

Technical Data Sheet (TDS)

Soundless Cracking Agent (SCA/HSCA / Static Cracking Agent)

Standard Reference : JC/T 506-2008

Important Reminder: This product is only for filling pre-drilled holes to split rock & concrete.

DO NOT mix into fresh concrete / UHPC as expansion admixture.

1. Product Identification

Product Name: Soundless Cracking Agent (SCA/HSCA)

Alias: Static Cracking Agent, Non-explosive Rock Splitting Agent

Appearance: inorganic powder

Main Active Component: Calcium Oxide (CaO, quicklime) plus functional set-control additives

Reaction Principle: $\text{CaO}+\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$, Hydration generates huge volume expansion with significant heat release.

Hazard Classification: Non-explosive building material; risk of material ejection from boreholes during hydration.

2. Product Grades & Temperature Models

Grade Model	Applicable Ambient Temperature	Recommended Season
SCA-I High-temperature type	25~40 ℃	Summer
SCA-II Medium-temperature type	10~30 ℃	Spring & Autumn
SCA-III Low-temperature type	-5~15 ℃	Early Winter / Shaded area

3. Core Technical Properties (Premium Grade, JC/T 506-2008)

Test condition: Standard temperature, powder/water ratio = 1 : 0.28~0.32

Item	Specification
Initial Setting Time	≥ 10 min
Final Setting Time	≤ 150 min
SCA-I	8h ≥ 30 MPa ; 24h ≥ 55 MPa
SCA-II	8h ≥ 20 MPa ; 24h ≥ 45 MPa
SCA-III	8h ≥ 10 MPa ; 24h ≥ 25 MPa
Pour into boreholes within 10 minutes after mixing;Maximum Expansion Pressure:60~90MPa	

4. Construction Technical Parameters

Borehole Diameter: 32~40 mm. DO NOT exceed 50 mm (high risk of ejection)

vertical holes preferred. Inclined / horizontal holes require denser slurry compaction.

Hole Spacing:

Natural rock: 200~350 mm

Reinforced concrete: 150~250 mm

5. Operation Guidance

Completely remove dust & standing water inside boreholes

Mix thoroughly without dry agglomerates; fill holes densely, no sealing required generally

Keep personnel away from hole openings after filling; wear safety goggles & alkali-resistant gloves

6. Packing, Storage & Shelf Life

Package: 20kg/bag, woven bag with inner plastic liner

Storage: Dry & ventilated warehouse; protect from moisture & rain. Moistened powder loses activity.

Shelf Life: 18 months under original sealed dry storage. Use quickly once opened.

7. Critical Safety Warnings

7.1 Slurry is strongly alkaline. Avoid direct contact with skin and eyes. In case of contact, flush continuously with plenty of clean water and seek medical aid if necessary.

7.2 Strong exothermic hydration reaction. Risk of jet ejection from boreholes. Never stand directly facing holes after pouring.

7.3 FORBIDDEN to blend into fresh concrete or UHPC mixture. Internal mixing will cause sudden cracking or bursting of structural members.

7.4 Minimize outdoor operation during heavy rain. Select corresponding low-temperature model under freezing conditions.

8. Disclaimer

All data is obtained under standard laboratory conditions. Actual cracking performance is affected by borehole layout, free surface, raw material property and site temperature. Small-scale field trial is recommended before formal construction.

This material is exclusively for static fragmentation via borehole filling; cannot substitute for MgO expansion admixture for concrete shrinkage compensation.