

**FRICITION ROCK ANCHOR**

**FRICITION BOLT**

Immediate Anchorage Rock Support



**IMPROVING ROCK STABILITY**

Minova’s Friction Bolt improves rock stability, strata control, and safety. The Friction Bolt provides increased anchorage as lateral strata movement occurs.

The Friction Bolt is primarily used in hard-rock mining operations and installed with rotary percussion equipment.

Minova’s Friction Bolts are available in multiple sizes: 33-, 35-, 39-, 46-, and 47-mm diameter.

**STRENGTH AND VERSATILITY**

Minova’s Friction Bolt is manufactured from high-strength steel and in accordance with ASTM F432 Specifications, where applicable.

For increased protection against corrosion, the Friction Bolt can be hot-dipped galvanized.

Standard lengths range from 0.5 m to 3 m (1.5 ft to 10 ft)

**INSTALLATION PROCEDURE**

1. Drill hole at proper diameter and depth. Drill hole diameter is suggested in the table below and determined by on-site testing. Hole depth should be minimum 1” longer than bolt length.
2. Install bearing plate on bolt and insert the tapered end of the Friction Bolt into the drill hole. A driving tool is fitted into the rock drill’s chuck. Place Friction Bolt and bearing plate onto the installation tool.
3. Using percussion and thrust, fully drive the Friction Bolt into the drill hole until the bearing plate is tight against the rock surface.

**SPECIFICATIONS**

Size	Typical Drill Hole Diam.	Min. Bolt Strength, lbs	Typ. Bolt Strength, lbs
33 mm	1-3/16” to 1-1/4” (30 to 32 mm)	16,000	21,000
35 mm	1-5/16” to 1-3/8” (33 to 34 mm)	16,000	22,000
39 mm	1-3/8” to 1-1/2” (36 to 38 mm)	20,000	24,000
46 mm	1-11/16” to 1-3/4” (43 to 45 mm)	30,000	33,500
47 mm	1-3/4” (44 to 45 mm)	30,000	33,500

*Specific drill hole diameters determined by onsite installation and anchorage testing, and strata control performance.*

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Started more than 135 years ago, Minova is a global manufacturer and supplier of chemical and mechanical earth control products and support equipment. With manufacturing plants on five continents and operations in more than 25 countries, Minova is an industry-leading provider of ground support solutions for the underground mining, construction and energy industries.

### ADDITIONAL DOCUMENTATION

- Steel Bolts, Plates, Other Steel Articles Safety Data Sheet (SDS)
- Minova Guide to Rock Bolting
- Minova Chemicals, Polymers & Steel Application Guide

If further information is required consult Minova Americas website: [www.minovaglobal.com](http://www.minovaglobal.com).

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