

# LOKSET RESIN CAPSULES.



[www.minovaglobal.com/apac](http://www.minovaglobal.com/apac)



EST. 1960

## WE HAVE MANUFACTURED LOKSET RESIN CAPSULES SINCE THE 1960'S

We are the leading supplier and innovator in this field, with our development and manufacturing processes ensuring security of supply, service and support reinforcing your **SAFETY** and **PRODUCTION** output.

# WHAT IS LOKSET?

Resin capsules used in the coal and hard rock mining industries

Available in multiple configurations of single / double length combinations, various speeds, diameters, set times, viscosity and shelf life



Polyester resins, oil or water based

Designed to provide independent bolt and bearing support for roof bolts

# RESIN CAPSULE CHARACTERISTICS

## MASTIC

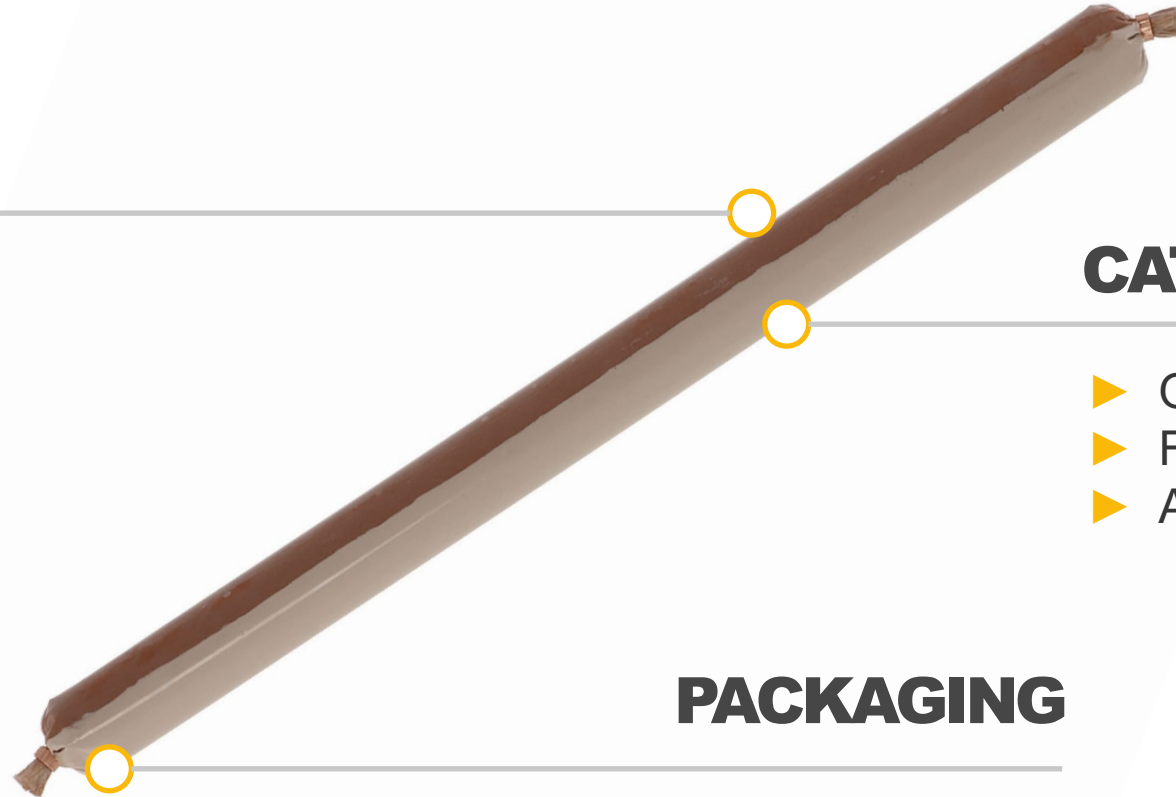
- ▶ Polyester resin
- ▶ Accelerator
- ▶ Fillers
- ▶ Additives

## CATALYST

- ▶ Organic peroxide
- ▶ Fillers
- ▶ Additives

## PACKAGING

- ▶ Polyester film
- ▶ Metal clips



# RESIN CAPSULE CHARACTERISTICS

## 1 SPEED

Gel time of capsule:

- ▶ Multiple speeds options available based on preference
- ▶ **Most Common:**  
15 second, 20 second, 80 second

## 2 DIAMETER

- ▶ Diameter of the capsule will depend on rock bolt system and hole size
- ▶ **Most Common:**  
25 mm, 26 mm, 30 mm, 36 mm, 45mm

## 3 VISCOSITY

Influences:

- ▶ Ease of insertion of bolt into hole
- ▶ Shelf life of the resin capsule
- ▶ Different options for different mine requirements

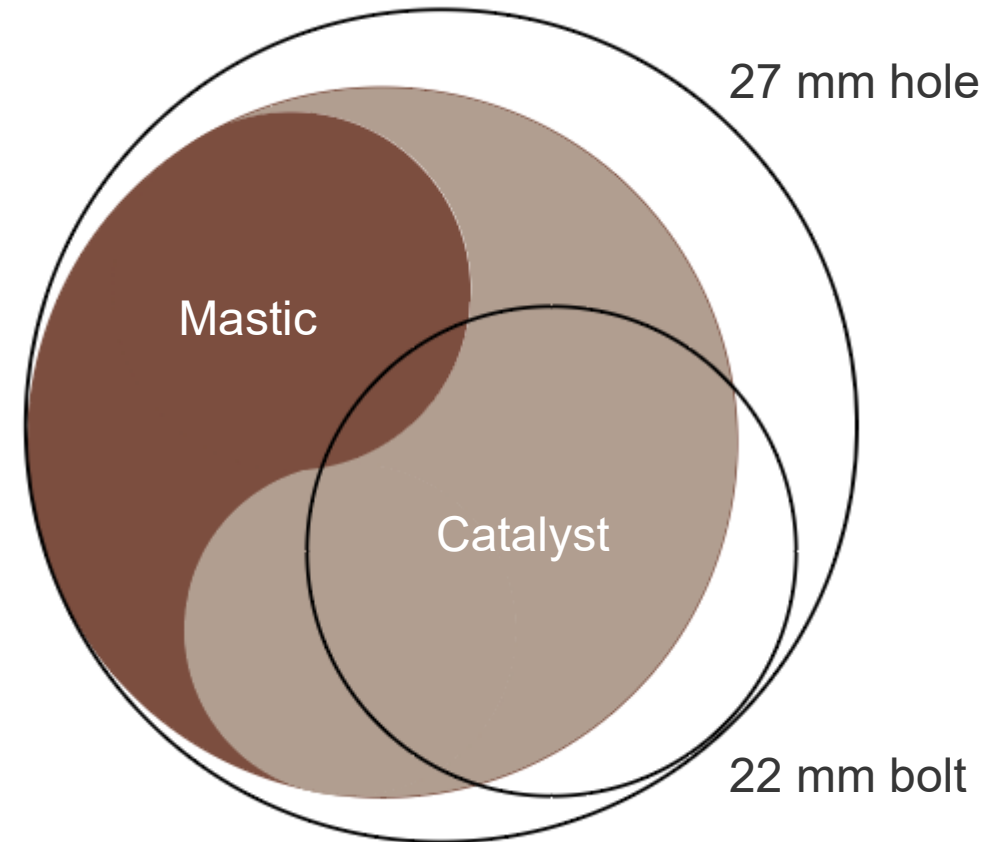
## 4 LENGTH

- ▶ Length of the capsule will depend on rock bolt system and ground conditions:
- ▶ 330 mm to 3,000 mm (X2) capsules available
- ▶ **Most Common:**  
650 mm, 1000 mm, 1200 mm, 2400 mm (X2)

# HOW DOES LOKSET WORK?

Lokset capsules are filled with a reinforced thixotropic polyester resin in one compartment and a catalysed mastic filler in the other, separated by a physical barrier.

The rotation of the bolt during installation ruptures the capsule, shreds the film and mixes the two components resulting in a chemical reaction, transforming the resin into a solid high strength bonding element which transfers the load.



# LOKSET IN NUMBERS



Capsules produced in Australia in 2019



\*4k km is greater than the distance between Sydney and Perth

**4,000KM\***



of resin cartridges produced annually



Is the most popular diameter of capsule



Australian Made in  
*Nowra, NSW*

# WHY CHOOSE LOKSET?



## Easy to use

No special equipment needed.  
Reduces size of bore hole.



## Safe

Roof is supported without  
cure time to continue  
working.



## Fast

Instant support to speed  
up mining cycle process.



## Cost Effective

Less material handling,  
equipment maintenance,  
and material in the  
borehole.



## Strong

The strength of the bond is  
significantly higher than the  
anchor's strength.



## Shelf Life

4 month, 6 month and 12 month  
shelf life for your operation



# WHAT YOU NEED WHEN YOU NEED

Lokset Toospeedie	<ul style="list-style-type: none"><li>▶ Two speeds in a single capsule</li><li>▶ Pre-tensioning of rock bolts</li></ul>
Lokset X2	<ul style="list-style-type: none"><li>▶ Two speeds in two joined capsules</li><li>▶ Used in hard rock mining</li></ul>
Lokset Supamix	<ul style="list-style-type: none"><li>▶ Water based resin capsule</li><li>▶ 6 month shelf life</li></ul>
Lokset Spin to Stall	<ul style="list-style-type: none"><li>▶ Faster installation speeds</li><li>▶ Improved installation performance</li></ul>
Lokset Advance	<ul style="list-style-type: none"><li>▶ Latest generation of capsule</li><li>▶ 12 month shelf life</li><li>▶ Improved installation performance</li></ul>
Lokset J and Long Tendon Series	<ul style="list-style-type: none"><li>▶ Installing cable bolts</li><li>▶ Special formulations to reduce insertion force</li></ul>

# WHY LOKSET?

Resin in capsules was originally developed in the 1960' as an alternative to conventional rock-bolting grouts/mortars

- Eliminates grout/mortar preparation time related to traditional cement based grouts
- Eliminates equipment cleaning time
- Immediate setting/hardening time
- Rapid strength development

Lokset capsules and their installation process provide a state-of-the-art methodology for rock-bolting in hard rock and soft rock mining

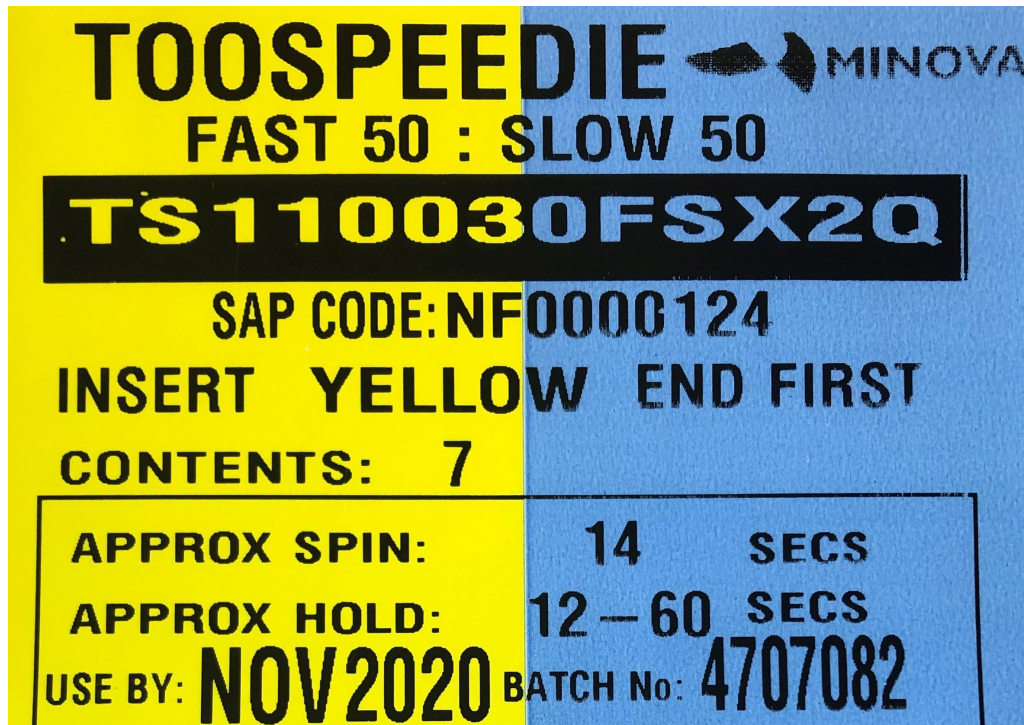


# QUALITY ASSURANCE

- ▶ During each production process, quality control checks are carried out to ensure a consistent product quality. **This includes:**
- ▶ ISO certified since 1995
- ▶ Incoming raw materials certified
- ▶ Mastic confirmed for correct gel and viscosity
- ▶ Paste confirmed for reactivity
- ▶ Capsules are checked for speed and ratio
- ▶ Tracking back to each cartridge produced
  - By date
  - By pallet number
  - By production batch



# LABELLING & PACKAGING



Lokset resin capsules are packed into appropriate **boxes** according to their length and in quantities depending on their size. Boxes are stacked on pallets.

The **shelf life** for properly stored capsules is between **4 and 12 months**, depending on the capsule variant. The capsules shall be stored in closed containers, in dry and well-ventilated areas at **0 - 25 °C**.

Color of label is dependant on resin speed as well as the resin combination:

-  Super fast
-  Extra fast
-  Fast
-  Medium
-  Slow

# CHOOSING YOUR CAPSULE TYPE

Choice of mastic

Types of formulations vary depending on viscosity and mechanical properties.

## Factors influencing your choice:



Type of bolting machine



Borehole & bolt dimension optimized



Local geological conditions

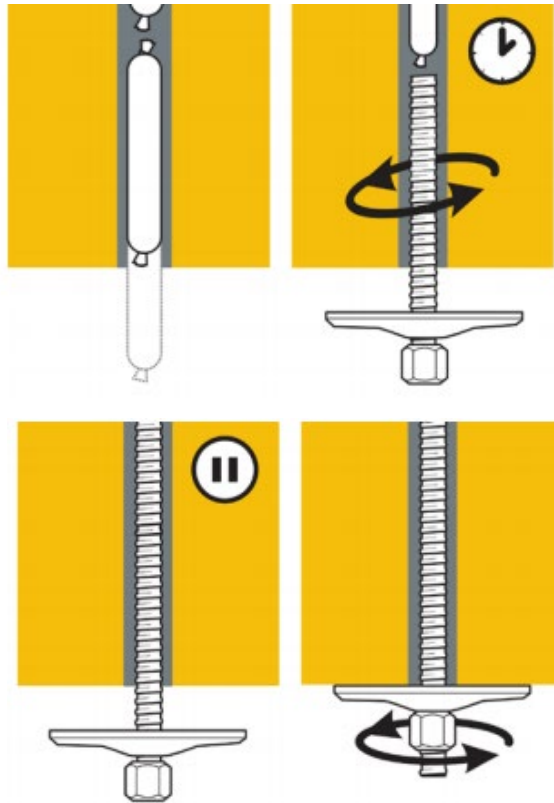
**Gel time:** 10 - 1500 sec.

### Gel Time Rules:

- 1 The gel time should be longer than the time required to mix components along length of bolt.
- 2 Influence of temperature- all temperatures (of capsule, bolt, environment) affect the gel time.
- 3 Type of bolting machine, power and rpm can affect gel time.

*Minova is ready to help you understand and choose the right mastic for your conditions.*

# HOW IS LOKSET INSTALLED?



1

## Drill holes

to correct length and diameter for selected bolt and cartridge used

2

## Clear holes

of dust and debris - flushing with air or water is recommended.

3

## Position cartridges

by pushing or shooting into position in the borehole

4

## Push bolt

into borehole and rotate bolt to mix resin

5

## Spin bolt

for up to 5 seconds when the bolt reaches the back of the borehole



# STORAGE PROCEDURES



Best stored in a dry, **well-ventilated** area



Recommended storage area temperature



Must be kept out of direct sunlight



High temperatures will dramatically reduce shelf life



Do not store for prolonged periods above **32°C**



Do not stack pallets of this product



Rotate stock for maximum performance



12 months shelf life with Lokset Advance



# WHY CHOOSE MINOVA?



Proven history in the market



Enhancement of safety for workers



Global leader in ground support



Timely & effective product applications



ISO Quality standards



Complete product portfolio



Technical support & expertise



Preferred by Major Global Mining Companies