



BluGeo CF Rock Bolt

DCP LOW PROFILE CABLE FLEXIBLE ANCHOR



BluGeo CF Rock Bolt is a multi-component steel and polyethylene sleeved bolt which requires only installation to form a rock supporting anchor.

BluGeo CF Rock Bolt has been designed as an easy to install, reliable grouting, flexible nut and plate configuration product suitable for civil engineering applications. BluGeo CF Rock Bolt incorporates a unique patent designed, low profile fixing nut to form a Double Corrosion Protection bolt with either a 30T or 60T capacity.

Application Advantages

- Easy to install
- Shotcrete application savings
- Flexible nut and plate configuration
- Unique anchor shell technology
- Excavation savings

Lifecycle Advantages

- Double Corrosion Protection
- Accessible for post installation testing
- 100 year design life

About the Product

BluGeo CF Rock Bolt has a low profile head and is an extremely durable, high strength, easy installation bolt manufactured from Australian Standard steel, and polyethylene sleeve. This allows the product to be used in major civil engineering project applications and ensures a durable and long lasting installation. BluGeo CF Rock Bolt is a leader in its class of cable bolts with its low profile head allowing savings in shotcrete application lining thicknesses. It is the reliable choice for all modern tunnel bolting applications.

Application Solutions

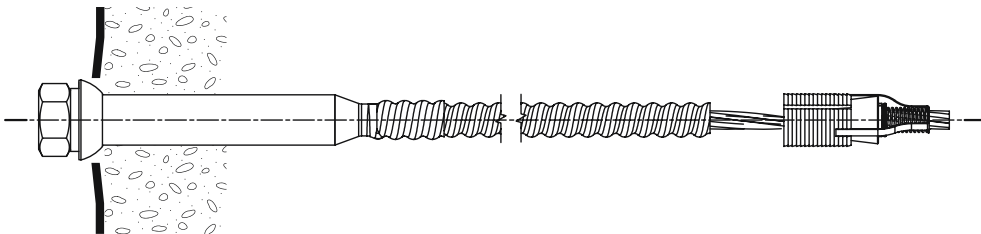
- 100 year design life rock support
- Slope stability
- Ground anchors
- Roof support
- Rock reinforcement
- Low clearance applications

Project Specification Clause

DCP LOW PROFILE CABLE FLEXIBLE 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-fabricated product that has independent testing to validate the performance outlined in the technical data table on the following pages. BluGeo CF Rock Bolt manufactured by Bluey Technologies or equivalent shall be accepted.

Project Examples

Tunnel rock support, road cuttings, rail cuttings, basement construction, mining, marine structures.





BluGeo CF Rock Bolt

DCP LOW PROFILE CABLE FLEXIBLE ANCHOR

Application Specification

DRILLING

- 1.1 Position the bolting machine into the position and angle specified.
- 1.2 Using a 57-64mm bit, drill to a depth equivalent to the length of the BluGeo CF Rock Bolt.
- 1.3 Flush and air blow the drilled hole until the flushing water returns clear, and remove the extension drill steels.

ANCHORING

- 2.1 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.
- 2.2 Place the specified dolly into the drill chuck
- 2.3 Load the BluGeo CF Rock Bolt onto the Jumbo boom, Shell end first – DO NOT grip the BluGeo CF Rock Bolt with any gripper jaws as the sheathing could be cut. The bolt can also be inserted by hand into the hole. Ensure a holding brace is used to keep the bolt in the hole when inserted vertically into roof.
- 2.4 Place the drive end of the BluGeo CF Rock Bolt into the drive mechanism in the base of the dolly. Rotate the BluGeo Cable Bolt nut to ensure it is engaged into the drive mechanism.
- 2.5 Take the bolt up to the level required for the plate to be fixed with cut face or mesh. Spin the BluGeo CF Rock Bolt using maximum rotation. No thrust or feed force at this stage. The expansion shell will expand and grip.
- 2.6 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.
- 2.7 The BluGeo CF Rock Bolt is ready to be grouted.

GROUTING

- 3.1 Refer to BluCem HS400 TDS for mixing and pumping instructions.
- 3.2 Lay out the grout, mixer, pump and hoses to suit the location of the BluGeo CF Rock Bolt to be grouted. The longest pumping distance for the Thixotropic grout must be kept below 30 metres.
- 3.3 Check the mixer and remove any scale/debris.
- 3.4 Check that all taps and fittings in the grout line are operational.
- 3.5 Place some water into the mixing bowl, test the operation of the mixing paddles and pump this water through to slick the grout lines.
- 3.6 Ensure all test water is removed from the mixing bowl before commencing
- 3.7 ALWAYS MEASURE the volume of water and add to the bowl.
- 3.8 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.
- 3.9 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 BluGeo CF Rock Bolt.
- 3.10 Connect the grout lance to the BluGeo CF Rock Bolt, ensuring the lance is screwed on with a complete seal with the nut. If using a Jumbo grouting boom ensure the grout cup is hard against the nut and plate.
- 3.11 Keep mixer blades rotating to feed grout into the pump chamber and turn the pressure relief tap to off.
- 3.12 Commence pumping until grout appears at the indicator hole in the plate.
- 3.13 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.
- 3.14 Disconnect the grout lance from the BluGeo CF 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.



BluGeo CF Rock Bolt

DCP LOW PROFILE CABLE FLEXIBLE ANCHOR

Product Data

Please refer to Important Notice on following page

Drill hole size	64mm - BluGeo CF Rock Bolt 22 57mm - BluGeo CF Rock Bolt 18
-----------------	----------------------------------------------------------------

TESTED CHARACTERISTIC	STANDARD	RESULT					
		BluGeo CF Rock Bolt 18		BluGeo CF Rock Bolt 22		BluGeo CF Rock Bolt 22 (HC)	
Yield Strength	AS1391	29T	289kN	53T	525kN	53T	525kN
Tensile Strength	AS1391	35T	353kN	60T	590kN	61T	610kN
Standard Elongation	AS1391	3.5%		6 - 7%			
No of Wires		7		19			
Cable Diameter		17.8mm		21.8mm			

SHEATHING SPECIFICATIONS					
PROPERTY	TEST METHOD	NOMINATED CELL CLASSIFICATION	ACCEPTANCE CRITERIA FOR NOMINATED CELL CLASSIFICATION	TEST RESULT	CELL CLASSIFICATION ACHIEVED
Density	ASTM D1505	3	>0.940 - 0.947g/cm ³	0.948g/cm ³	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	8.62MPa	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: $w \geq 2\text{mm}$
- 2 Pitch of corrugations (p): $12w \geq p \geq 6w$
- 3 Amplitude of corrugations (a): $a \geq 3w$

The profile must not allow voids to be formed in the grout column.



BluGeo CF Rock Bolt

DCP LOW PROFILE CABLE FLEXIBLE ANCHOR

Contact Bluey

BRISBANE (HEAD OFFICE)

Bluey Technologies Pty Ltd
Unit 8, 53 Metroplex Avenue, Murarrie Qld 4172 Australia
Ph +61 7 3399 3635 Fax +61 7 3899 9822 brisbane@bluey.com.au

SYDNEY

Bluey Technologies Pty Ltd
Unit 3, 35 Higginbotham Road, Gladesville NSW 2111 Australia
Ph +61 2 9807 2207 sydney@bluey.com.au

MELBOURNE

Bluey Technologies Pty Ltd
PO Box 170, Tullamarine VIC 3043 Australia
Ph +61 3 9826 5570 melbourne@bluey.com.au

PERTH

Bluey Technologies Pty Ltd
Ph +61 402 372 308 perth@bluey.com.au

AUCKLAND

Bluey Technologies
Ph +64 21 102 4797 nz@bluey.com.au

www.bluey.com.au

BLUEY ASIA PACIFIC DISTRIBUTOR

QUICSEAL CONSTRUCTION CHEMICALS PTE LTD

No.7 Eunos Avenue 8A, Eunos Industrial Estate, (S)409460 Singapore
Ph +65 6742 4466 Fax +65 6741 4666

www.quicseal.com

IMPORTANT NOTICE

This Technical Data Sheet is provided for general information and instruction only. Bluey does not warrant that the information it contains is accurate, reliable or complete. Bluey does not warrant that the product (or any related services) will achieve any of the characteristics set out herein in any particular application in the field, nor that it will be suitable for any specific use or purpose. The properties and characteristics set out herein represent typical testing results under laboratory conditions only. Results of actual product implementation may vary. Site-specific and project-specific criteria will affect product performance, including without limitation: surfaces, materials or products used with the product or to which the product is applied; and weather, climatic or seasonal conditions. The user must take into account all such criteria relevant to the project concerned when considering any desired results, including by undertaking trial mixing and application under site conditions. Not all product parameters are batch tested as part of the manufacturing quality control process, and performance may vary between batches.

If Bluey gives any express written product warranty in relation to the product, that warranty is subject to the foregoing qualifications, despite anything to the contrary in any other document. All other representations, advice, suggestions or promises regarding the product's performance or its implementation, whether verbal or in writing, and whenever given, including in the course of any field services, are expressly disclaimed. Without limiting the foregoing, Bluey will have no liability for loss or damage of any kind if any application specifications are not followed.

The foregoing is not intended to exclude any warranties or guarantees which by law cannot be excluded. Subject only to the foregoing provisions of this Notice, and to the extent permitted by law, Bluey disclaims all liability for loss or damage of any kind suffered as a result of or in connection with the product or its implementation. If such liability cannot be wholly excluded, Bluey's liability will, to the extent permitted by law, be limited to the replacement of the product itself or the direct cost of replacement of the product itself (not including any collateral or consequential loss or damage of any kind).

© Bluey Technologies Pty Ltd