MasterGeo LP Rock Bolt

DCP Low profile steel rigid anchor

Material Description

MasterGeo LP Rock Bolt is a multi-component steel and polyethylene sleeved bolt which requires only installation to form a rock supporting anchor.
MasterGeo LP Rock Bolt has been designed as an easy to install, reliable grouting, flexible nut and plate configuration product suitable for civil engineering applications. **MasterGeo LP Rock Bolt** incorporates a unique patent designed, low profile fixing nut to form a Double Corrosion Protection bolt.

Areas of Application

- Tunnelling and underground construction – provides rock reinforcement in tunnel excavation and support systems.
- Mining – used for ground stabilization, roof and rib support in underground mines.
- Civil engineering projects – strengthens retaining walls, bridge abutments, and other critical structures.
- Slope stabilization – helps prevent landslides and soil movement in steep terrain.
- Road and rail infrastructure – reinforces cuttings, embankments, and tunnel linings to ensure long-term stability.
- Hydroelectric and dam projects – provides reinforcement in water-exposed structures where corrosion resistance is essential.
- Marine and coastal structures – used in seawalls, piers, and other coastal applications requiring high durability.
- Blast-sensitive areas – ideal for projects requiring cuttable reinforcement, such as TBM tunnelling and drill-and-blast excavation.

Product Data

Cross Sectional Area	380mm^2
Mass	3.00kg/m
Drill Hole Size	35mm Temporary 48mm Permanent

Performance Data

Tested Characteristics	Result			
	X Grade M24 Bar			
	Minimum		Maximum	
Yield Strength (AS1391)	600MPa	228kN	650MPa	240kN
Tensile Strength (AS1391)	840MPa	306kN	920MPa	335kN
Standard Elongation (AS1391)	15%		19%	
Shear Strength (0.7 x UTS) (AS1391)	223kN		245kN	
Bar Diameter	Core 21.7mm		Major 23.5mm	

Application

Drilling

Position the bolting machine into the position and angle specified.
Using a 48mm bit, drill to a depth equivalent to the length of the **MasterGeo LP Rock Bolt**.
Flush and air blow the drilled hole until the flushing water returns clear, and remove the extension drill steels.

Anchoring

Check for correct hole depth. This is best done using conduit marked at the correct length. Ensure the hole has been flushed of all loose material so there is no breakage in the sheathing when inserted.
Place the specified dolly into the drill chuck
Load the **MasterGeo LP Rock Bolt** onto the Jumbo boom, Shell end first – DO NOT grip the BluGeo LP Rock Bolt with any gripper jaws as the sheathing could be cut. The bolt can also be inserted by hand into the hole.

MasterGeo LP Rock Bolt

DCP Low profile steel rigid anchor

Ensure a holding brace is used to keep the bolt in the hole when inserted vertically into roof.
Place the drive end of the **MasterGeo LP Rock Bolt** into the drive mechanism in the base of the dolly. Rotate the B **MasterGeo LP Rock Bolt** nut to ensure it is engaged into the drive mechanism.
Take the bolt up to the level required for the plate to be fixed with cut face or mesh. Spin the **MasterGeo LP Rock Bolt** using maximum rotation. No thrust or feed force at this stage. The expansion shell will expand and grip.
The nut and bolt will spin to the end of the remaining thread when the shell engages. This will indicate you have achieved the full preload of the expansion shell.
The **MasterGeo LP Rock Bolt** is ready to be grouted.

Grouting

Refer to **MasterRoc MG 01** technical data sheet for mixing and pumping instructions.
Lay out the grout, mixer, pump and hoses to suit the location of the **MasterGeo LP Rock Bolt** to be grouted. The longest pumping distance for the thixotropic grout must be kept below 30 metres.
Check the mixer and remove any scale/debris.
Check that all taps and fittings in the grout line are operational.
Place some water into the mixing bowl, test the operation of the mixing paddles and pump this water through to slick the grout lines.
Ensure all test water is removed from the mixing bowl before commencing.
ALWAYS MEASURE the volume of water and add to the bowl.
Keep mixing until smooth, lump free slurry is achieved. The consistency should be checked by scooping a level handful with a rubber glove and the grout must not fall off when the hand is turned upside down.
Attach the grout line to the lance and run the pump to clear any water through the line until thixotropic grout appears. Turn off the pump ready for filling of **MasterGeo LP Rock Bolt**.
Connect the grout lance to the **MasterGeo LP Rock Bolt**, ensuring the lance is screwed on with a complete seal with the nut. If using a jumbo routing boom ensure the grout cup is hard against the nut and plate.
Keep mixer blades rotating to feed grout into the pump chamber and turn the pressure relief tap to off.
Commence pumping until grout appears at the indicator hole in the plate.
Release the pressure in the grout line by turning on the pressure relief tap. The grout must not keep running from the hole collar for more than 4-5 drips after the grout line is de-pressurised.
Disconnect the grout lance from the **MasterGeo LP Rock Bolt**, being careful of any grout which may drip from above. The grout lance will only rotate/disconnect if the line is de-pressurised.

Specification Clause

DCP LOW PROFILE STEEL RIGID ANCHOR - The rock supporting bolt used for this project shall be a multi component steel and polyethylene sleeved bolt which requires only the installation to form a durable rock supporting product. It shall be a pre-blended product that has independent testing to validate the performance outlined in the technical data table on the following pages. MasterGeo LP Rock Bolt, manufactured by Master Builders Solutions or equivalent shall be accepted.

MasterGeo LP Rock Bolt

DCP Low profile steel rigid anchor

Sheathing Specifications

Property	Nominated Cell Classification	Acceptance Criteria for Nominated Cell Classification	Test Result	Cell Classification Achieved
Density (ASTM D1505)	3	>0.940 - 0.947g/cm3	0.948g/cm3	4
Melt Index (ASTM D1238)	3	<0.4 - 0.15g/10min	0.3g/10min	3
Flexural Modulus (ASTM D790)	5	758 - 1103 MPa	790MPa	5
Tensile Strength (ASTM D638)	3	21 - 24MPa	22.9MPa	4
Slow Growth Crack Resistance (ASTM D1693/ ASTM F1473)	3	192 hours (D1693)	11 hours (F1473)	4
Hydrostatic Strength Classification (D2837)	3	8.62MPa	3	3
Colour	C	2.0% - 3.0%	2.0% - 3.0%	C

Sheathing must be corrugated and HDPE conforming to achieve 100 year design life
Corrugations must be uniform and generally sinusoidal in shape, conforming to the following:
1 Wall thickness (w) of ducts: w >_2mm
2 Pitch of corrugations (p): 12w >_ p >_ 6w
3 Amplitude of corrugations (a): a >_3w
The profile must not allow voids to be formed in the grout column.

Disclaimer

MB Solutions Australia Pty Ltd
ABN 69 634 934 419
Suite 102, 2 Burbank Place
Norwest NSW 2153
Freecall: 1300 227 300
www.master-builders-solutions.com/en-au

MB Solutions New Zealand Ltd
45C William Pickering Drive
Albany, Auckland
New Zealand

Freecall: +64 9414 7233

Emergency Advice:
1300 954 583 within Australia (24hr)
0800 001 607 within New Zealand