

# NORDIC GEO SUPPORT

## Friction Rock Stabilizers

### FOR

### MINING AND TUNNELLING





## Friction Rock Anchors

Friction rock anchors are made from high tensile steel roll formed into open slotted tubes. Driving the high tensile steel tube into a hole with diameter smaller than the tube diameter generates a radial force on the rock. This results in a frictional resistance to the pullout of the tube from the hole. A steel ring is fixed to the collar end of the tube to retain a bearing plate (washer).

Friction rock anchors are used internationally in mining and tunneling and are considered the simplest form of rock anchor. Friction rock anchors can be installed with either hand held or mechanised equipment (Jumbos, Roof bolters etc.) and provide an immediate frictional support at the face. For additional load bearing capacity

and corrosion protection, friction rock anchors can be post grouted with cement grouts or cement capsules.

After installation, when ground shifts can loosen mechanical rock bolts, the Friction Rock Stabilizer tube grips more tightly. Days or weeks later, when the average conventional mechanical bolts become ineffective and need retouring; a typical friction anchor retains its load-bearing characteristics.

Friction rock anchors are available in black or galvanized steel and are manufactured in nominal 33mm, 34mm, 35mm, 39mm, 41mm and 47mm diameters with lengths from 300mm to 3000mm in 300mm steps.

Nordic Geo Support Africa also supplies mesh pins for mesh fixing applications. The mesh pin, available in various lengths, consists of a 40mm diameter friction rock anchor, modified with a 47mm ring fixed to the collar end of the anchor. Mesh pins are installed into previously installed 47mm rock anchors using the same 47mm driver to tighten mesh against the rock. This reduces the amount of inventory necessary on sites. The mesh pin also eliminates the possibility of a driver designed to install 40mm diameter anchor being used to install 47mm diameter anchor.

## Typical Specifications

Friction Rock Anchor Size	33/34mm	35mm	39/41mm	46/47mm
Minimum Outer Diameter	34mm	35mm	41mm	47mm
Outer Diameter Tolerance	0.5mm	0.5mm	0.5mm	0.5mm
Available Lengths	0.3m to 3m	0.3m to 3m	0.6m to 3m	0.6m to 3m
Recommended Hole Size**	28–30mm	30-32mm	34-36mm 37-39mm	43-45mm
<b>Material</b>				
	Supraform 420			
Minimum Yield Strength	420 MPa	420 MPa	420 MPa	420 MPa
Minimum Tensile Strength	480 MPa	480 MPa	480 MPa	480 MPa
Elongation %	19 %	19 %	19%	19%

\*\* Optimal hole size to be determined by customer to suit their specific requirements

## Advantages of Friction Rock Anchors

- Fast, easy installation
- Full-length support even without bearing plate.
- Effective at any angle. Visual inspection.
- Easier mesh installation immediate support
- Cost effectiveness
- Effectiveness increases with rock movement



Typical Length of Anchor		Color
Metric (mm)	Imperial (inches)	
450	18"	Black
900	36"	Green
1200	48"	Grey
1500	60"	Orange
1800	70"	Red
1981	78"	Blue
2400	94"	Yellow
3650	144"	Purple

## Markings & Bundling

Ends are colored coded indicating the anchor length according to mine standards.

33mm to 41mm diameter anchors are bundled in units of 300, anchors in excess of 41mm are bundled in units of 150.



## Quality

The Friction Rock Anchors are manufactured within a quality-controlled environment, ensuring that the anchors meet the required specified standards.



Anchors are marked with batch numbers, ensuring all materials are traceable.

## Technical Support

Nordic Geo Support Africa provides a technical advisory service by a team of specialists in the field. The service includes on site assistance and advice on evaluation trials and laboratory work.

## Important note

Nordic Geo Support Africa products are guaranteed against defective materials, manufacture, and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Nordic Geo Support Africa endeavors to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation or information given by it.

## Nordic Geo Support Africa Support Solutions

Nordic Geo Support Africa is Africa's only integrated supplier of rock support products, injection systems, cement grouts, surface coatings, rockbolts, mesh and accessories for rock bolting, rock consolidation and ventilation control. We also develop and formulate standard and high strength backfill mix designs individually for our customers.



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