOAD
		d [mm]	N _{rec} [kN]	V _{rec}	
Solid Brick EN 771-1 - HD (High Density) Dimensions: 120x240x60 mm class f _b ≥ 73 N/mm ² density ρ _m ≥ 1700 kg/m ³  ≥ 5.8 / A4-70	≥ 5.8 A4 -70	M8	0,7	1,3	
	≥ 5.8 A4 -70	M10	1,0	2,5	
	≥ 5.8 A4 -70	M12	1,2	2,6	




MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD		ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec}	
Hollow Brick EN 771-1 - LD (Low Density) Dimensions: 240 x 120 x 120 mm class f _b ≥ 18,3 N/mm ² density ρ _m ≥ 810 kg/m ³  ≥ 5.8 / A4-70	≥ 5.8 A4 -70	M8	GC 12 x 80	1,5	1,7	
	≥ 5.8 A4 -70	M10	GC 15 x 85	1,8	2,0	
	≥ 5.8 A4 -70	M12	GC 20 x 85	2,1	2,9	



MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD		ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec}	
Hollow Brick EN 771-1 - LD (Low Density) Dimensions: 120 x 250 x 250 mm class f _b ≥ 5,3 N/mm ² density ρ _m ≥ 550 kg/m ³  ≥ 5.8 / A4-70	≥ 5.8 A4 -70	M8	GC 12 x 80	0,3	0,9	
	≥ 5.8 A4 -70	M10	GC 15 x 85	0,7	0,9	
	≥ 5.8 A4 -70	M12	GC 20 x 85	0,8	0,9	



MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD		ADMISSIBLE SHEAR LOAD
				d [mm]	N _{rec} [kN]	V _{rec}
Hollow Brick EN 771-1 - LD (Low Density) Dimensions: 555 x 195 x 275 mm class f _b ≥ 4 N/mm ² density ρ _m ≥ 600 kg/m ³  ≥ 5.8 / A4-70	≥ 5.8 A4 -70	M8	GC 12 x 80	0,3	0,4	
	≥ 5.8 A4 -70	M10	GC 15 x 85	0,3	0,4	
	≥ 5.8 A4 -70	M12	GC 20 x 85	0,3	0,4	

NOTE: For different masonry base materials, load values must be obtained within situ tests

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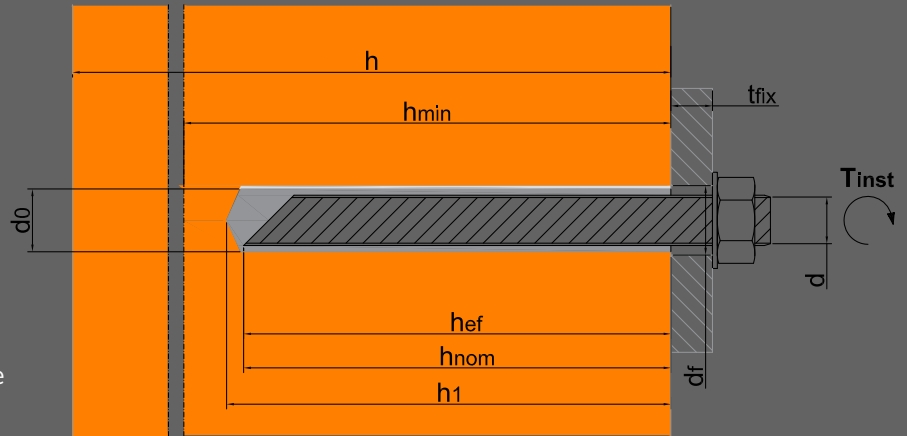


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Installation Data

- d(mm) Rod diameter
- h_{min} (mm) Minimum thickness of base material
- d_o (mm) Hole diameter
- h_1 (mm) Hole depth
- h_{nom} (mm) Embedment depth
- h_{ef} (mm) Effective anchorage depth
- S_{cr} (mm) Characteristic spacing
- C_{cr} (mm) Characteristic edge distance
- S_{min} (mm) Minimum allowable spacing
- C_{min} (mm) Minimum allowable edge distance
- t_{fix} (mm) Fixture thickness
- d_f (mm) Diameter of clearance hole in the fixture
- S_w (mm) Key
- T_{inst} (Nm) Installation torque



WARNING: We assume no liability for the incorrect installation of the product.



Option 7

M8 to M16 Threaded Bar

MATERIAL	ROD DIAMETER	TYPE OF ROD	MINIMUM THICKNESS OF BASE MATERIAL			HOLE DIAMETER			HOLE DEPTH			EMBEDMENT DEPTH			ANCHORAGE DEPTH			CHARACTERISTIC SPACING			CHARACTERISTIC EDGE DISTANCE		
			h_{min} (mm)	d_o (mm)	h_1 (mm)	h_{nom} (mm)	h_{ef} (mm)	S_{cr} (mm)	C_{cr} (mm)														
 M8-M16 Non cracked concrete 	M8	≥ 5.8 A4-70	100	110	190	10	65	85	165	60	80	160	60	80	160	180	202	202	90	101	101		
	M10	≥ 5.8 A4-70	100	120	230	12	75	95	205	70	90	200	70	90	200	210	253	253	105	126	126		
	M12	≥ 5.8 A4-70	110	140	270	14	85	115	245	80	110	240	80	110	240	240	291	291	120	145	145		
	M16	≥ 5.8 A4-70	136	161	356	18	105	130	325	100	125	320	100	125	320	300	351	351	150	175	175		

MATERIAL	ROD DIAMETER	TYPE OF ROD	MINIMUM ALLOWABLE SPACING	MINIMUM ALLOWABLE EDGE DISTANCE	FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE IN THE FIXTURE	KEY	INSTALLATION TORQUE
	d(mm)		S_{min} (mm)	C_{min} (mm)	t_{fix} (mm)	d_f (mm)	S_w (mm)	T_{inst} (Nm)
 M8-M16 Non cracked concrete 					min - max			
	M8	≥ 5.8 A4-70	40	40	0 - 1500	9	13	10
	M10	≥ 5.8 A4-70	40	40	0-1500	12	17	20
	M12	≥ 5.8 A4-70	40	40	0-1500	14	19	40
M16	≥ 5.8 A4-70	50	50	0-1500	18	24	80	

NOTE: To avoid splitting failure, the thickness of the concrete should be $h \geq h_{ef}$

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Installation Data



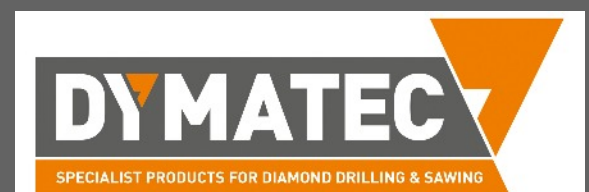
Option 7

8mm to 16mm Rebar

MATERIAL	ROD DIAMETER	TYPE OF ROD	MINIMUM THICKNESS OF BASE MATERIAL	HOLE DIAMETER	HOLE DEPTH	EMBEDMENT DEPTH	EFFECTIVE ANCHORAGE DEPTH	CHARACTERISTIC SPACING	CHARACTERISTIC EDGE DISTANCE	MINIMUM ALLOWABLE SPACING	MINIMUM ALLOWABLE EDGE DISTANCE	MAX FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE IN THE FIXTURE	KEY	INSTALLATION TORQUE
	d(mm)		h_{min} (mm)	d_o (mm)	h_i (mm)	h_{nom} (mm)	h_{ef} (mm)	S_{cr} (mm)	C_{cr} (mm)	S_{min} (mm)	C_{min} (mm)	t_{fix} (mm)	d_f (mm)	S_w (mm)	T_{inst} (Nm)
 M8-M16 Solid Brick	M8	≥ 5.8 A4-70	200	10	85	80	80	240	120	240	120	10	9	13	5
	M10	≥ 5.8 A4-70	250	12	90	85	85	255	128	255	128	20	12	17	8
	M12	≥ 5.8 A4-70	300	14	100	95	95	285	143	285	143	30	14	19	10

MATERIAL	ROD DIAMETER	TYPE OF ROD	PLASTIC SLEEVE	BASE MATERIAL	HOLE DIAMETER	HOLE DEPTH	EMBEDMENT DEPTH	EFFECTIVE ANCHORAGE DEPTH	CHARACTERISTIC SPACING	CHARACTERISTIC EDGE DISTANCE	MINIMUM ALLOWABLE SPACING	EDGE DISTANCE	FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE	KEY	INSTALLATION TORQUE
	d(mm)		(*)	h_{min} (mm)	d_o (mm)	h_i (mm)	h_{nom} (mm)	h_{ef} (mm)	S_{cr} (mm)	C_{cr} (mm)	S_{min} (mm)	C_{min} (mm)	t_{fix} (mm)	d_f (mm)	S_w (mm)	T_{inst} (Nm)
 M8-M16 Hollow Brick	M8	≥ 5.8 A4-70	GC 12x80	100	12	85	80	80	$l_{unit,max}$	$0,5 \times l_{unit,max}$	100	100	10	9	13	3
	M10	≥ 5.8 A4-70	GC 15x85	100	16	90	85	85	$l_{unit,max}$	$0,5 \times l_{unit,max}$	100	100	20	12	17	4
	M12	≥ 5.8 A4-70	GC 20x85	100	20	90	85	85	$l_{unit,max}$	$0,5 \times l_{unit,max}$	120	120	30	14	19	6

WARNING: Installation and load technical data can be modified by us. For up to date technical data sheets please visit www.dymatecuk.com



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