

Keyfix AE100

Epoxy acrylate anchoring system



DESCRIPTION

Keyfix AE100 is a styrene-free epoxy acrylate resin anchoring grout, supplied in a pre-packed cartridge system, designed to deliver fast curing and high strength anchoring for both high and medium loads, it also can be used for fixings in damp environments or with chemical exposure.

Keyfix AE100 is suitable for use with different types of substrates such as, solid and hollow masonry, hard natural stone, solid rock, voided stone or rock.

APPLICATIONS

Keyfix AE100 is ideally designed for use in the following applications:

- » Anchoring threaded rods and post installed rebars in masonry and uncracked concrete.
- » Permanent installation of reinforcing and starter bars.
- » Suspended ventilation systems.
- » Safety barriers.
- » Machinery and heavy machinery.
- » Racking.
- » Rolling cranes.

ADVANTAGES

- » Suitable for dry, wet and flooded holes.
- » Can be applied using standard sealant application gun.
- » Exceptional rapid strength development.
- » Styrene free.
- » Resistant to dynamic loading.
- » Exceptional bond to concrete and steel surfaces.
- » High ultimate and early strengths.
- » Low waste, reusable and easily recycled cartridge.
- » Resistant to chemicals and damp conditions.

STANDARDS

Keyfix AE100 complies with the following standards:

- » ETA for Threaded Rods & Rebar– Option 7.
- » ETA for Hollow Wall/Masonry Installations.
- » WRAS approved material for potable drinking water.

TECHNICAL PROPERTIES @ 20°C:

Tensile strength: ASTM D638	≥ 4 MPa @ 7 days
VOC:	< 50 g/ltr (comply with LEED)

METHOD OF USE

SUBSTRATE PREPARATION

Substrate should be sound, clean and free from grease or any contaminants. 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.

Deformed or ribbed bars will give a higher performance than smooth or other bar types. After drilling, holes should be brushed and blown out twice, to remove all drilling debris.

APPLICATION

- » Unscrew the protective cap, cut the film to remove the metal clip and attach the static mixing nozzle.
- » Insert the cartridge into the cartridge gun and dispense sufficient material until an even colour is achieved.
- » Usually 10 ml of extruded material should be adequate.
- » 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 thirds (2/3) 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.

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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.

CLEANING

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

ESTIMATING

The required quantity of Keyfix AE100 depends on the hole diameter and depth. Normally, it is enough to fill the hole two-third full. The estimated volume of Keyfix AE100 can be calculated using the following equation:

$$\text{Volume (ml)} = (\pi/6000) \cdot \Phi h^2 \cdot HD$$

Where:

Φh : Hole diameter (mm).

HD: Hole depth (mm).

WORKING AND HARDENING TIMES

Working and Hardening Times						
Base Material Temperature	-10°C**	-5°C**	5°C	15°C	25°C	35°C
Gel Working Time	50 min	40 min	20 min	9 min	5 min	3 min
Curing Time Dry Concrete	240 min	180 min	90 min	60 min	30 min	20 min
Curing Time Wet Concrete	480 min	360 min	180 min	120 min	60 min	40 min

**Resin Temperature must be at least 20°C.

DESIGN CONSIDERATION

Table I summarizes the forces that each deformed steel reinforcement bar can withstand at each specified holes depth.

TABLE I

Bar diameter (mm)	Hole diameter (mm)	Embedded length (mm)	Bar area (mm ²)	Maximum pull out force (kN)	Needed quantity of Keyfix AE100 per hole (ml)
8	10	80	50	30	4.2
10	12	90	79	45	6.8
12	14	110	113	65	11.3
16	18	125	201	90	21.2
20	24	170	314	160	51.3
25	28	210	491	260	86.2

Note: The values provided in the table above represent raw, unfactored data tested for C20/25 concrete.

For information regarding typical performance in aerated concrete, loads for solid & hollow masonry, and bond strength and tension load in wood, kindly contact DCP's technical department at technical@dcp-int.com.



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PACKAGING

Keyfix AE100 is available in 290 ml (2 mixing nozzles included).

STORAGE

Keyfix AE100 has a shelf life of 12 months from date of manufacture if stored at temperature of 20°C.

If these conditions are exceeded, contact DCP Technical Department for advice.

CAUTIONS

HEALTH AND SAFETY

Keyfix AE100 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

Keyfix AE100 is flammable, and should be kept in a cool place.



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- » Tile adhesives and grouts.
- » Building products.
- » Structural strengthening.

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.