

DESCRIPTION

The expandable rock bolts are a stabilization device for rock masses in mining and underground works. They are made up of a high elastic limit steel tube, bent into an omega shape, and sealed at the ends with ferrules.

Once inserted into the hole drilled in the rock, which must have a larger diameter than the original diameter of the tube, they expand through the application of water under pressure. This process causes the anchoring bolt to be loaded, and offer immediate support. This is achieved thanks to the action of two types of forces; the first force- a radial pressure perpendicular to its axis along its entire length, and the second force- a frictional force along its entire length.



FIELDS OF APPLICATION

- Underground mining: to stabilize the rock mass in tunnels, galleries, chambers, and other underground excavations
- Tunnel construction: to secure the cavity during excavation
- Geotechnics: for the stabilization of slopes, rock walls, and other geotechnical structures

ADVANTAGES OF EMC ROCK BOLTS

- High strength: the expandable rock bolts are highly resistant due to their design and the material used in their manufacture, making them suitable for applications that require a high load capacity.
- Easy installation: the expandable rock bolts can be installed quickly and easily, reducing downtime and labor costs.
- Flexibility: the expandable bolts are flexible and can adapt to different geological and terrain conditions.
- Compatibility with other systems: the expandable rock bolts are compatible with other anchoring systems, allowing for greater flexibility in selecting support systems.
- Safety: the expandable rock bolts are safe for use in underground environments, as they do not require any chemical accelerant during installation and achieve load immediately.

COLOR TABS

We offer colour taps to protect the rock bolt when it is inserted to the hole and to identify the length of the bolts by the ASTM rules. The colour taps can be customizable with the logo of your company.

ASTM COLORS		LENGTH (ft)
	RED	5
	DARK BLUE	6
	ORANGE	7
	WHITE	8
	FLUORESCENT GREEN	9
	SAFETY YELLOW	≥10, >12
	DARK GREEN	≥12, >14
	BROWN	≥14, >16
	NO COLOR	≥16, >18
	LIGHT BLUE	≥18, >20
	BLACK	≥20, >22
	PINK	≥22, >24

TECHNICAL PROPERTIES OF THE EXPANDABLE ROCK BOLTS

SPECIFICATIONS	STANDARD	MIDI	SUPER
Variable lengths Up to (m)	6	6	6
Tube Thickness (mm)	2	2	3
Original Pipe Diameter (mm)	41	54	54
Maximum Pipe Diameter (mm)	26	39	39
Recomm Drill Diameter (mm)	36-38	45-51	45-51
Minimum Breaking Load (Kn)	120	160	240
Weight (Kg x m)	2	2.7	3.9
Raw Material Quality	S 355-MC	S 355-MC	S 355-MC
Yield Strength (Kn)	100	120	220
Maximum Elongation	10-20 %	10-20 %	10-20 %
Inflation Pressure	300 Bar	240 Bar	300 Bar
Front Busing Diameter (mm)	28	38	38
Diameter of the Inflation Busing (mm)	30	41	41
Recommended Plate (mm)	150x150x4	200x200x5	200x200x6

INSTALLATION PROCEDURE

- Drill the hole in the rock with a depth slightly larger than the bolt
- Insert the expansion bolt through the hole manually or automatically
- Inject pressurized water to expand the bolt in order to make contact with the walls of the hole
- Wait for the necessary time for the bolt to fully expand and remove the inflation pump nozzle

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