

### POLYESTER RESIN BASED CAPSULE FOR ROCK STABILISATION

#### Description

CONCAP R resin capsules contain very high quality polyester resin and its catalyst in precisely measured quantities. The capsules are designed to be inserted into the drill holes for the purpose of mining or tunnelling.

The rotating bolt during insertion, forces resin and catalyst to come in contact and thus ensuring homogeneous mixing of the catalyst and the resin. The homogenous mix fills the annular space between the bolt and the bore hole and holds the bolt firmly and permanently.

#### Uses

CONCAP R resin capsules are developed for stabilisation of strata in tunnels and mining applications.

The basic purpose of strata reinforcement CONCAP R resin capsules is to prevent the freshly exposed rocks particularly overhead after each blast from collapsing.

CONCAP R resin capsules may be used for the purpose of both point anchorage and full column grouting, mortars.

#### Advantages

- Controlled setting time
- Permanent anchorage unaffected by vibration or by corrosive environment
- Distributed anchorage - no localised high stresses, induced in bolted rock
- Reliability: laboratory tested pre packed material,
- minimise complications like prolonged setting time, limited load bearing ability, etc.
- Chemical & corrosion resistance - the cured polyester resin is resistant to fresh and salt water, oils, grease, petrol, salts etc.

#### Characteristics

Chemical base: Polyester Resin

Appearance: Paste

Colour: Yellow greyish

Density after mixing:  $1.90 \pm 0.05$

Compressive strength:  $\geq 60 \text{ N/mm}^2$  in 1 hr  
(at  $+22^\circ\text{C}$ , ASTM C579)

Pull out resistance:  $0.44(0.6 \text{ mm})$   
(under load  $75 \text{ KN-mm}$ )

Tensile adhesion strength:  $\geq 20 \text{ N/mm}^2$  (concrete failure)

Pot Life: 3-4 mint at  $+22^\circ\text{C}$

#### Application Instruction

##### APPLICATION METHOD / TOOLS

- The holes should be drilled to the recommended depth using a rotary percussive machine. The bore holes prior to insertion of CONCAP R resin capsules should preferably be cleaned with compressed air to ensure total elimination of foreign particles, rock dust or water that may otherwise remain inside the bore hole.
- After making the bore hole reasonably dry and free from rock dust, required number of cartridges should be inserted into the bore hole with the help of a loader stick. For crown portions, use of a loader stick may not be possible since the cartridges may get dropped down as soon as the loader stick is removed. In such cases the cartridges may be pushed in by rebar itself very gently to eliminate the possibility of puncture of the cartridges during insertion. The rebar should be inserted into the bore hole gently and full length always; the rebar should never be pushed in with the help of a boomer. Pushing the bolt with a boomer may result in buckling of the bolt. The projected end of the bolt should be fixed with pneumatic jack hammer/rotary drill with the help of couplings/adaptor or a pair of nuts and spinning of the bolt should be done for 30 to 45 seconds (75 spin in  $1/2$  minute at the rate of  $150 \text{ r.p.m.}$ ) in order to ensure homogeneous mixing of the resin and the catalyst. Spinning in the opposite direction for removal of adaptor should be avoided. During the pullout test, the steel plate should be positioned properly, firmly and completely on the rock surface to avoid misleading results. The torque is generally applied immediately after installation of the bolt and the pull out test may be carried out as early as 30 minutes of insertion of the bolt terracing.

#### Limitation

- Capsules should not be inserted in the borehole in running water condition.
- Setting time is inversely proportional to temperature at the time of application.

#### Packaging

32 mm dia x 300 mm length ( 20 pcs in a box)

#### Shelf Life

6 months from date of production

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#### Storage and Shelf life

Store properly in dry condition in undamaged and unopened original sealed packaging between 10 - 20°C away from direct sunlight. Storage at lower temperatures such as in cool rooms is highly recommended and will extend the shelf life. Stock rotation is strongly recommended. When using cool room storage the resin capsules should be allowed time to attain ambient temperature before use otherwise SPIN and HOLD TIMES will be extended.

#### Safety Precautions

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data..

#### Note

All Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact our local FIRSTCHOICE SPECIALITY CHEMICALS PRIVATE LIMITED representative.

#### Disclaimer

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

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