

PRODUCTS

ROCLOC® CARTRIDGES



RESIN CARTRIDGES FOR ROCK-BOLTING EUROPEAN STANDARDS

Resin cartridges have a cylindrical shape and consists of two separate compartments containing a resin mastic and a catalyst paste. The two components are sealed within a polyester film tube. A special plastic cap with radial projected ends (known as a "parachute") may be fitted to one of the cartridge tips and acts as a retaining element preventing the cartridge from sliding out of the bore-hole. The choice of cartridges depends on the diameter of the rock bolt and bore-hole. An annular gap of 3 mm is ideal to permit rupture of the cartridge membrane and to ensure adequate mixing of the two components.

After drilling, the desired number of cartridges are inserted into the bore-hole followed by the rock-bolt. The end of the rock-bolt is angle cut so as to form a sharp tip to ease membrane rupture. As soon as the rock-bolt is inserted into the bore-hole it is spun in order to facilitate the mixing of the resin with the hardener. Spinning is stopped as soon as the rock-bolt is inserted to full length of the bore-hole and as per the recommended "Spin Time". The Rock-drill is then left immobile (as per the recommended "Hold Time") in order to allow the hardening reaction to take place. The hardening time (hold time) depends on the resin set time, the rock temperature as well as to the energy given to the system while the rock-bolt is inserted into the bore-hole.



ADVANTAGES

- High load transmission due to high bonding strength
- Short setting times allow fast bearing support of the rock-bolt and overhead roof bolting
- Ease and speed of installation
- Simple and safe handling
- Full length encapsulation or point anchoring possible
- Suitable for automated installations due to possibility of pneumatic firing
- Cartridges with various setting times, lengths and diameters are available to cover a wide range of application

The required diameter and length of RocLoc® cartridges is calculated by estimating the volume of the annulus between the bolt and the borehole. Cartridges are manufactured in diameters of 21, 23, 25, 28, 32 and 35 mm and standard lengths of 380, 400, 450, 500, 600, 900, 1000, 1100 and 1350 mm. Other lengths and diameters of the cartridge can be manufactured upon request.

Gel time RocLoc® resin cartridges are produced in a variety of gel times.

Generally, the sum of the Spin Time and Hold Time is the Gel Time. The time from the start of mixing until the resin starts to harden is the Gel Time. Gel Time is influenced by the temperature of resin, strata and bolt. Additionally, the amount of heat generated in mixing during the spin time also affects Gel Time. Field trials are recommended.

Spin time Cartridge contents should be completely mixed to achieve maximum anchorage.

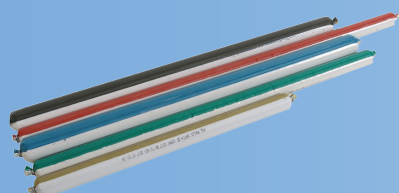
The generally accepted mix standard is a minimum of 30 revolutions of the bolt. Spin Time is the time required to achieve the complete mix. Typically, bolters are able to achieve rotations of the order of 600 - 800 rpm.

Hold time After the cartridge contents are mixed, the resin must harden to achieve strength.

The time required after mixing is completed and the bolt has achieved a firm anchorage is referred to as Hold Time.



@ 25°C				
Speed (sec)	Spin time (sec)	Hold time (sec)	Cartridge colour	Label colour
15	8	>4	Purple	Purple
20	8	12	Black	Black
30	8	14	Red	Red
60	10	30	Green	Green
120	20	90	Blue	Blue
300/600	20	240	Yellow	Yellow



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