



AIRDRAULIC BIRCO GROUP PTY LTD

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A B N 47 002 890 477

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SOUNDLESS CRACKING AGENT

Soundless Cracking Agent (SCA) is used in cracking rock, sandstone, concrete & dimension stone such as granite. This material works on the principle of mixing the SCA with water and an expansion force created by the hydration of the SCA.

This process is highly recommended in densely populated and sensitive areas where Law forbids blasting with explosives. This safe method of cracking hard material is ideal under such circumstances.

Usage

- Demolition of concrete structures.
- Cracking of Rocks, Sandstone, Granite, etc.
- Road works, Quarrying and others

Working Temperature Range

- 10 – 25 degree C Type 2
- 0 – 15 degree C Type 3

Mixing Directions & Safety Warnings

- Drill holes in accordance to the recommended design
- Mix 5kg of SCA with approximately 1.5 Litres of water
- Pour SCA Mixture into clean dry holes

Important Safety Warning

- Users must use industrial gloves & protective eye wear when handling or mixing the SCA.
- Do not look directly down the hole during pouring.
- It is important to use clean water to wash SCA from affected skin
- Seek immediate medical attention.

Recommended Cracking Design & Method Using SCA

Material to Crack	Diameter (mm)	Spacing (cm)	Depth	Usage Kg/m ³
Soft Virgin Rock	35 – 50	40 – 60	Height	8 – 10
Hard Virgin Rock	35 – 65	40 – 60	Height + 5%	10 – 10
Dimension Stone	30 – 40	20 – 60	Height	5 – 15
Plain Concrete	35 – 50	40 – 60	80% Height	8 – 10
Reinforced Concrete	35 – 50	15 – 30	90% Height	15 – 25

DISTRIBUTORS OF:

- *Edco Surface Preparation Tools *Macdonald Air Tools *Timberking Chainsaws *Rock Drills *Drilling Equipment *Picket Post Driver *Air Hose & Fittings
- *Compressors *ASL Lubricators * Stone Compaction Equipment *Electric & Pneumatic Points & Chisels *Pedestal & Wall Fans *Mancoolers & Tube Fans
- *VAF Fans *Venturi Air Movers *Gas Heaters *Submersible Pumps *Transfer Pumps *Puddle Pumps *Layflat hose and fittings *Bauers & Camlocks
- *Blast Hole Plugs *Anfo Loaders *Slopemeters *Schroeder Hydraulic Filters & Elements *CBC Reversing Cameras *Reversing Alarms *Osha Safety Valve



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SOUNDLESS CRACKING AGENT (S.C.A) INSTRUCTIONS

Description of Product

SCA is a soundless and environmentally safe non explosive demolition agent. It does not cause any flyrock, noise, ground vibration, gas, dust or environmental pollution.

SCA creates systematic cracking in rock and concrete making secondary breaking easier and quicker to complete.

Fields of Application

- SCA is ideally suited for all demolition work but particularly where the use of explosives will cause damage, pollution, danger or inconvenience to the surrounding environment
- Quarries, demolition works, breaking out before concrete repair and mining are some of the areas where SCA will save the user, money and inconvenience

Features and Benefits

- Noise and Vibration free
- Environmentally friendly, no dust, flyrock, gas or debris
- Easy to mix with drill and paddle
- Less hazardous than conventional methods
- No license or special expertise required for usage
- Expansive stress of more than 30N/mm²
- Economical – savings in manpower, product cost and removal of waste
- No special security required for storage

Technical Data/Typical Properties

Grades:

Type 2: 10 – 25 degrees Celsius

Type 3: 0 – 15 degrees Celsius

Quantity:

(per 1m length of hole diameters)

Hole Diameter (mm)	SCA (kg/m)
36	1.7
38	1.9
40	2.1
42	2.3
44	2.5
46	2.8
48	3.0
50	3.2

Hole Diameter (inch)	SCA (lb/yd)
1 3/8	3.1
1 1/2	3.7
1 5/8	4.4
1 3/4	5.1
1 7/8	5.8
2	6.7

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Application Procedure

- **Hole Spacing and Hole Depth**

Hole spacing will vary depending on the type of rock boulder or concrete etc. to be removed. The following table however provides guidelines to work from.

Material to crack	Diameter (mm)	Spacing (mm)	Depth	Usage Kg/m ³
Soft Virgin Rock	35 - 50	40 - 60	Height	8 - 10
Hard Virgin Rock	35 - 65	40 - 60	Height + 5%	10 - 10
Dimension Stone	30 - 40	20 - 60	Height	5 - 15
Plain Concrete	35 - 50	40 - 60	80% Height	8 - 10
Re-inforced Concrete	35 - 50	15 - 30	90% Height	15 - 25

- **Hole Diameter**

In all cases the minimum hole diameter should be 35mm. The larger the hole is, the greater the expansive stress becomes. The hole size however is recommended to be no greater than 50mm diameter.

- **Mixing Equipment**

- o 10-20 Ltr Metal or plastic bucket
- o Measuring Beaker
- o Protective rubber gloves and goggles
- o Mechanical mixer and paddle

- **Mixing**

Pour approximately 1.5ltrs of clean water into the container adding one 5kg bag of SCA gradually and mix well for approximately 2-3 minutes until a lump free consistency is obtained

- **Application**

- o SCA should be poured into holes within 10 minutes of mixing water and powder
- o Drill horizontal holes with a slight slope to help in filling
- o Once the SCA's fluidity is gone it should not be re-mixed with water as the strength is greatly reduced
- o SCA must be poured into the hole to its brim
- o Spraying the surface with water and keeping it wet after the cracks initiate tends to increase width of cracks and speeds the cracking process
- o Covering the filled hole with a plastic cover is desirable to avoid dilution of SCA from external water source until cracking starts

- **Packaging**

SCA is available in 20kg boxes with 4 x 5kg bags in each box.

- **Storage**

SCA can be stored up to 1 year in accordance with manufacturer's instructions for use. Store SCA in a cool, dry place same as for cement. If a bag is used, push the air out of the bag and seal it with tape. Use it as soon as possible.

KEEP OUT OF REACH OF CHILDREN.

- **Watch points**

- 1) When mixing and filling holes always wear rubber gloves, safety glasses and helmet
- 2) Do not use for other purposes besides the cracking of rocks or concrete
- 3) Rinse with water when any portion of the skin comes into contact with SCA
- 4) Do not look directly into holes filled with SCA for at least 8 hours after pouring
- 5) Whenever possible keep filled holes covered for protection
- 6) Ensure the area is suitably isolated prior to commencement of work

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SOUNDLESS CRACKING AGENT (S.C.A) MATERIAL SAFETY DATA SHEET

Transport & Storage

SCA is a Non-Combustible & Non-Explosive product. SCA must be stored in a cool dry environment. It can be transported in a conventional manner with no special licences or permit

Mixing

Standard protective equipment must be worn, i.e. Rubber Gloves, Safety Glasses, Dust Mask and Protective Clothing.

Pouring

Do Not Stand directly over the hole when applying SCA

Warning – Important to Note: When applying SCA to 50mm holes or larger, Blast mats are recommended. Under certain working and temperature conditions and circumstances beyond our control, SCA can blow out of the hole with a **Loud Bang Sound**. To prevent such a situation from happening it is suggested that the SCA is poured early in the morning when the temperature is cool, also by adding 2-3% cement to the mixture will help prevent the SCA from going and setting of too quickly.

For Safety Reasons The area should be cleared until reaction has finished – approximately 2 hours. Warning signs must be properly and clearly displayed around the cleared areas. **Do Not** look or stand over holes during and after filling.

Disposal

The Any product not required can be stored for up to 6 months for future use, after which, contact your SCA Distributor for disposal

First Aid

If SCA comes in contact with skin or eyes, immediately wash with clean water. Wash with clean water repeatedly until all powder or slurry is removed. Seek medical advice and attention immediately to control irritation.

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