

## CutRock®

### Non-explosive Destructive Chemical Agent for Concrete and Rock

CutRock is a ready-to-use powder that is mixed with water and changed into a hard product with lower density by some chemical reactions which lead to volume increase in the final product. This increase leads to a compression that destroys stone and or concrete. This compound is safe, without noise and environmental pollution compared to explosive methods. This procedure is accomplished successfully within 6 hours if implemented correctly.

Physical state	Powder
Color	Grey
Density	1/4 g/cm <sup>3</sup>
Chloride content	Contains Chloride ions
pH	0
Freezing temperature	-5°C

#### Usage and effect of the surface cleaner

Volume increases after mixing with water

High compressive, flexural, and tensile strength

#### The usage

- Destroying the reinforced and unreinforced concrete
- Quarry of stone from mine
- Road construction and tunnel excavation
- Mixing method

CutRock is a material that is only mixed with a suitable amount of water. Mixing is done in a container with suitable volume and it is better to be accomplished by a mechanical mixer. However, hand mixing is also possible for lower volumes. The suitable water is the water used for concrete and its temperature should be adjusted depending on the ambient temperature. The

water temperature is adjusted to between 25°C to 30°C at the temperature below 15°C and for higher temperatures, the water with the ambient temperature must be used.

The CutRock compound is produced in two types based on the ambient temperature which are known as summer and winter CutRock. The water used for the summer CutRock is 62% of the powder and the water used for the winter CutRock is 30% of the powder. The expansion and destructivity of CutRock is increased by optimizing the used water therefore, it is necessary to take care of adjusting the amount of water. The performance of CutRock is faster at higher temperatures.

The prepared mortar must be poured into pores within 5 to 10 minutes and sealed.

#### The instruction to use

The general method of using the CutRock is that the mortar produced from the CutRock is placed in the pores of the stone or concrete and their doors are closed. After the hydration reaction, the expansion from the reaction will put the pores under compression and leads to a burst in that section. These pores must be of suitable size and excavated within suitable distances from each other and in the direction that we want to cut that stone or concrete element. This concrete or stone element is either with an arbitrary form or confined in a closed space or reinforced concrete. The implementation methods are as follows depending on the form of the element:

#### a- Excavating pores in the concrete or stone with arbitrary form:

- 1- The pores must be created within equal intervals by a 40 to 50-mm drill. The bigger pores develop more destructive power.
- 2- The distance of the first pore from the edge of the concrete or stone must be a maximum of 25 cm.

- 3- The depth of the pores must be a minimum of 0.7% of the depth of the stone or concrete.
- 4- The optimum interval between pores is 52 cm.
- 5- The pores must be in the same direction and excavated completely perpendicular to the surface
- 6- The pores must be cleaned
- 7- The strong wooden cleats can be used to form and cut the stone. These cleats are submerged in the water before the implementation and develop cracks by strike after placing them between cracks.

**b- Excavating pores in the confined concrete or stone:**

The excavation method is similar to the previous method assuming that the pores are excavated at a 30° angle so that the separated sections are easily moved.

**c- Excavating pores in the reinforced concrete:**

The pore intervals are reduced because of the continuity of concrete due to the presence of rebars.

### Safety tips

Avoid direct contact with skin, breathing the dust, and clothes contamination since this material is highly alkaline. Avoid looking at the pores after filling them with the mortar.

### Packaging

The CutRock is supplied in 25 kg bags.

### The maintenance condition

The above product is usable within 12 months of standard storage. This product is sensitive to moisture therefore the bags must not be opened during storage.

### Complementary information

Contact the technical section of Capco Company for complementary information. You can also refer to the performance form of Betonyse-PPI for more information on the performance of this product and its efficiency on the characteristics of hardened concrete.