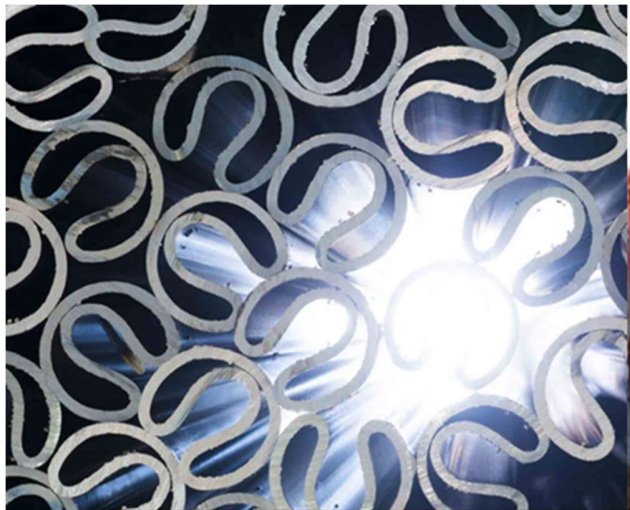


NORDIC GEO SUPPORT

Expandable Rock Bolts

FOR
MINING AND TUNNELLING



NordicGEO Expandable Rock Bolts – Technical Data



Expandable Rock Bolt Overview

NordicGEO ERB are Expandable Rock Bolts that are used as rock support in mining and tunneling applications. Working with the experienced manufacturing leader for more than 30 years based in Sweden, Nordic Geo Support offers a comprehensive range of expandable rock bolts that meet the typical targets of elongation between from 15% (ERB range) up to 30% (ERB+ Range) as well as corrosion protected bolts.

NordicGEO ERB provides high level of safety and productivity in your operations. The bolts can be used in various ground conditions. Both the ERB and ERB+ ranges of bolts can be offered with corrosion protective coating, which is a polymer alloy coating. These coatings are designed to optimise bolt life in aggressive ground conditions, reducing the need to replace bolts, saving time and money.

NordicGEO ERB is a cost-effective solution that offers immediate full length support in the borehole.

Easy installation from manual insertion to mechanised and fully automated equipment.

Fast, secure rock bolting technologies from Nordic Geo Support.

Working Principles

Rock walls in underground mines and tunnels need to be secured to prevent collapse or cave in. The reinforcement with expandable rock bolts (ERB) arrests crack formation and propagation.

The expansion of the bolt via high pressure water (hydroforming) creates a friction and interlocking anchor. There is immediate full-length support for faster cycle times, no waiting for grouting to set. The bolts are suitable for manual or mechanical installation. After drilling the hole, installation requires a water pump to expand the bolt into the shape of the hole to create instant support. Installation is flexible to variations in drill hole diameter and other irregularities. Installation is also clean and easy in an environmentally friendly solution.

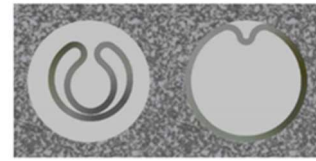


Figure 1. NordicGEO ERB before and after expansion in the hole.

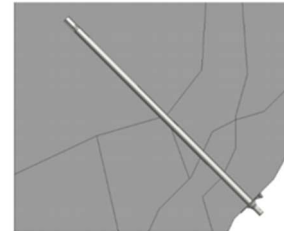


Figure 2. NordicGEO ERB expands to secure the rock wall, preventing cave-in.

Typical Specifications

	NordicGEO ERB			NordicGEO ERB+		
	120	160	240	120+	160+	240+
Typical breaking load (kN) (Expanded Profile)	130	170	250	120	160	240
Minimum breaking load (kN) (Expanded Profile)	120	160	240	120	160	230
Minimum yield load (kN) (Expanded Profile)	100	130	200	90	120	170
Typical elongation, (%) (Expanded Profile)	15	15	15	30	30	30
Minimum elongation, (%) (Expanded Profile)	10	10	10	20	20	20
Bolt Diameter (mm)	28	38	38	28	38	38
Profile diameter (mm)	27.5	36	36	27.5	36	36
Material thickness (mm)	2	2	3	2	2	3
Original tube, diameter (mm)	41	54	54	42	54	54
Upper bushing, diameter (mm)	28	38	38	28	38	38
Bushing head diameter (mm)	30/37	41/48	41/48	30/37	41/48	41/48
Recommended hole diameter (mm)	32-39	43-52	43-52	32-39	43-52	43-52
Optimal hole diameter (mm)	35-38	45-51	45-51	35-38	45-51	45-51
Recommended inflation pressure (bar)	300	240	300	300	240	300
Standard Lengths (meters)**	1.5 – 4.0	2.4 - 6.0	2.4 - 6.0	1.5 – 4.0	2.4 - 6.0	2.4 - 6.0

** ERB 160 and 240 minimum length is 2.4m. Other lengths possible upon request.

Highest Quality

Expandable rock bolts are manufactured from unique steel in the Nordics guaranteeing homogenous material. Each production stage from steel manufacturing to profiling and assembling of rock bolts belongs to single own production and quality control chain. Quality control secures that the product is regularly tested to secure quality and safety. Each product is marked with a unique code, which enables full traceability of products. Expandable rock bolts are delivered in standard bundles, loaded on truck or in 20' containers. Protective oil can be applied on request. Superior delivery performance is based well working logistics and short internal manufacturing chain optimising delivery times.



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