

# ROCK REINFORCEMENT

## Cable Bolts



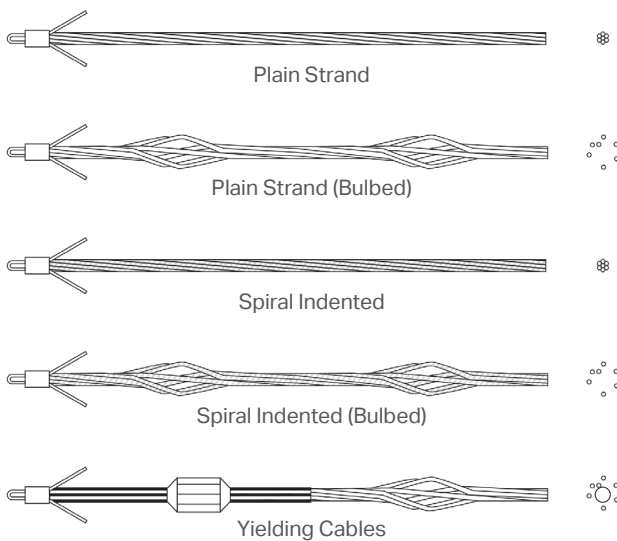
Normet offers a comprehensive range of cable bolting systems including high strength, stress-relieved low relaxation 7-wire steel strand cables for static and dynamic applications. Normet's portfolio of cable bolt systems consists of cable bolt tendons, barrels, expansion shells, and plates. The cable tendons are available in pre-cut or continuous coil versions, with either a black or galvanized finish.

Normet offers a range of standard and enhanced cable anchors suited to various applications.

- > Plain Strand is suited to typical long-anchor support applications.
- > Bulbed Strand is available for increased pull-out resistance and can be supplied with up to 5.7 bulbs per meter.
- > Spiral Indented Strands feature a ribbed profile rolled over the full length of the cable to improve both anchorage stiffness and pullout resistance by up to 75% compared to plain strands.
- > Yielding Cables features swaged collars and debonding sleeves that allow the cable to tolerate large deformations in the rock mass without a reduction in tensile capacity or failure of the cable.

Normet specialises in customised configurations to suit customer-specific requirements.

### CABLE CONFIGURATIONS



### WORKING PRINCIPLE

Cable anchors are high-tensile, permanent rock reinforcement suited to long-length installations within confined spaces. They are installed into pre-drilled holes and are bonded into the rock mass using either resin or grouts. They can be manually installed or installed by various forms of mechanized equipment.

### BENEFITS

- > Cable bolts are suited to applications requiring anchoring depths exceeding 3.0 m.
- > The flexible nature of the cable allows convenient transport and handling of the product in confined spaces.
- > Cable bolts are substantial and permanent reinforcement suited to long-term high-stress applications.
- > Normet offers injectable resins designed for cable bolting to enhance the speed of installation and curing time greatly.

### RANGE AND SPECIFICATIONS

Parameter	15.2 mm Cables	17.8 mm Cables
Cross-Sectional Area	143 mm <sup>2</sup>	195 mm <sup>2</sup>
Load at 1% Extension	234 kN	312 kN
Minimum Tensile Strength	250 kN	355 kN
Mass per Meter	1.13 kg/m	1.51 kg/m
Elongation	Min.: 3.5% Typ.: 6.5%	Min.: 3.5% Typ.: 5.7%

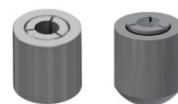
Parameter	15.2 mm Yielding Cables
Yield force limit	*Selectable 150 - 220 kN
Ultimate Displacement Capacity	**300 - 400 mm
Typical Energy Absorption Capacity	***24.6 kJ at 275 mm displacement

\*Yielding force is factory set and adjustable per order within the specified range

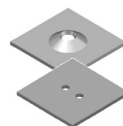
\*\*Displacement capacity is factory set and adjustable per order within the specified range

\*\*\*Based on tests results from Normet Dynamic Impact Tester - 26 kJ impulse @4.6 m/s (2T drop mass)

### CABLE BOLT ACCESSORIES



**Barrel & Wedge** provides positive support at the rock face at the collar of the hole and secures roof plates on the cable bolt tendon.



Face Plates provide optimal surface support in cable bolt applications. It is available in Flat Plate versions or Dome Plates for high-load-bearing applications.

