



Application Guidelines

Ref. #: DCP15/03-0049-A-2021



Quickmast Anchor E

[Epoxy resin cartridge system for anchoring]



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Section A : General Comments

General Notes:

The information below is a detailed overview for the application of DCP's **Quickmast Anchor E** anchoring system and should be read in conjunction with the relevant technical data sheet prior to application. All DCP Products should be applied by experienced specialist contractors.

All the points below assume correct preparation of the relevant surface.

High Temperature Working:

It is suggested that, for temperatures above 95°F (35°C), the following guidelines are adopted as good working practice:

- i. Unmixed materials and equipment should be stored in a cool shaded area and away from direct sunlight.
- ii. Avoid application during peak temperature of the day.
- iii. Plan for enough materials, tools and labor to ensure continuous application.

Low Temperature Working:

It is suggested that, for temperatures below 50°F (10°C), the following guidelines are adopted as good working practice:

- i. Unmixed materials should be stored in a warm (preferably temperature controlled) environment, avoiding exposure to frost or temperatures below 41°F (5°C).
- ii. Cold temperatures will affect the properties of the resin.
- iii. Avoid applying the grout if the temperature is around 41°F (5°C) and falling.

Tools and Equipment:

It is suggested that the following list of equipment are adopted as a minimum requirement

Personal protection

- : Protective overalls
- : Goggles or a face mask
- : Good quality gloves
- : Safety shoes
- : Safety helmet



Equipment

- : Hammer drill (Fig.1)
- : Drill bit (Fig.2)
- : Double cartridge gun (Fig.3)
- : Cleaning brush (Fig.4)
- : Hand air pump (Fig.5)



Fig.1: Hammer drill



Fig.2: Drill bit



Fig.3: Double cartridge gun



Fig.4: Cleaning brush



Fig.5: Hand air pump

Section B : Application

1.0 Substrate Preparation

1.1 Substrate preparation

1.1.1 The area to be drilled should be marked on the structure using a spray paint.

1.1.2 **Hole:** for optimum anchoring, should be rough sided and dust free. Use a rotary hammer drill for uniformity. The hole should be cleaned by a combination of compressed air and a steel brush.

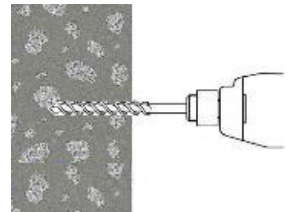
1.2 Steel preparation

1.2.1 **Bars and anchors:** should be clean and rust free to achieve the design bond strength. Deformed bars will have a better bond strength.

Note: Holes should be dry and dust free.

2.0 Drilling

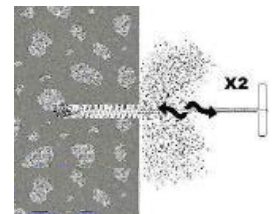
2.1 Use a suitable drill bit diameter and drill hole in the concrete to the required embedment depth. (See below table for reference).



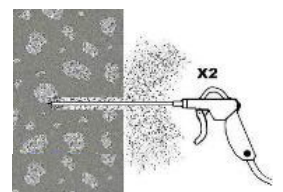
Bar diameter		Hole diameter		Embedded length		Maximum pull out force *		Needed quantity of Quickmast Anchor E per hole	
Inch	mm	Inch	mm	Inch	mm	lb	kN	fl. oz.	ml
3/8"	10	9/16"	14	3-15/16"	100	7756	35	0.35	10.3
7/16"	12	5/8"	16	4-3/4"	120	11173	50	0.45	16.1
5/8"	16	3/4"	20	6-5/16"	160	21694	97	1.13	33.5
3/4"	20	1"	25	7-7/8"	200	33722	150	2.21	65.4
1"	25	1-1/4"	32	9-13/16"	250	52965	236	4.53	134.0
1-1/4"	32	1-9/16"	40	12-5/8"	320	86777	386	9.06	267.9

* Maximum pull-out force that yield a concrete splitting failure pattern.

2.2 Insert the steel brush to the back of the hole and pull out in a back and forth twisting motion.



2.3 Insert the nozzle extension of the hand air pump into the back of the hole and blow out the dust 2 times.

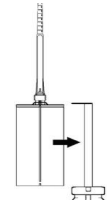


2.4 Brush over the whole length of the hole again in a twisting motion.

2.5 Blow out again using the hand air pump until the hole is clean and dust free.

3.0 Placing

- 3.1 Unscrew and remove the cartridge protective cap.
- 3.2 Remove the insert plug and attach the static mixing nozzle tightly.

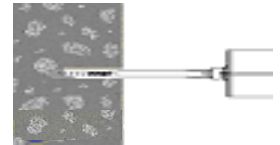


- 3.3 Insert cartridges into the double cartridge gun and dispense sufficient material (typically 10 ml) until an even homogeneous color is achieved.

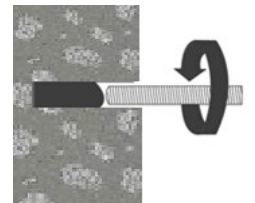


- 3.4 Insert the nozzle into the back of the hole and start applying pressure to the gun, slowly withdraw the nozzle as the hole fills.

Note: As the mixer nozzle is withdrawn, ensure that no air voids are created.



- 3.5 Normally it's sufficient to fill the hole approximately half to two thirds full.
- 3.6 Immediately Press the stud/steel rebar in a circular motion into the hole to the required embedment depth with slight agitation.
- 3.7 The bar should be left undisturbed until materials reach final setting.
- 3.8 Clean any excess resin around the hole.



3.9 Allow the resin to cure completely. (see table below).

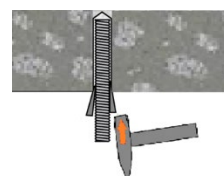
Resin Cartridge Temperature	Working Time	Base material temperature	Loading time
50 to 59°F (10 to 15°C)	20 min	41 to 50°F (5 to 10°C)	24 hr
		50 to 59°F (10 to 15°C)	12 hr
59 to 68°F (15 to 20°C)	15 min	59 to 68°F (15 to 20°C)	8 hr
68 to 77°F (20 to 25°C)	11 min	68 to 77°F (20 to 25°C)	7 hr
77 to 86°F (25 to 30°C)	8 min	77 to 86°F (25 to 30°C)	6 hr
86 to 95°F (30 to 35°C)	6 min	86 to 95°F (30 to 35°C)	5 hr
95 to 104°F (35 to 40°C)	4 min	95 to 104°F (35 to 40°C)	4 hr
+104°F (40°C)	3 min	+104°F (40°C)	3 hr

3.10 The anchor can be loaded after the required curing time.



Notes:

➤ When filling holes overhead or in porous block work, the use of plastic sleeves is recommended.



➤ Partly used cartridge are reusable, remove the static mixer and surplus base and catalyst components from the cartridge nozzle, insert the plug and screw on the protective cap.

4.0 Cleaning

4.1 Use thinner solvent like **DCP Solvent** to clean the tools within the pot life of the grout.



Section C : Cautions

Health and safety

Quickmast Anchor E is irritant to skin, eyes and respiratory system. Wear suitable gloves and eye protection.

Fire:

Quickmast Anchor E is nonflammable.

For further information on refer to the Material Safety Data Sheet.

Section D : Approval and Variations

This application guideline is offered by DCP as a 'standard proposal' for the application of **Quickmast Anchor E**. It remains the responsibility of the Engineer to determine the correct method for any given application. Where alternative methods are to be used, these must be submitted to DCP for approval, in writing, prior to commencement of any work. DCP will not accept responsibility or liability for variations to the above application guideline under any other condition.