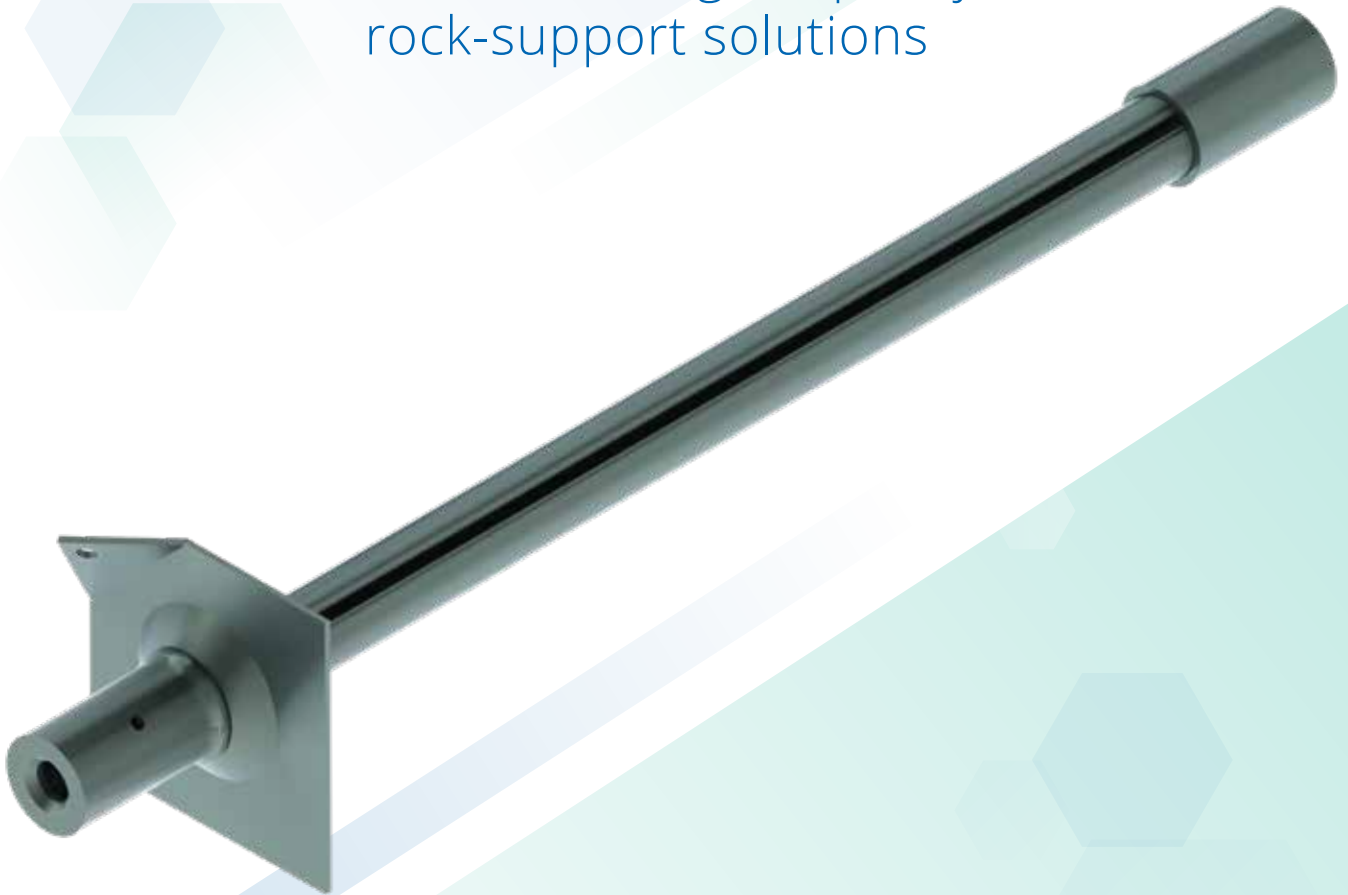


# **EXPANDABLE FRICTION BOLT**

Immediate & high-capacity  
rock-support solutions



**Dextra**

## About Expandable Friction Bolt

GEOTEC Expandable Friction Bolt (Expansion bolt) is a bolt made of a deformed steel tube which is expanded at the end of installation by injecting high-pressure water. It is especially recommended for the following applications:

- **Roof and wall bolting with irregular bore holes.** The expanded tube will adjust the cavity's shape.
- **No grouting or chemical required.** Only high pressure water is required to expand the tube. No dirty grouting operation or chemicals required, this is especially recommended in case the ventilation in tunnel is limited.
- **Install and carry on!** Instant anchor support is provided right after the tube is expanded.

view

## Key benefits

- High load-bearing capacity combined with excellent elongation properties.
- The elongation properties allow substantial rock movement without shearing bolt.
- Immediate full length support for faster excavation.
- Simple and clean installation.
- Adjusts to borehole irregularities.
- Reliable installation quality.
- Flexible to variations in drill hole diameter.
- Versatile bolting solution for variable ground conditions.
- No grouting or chemical needed.
- Manual or mechanical installation at choice.

## Product features

- Length up to 8 meters.
- 2 diameters available: 27.5mm and 36mm.
- Adapts boreholes between 32 to 52mm.
- 4 high-load capacities up to 24 metric tons.
- Excellent ductility elongation properties, allowing substantial rock movement without the boltshearing.

## Standards

### Design

- BS EN 1997-1
- BS EN 1537
- BS 7861-1

## Product design & concept

Head set

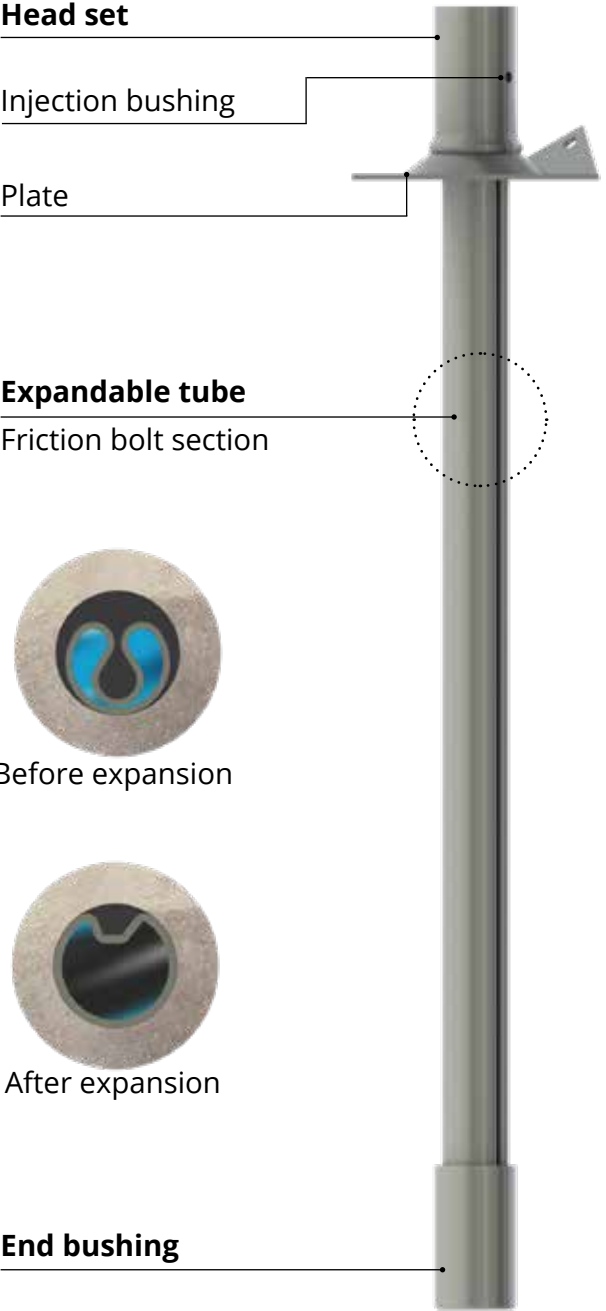
Injection bushing

Plate

Expandable tube

Friction bolt section

End bushing



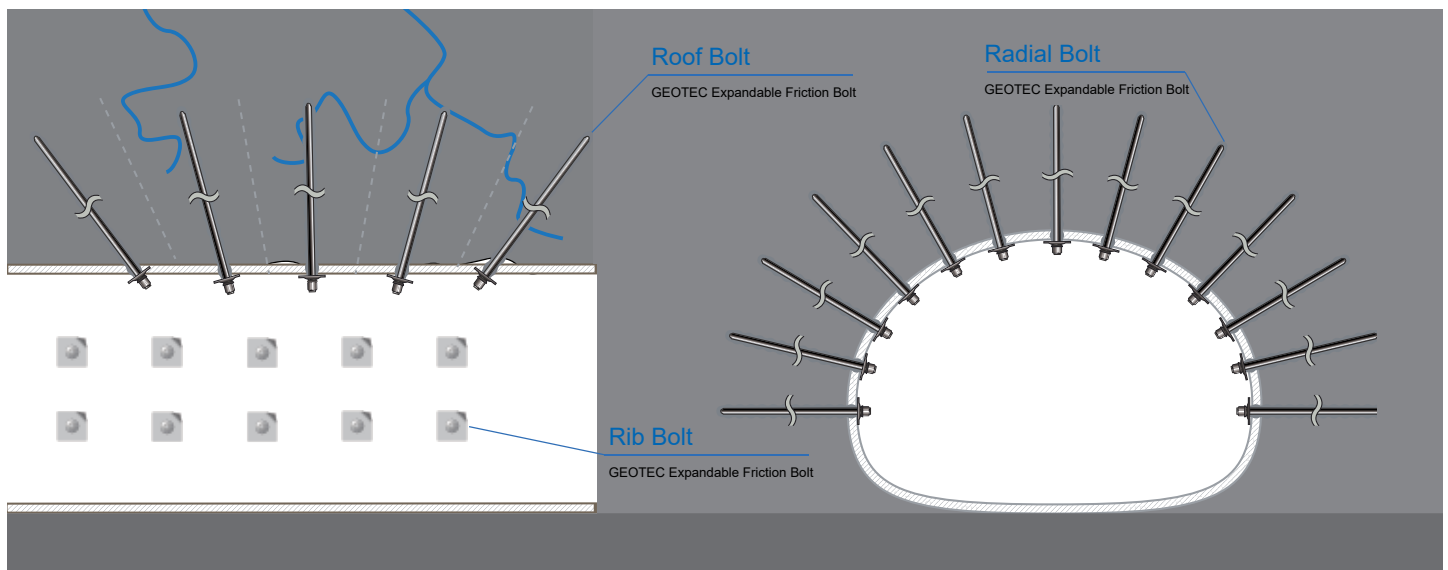
Before expansion



After expansion



## Applications



During the expansion process, the Dextra Friction bolt compacts the material surrounding the hole and adapts its shape to fit the irregularities of the bore hole. A combination of frictional and mechanical interlock is generated throughout the entire bolt length, reinforcing and increasing the load-bearing strength of the rock surrounding the drilled hole. The load of the rock is transferred to the Dextra Friction bolt directly without any necessary auxiliaries such as mechanical locking devices or grouting agents. Rock reinforcement is unaffected by the presence of water, which is squeezed out of the contact rock. Dextra Friction Bolts and the quality assured installation procedure permits rock reinforcement where expensive external support is normally required.

A rockbolt face plate or bearing plate serves the purpose to support the loose rock around the rockbolt head as well as to distribute the load that comes on the bolt head uniformly into surrounding rock. The Dextra Friction face plate is specially designed to support the surface rock without introducing unfavorable stresses on the bolt head.



## Technical Information

Description	Product type				
	DM120L	DM120	DM160	DM200	DM240
<b>Mechanical properties</b>					
Min. Tensile Load (kN)	100	100	140	170	200
Ultimate Load (kN)	120	120	160	200	240
Min. Elongation (%)	22%	22%	22%	22%	22%
Ultimate Elongation (%)	25% - 30%	25% - 30%	25% - 30%	25% - 30%	25% - 30%
Inflation Pressure (MPa)	30	24	24	24 - 26	30
<b>Physical properties</b>					
Bolt Length (m)	2 - 6	2 - 6	2 - 6	2 - 6	2 - 6
Tube Thickness (mm)	2	1.5	2.3	2.5	3
Bolt diameter (mm)	27.5	36	36	36	36
End Bushing dia. (mm)	28	36	36	36	36
Bushing head dia.	30 / 36	41 / 48	41 / 48	41 / 48	41 / 48
Original Tube dia. (mm)	44	54	54	54	54
Optimal borehole dia. (mm)	35 - 38	45 - 51	45 - 51	45 - 51	45 - 51
Plate Dimensions (mm)	150 x 150 x 6	150 x 150 x 6	150 x 150 x 6	150 x 150 x 8	150 x 150 x 8
System Weight (2 - 6 m) (kg)	5.4 - 13.7	5.7 - 13.5	7.7 - 19.4	8.48-21.18	9.7 - 24.8

Commercial presence  
in more than  
**55** countries



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