

Quickmast Anchor E

Epoxy resin cartridge system for anchoring (Formerly known as Keyfix E)



Description

Quickmast Anchor E is a two component high strength pure epoxy resin anchoring grout pre-packed in dual cartridge system with fast curing rate.

Quickmast Anchor E is formulated for permanent installation of steel reinforcement bars and threaded rods into concrete substrates in structural applications.

Applications

Quickmast Anchor E is ideally designed for use in the following applications:

- ▲ Permanent installation of reinforcement starter bars and dowel bars.
- ▲ Permanent installation of hand rails, safety fence, wall ties, railway tracks and ground anchors.

Advantages

- ▲ Exceptional rapid strength development.
- ▲ Resistant to dynamic loading.
- ▲ Exceptional high compressive.
- ▲ Extremely dense.
- ▲ Exceptional bond to concrete and steel surfaces.
- ▲ Suitable for dry and damp concrete holes.
- ▲ Good chemical resistance.
- ▲ High ultimate and early strengths.

Standards

Quickmast Anchor E complies with the requirements of ASTM C881 as Type I & IV, Grade 3, Class C.

Method of Use

Substrate Preparation

Substrate should be sound, clean and free from grease or any contamination. Bars should be free from any loose rust deposits. Holes can be drilled using a hammer drill to produce a rough surface or by coring to produce a smooth surface. Quickmast Anchor E bond strength will be the same in both cases.

Technical Properties:

Consistency: ASTM C881	Pass (Grade 3)
Gel time: ASTM C881	40 ± 5 min @ 73°F (23°C)
Bond strength: ASTM C882	≥ 3000 psi (20.5 MPa) @ 2 days ≥ 3500 psi (24 MPa) @ 14 days
Compressive yield strength: ASTM D695	≥ 13,000 psi (90 MPa) @ 7 days
Linear coefficient of shrinkage on cure: ASTM D2566	< 0.0003 @ 24 hr
Compressive modulus: ASTM D695	≥ 500,000 psi (3450 MPa) @ 7 days
Heat Deflection Temperature: ASTM D468	> 120°F (49°C) @ 7 days
Water absorption: ASTM D570	< 0.5% @ 24 hr
VOC: ASTM D2369	≤ 5 g/ltr (complies with LEED)

Deformed or ribbed bars will give a higher performance than smooth or other bar types. After drilling, to provide the maximum performance of the anchor, all drilling debris should be removed by brushing and blowing the holes at the following sequence: 2 blows, 2 brushes, 2 blows, 2 brushes then 2 blows.

Application

- ▲ Unscrew the protective cap, remove the insert plug and attach the static mixing nozzle.
- ▲ Insert the cartridge into the cartridge gun and dispense sufficient material until an even colour is achieved.
- ▲ Usually 0.34 fl. oz. (10 ml) of extruded material should be adequate.

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Lancaster, SC 2970
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- ▲ Insert the nozzle into the base of the hole, apply pressure to the gun and slowly withdraw the nozzle as the hole fills.
- ▲ Normally, it is enough to fill the hole approximately two-third full.
- ▲ Insert the stud/steel bar into the hole with a twisting action, ensuring that is fully embedded.
- ▲ Allow the resin to cure fully before loading.

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.

Working and Loading Times

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

*Notes: Working time is set at the highest base material temperature in the range.
Loading time is set at the lowest base material temperature in the range.*

Cleaning

All tools should be cleaned immediately after finishing by DCP Solvent. Hardened materials can be cleaned mechanically.

Estimating

The required quantity of Quickmast Anchor E depends on the hole diameter and depth. Normally, it is enough to fill the hole two-third full.

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Design Consideration

Table I summarizes the forces that each deformed steel reinforcement bar can withstand at each specified holes depth. These forces were calculated in accordance with EOTA TR023 "Assessment of post-installed rebars connection", considering that the yield strength of the steel is 60900 psi (420 MPa) and the compressive strength of concrete is 3625 psi (25 MPa) cube.

Table I

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.

Packaging

Quickmast Anchor E is available in 8.5 fl. oz. (250 ml) unicartridge and in 22 fl. oz (650 ml) twin cartridge system.

Storage

Quickmast Anchor E has a shelf life of 12 months from date of manufacture if stored at temperature of 20°C.

If these conditions are exceeded, DCP Technical Department should be contacted for advise.

Cautions

Health and Safety

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

For further information refer to the Material Safety Data Sheet.

Fire

Quickmast Anchor E is nonflammable.

DCP Solvent is flammable, do not use near a naked flame and do not smoke during use.

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- ▲ Surface treatments
- ▲ Grouts and anchors.
- ▲ Concrete repair.
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- ▲ Sealants.
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- ▲ Adhesives.
- ▲ Tile adhesives and grouts.
- ▲ Building products.
- ▲ Structural strengthening.

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Note:

We endeavour to ensure that any information, advice or recommendation we may give in product literature is accurate and correct. However, because we have no control over where and how products are applied, we cannot accept any liability arising from the use of the products.



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03-0049-B-2021