

# Breakrete CC

**CEMKRETE**

## High performance non-explosive demolition agent

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### Uses

**Breakrete CC** is a non-explosive demolition agent provides a practical and flexible approach to meet the specifics of any concrete or rock demolition projects **Breakrete CC** an expansive grout is a simple alternative to jack hammering or explosives and has proven itself to be a solid performer while delivering best-case outcomes.

### Advantages

- No special storage/security requirements reflect ease of handling and use.
- No fly rock  
Save time, labor,
- Save insurance exposure
- No vibration
- Gently cracking to a predictable time frame eliminating damage to surrounding structures caused by vibration. This really is controlled demolition.
- No dust
- Minimizes impact on surrounding work operations, equipment, filtration systems, and air quality for workers.
- No environmental pollution
- No toxic gaseous emissions.
- Personnel friendly
- Reduces or eliminates need for jackhammers.

### Description

**Breakrete CC** an Expansive Mortar (Soundless Cracking Agent) in grey powder .there are three main types of **Breakrete CC**, they are CC-I(25°C~40°C), CC-II (10°C~25°C), CC-III(-5°C~10°C). When the **Breakrete CC** mixed with appropriate water and poured into the pre-drilled holes, it will start to expand after half an hour, the expansive power is increasing as time goes on. It can get 100-123 Mpa expansive power after some hours. Generally, the rock or concrete belongs brittle material, their tensile strength are far less than the compressive strength (for the tensile strength, rock is 1.96-30Mpa while concrete is 1.5-4.0 Mpa, they are equal to 1/10-1/20 of their compressive strength). Therefore, reasonable hole design can easily crack the rock and concrete or reinforced concrete by our **Breakrete CC**. As usual, it can crack the materials in around 2-24 hours. It is soundless, non-explosive, no noise, no vibration, no flying rock during the process of demolition. Comparing with explosive or other demolition tools, the **Breakrete CC** is much safer, lower cost, higher efficiency ,etc. Nowadays, it is widely used for quarrying, rock excavating and removing, concrete & reinforced concrete demolition, such as road/tunnel/ trench/boulder/ bridges/building demolition and construction, concrete foundation removal , underground demolition and other civil engineering demolition.

**Breakrete CC** consists of calcium oxides, silicon dioxide, and little other ingredients. In order to meet different worksite temperature,

### Water addition

The amount of added water to obtain a pourable consistency is precise and an accurate gauging method must be employed. According to the grout consistency requirement, the water addition to each 5 kg standard pack of **Breakrete CC** should be as follows :-

1. Drill holes as follow designed .
2. Clean the holes and measure temperature of drill holes.
3. Add 1.5 liter of clean water of proper temperature to plastic mixing bucket. Dump one 5 kilo container **Breakrete CC** into bucket with water.
4. Begin mixing immediately wait 1/2" electric drill with mixing attachment.
5. **Breakrete CC** will seem dry at first **-do not add more water!**
6. Once mixing begins, you have only 5 minutes to finish mixing and fill holes . Longer mixing times increase likelihood of blowouts.
7. Fill holes as quickly as possible. Do not use a funnel. Do not plug holes or place heavy objects on holes.
8. Cover holes with a tarp if people will remain in the area - especially in hot weather, when blowouts are more likely to occur.

### Notes:

1. Never fill glass or metal containers with **Breakrete CC** or any container which widens towards the bottom.
2. Never pump **Breakrete CC**.
3. Mixing by hand lengthens mix time and is more likely to result in a blowout.



### Properties

Mix **Breakrete CC** with water and pour it into a rock drilled hole. This begins the process of hydration and over a period of 24 hours time, an expansive stress > 100 Mpa is generated fractures that significantly facilitate secondary removal

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### Instruction for use

#### Hole Depth

1. Maximum Hole Depth is 10 feet.
2. Minimum Hole Depth is 4 times hole diameter; for example 5" with 1-1/4" hole, 6" with 1-1/2".
3. Holes shallower than 4 times diameter are likely to blow out.
4. In reinforced concrete, drill 85 to 90% of its depth. In ledge, drill as deep as you want to remove. In boulders, drill 2/3 to 3/4 of the rock's thickness.

#### Hole Pattern

1. Holes must be drilled so as to allow a free face for the **Breakrete CC** to push toward. For example, drilling at 45° angle in a flat surface of ledge will push it upwards, but drilling straight down might not allow anywhere for the pressure to go.
2. To demolish a slab without pushing out the walls which surround it, drill a cone shaped pattern at the center and fill these holes first. The cone will pop upwards and create a free face.
3. Hole pattern depends on tensile strength of what you're breaking, amount of rebar if any, and the size of the pieces you want when you're done. This can often be determined by experiment; a good starting point is to space holes one foot on center in rows one and a half feet on center. In non-reinforced concrete, holes may be spaced as far apart as 24".
4. Hole pattern also depends on how fast you need results. More holes spaced closer together will live faster break times and smaller pieces, but this costs more in labour and **Breakrete CC**.
5. Boulders are much easier to break than reinforced concrete or ledge, and drill holes can be spaced further apart, especially if breaking speed is not critical.
6. When removing part of a slab, you will want to prevent cracks from spreading into the rest of the slab. Drill holes 6" on center in a line between the "demolish" section and the "keep" section, then fill every third hole. The empty holes form weak points and prevent cracks from spreading into the "keep" section.
7. Empty holes can also be used to direct cracks -they cost less than filled holes. For example, if you want to break a boulder into thirds, you can use this pattern: This will save money compared to filling all the holes, but will slow down the breaking time.

### Mixing

**Breakrete CC** is mixed with 30% water and the mix is poured into pre-drilled holes (32-52mm). While **Breakrete CC** is reacting, other nearby holes can be filled safely. Evacuating the area is not necessary. When **Breakrete CC** expands, it cracks the rock/concrete into pieces of a predetermined size, which can be removed with conventional methods. This method makes the operation more effective as protection of nearby structures is not necessary and other work can continue normally. The material used is environmentally friendly and can be disposed of as normal construction waste.

**Breakrete CC** can even be used in situations where there is standing water in the rock or structure. **Breakrete CC** makes it possible to work in a very confined space where it's difficult or impossible to use machinery.

### Standard Quantity

**Table 1: Pre-drilled hole design table**

Materials & purpose	Hole design		
	Diameter(mm)	hole spacing	Depth
Soft stone quarrying	28-38	200-300mm	105% of height
Hard stone quarrying	30-40	200-300mm	105% of height
Stone cutting	28-38	200-400mm	90% of height
Plain concrete demolition	30-40	300-500mm	80% of height
Reinforced concrete demolition	35-40	150-300mm	90% of height

**Table 2: Quantity of Breakrete CC used per hole length and hole diameters**

Hole diameter (mm)	30	32	34	36	38	40	42	44	46	48	50
BreakreteCC (kg/m)	1.2	1.3	1.5	1.9	2.1	2.1	2.3	2.5	2.8	3.0	3.2

**Table 3: Quantity of Breakrete CC used per 1m<sup>3</sup>.**

Kinds of objects to be demolished			Standard quantity of Breakrete CC per 1m <sup>3</sup>
Rocks	Soft rock		5-8kg
	Medium rock		8-12kg
	Hard rock		12-20kg
Concrete	Plain concrete		5-8kg
	Reinforced concrete	Concrete including less quantity of re-bars	10-25kg
		Concrete including much quantity of re-bars	20-35kg
Bricks			10-25kg

### Storage

**Breakrete CC** has a shelf life of 12 months if kept in a dry store in unopened bags.

### Supply

**Breakrete CC:** 5 kg moisture resistant bags

**Yield of 5 kg pack at pourable consistency :** 3.8 liters



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## Precautions

### Health & Safety

**Breakrete CC** is alkaline and should not come into contact with skin or eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes to eyes should be washed immediately with plenty of clean water and seek medical advice.

## Additional Information

Cemkcrete manufactures a wide range of those complementary products which include:

- Waterproofing membranes & water stops
- Joint sealants & filler boards
- Cementitious & epoxy grouts
- Specialized flooring materials
- Fireproof coating and systems
- Concrete admixture
- Repairing material

For further information on any of the above, please consult your local Cemkcrete office - as below.

**Important Note:** Cemkcrete warrants its materials free of manufacturing defects and produced as per standard specifications and sold under the terms and conditions of usages, whilst Cemkcrete endeavors to ensure that any advice, recommendation, or information, given through its products literatures are reflects of the R&D in-house lab test and practical sites experience and knowledge based feed backs, however, the products are being used under various conditions and applied beyond its control where or how either directly or indirectly at various locations and places at a different stages that of an intended purposes and uses. Therefore, Cemkcrete cannot hold warranty or responsible for resultant consequences, such as damages to the property or assets but the product itself.

