

Hydraulically Expandable Friction Bolt

DESCRIPTION



Normet ERB's are hydraulically expandable rock bolts, comprising of a steel tube, folded in on itself, with welded bushings at either end to seal the profile. Once inserted into a pre-drilled hole, the ERB is inflated using high-pressure water, causing the bolt to expand and compress against the surface of the support hole, providing immediate, full-length frictional anchorage and reinforcement. These bolt types are typically installed as temporary support in tunneling, mining, and civil engineering applications but are available with corrosion protection options to extend their useful life.

ERB's offer rapid installation and immediate support, making them ideal for time-sensitive applications. They are also environmentally friendly, requiring no chemicals to install.

KEY BENEFITS

- › Rapid and easy installation, typically 50% faster than typical resin-type rock bolts.
- › Immediate anchorage after expansion, no curing time delays for encapsulating resins or grouts.
- › Full-length anchorage and load distribution.
- › Environmentally friendly and chemical-free.

TYPICAL APPLICATIONS

ERB bolts are typically installed in tunnelling, mining, and civil engineering applications where temporary and immediate rock reinforcement is needed.

- › Rib and Roof Support
- › Face Stabilization
- › Slope Stabilization
- › Retaining Wall Support

ERBs can be coated with a corrosion protection polymer to extend their installed life.

TECHNICAL DATA

Technical Data		ERB 120	ERB 160	ERB 240	ERB 240 Light
Ultimate Load (kN)		120	160	240	240
Yielding Load (kN)	ERB Standard	100	130	200	220
	ERB Plus	100	120	170	
Tube Thickness (mm)	ERB Standard	2.0	2.0	3.0	2.3
	ERB Plus	2.0	2.0	3.0	
Weight (Kg/m)		2	2.7	3.9	3.1
Bolt Diameter (mm)		27	36	36	36
Inflated Tube Dia.(mm)		41	54	54	54
Instl. Hole Dia. (mm)		32 - 39	43 - 52		
Optimal Hole Dia. (mm)		35 - 38	45 - 51		
Min. Elongation (%)	ERB Standard	15	15	15	10
	ERB Plus	20	20	20	
Upper Bushing Diameter (mm)		28	38		
Inflation Bushing Dia. (mm)		30/37	41/48		
Expansion Pressure (bar)		300	240	300	
Standard Lengths (m)		1.5 - 4.0		2.4 - 6.0	

ADDITIONAL CONFIGURATIONS

- › ERB 240 is available in the light version which has a higher tensile material and a thinner tube wall thickness to offer a lighter bolt with the same tensile capacity as the standard ERB.

FUNCTIONALITY / INSTALLATION

Normet ERB can be installed manually, semi-automatically, or fully automatically using portable equipment or typical drilling jumbos and bolters equipped with the necessary accessories.

The ERB is inserted into a pre-drilled hole with a borehole diameter smaller than the expanded diameter of the tube. The bolt is inflated using high-pressure water from a specialized pump and installation nozzle. The water pressure inflates the tube, compressing it against the borehole walls. The resulting contact pressure frictionally locks the ERB into the support hole, offering full-length anchorage and radial pre-stressing of the surrounding rock.

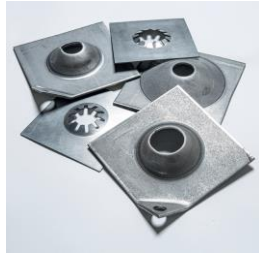
Once the inflation nozzle is removed, the inflation water drains from the bolt through the charging hole in the bolt collar, leaving the bolt empty and allowing the bolt to absorb deformation without bursting.

Whilst any information and/or specification contained herein is to the best of our knowledge, true and accurate, we always recommend that a trial be carried out to confirm suitability of the product. Please note regional climatic conditions may cause a variation in the performance of the product. No warranty is given or implied in connection with any recommendations or suggestions made by us or our representatives, agents or distributors. The information in this data sheet is effective from the date shown and supersedes all previous data. Please check with your local Normet office to confirm that this is current issue.

Hydraulically Expandable Friction Bolt

ACCESSORIES

The adjustable face plate for expandable rock bolts is designed to provide optimum support action. It will secure the installation without introducing unfavourable tensile stresses into the bolt head and will ensure that the face plate always lies flat against the rock surface. This is facilitated by the elliptical bolt hole and the domed plate.



DIMENSIONS / PACKING

Bolts are typically made in 2400 mm; 3600 mm; 4000 mm and 6000 mm.

Other lengths on request.

Packaging details are as follows:

- › ERB 120 – 100 bolts per bundle
- › ERB 140 – 50 bolts per bundle
- › ERB 160 – 50 bolts per bundle
- › Adjustable plates – Wooden pallets with collars
- › Net Washers – based on quantity

Technical Data	ERB 120	ERB 160	ERB 240
Dimensions	150 mm x 150 mm		
Thickness (mm)	4 / 6	4	4
Bolt Hole Dimensions (mm x mm ± 0.5 mm)	29 x 39		39 x 44
Minimum Breaking Load	50 kN		
Deflection at 30 kN	Maximum 2 mm		

Other dimensions are available upon request.

Product Quality Standard: ASTM F432-13, Standard specification for roof and rock bolts and accessories.

Net washers with 2-ton capacity are also available.