



## KEY BENEFITS

- Rapidly gains strength and reliably secures roof bolts
- Easy to use
- Secures the bolts in watered drill holes

## DESCRIPTION

Mineral capsule for roof bolts MCC is created for steel composite and rope bolts fixing.

Mineral capsules for bolts fixing MCC are manufactured as a single-chamber cylindrical tube by sewing the nonwoven material.

Non-woven material allows water penetration and keeps it inside.

Prepared capsules are packaged with a dry mix of mineral fine-grained binders and fillers with a complex of modifying additives providing high early strength and high bond strength with the rock mass, which makes it possible to improve load properties of the bolts.

Special treatment of the capsules makes it easy to insert it into the drill hole.

## Technical Description

### APPLICATION TECHNIQUE

The parameters of bolting and ways of its installation are in accordance to the "Instructions for the calculation and application of bolting in the mines".

Before installation of the roof support, preparation works are required to provide necessary number of the bolt sets and capsules, as well as the drinking water container. A soaking tank should be such that when the capsule is soaked, it does not bend. Water replacement has to be done every shift. Do not store more than the daily requirement of the capsule MCC at the place of application.

Before the bolt's installation to determine whether the depth of hole fits the bolt length holes are to be examined with depth and diameter measurements.

Installation of the MCC is done after soaking in water tanks. The recommended soaking time should not be exceeded. Time for the bolts fixing from the capsules soaking should not be exceed more then 3-5 min.

The quantity of capsules MCC for bolts fixing must be at least two. Soaked capsules MCC are installed into the well and using the bolt are pushed into the drill hole. In case of large inflow, the capsules are to be inserted on by one and compacted by the roof bolt.

The holes drilling, as well as the bolts installation, is carried out with the use of an electric drill type with manual or mechanical feed, portable hydraulic or pneumatic drills, as well as by mining machines and other the self-propelled special drilling equipment.

### PACKAGE TYPE AND TRANSPORTATION

The capsules are packed in polyethylene bags taking into account the size of the capsules. The free top end of the bag is securely packed. In order to protect content against moisture and pollution, plastic bags with capsules are packed in cardboard boxes.

Transportation of MCC capsules is possible by any mode of transport. For shipping, unloading, transport and storage of MCC capsules measures should be observed to exclude the possibility of damage and soaking of the package.

### SAFETY

The requirements of "Safety rules in coal and shale mines" and "Uniform safety rules for the development of ore, non-metallic and alluvial deposits in an underground manner" should be complied when the bolt fixing works are performed.

### SPECIFICATION

Saturation time before installation in a well

- MCC 400/23	50-70 s
- MCC 600/23	60-80 s
- MCC 400/37	2,5-3 min
- MCC 600/37	2,5-3 min

Size of capsule:	
length	400 mm; 600 mm
diameter:	
- for a shot hole 30mm	23,5-24,5 mm
- for a shot hole 43 mm	36,5-37,5 mm

Net weight:

- MCC 400/23	290-310 g
- MCC 600/23	430-465 g
- MCC 400/37	690-730 g
- MCC 600/37	1,05-1,1 kg

Specification for dry mix:

- setting time	
starting	4-6 min
ending	8-10 min
- compressive strength:	
after 1 hour	1,5-2 MPa
after 3 hours	4,0-6,0 MPa
after 24 hours	12,0-15,0 MPa

### STORAGE SHELF LIFE

Mineral capsules for bolts fixing MCC should be stored in the manufacturer's package in a dry open-air room with relative humidity not exceeding 60%, temperature from -60 to + 50 ° C. Storage period in the manufacturer's packaging is 6 months from the date of manufacture.

Avoid ingress of moisture on the product when storing in the place of application.

The information provided is based on our experience and present knowledge. For more information please contact to the manufacturer's representative.