



  
**JENNMAR**

# PRODUCT CATALOGUE

COAL MINING

# MISSION STATEMENT

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## **VISION**

To be the safest and most innovative Australian manufacturer relentless in the pursuit of employee and customer excellence.

## **MISSION**

To be a responsible employer and leading innovator of sustainably manufactured high quality products for mining, industrial and infrastructure markets. Accountable to our stakeholders by creating employee and customer excellence, and positive outcomes for all.



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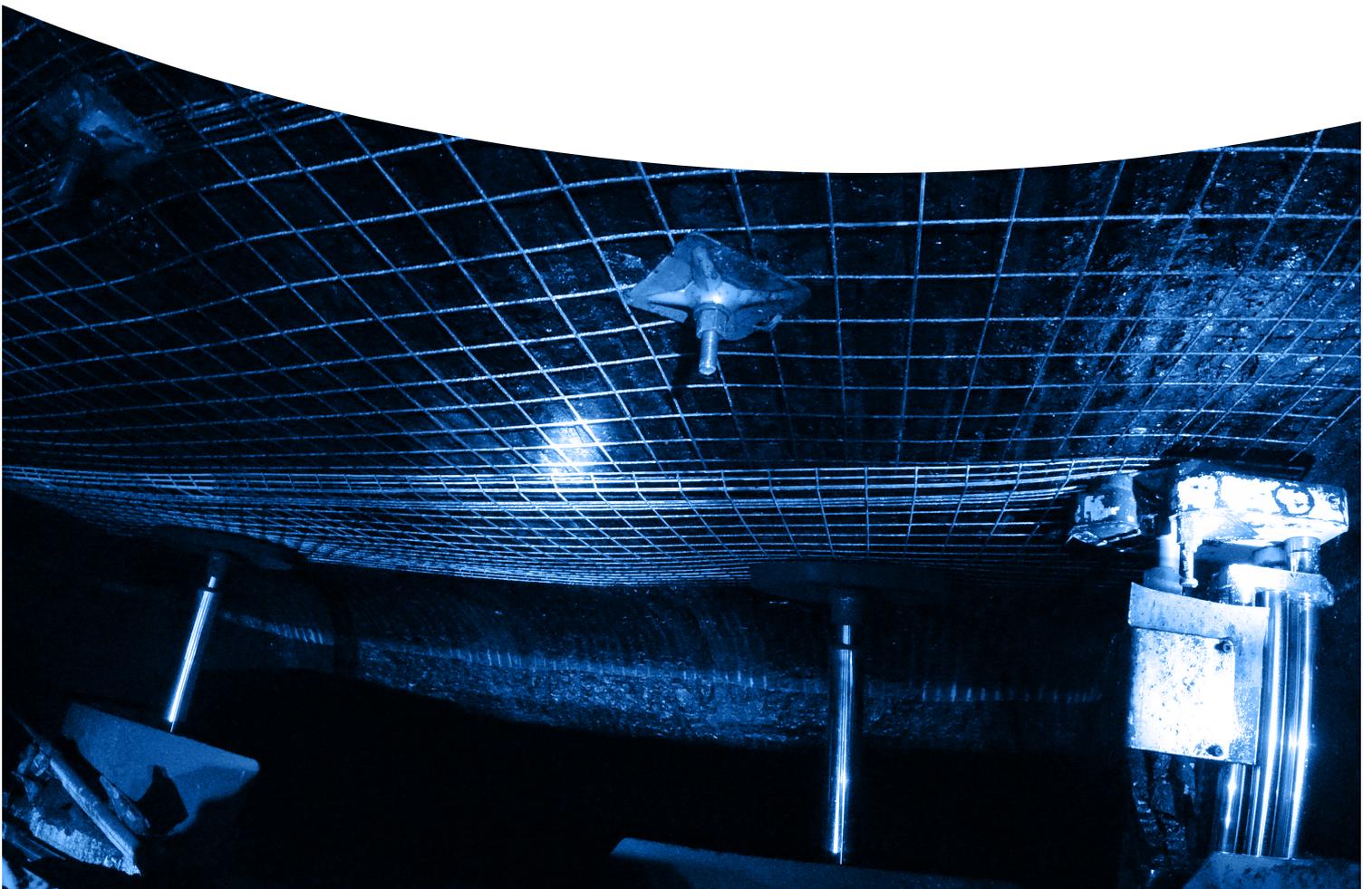
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# ROCK BOLTS & ROCK BOLT ACCESSORIES



# Rock Bolts

## M24 JX Torque Tension Bolt



### Features:

- The preferred primary roof support bolt by Australian coal mines
- The "X" grade steel used by Jenmar has a superior toughness and ductility through the use of grain refining alloys. The Jenmar "X" grade bolts provide better performance in mines where Stress Corrosion Cracking is evident and also in areas of high localized horizontal stresses
- All nuts are coated with a dry film molycoat to provide low friction and corrosion resistance
- All nuts are connected to the bolt by a shear-pin with varying ranges of torque breakout strength

Property	Minimum Value	Typical Value
Yield strength (kN)	218	246
Ultimate Tensile strength (kN)	305	348
Shear Strength (kN)	213	243
Elongation %	15	19
Bar core diameter (mm)	21.5	21.7
Cross sectional area (mm <sup>2</sup> )	363	378
Rib height (mm)	1.1	1.5
Rib Spacing (mm)	23	30
Mass/meter (kg/m)	2.8	3

Steel grade colour code	
-------------------------	--

Bolt length (m)	Colour code
1.2	
1.5	
1.8	
2.1	
2.4	

High ribbed bar for improved resin mixing and higher load transfer  
 To suit drill bit 27 – 28mm  
 Available plain or hot dipped galvanized

# Rock Bolts

## M24 JBX Torque Tension Bolt



### Features:

- The "X" grade steel used by Jenmar has a superior toughness and ductility through the use of grain refining alloys. The Jenmar "X" grade bolts provide better performance in mines where Stress Corrosion Cracking is evident and also in areas of high localized horizontal stresses
- All nuts are coated with a dry film molycoat to provide low friction and corrosion resistance
- All nuts are connected to the bolt by a shear-pin with varying ranges of torque breakout strength

Property	Minimum Value	Typical Value
Yield strength (kN)	218	246
Ultimate Tensile strength (kN)	305	348
Shear Strength (kN)	213	243
Elongation %	15	19
Bar core diameter (mm)	21.5	21.7
Cross sectional area (mm <sup>2</sup> )	363	378
Rib height (mm)	0.5	1
Rib Spacing (mm)	9	13
Mass/meter (kg/m)	2.8	3

Steel grade colour code	
-------------------------	--

Bolt length (m)	Colour code
1.2	
1.5	
1.8	
2.1	
2.4	

To suit drill bit 27 – 28mm

# Rock Bolts

## M24 JBS Torque Tension Bolt



### Features:

- Mild steel bolts are commonly used for development rib support and longwall bolt-up roof support
- All nuts are coated with a dry film molycoat to provide low friction and corrosion resistance
- All nuts are connected to the bolt by a shear-pin with varying ranges of torque breakout strength

Property	Minimum Value	Typical Value
Yield strength (kN)	109	129
Ultimate Tensile strength (kN)	160	185
Shear Strength (kN)	112	130
Elongation %	22	27
Bar core diameter (mm)	21.5	21.7
Cross sectional area (mm <sup>2</sup> )	363	378
Rib height (mm)	0.5	1
Rib Spacing (mm)	9	13
Mass/meter (kg/m)	2.8	3

Steel grade colour code	
-------------------------	--

Bolt length (m)	Colour code
1.2	
1.5	
1.8	
2.1	
2.4	

To suit drill bit 27 – 28mm  
Available plain or hot dipped galvanised

# Rock Bolts

## Hawkeye 'X' grade bolt



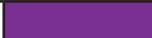
### Features:

- Ideal for longwall facelines and bolt-up
- Low protrusion
- Female square drive
- Torque: tension
- Can be configured for Spin2stall or Spin & Hold system
- Made for low seam height

Property	Minimum Value	Typical Value
Yield strength (kN)	218	246
Ultimate Tensile Strength UTS (kN)	305	348
Shear Strength (kN)	213	243
Elongation %	15	19
Bar core diameter	21.5	21.7
Cross sectional area (mm <sup>2</sup> )	363	378
Rib height (mm)	1.1	1.5
Rib spacing (mm)	23	30
Hawkeye nut diameter (mm)	33	33
Mass/Meter (kg/m)	2.8	3

Steel grade colour code



Bolt length (m)	Colour Code
1.2	
1.5	
1.8	
2.1	
2.4	
2.7	

# Rock Bolts

## 3/4" JSD Paddle Bolt



### Features:

- 22mm wide paddles on the insertion end promotes shredding of the resin capsule film and efficient mixing in 27 – 28mm diameter holes
- Normally used for rib support as a lightweight alternative to M24 Bolts when high strength is not required
- Can be readily installed with hand operated “windy borers”
- Available with a 3mm ‘C’ break out pin

Property	Minimum Value	Typical Value
Yield strength (kN)	66	78
Ultimate Tensile strength (kN)	98	116
Shear Strength (kN)	68	76
Elongation %	22	27
Bar core diameter (mm)	17	17.4
Cross sectional area (mm <sup>2</sup> )	227	238
Rib height (mm)	1	1.4
Rib Spacing (mm)	7	11
Mass/meter (kg/m)	1.85	1.95

Steel grade colour code	
-------------------------	--

Bolt length (m)	Colour code
1.2	
1.5	
1.8	
2.1	

To suit drill bit 27 – 28mm

# Rock Bolts

## 33mm Friction Lok Bolt



### Features:

- The radial compression of the slotted steel tube inside a borehole provides both radial and axial restraint to rock movement
- Used as rib support in some coal mines when crushed coal rib prevent resin capsule insertion
- Minimal bolt tail protrudes into the roadway
- Can be post grouted for extra corrosion protection and support capacity
- Available in black or hot dipped galvanized

Property	Minimum Value	Typical Value
Yield strength (kN)	80	100
Ultimate Tensile strength (kN)	100	120
Cross sectional area (mm <sup>2</sup> )	-	204
Mass/meter (kg/m)	-	1.53

To suit drill bit 30 – 32mm

# Rock Bolts

## M36 Boot Bolt



### Features:

- High strength & ductility, 33 mm diameter bolt for pinning conveyor equipment to the mine floor
- High ductility reduces likelihood of fatigue failures due to the constantly changing load conditions of the conveyor equipment
- Designed for installation with common coal mine equipment – 42mm cable bolt drill bits, 36mm diameter cable bolt resin capsules
- Separate drive nut allow spinning into the hole using regular roof bolt spanners. Drive nut part # NUTM36DRIVE
- Special 100 x 100mm plate designed to fit the common “boot end” base plates. Accommodates installation angles up to 15 degrees
- Standard length 1800mm

Property	Typical Value
Yield strength (kN)	284
Ultimate Tensile strength (kN)	412
Shear Strength (kN)	275
Elongation %	30
Bar core diameter (mm)	33
Cross sectional area (mm <sup>2</sup> )	855
Paddle width (mm)	36-38
Paddle Spacing (mm)	50
Mass/meter (kg/m)	6.7

Bolt length (m)	Colour code
1.2	
1.5	
1.8	
2.1	

To suit drill bit 42mm

## Rock Bolt Accessories

### M24 Tension Indicator Washer



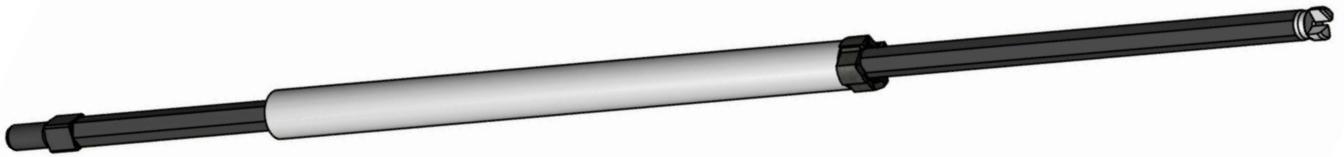
#### Features:

- Centralising corner lugs to match the standard M24 Dome ball
- Collapses/inverts uniformly at the rated tension load and torque
- Used in conjunction with mated flat washer to prevent frictional heating or damage to the tension indicator washer
- Washer does not collapse onto the thread and can be removed by hand if the nut is taken off
- Coloured RED dome is hidden when the correct load is applied

Dimensions (mm)	52 x 52
Load at Collapse (tonnes)	6 - 8

# Rock Bolt Accessories

## Cover Drive



### Features:

- Allows a resin anchored bolt to be installed in competent coal behind the crush-zone Improves rib bolting efficiency in broken rib conditions
- Designed to complement existing rib bolting processes and acts as a physical support to prevent borehole collapse
- Installed with a specialized drill steel and the coverdrive is left in the hole as the drill steel is retracted
- To suit bolt anchorage holes drilled with 27 – 28mm drill bits
- Patented

Length (mm)	Diameter (mm)	Mass (kg)
600	50	0.157

# Rock Bolt Accessories

## Floor Bolt Extension



### Features:

- Commonly used for forming floor bolts for pinning boot ends etc, this section is removed and re-used
- Can be used as extensions to existing mild steel rock bolts for hanging
- Hex drive allows for easy removal from floor bolts
- Optional to come with or without nut and dome balls
- After removal, no bolt tails are left protruding from the floor eliminating trip hazards

Property	Typical Value
Threaded Stem Yield strength (kN)	118
Threaded Stem UTS (kN)	177
Threaded Stem Elongation %	27
Threaded stem length (mm)	300
Coupler diameter (mm)	35
Coupler steel grade	K1137
Coupler length (mm)	75
Drill hole diameter	43 - 45
Hex drive (mm)	18

# Rock Bolt Accessories

## Torque Test Nut



**Features:**

- A high torque roll pin with break-out set to 250-270 N.m break-out
- Colour coded bright pink nut to distinguish from regular bolts
- Can be placed within every bolting pod to ensure bolting rigs are regularly checked for torque output
- The bolt can be installed as part of the normal support pattern, with the high tensile nut being fully rated for X grade roof bolts
- A successful break-out indicates the bolting rigs are able to exceed 8 tonnes pre-tension on normal roof bolts

Bolt Thread	Torque Break-out (Nm)
M24	250-270

MM\_B\_M24CPIN\_Rev1

## 36 A.F. Dolly



**Features:**

- 36mm A.F. socket to suit standard rock bolt installations
- 25mm locking square drive suitable for common coal mining rock bolting rigs

Drive (mm)	Length (mm)	Socket (mm)
25 square	300-600	36 Hex

MM\_D\_JDO650300-Rev1

# Rock Bolt Accessories

## “U” Hanger Nuts



**Features:**

- 10mm diameter “U” hanger
- Available in all thread types
- Readily threaded onto the base of rock bolts for use as a hanger
- Recommended for carrying static loads
- Not recommended for lifting or pulling
- Avoid side loading of the “U” hanger

Length (mm)	Width (mm)	Mass (kg)	Load Rating (tonne)
92	56	0.28	2

MM\_N\_NUTHM24H125D\_Rev1

## M24 Nut



**Features:**

- M24 x 3 hot forged nut to suit M24 Rock Bolts
- Suitable for ‘X’ and ‘S’ grade rock bolts

Hex dimension (mm)	Length (mm)	Mass (kg)	Proof Load (kN)	Steel grade
36 A.F.	30	0.17	379.5	AS/NZS 4291.2:1995 class 8

MM\_N\_NUTRM24H125D-Rev1

## M24 Dome Ball Washer



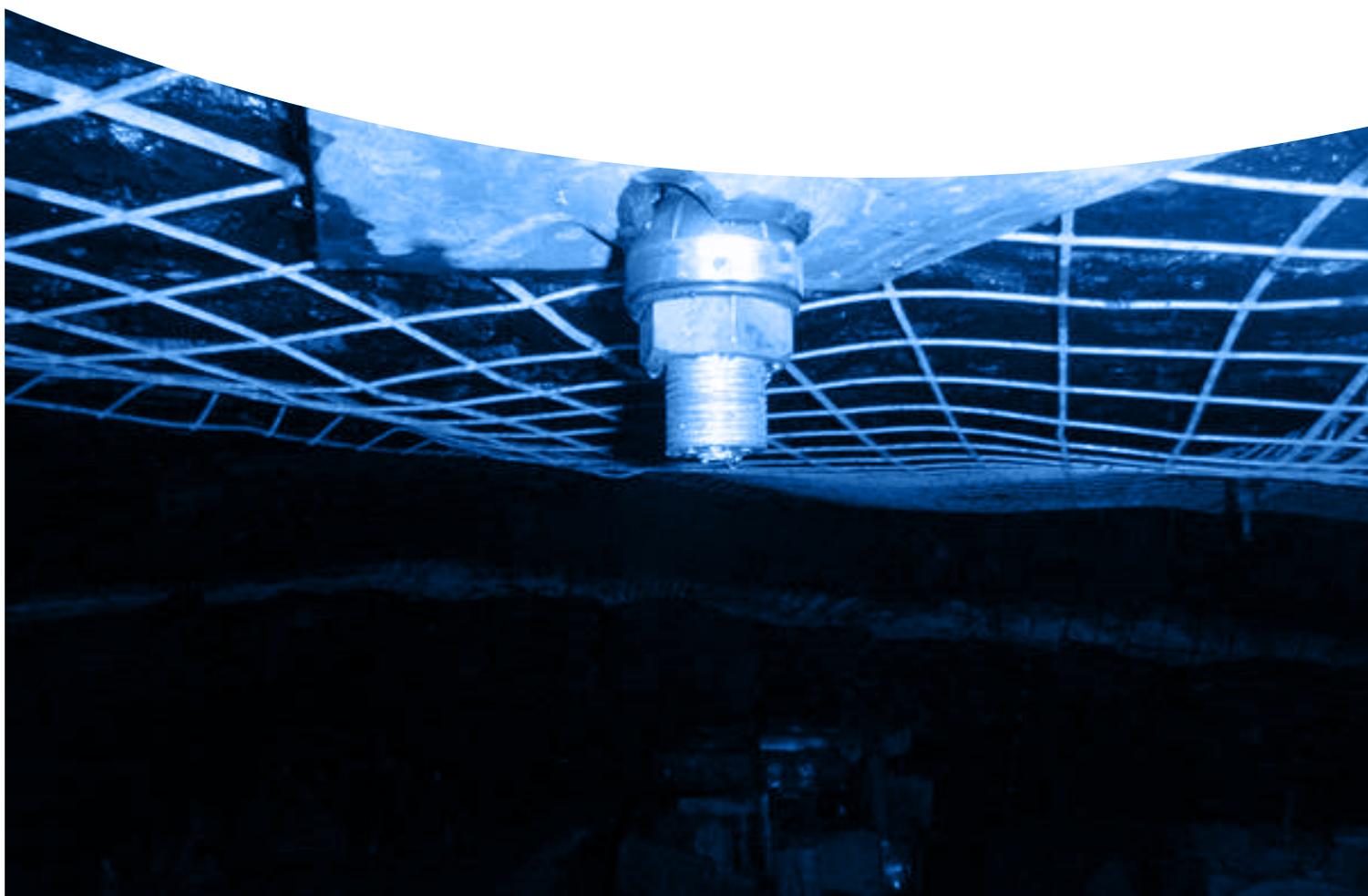
**Features:**

- Hot forged dome ball washer to suit M24 rock bolts

Outside Diameter (mm)	Length (mm)	Mass (kg)	Steel Grade
50	15	0.13	Medium carbon steel

MM\_N\_WASHM24DB-Rev1

# CABLE BOLTS & CABLE BOLT ACCESSORIES



# Cable Bolts

## 100T Goliath Cable Bolt



### Features:

- 100 tonne capacity cable bolt
- Highest capacity cable on the market but still maintains flexibility for manual handling during installation
- Pre-tensioning jacks available up to 30 tonne
- 80 tonne capacity high tensile plates are available in relatively light weight 14mm thick steel

### Typical Applications:

- Goliath of any length can be readily installed with hand bolters and hydraulic rigs as a point anchored, pre-tensioned support
- The 4m Goliath can be fully encapsulated with resin installed alongside primary support at the face. Installation time between 6 - 8 minutes

Property	Typical Value
Strand diameter (mm)	28.6
Number wires	19
Wire type	smooth
Steel area (mm <sup>2</sup> )	532
Mass (kg/m)	4.2
Typical yield strength (kN)	850
Typical Ultimate tensile strength (kN)	970
Breaking load with barrel & wedge (kN)	785
Elongation %	5 - 7

Cable length (m)	Colour code
4.0	Green
6.0	Red
8.0	Yellow
10.0	

To suit drill bit 35mm

Resin capsules available to obtain encapsulation length up to 4m

# Cable Bolts

## 100T Bulbed Goliath Cable Bolt



### Features:

- 100 tonne capacity cable bolt
- Highest capacity cable on the market but still maintains flexibility for manual handling during installation
- Bulbed Goliath offers higher capacity anchorage over shorter encapsulation length
- Pre-tensioning jacks available up to 30 tonne
- 80 tonne capacity high tensile plates are available in relatively light weight 14mm thick steel

### Typical Applications:

- Bulbed Goliath of any length can be readily installed with hand bolters and hydraulic rigs as a point anchored, pre-tensioned support

Property	Typical Value
Strand diameter (mm)	28.6
Number wires	19
Wire type	smooth
Bulb diameter (mm)	35
Bulb spacing (mm)	300
Steel area (mm <sup>2</sup> )	532
Mass (kg/m)	4.2
Typical yield strength (kN)	850
Typical Ultimate tensile strength (kN)	970
Breaking load with barrel & wedge (kN)	785
Elongation %	5 - 7

Cable length (m)	Colour code
4.0	Green
6.0	Red
8.0	Yellow
10.0	

To suit drill bit 42mm

Resin capsules available to obtain encapsulation length up to 2.5m

# Cable Bolts

## 31mm 70T SUMO TEX Cable



### Features:

- 70 tonne capacity, 12 wire hollow cable bolt
- Fully bulbed, smooth wire for both high axial and shear performance when fully grouted
- Eliminates the need for hazardous hydraulic tensioners
- 8-10 tonne pre-tension is achievable off most hydraulic bolting rigs
- The threaded TEX end fitting achieves full tensile capacity of the wires
- Light weight high capacity 12mm plates available

Property	Typical Value
Strand diameter (mm)	31
Number wires	12
Wire type	smooth
Bulb diameter (mm)	36
Bulb spacing (mm)	500
Steel area (mm <sup>2</sup> )	385
Mass (kg/m)	3.5
Typical yield strength (kN)	640
Typical Ultimate tensile strength (kN)	705
Breaking load with TEX end fitting (kN)	705
Elongation %	5 - 7

Cable length (m)	Colour code
4.0	Green
6.0	Red
8.0	Yellow
10.0	

To suit drill bit 42 - 45mm

# Cable Bolts

## 70T 12 Wire SUMO Cable Bolt



### Features:

- Higher 70 tonne capacity SUMO cable bolt
- 12 wires increases flexibility and capacity
- Large 14mm I.D. central flexible corrugated grout tube
- Increased flexibility makes handling in confined areas easier and reduces the risk of manual handling related injuries
- Standard 31mm diameter and hex drive to suit existing cable bolting accessories i.e. dollies, tensioners and grout lances
- Birdcaged along the entire length for maximum load transfer
- Smooth wires for optimum performance in shear
- Plated with new higher capacity 12mm thick volcano plates with grout indicator slots.
- Plates available for trussing
- Lengths available up to 14 m

Property	Typical Value
Strand diameter (mm)	31
Number wires	12
Wire type	smooth
Bulb diameter (mm)	36
Bulb spacing (mm)	500
Steel area (mm <sup>2</sup> )	362
Mass (kg/m)	3.5
Typical yield strength (kN)	640
Typical Ultimate tensile strength (kN)	705
Breaking load with barrel & wedge (kN)	640
Elongation %	5 - 7

Cable length (m)	Colour code	
4.2		
6.2		
8.2		
10.2		

To suit drill bit 42 – 45 mm

# Cable Bolts

## 31mm JW10 TEX Cable



### Features:

- 70 tonne capacity, 10 wire hollow cable bolt
- Fully bulbed, smooth wire for both high axial and shear performance when fully grouted
- Eliminates the need for hazardous hydraulic tensioners
- 8-10 tonne pre-tension is achievable off most hydraulic bolting rigs
- The threaded TEX end fitting achieves full tensile capacity of the wires
- Light weight high capacity 12mm plates available

Property	Typical Value
Strand diameter (mm)	31
Number wires	10
Wire type	smooth
Bulb diameter (mm)	36
Bulb spacing (mm)	500
Steel area (mm <sup>2</sup> )	385
Mass (kg/m)	3.5
Typical yield strength (kN)	640
Typical Ultimate tensile strength (kN)	705
Breaking load with TEX end fitting (kN)	705
Elongation %	5 - 7

Cable length (m)	Colour Code
4.2	Green
6.2	Red
8.2	Yellow
10.2	

To suit drill bit 42 – 45 mm

# Cable Bolts

## 70T 10 Wire Hollow Cable Bolt



### Features:

- 70 tonne capacity, 10 wires
- Smooth wires for improved strength against shearing
- Standard 31mm diameter and hex drive to suit existing cable bolt accessories i.e. dollies, tensioners and grout lances
- Birdcaged along entire length for maximum load transfer
- Point anchored with J-LOK "Post-Grout" resin capsules, specifically designed for mixing in larger drill holes
- Top-down grouted using thixotropic grout
- Plated with new higher capacity 12mm thick volcano plates with grout indicator slots. Available in 200x200mm and 300x300mm sizes.
- Plates available for trussing
- Lengths available up to 10m

Property	Typical Value
Strand diameter (mm)	31
Number wires	10
Wire type	smooth
Bulb diameter (mm)	36
Bulb spacing (mm)	500
Steel area (mm <sup>2</sup> )	362
Mass (kg/m)	3.5
Typical yield strength (kN)	640
Typical Ultimate tensile strength (kN)	705
Breaking load with barrel & wedge (kN)	640
Elongation %	5 - 7

Cable length (m)	Colour code
4.2	Green
6.2	Red
8.2	Yellow
10.2	

To suit drill bit 42 – 45 mm

# Cable Bolts

## Superstrand Cable Bolt



### Features:

- Flexible and easy to handle even around the tight working areas of bolting rigs and continuous miner platforms
- Plain SuperStrand of any length can be readily installed with hand bolters as point anchored, pre-tensioned support
- The 4m SuperStrand can be “fully encapsulated” with resin installed alongside primary support at the face. Installation time between 6 – 8 minutes
- Special “through-the-chuck” drill motors allow full resin encapsulation of SuperStrands up to 8m in length

Property	Typical Value
Strand diameter (mm)	21.8
Number wires	19
Wire type	smooth
Steel area (mm <sup>2</sup> )	313
Mass (kg/m)	2.5
Typical yield strength (kN)	525
Typical Ultimate tensile strength (kN)	590
Breaking load with barrel & wedge/ ToTo/TEX (kN)	510
Elongation %	5 - 7

Type	Thread Diameter	Tail Length
ToTo	48	Min 150
TEX	42	Min 70

Cable length (m)	Colour code
4.0	Green
6.0	Red
8.0	Yellow
10.0	

To suit drill bit 27 – 28mm

Resin capsules available to obtain encapsulation length up to 4m

# Cable Bolts

## 15.2mm Twin Strand Tendons & Trusses



### Features:

- Low cost to capacity cable bolt configurations for the coal mining industry
- Can be used in either top-down or bottom-up grouting applications
- Typically fitted with fish-hooks to hold the cables inside the drill holes
- Truss configurations are available for ease of manually bending and tensioning cross members
- Birdcage spacing at 180mm for maximum bond strength with the grout and rock

Property	Typical Value
Strand diameter (mm)	15.2
Wire type	smooth
Bulb diameter (mm)	25
Bulb spacing (mm)	180
Steel area (mm <sup>2</sup> )	280
Mass (kg/m)	2.3
Typical yield strength (kN)	490
Typical Ultimate tensile strength (kN)	530
Elongation %	5 - 7

Cable length (m)	Colour code	Cable length (m)	Colour code
4.0		10.0	
6.0		11.0	
8.0		12.0	
9.0			

To suit drill bit 52 – 55 mm

# Cable Bolts

## 15.2mm Triple Strand Tendons & Trusses



### Features:

- Low cost to capacity cable bolt configurations for the coal mining industry
- Can be used in either top-down or bottom-up grouting applications
- Typically fitted with fish-hooks to hold the cables inside the drill holes
- Truss configurations are available for ease of manually bending and tensioning cross members
- Birdcage spacing at 180mm for maximum bond strength with the grout and rock

Property	Typical Value
Strand diameter (mm)	15.2
Wire type	smooth
Bulb diameter (mm)	25
Bulb spacing (mm)	300
Steel area (mm <sup>2</sup> )	420
Mass (kg/m)	3.4
Typical yield strength (kN)	735
Typical Ultimate tensile strength (kN)	795
Elongation %	5 - 7

Cable length (m)	Colour code	Cable length (m)	Colour code
4.0		10.0	
6.0		11.0	
8.0		12.0	
9.0			

To suit drill bit 52 – 55 mm

# Cable Bolts

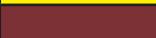
## 18mm Twin Strand Tendons & Trusses



### Features:

- Low cost to capacity cable bolt configurations for the coal mining industry
- Can be used in either top-down or bottom-up grouting applications
- Typically fitted with fish-hooks to hold the cables inside the drill holes
- Truss configurations are available for ease of manually bending and tensioning cross members
- Birdcage spacing at 180mm for maximum bond strength with the grout and rock

Property	Typical Value
Strand diameter (mm)	18
Wire type	smooth
Bulb diameter (mm)	25
Bulb spacing (mm)	230
Steel area (mm <sup>2</sup> )	380
Mass (kg/m)	3
Typical yield strength (kN)	600
Typical Ultimate tensile strength (kN)	706
Elongation %	5 - 7

Cable length (m)	Colour code	Cable length (m)	Colour code
4.0		10.0	
6.0		11.0	
8.0		12.0	
9.0			

To suit drill bit 52 – 55 mm

# Cable Bolts

## 18mm Triple Strand Tendons & Trusses



### Features:

- Low cost to capacity cable bolt configurations for the coal mining industry
- Can be used in either top-down or bottom-up grouting applications
- Typically fitted with fish-hooks to hold the cables inside the drill holes
- Truss configurations are available for ease of manually bending and tensioning cross members
- Birdcage spacing at 180mm for maximum bond strength with the grout and rock

Property	Typical Value
Strand diameter (mm)	18
Wire type	smooth
Bulb diameter (mm)	25
Bulb spacing (mm)	300
Steel area (mm <sup>2</sup> )	570
Mass (kg/m)	4.5
Typical yield strength (kN)	900
Typical Ultimate tensile strength (kN)	1059
Elongation %	5 - 7

Cable length (m)	Colour code	Cable length (m)	Colour code
4.0		10.0	
6.0		11.0	
8.0		12.0	
9.0			

To suit drill bit 52 – 55 mm

## Cable Bolt Accessories

### 31mm Barrel & Wedge



#### Features:

- Domed barrels & wedges are used with volcano plates to achieve installation angles of up to 18 degrees
- All barrels & wedges have an oil film coating and are pre-packaged in strong 4 litre buckets for corrosion protection
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- To suit 31mm 12 wire SUMO and 31mm 10 wire Hollow cable
- Bucket lid colour = white for 70mm barrel
- Bucket lid colour = black for 90mm barrel

Cable Diameter (mm)	Barrel Length (mm)	Barrel Diameter (mm)	Unit Weight (kg)	Qty/Bucket
31	74	70	1.53	5
31	74	90	2.16	5

## Cable Bolt Accessories

### 28.6mm Barrel & Wedge



#### Features:

- Domed barrels & wedges are used with volcano plates to achieve installation angles of up to 18 degrees
- All barrels & wedges have an oil film coating and are pre-packaged in strong 4 litre buckets for corrosion protection
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit Goliath cable bolts

Cable Diameter (mm)	Barrel Length (mm)	Barrel Diameter (mm)	Qty/Bucket
28.6	73	75	5

MM\_CA\_BW286MMD-Rev1

### 21.8mm Barrel & Wedge



#### Features:

- Domed barrels & wedges are used with volcano plates to achieve installation angles of up to 18 degrees
- All barrels & wedges have an oil film coating and are pre-packaged in strong 4 litre buckets for corrosion protection
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit 21.8mm Superstrand Cables
- Bucket lid colour = yellow

Cable Diameter (mm)	Barrel Length (mm)	Barrel Diameter (mm)	Qty/Bucket
22	60	58	10

MM\_CA\_BW218MMD-Rev1

## Cable Bolt Accessories

### 18mm Barrel & Wedge



#### Features:

- Flat barrels & wedges are used with flat plates
- All barrels & wedges have an oil film coating and are pre-packaged in strong 4 litre buckets for corrosion protection
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit 18mm Twin and Triple Strand Tendons and Trusses
- Bucket lid colour = white

Cable Diameter (mm)	Barrel Length (mm)	Barrel Diameter (mm)	Unit Weight (kg)	Qty/Bucket
18	57	50	0.72	10

MM\_CA\_BW18MM-Rev1

### 15.2mm Barrel & Wedge



#### Features:

- Flat barrels & wedges are used with flat plates
- All barrels & wedges have an oil film coating and are pre-packaged in strong 4 litre buckets for corrosion protection
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit 15.2mm Twin and Triple Strand Tendons and Trusses
- Bucket lid colour = white

Cable Diameter (mm)	Barrel Length (mm)	Barrel Diameter (mm)	Unit Weight (kg)	Qty/Bucket
15.2	44	42	0.42	20

MM\_CA\_BW15MM-Rev1

## Cable Bolt Accessories

### Trussing Splice Tube



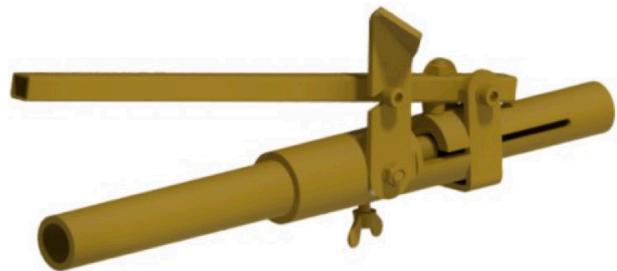
**Features:**

- Designed for joining truss tails
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit 15.2mm or 18mm Twin and Triple Strand Trusses

Length (mm)	Width (mm)	Unit Weight (kg)	Qty/Bucket
200	95	3.8	5

MM\_CA\_1518SPICE-Rev1

### Grout Guns



**Features:**

- Pressure rated quick connection to poly grouting hose
- Easy to use even with heavy rubber grouting gloves
- Colour coded to suit the grout hose colour code

Suit Tube Diameter (mm)	Colour code	Rated Working Pressure (Bar)	Length (mm)	Unit Mass (kg)
16	Red	34.5	340	1.4
20	Yellow	34.5	340	1.4

MM\_CA\_GROUTGUN16-GROUTGUN20-Rev1

# Cable Bolt Accessories

## Grout Lance – Screw In



**Features:**

- Suits common industry post groutable cable bolts
- Pressure rated
- Available with swivel to assist with screw in connection
- Available in length ranging from 200mm to 2000mm
- Available with either Minsup or Surelock fittings

Length (mm)	Thread Connection	Rated Working Pressure (Bar)
200 - 2000	½" BSP	200

MM\_CA\_LANCE31-Rev1

## Push-Clamp on Grout Guns



**Features:**

- Light weight
- Fast push and clamp on grout lance
- Available to suit numerous different cable bolts and hollow dowels

Suit Cable	Colour Code	Rated Working Pressure (Bar)	Length (mm)
SUMOTEX	Red	34.5	500 - 1800
JW10TEX	Yellow	34.5	500 - 1800
JW10	N/A	34.5	500 - 1800

MM\_CA\_GROUTGUN70T500\_Rev1

# Cable Bolt Accessories

## Grout and Breather Tube



### Features:

- Pressure rated
- Available in rolls or cut to length

Tube O.D. (mm)	Tube I.D. (mm)	Pressure rating	Mass (kg/m)	Length per roll	Colour code
5	3	n/a	0.01	200	
16	12.5	PN16	0.07	300	
20	16	PN16	0.11	300	

# Cable Bolt Accessories

## 30T Tensioners



### Features:

- 30 tonne cable bolt tensioner
- MDG41 specification
- Light weight
- Low operating pressure (370 Bar)
- Double acting to release tensioner off the cable under hydraulic power
- Patented design has engineered out possible pressure intensification within the double acting cylinder by having equal advance and retract ram areas.
- Suits up to 29mm diameter cable
- Patented design used special high capacity wedge setting springs to minimize tensioning bleed-off while maintaining a short tail on the cable bolts

### Typical Applications:

- 31mm Hollow cables, Goliath cables, Sumo Cables and SuperStrand
- Can be connected to continuous miners, air tracks or portable air/hydraulic power packs

Tensioning Capacity (kN)	Max. Operating Pressure (Bar)	Ram Area (cm <sup>2</sup> )	Stroke (mm)	Weight (kg)	Min. strand length required (mm)
294	370	79.9	87	14	100

# Cable Bolt Accessories

## Tiger Dollie



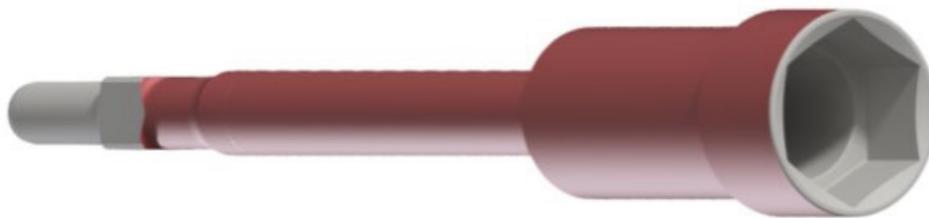
### Features:

- Exclusively used for tensioning of the "TOTO" device
- Suitable for both TG "TOTO" and SuperStrand "TOTO"
- Locking square drive
- Hardened socket for long life
- Sealed components to prevent contaminants entering and interfering with spring function

Drive (mm)	Length (mm)	Maximum Diameter (mm)	Mass (kg)	Socket
25mm square	460	70	5.5	ToTo device

MM\_D\_JDOTIGER-Rev1

## Dolly suit TEX cables



### Features:

- Lightweight design
- Long spigot to suit standard rigs and those with lobster rollers
- 55mm A.F. Hex socket

Drive (mm)	Length (mm)	Cable drive (mm)
25 square	500	55 A.F.

MM\_D\_JDO650055TWH-Rev1

## Cable Bolt Accessories

### Dolly to suit 21.8mm Superstrand



#### Features:

- Use for installation of 19 wire 21.8mm Superstrand Cables
- Additional 36 A.F. Hex allows dual purpose use on M24 rock bolts
- Internal flower drive with water flush cleaning feature
- 25mm locking square drive for use with common coal mining bolting rigs

Drive (mm)	Length (mm)	Cable drive	Socket (mm)
25 square	350	Superstrand	36 A.F.

# PLATES



# Plates

## Kanga Plate



### Features:

- High load bearing characteristics
- Light weight and rounded corners
- Lesser tendency to cut mesh upon loading
- Varying combination plate applications available

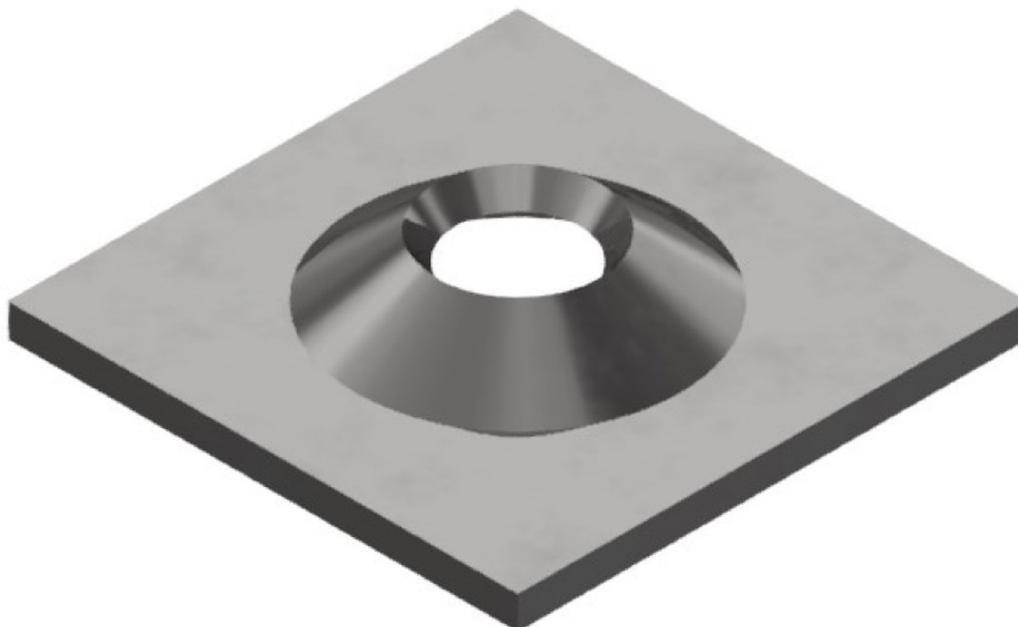
Square dimension (mm)	Thickness (mm)	Hole diameter (mm)	Mass (kg)	Quantity/Pallet	Min Collapse Load (kN)
150 x 150 (4 rib)	5	38	0.85	980/pallet	201
150 x 150 (8 rib)	5	38	0.85	980/pallet	201
150 x 150	6	38	1.02	980/pallet	245
200 x 200	5	38	1.53	500/pallet	201
200 x 200	6	38	1.83	500/pallet	245

Available with hanger slots

Available plain or hot dipped galvanised

# Plates

## Roof Bolt Volcano Plate



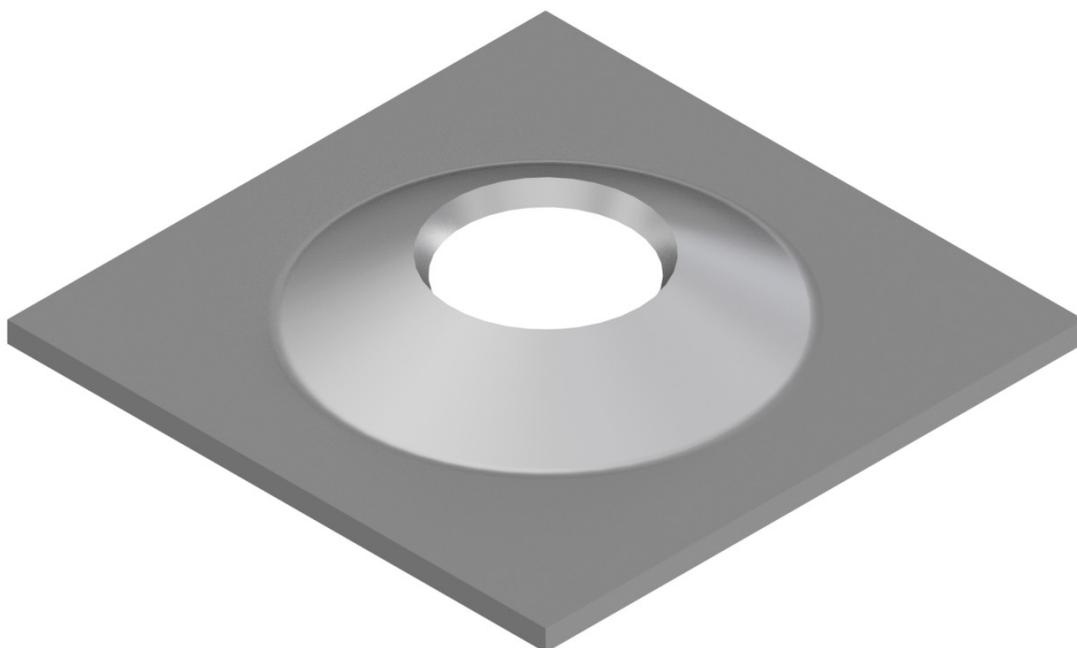
### Features:

- Dome profile allows for 18° angles of alignment when installing the rock bolt with a domed ball washer
- Available as "rumbled" to take off sharp edges

Square dimension (mm)	Thickness (mm)	Hole diameter (mm)	Minimum Collapse load (kN)	Minimum Pull Through load (kN)	Mass (kg)	Standard pack
150 x 150	10	36	216	294	1.76	980/pallet

Available plain or hot dipped galvanised

## Hawkeye Bolt Volcano Plate



### Features:

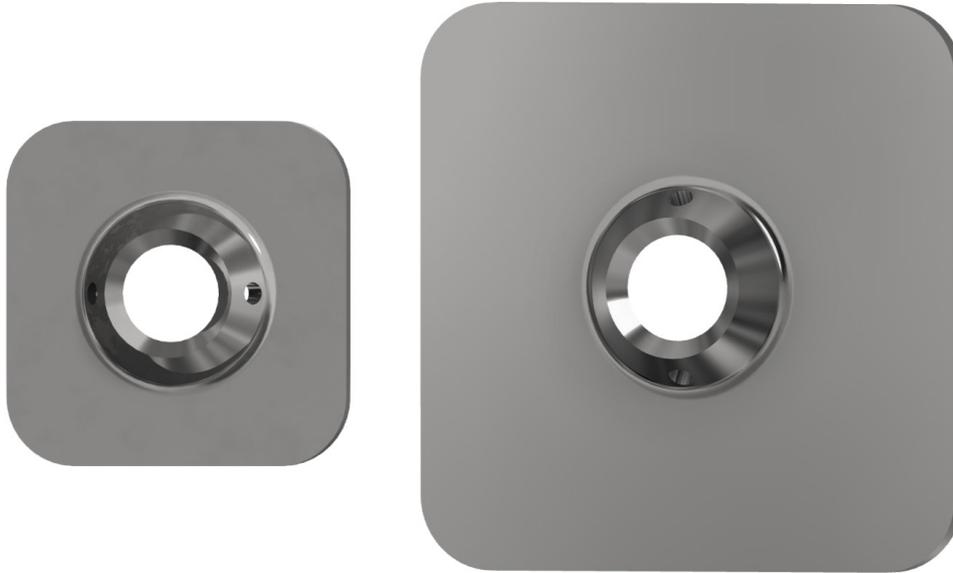
- Designed to suit the low profile Hawkeye 'X' grade bolt
- Dome profile allows for 15° angles of alignment when installing the rock bolt with a domed ball washer
- Available as "rumbled" to take off sharp edges

Square dimension (mm)	Thickness (mm)	Hole diameter (mm)	Minimum Collapse load (kN)	Minimum Pull Through load (kN)	Mass (kg)	Standard pack
150 x 150	6	46	200	200	1.0	980/pallet

Available plain or hot dipped galvanised

# Plates

## Cable Volcano Plate - TEX, 70T SUMO & Hollow Cables



### Features:

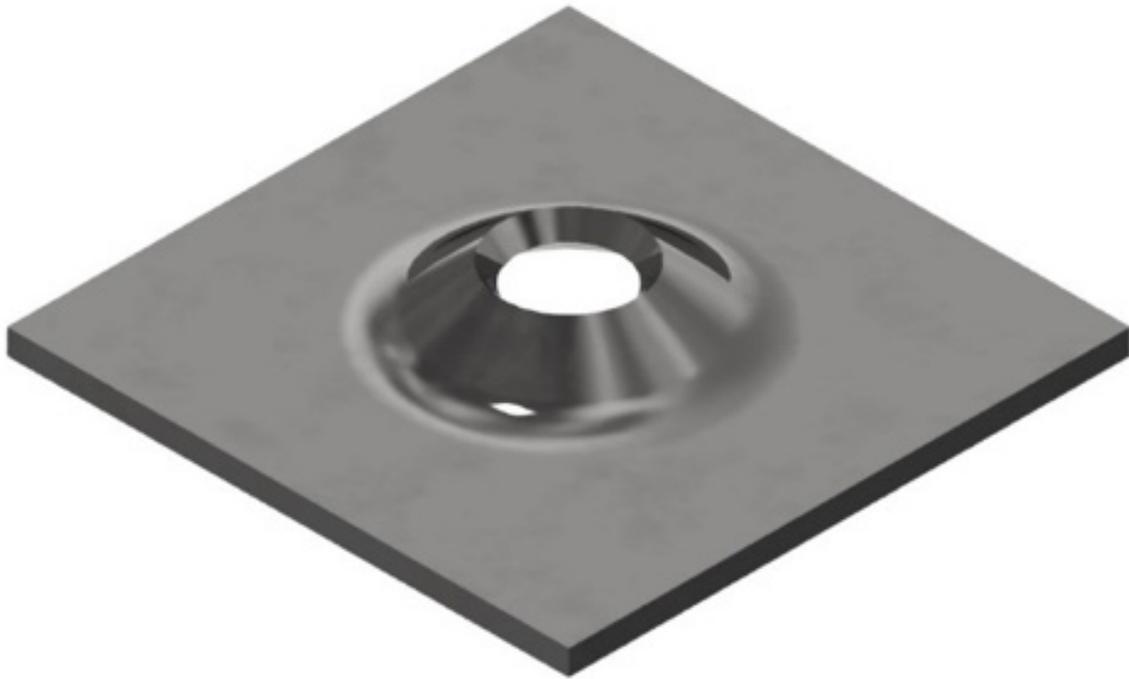
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel
- Grout indicator slots

Dimension (mm)	Thickness (mm)	Hole diameter (mm)	Minimum Collapse Load (kN)	Minimum Pull through load (kN)	Mass (kg)	Standard pack
300 x 300	12	56	294	441	8.5	100
200 x 200	12	56	294	441	3.8	200

Tested over a 150mm span

# Plates

## Cable Volcano Plate - Goliath



### Features:

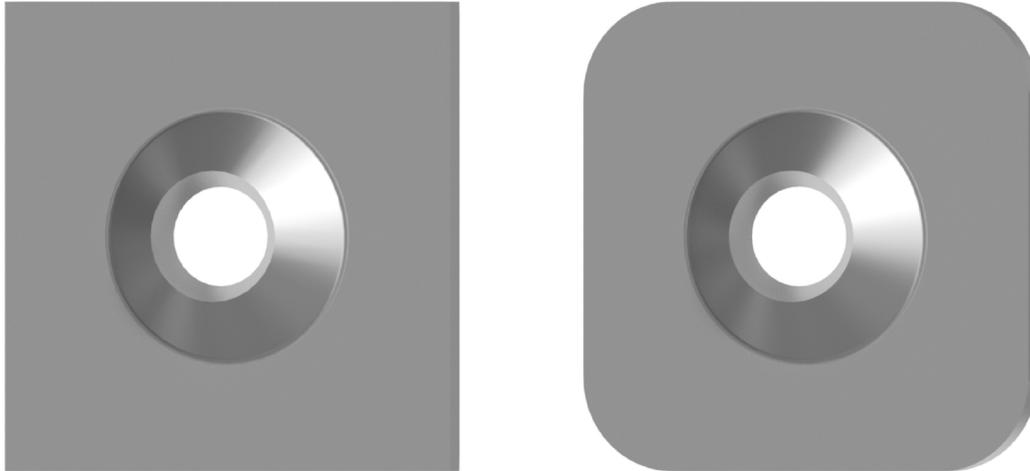
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel

Dimension (mm)	Thickness (mm)	Hole diameter (mm)	Minimum Collapse load (kN)	Minimum Pull through load (kN)	Mass (kg)	Standard pack
300 x 300	14	54	491	785	9.7	100

Tested over a 150mm span

# Plates

## Volcano Plates to suit Superstrand B&W and ToTo



### Features:

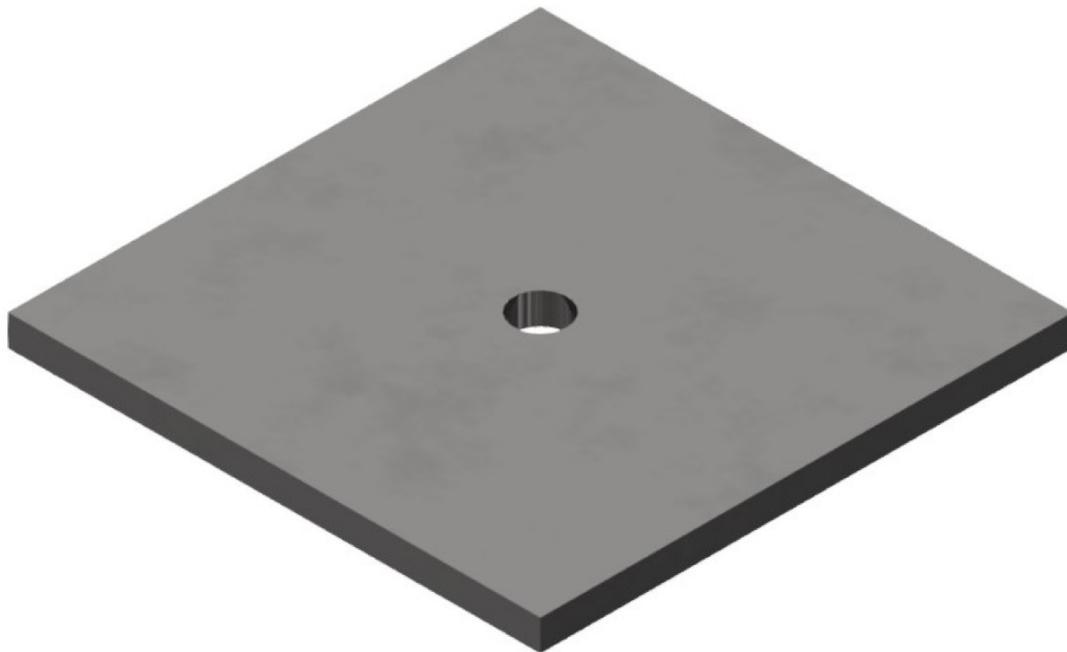
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel

Property	JV20201242	JV20201242C	JV30301242
Length (mm)	200	200	300
Width (mm)	200	200	300
Thickness (mm)	12	12	12
Hole Diameter (mm)	42	42	42
Mass (kg)	3.8	3.8	8.5
Standard Pack size	200	200	100
Min Collapse Load (kN)	147	196	147
Min Pull Through Load (kN)	343	441	343

Tested over a 150mm span

# Plates

## Flat Plate



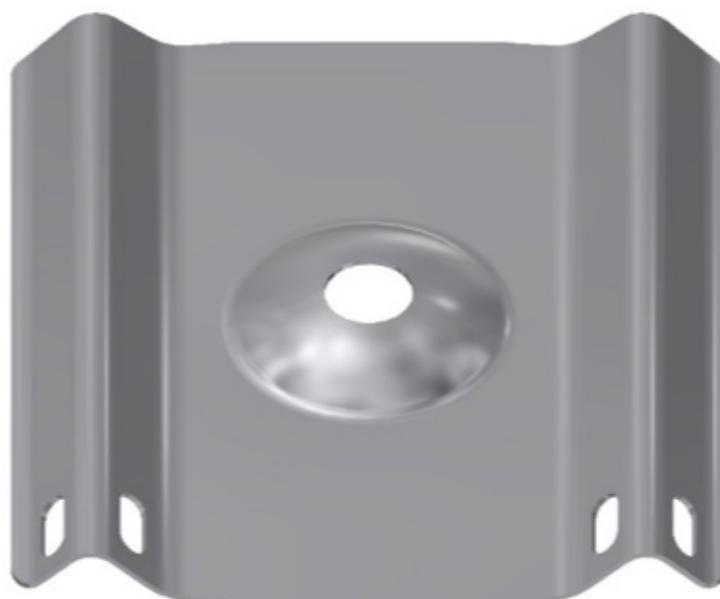
### Features:

- Can be supplied “rumbled” to take off edges. Unless specified, plates are supplied un-rumbled
- Used predominately with 15.2mm cable bolts. Can be supplied with 2 holes for cable bolting and grout tube application
- 200 x 200mm plates are often used on single tail twin-strand cable bolts with a flat barrel and wedge, Can be used in conjunction with a pizza pan
- Available as galvanised or black

Dimension (mm)	Thickness (mm)	Hole diameter (mm)	Mass (kg)	Standard pack
200 x 200	10	20	3.1	250

# Plates

## Domed Butterfly Plate



### Features:

- A high tensile 2.4mm thick domed profile to provide the strength in a single bearing plate for rib support applications
- Has service slots for suspension of light items
- Has user friendly rounded corners
- Available as galvanised

Length (mm)	Width (mm)	Thickness (mm)	Hole diameter (mm)	Minimum Collapse load (kN)	Minimum Pull Through load (kN)	Mass (kg)	Standard pack
300	280	2.4	34	27	78	1.75	960/pallet

# Plates

## Surface Support Plates

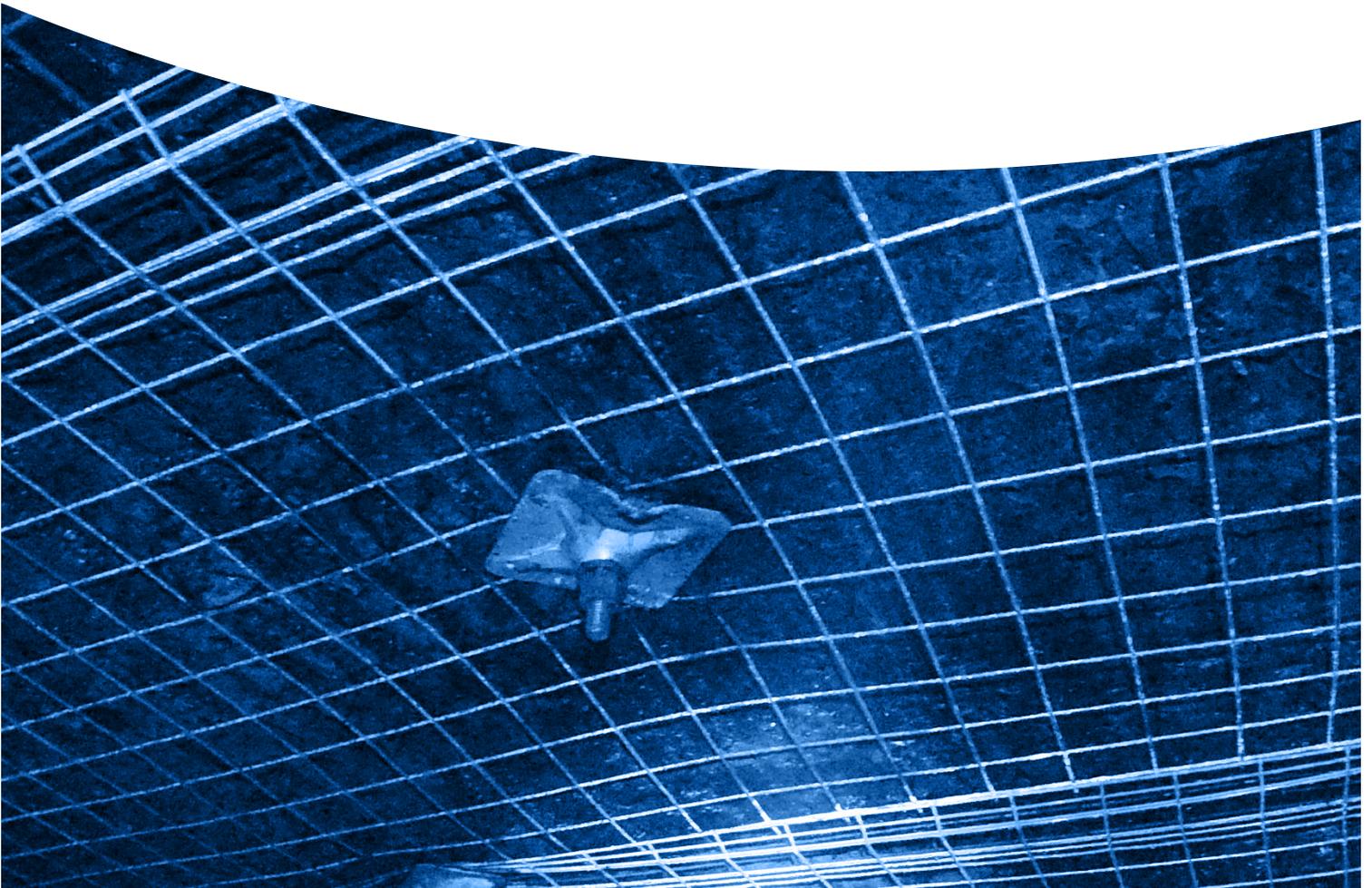


### Features:

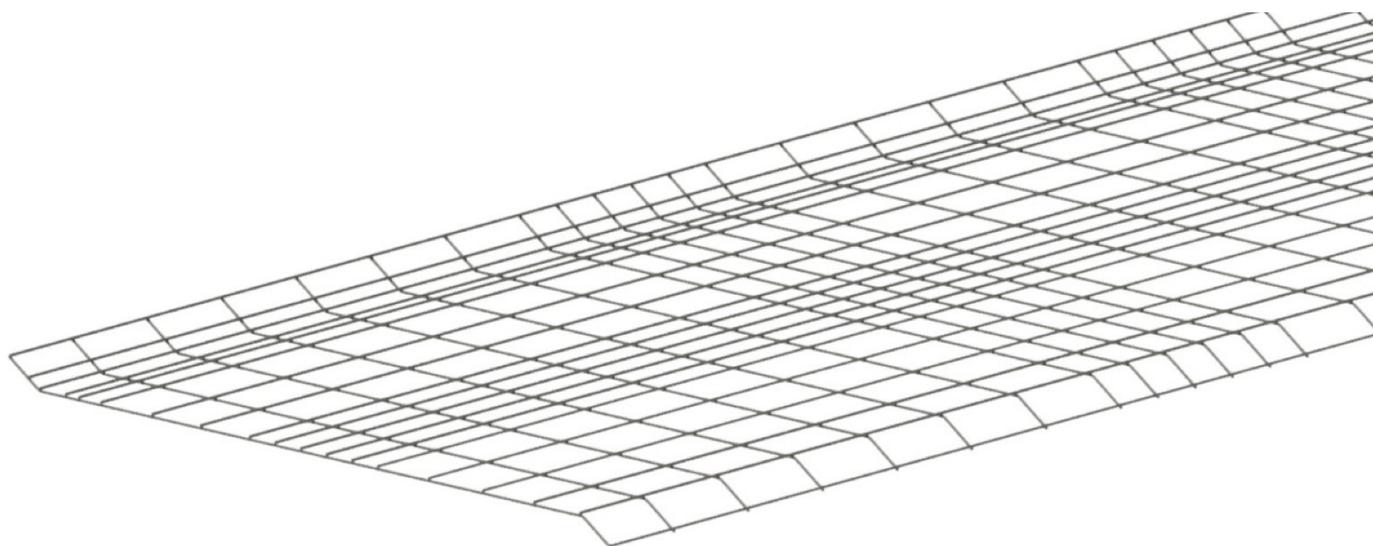
- Rolled safety edges and corners to eliminate handling cuts
- Re-inforced rolls around the perimeter for extra rigidity
- Used in combination with a bearing plate, ideal for rib confinement
- Ideal for use on Husker Mesh on longwall bolt-ups

Length (mm)	Width (mm)	Thickness (mm)	Hole diameter (mm)	Mass (kg)	Standard pack
300	280	1.9	50	1.32	960/pallet
300	300	0.8	50	0.84	1000/pallet
450	450	0.8	50	1.59	250/pallet

# MESH



## Steel Roof Mesh Module



### Features:

- Turned edges for interlocking of modules and to maintain stiffness for ease of handling over the top of a continuous miner
- Re-inforced areas for lateral linking of roof bolts across the strata
- Wire diameters, spacing and overall dimensions can be customised to suit particular applications
- Customised paint lines along the modules to suit roof bolt patterns

### Standard Roof Mesh Module

Wire diameter (mm)	Wire Typical UTS (kN)	Weld Strength* (kN)
5	8.5	7.5
5.6	12	
7	18	

\*based on smallest wire diameter in welded joint

Available with combined galvanised and epoxy coating. Epoxy auto-ignition temperature 450 - 600 degrees C. Epoxy film thickness >300 microns.

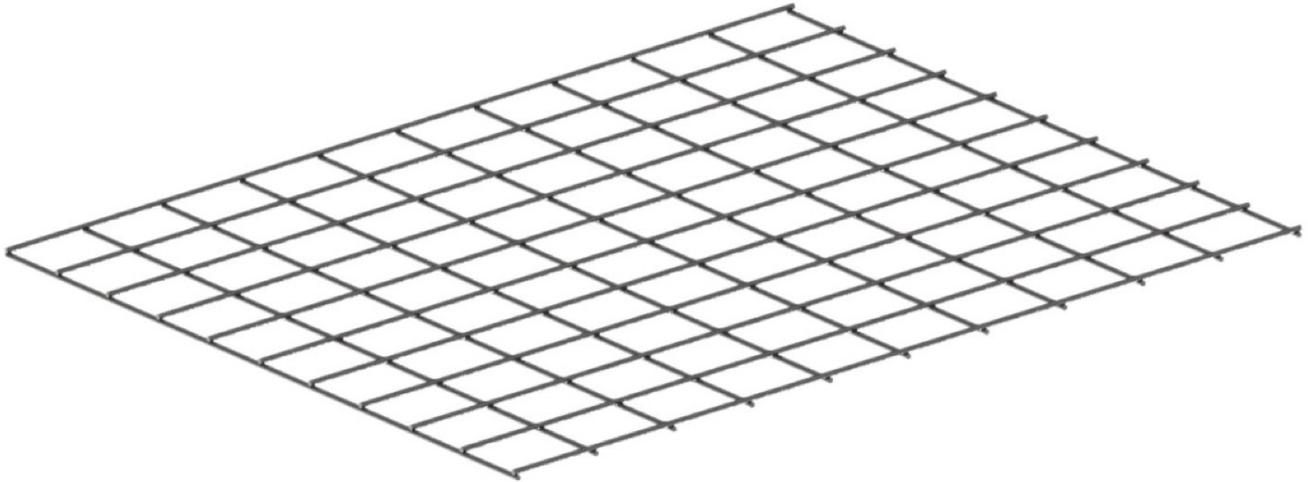
### Lightweight Sentinel Roof Mesh Module

Wire diameter (mm)	Wire Typical UTS (kN)	Weld Strength* (kN)
4	8.5	7.5
5	12	
5.6	18	

\*based on smallest wire diameter in welded joint

# Mesh

## Steel Rib Mesh Sheet



### Features:

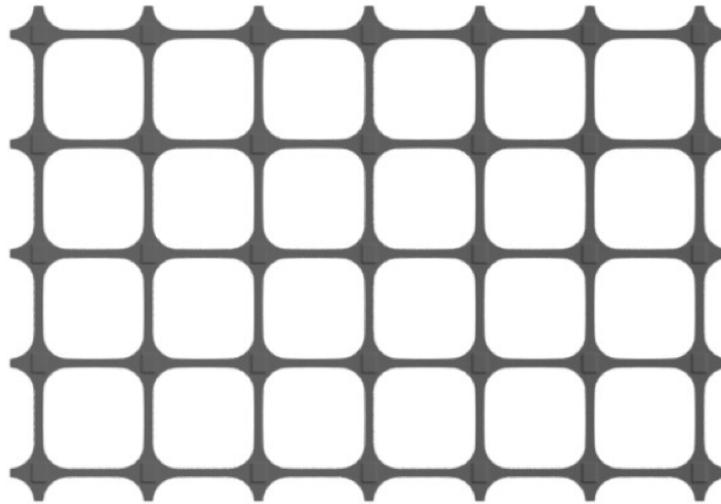
- Typically flat sheets of smaller wire diameter and dimensions suitable for rib support
- Wire diameters, spacing and overall dimensions can be customized to suit particular applications

Wire diameter (mm)	Wire Typical UTS (kN)	Weld Strength (kN)
4	6.3	4.7
5	8.5	7.5

Available galvanised

# Mesh

## Plastic Mesh



### Features:

- Available in rolls or custom cut flat sheets
- Commonly used for surface support that will later be cut by the continuous miner or longwall shearer

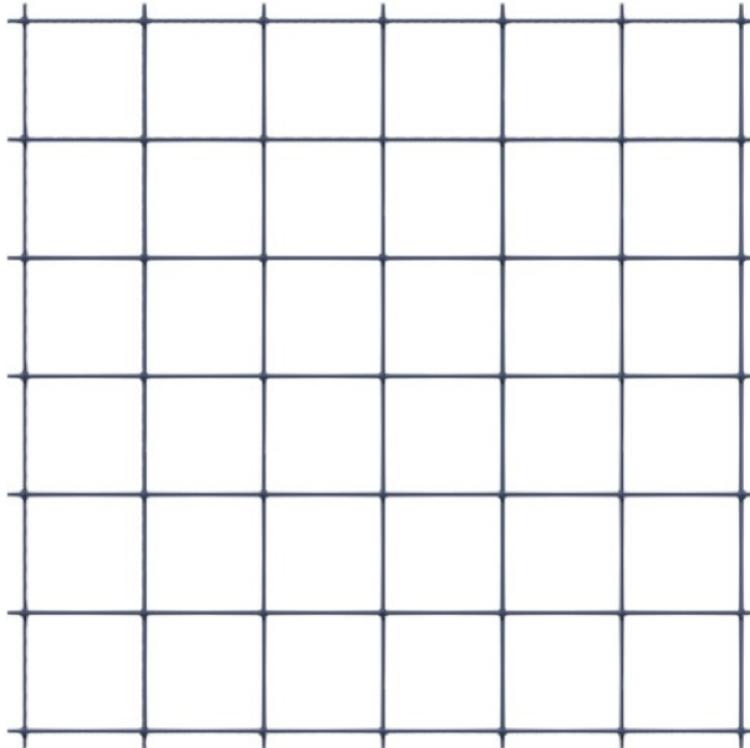
Minimum Tensile Strength (kN/m)	Minimum Elongation at Yield %	Aperture (mm)	Roll Dimensions (m)
22	10	61 x 61	28 x 2
45	10	65 x 65	50 x 2

Fire resistant to MDG3608

Available in flat sheets cut to custom dimensions

# Mesh

## Fibreglass Mesh



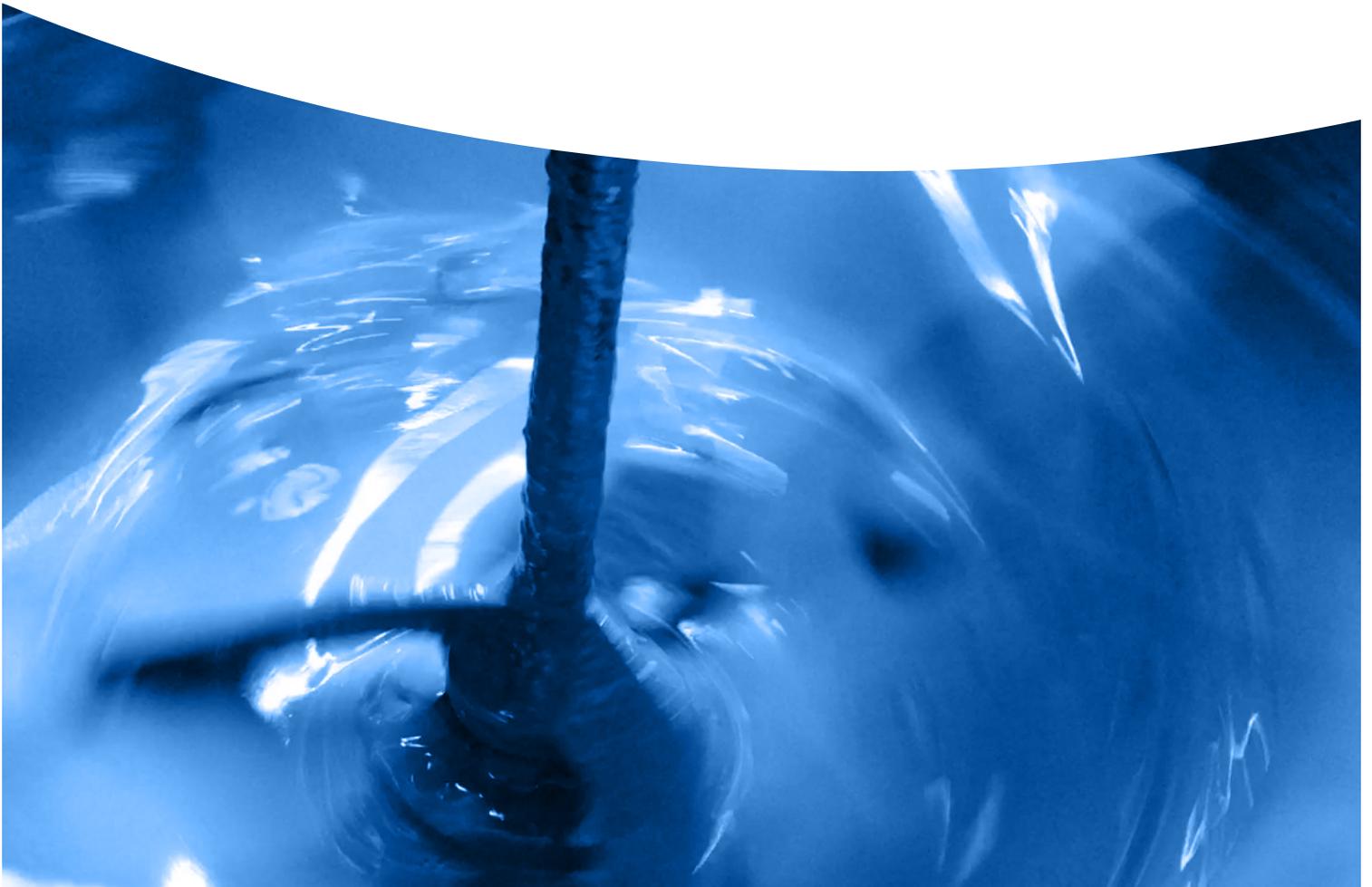
### Features:

- Available in custom rigid flat sheets
- Commonly used for surface support that will later be cut by the continuous miner or longwall shearer

Rod Diameter (mm)	Breaking load of rod (kN)	Load at knot (kN)	Aperture (mm)
4	12.5	2-3	100 x 100
6	28	3-5	100 x 100

Available in flat sheets to custom dimensions

# **SPECIALTY GROUT & CEMENT**



# Specialty Grout and Cement

## Bottom-Up 100 MPa Grout

Bottom-Up-100 is a pumpable cementitious grout for use as a bonding agent between a reinforcing member and the borehole wall in ground support systems. The product is packaged in durable water proof 20 kg bags for use in remote and harsh underground mining environments. The product is designed to minimise the risk of hard lumps entering pumping injection systems, which in turn minimises hazardous pressurisation and blockages.

### Features:

- High strength 100 MPa cable bolt grout for “bottom-up” grouting
- Ready to use, mix with water and pump
- Excellent pumpability
- Non shrink, unique expansion system compensates for shrinkage
- Typically used with Bowen cables, 15.2mm triple/twin-strand cable bolts and trusses

### Packaging:

- Durable water proof 20kg bags for use in remote and harsh underground mining environments
- 56 bags per pallet, 1.2 tonne per pallet



Uniaxial Compressive Strength* (MPa)			
	1 DAY	7 DAYS	28 DAYS**
5 litres/bag	60	100	105
6 litres/bag	55	90	100

\*UCS independent test results were obtained using 50 x 50mm cubes

\*\*28 day strength may vary between 85 MPa and 105 MPa depending on water content and testing methods utilised

Estimated yield 12 – 13 litres of grout at 5 – 6 litres of water per bag

Water : Grout Mix	5 - 6 litres per bag
Estimated Yield	12 - 13 litres per bag

## Specialty Grouts and Cements

### Top-Down 80 MPa Grout

Top-Down-80 is a pumpable cementitious grout for use as a bonding agent between a reinforcing member and the borehole wall in ground support systems. The product is packaged in durable water proof 20 kg bags for use in remote and harsh underground mining environments. The product is designed to minimise the risk of hard lumps entering pumping injection systems, which in turn minimises hazardous pressurisation and blockages.

#### Features:

- High strength 80 MPa thixotropic cable bolt grout for "top-down" grouting
- Ready to use, mix with water and pump
- Non shrink, unique expansion system compensates for shrinkage
- Excellent pumpability
- Typically used with TGBolt, Bulbed Superstrand and other "top-down" groutable cable bolts

#### Packaging:

- Durable water proof 20kg bags for use in remote and harsh underground mining environments
- 56 bags per pallet, 1.2 tonne per pallet



Uniaxial Compressive Strength* (MPa)			
	1 DAY	7 DAYS	28 DAYS**
6 litres/bag	43	77	89
7 litres/bag	33	63	80

\*UCS independent test results were obtained using 50 x 50mm cubes

\*\*28 day strength may vary between 70 MPa and 90 MPa depending on water content and testing method utilised

Estimated yield 13 - 14 litres of grout at 6 - 7 litres of water per bag

Water : Grout Mix	6 - 7 litres per bag
Estimated Yield	13 - 14 litres per bag

# Specialty Grouts and Cements

## J-URR GROUT (Jennchem Underground Roadway Repair)

Jennchem J-URR GROUT is a specially formulated fast-setting concrete designed for the mining and tunnelling industries. J-URR GROUT is designed specifically for demanding applications where quick return to service is required, or where traditional concrete mixing equipment is unavailable or impractical. J-URR GROUT is formulated to absorb water and gain strength rapidly with no mixing. J-URRGROUT is ideal for rehabilitating underground roadways and filling mud holes and swillies. J-URR GROUT is a safer, more permanent solution than temporary bridges or traditional fill methods.

### Features:

- Extremely Fast Setting
- Simple Application
- Quick return to service
- Safe to use
- Minimal dust make
- No mixing required
- Packaged in 1 tonne or 20kg bags
- Increases underground development production in wet conditions
- Fit for purpose QDS applicator available

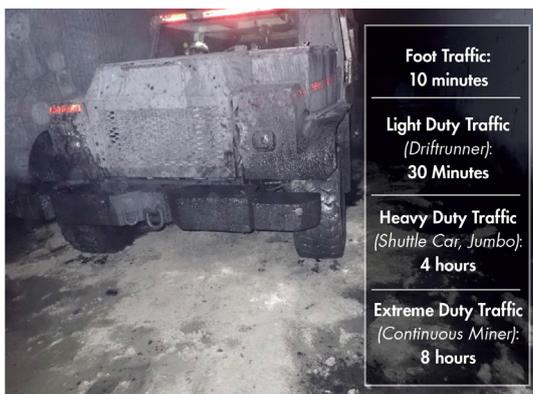
### Packaging:

- 20kg bags. (56 per pallet)
- 1 tonne bulk bags

### Set / Cure Time

Foot Traffic	Light Duty Traffic (Driftrunner)	Heavy Duty Traffic (Shuttle car, Jumbo)	Extreme Duty Traffic (Continuous miner)
10 minutes	30 minutes	4 hours	8 hours

Note: Hot materials (and/or water) will accelerate set times and strength gain. Cold materials will slow set times and strength gain. pH and chemistry of water may affect set time and strength gain.



### Shelf Life:

- One year when stored in cool dry conditions

### Yield:

- 20kg: Approx. 15.4 litres
- 1000kg: Approx. 0.77m<sup>3</sup>

### Application

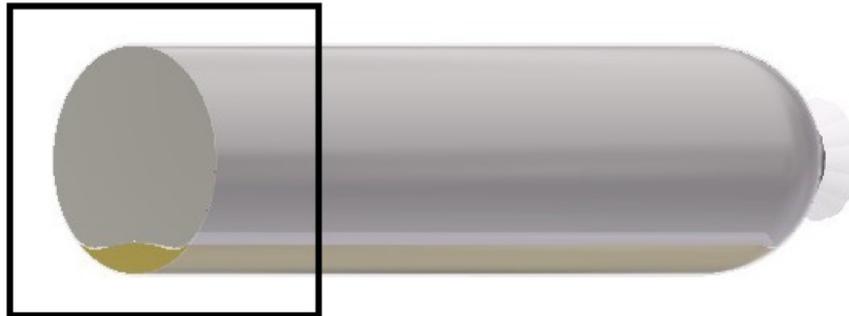
- Repaired area is only as durable as the underlying substrate.
- Remove mud or soft base if possible, put down rock or ballast and compact to provide solid base.
- Fill hole or depression with water (if not already filled) up to where the repair level is desired.
- Open packaging and dump material into standing water.
- Allow material to soak up water.
- Agitation with a shovel or other suitable tool can be used to improve mixing.
- Finish to desired texture. This can be done in multiple lifts if required.

# RESIN CAPSULES



# Resin Capsules

## SPIN2STALL® Resin Capsules



### Features:

- Increased productivity – no waiting around for resin to cure before tightening the nut
- No counting of spin or hold times – consistent installations
- Self-auditing bolt installation – based upon remnant thread length of the bolt which provides an indication of the standard of installation
- High pre-tension levels can still be achieved
- Extensive research and independent testing shows minimal damage to resin bond using spin to stall technique
- Uses a J-Lok dual speed cure accelerated specifically formulated resin capsule and Jennmar bolt with engineered accurate and reliable pin break out level
- Available in fast set speeds usually incorporating 50:50 proportions of Fast A speed: slow set

Punched shear strength (MPa)	>22 MPa	
Shelf life (months)	4	
Capsule length (mm)	800 – 1000	1100 – 1400
Quantity / box	25	20
Quantity / pallet	1050	840

Grit limestone filler configuration

Must only be installed using spin2stall technique when used with the appropriate JX bolt and shear-pin.

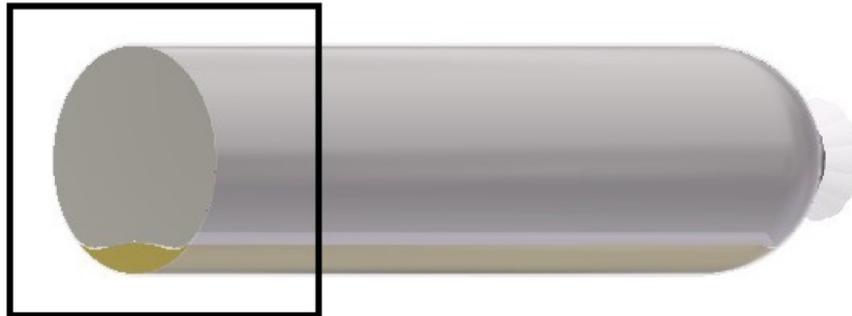
\*Relevant specifications are taken at 25°C

SPIN2STALL® is a registered trade mark of FCI Holdings Delaware, Inc

To mix, apply rotation and feed bolt up through the capsule at a rate of 1 sec per 100m of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole until the bolt is tightened to motor stall

# Resin Capsules

## Standard Dual Speed (Oil Based Catalyst) Resin Capsules



### Features:

- Separate resin mastic and catalyst encased within a thin plastic film, sealed at each end by wire clips
- Standard oil based catalyst as approximately 7% of capsule volume
- For full encapsulation of pre-tensioned rock bolts
- Available in diameters of 25, (nominal), 26, 30, 36mm
- Available in dual speed ratios 50:50, 40:60
- Other combinations available on request

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	800 – 1000	1100 – 1500	1600 – 1700
Quantity / box	25	20	15
Quantity / pallet	1050	840	720

Speed	Superfast/ slow	Extrafast/ slow	Fast/slow	Medium/ slow
Hold time (s)	10 - 60	12 - 60	14 - 60	19 - 60

Refer to individual box label for spin and hold installation instructions

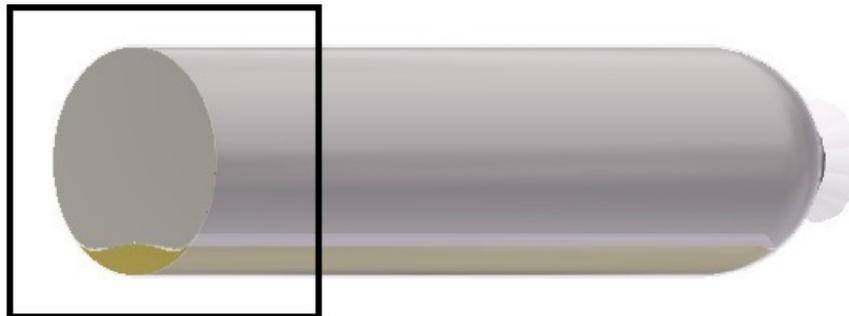
Available in standard, grit and LIF limestone filler configurations

Capsules  $\geq$  1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules < 1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## Standard Single Speed (Oil Based Catalyst) Resin Capsules



### Features:

- Separate resin mastic and catalyst encased within a thin plastic film, sealed at each end by wire clips
- Standard oil based catalyst as approximately 7% of capsules
- For general purpose anchoring of typical rebar rock bolts
- Available in diameters of 25, (nominal), 26, 30, 36mm
- Available gel times range from 10 seconds to 1.5 minutes

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	800 – 1000	1100 – 1500	1600 – 1700
Quantity / box	25	20	15
Quantity / pallet	1050	840	720

Speed	Superfast	Extrafast	Fast	Medium	Slow
Hold time (s)	4	4	4	8	80

Refer to individual box label for spin and hold installation instructions

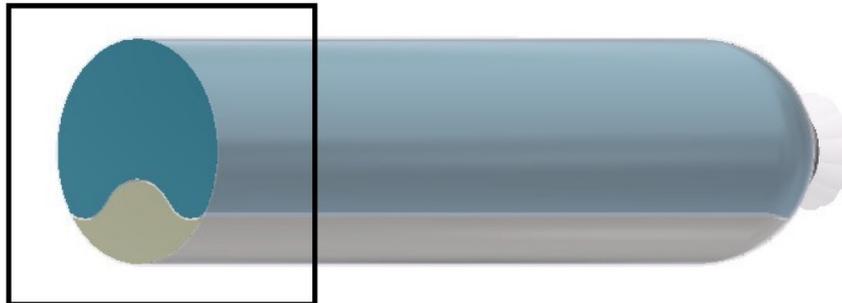
Available in standard, grit and LIF limestone filler configurations

Capsules  $\geq$  1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules < 1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## '5 Star' Dual Speed (Water Based Catalyst) Resin Capsules



### Features:

- Water based catalyst as 20 – 30% of capsule volume compared to the traditional 5-10%
- Provides superior mixing
- Available in diameters of 25, (nominal), 26, 30, 36mm
- For full encapsulation of pre-tensioned rock bolts
- Cost effective

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	800 – 1000	1100 – 1500	1600 – 1700
Quantity / box	25	20	15
Quantity / pallet	1050	840	720

Speed	Superfast/ Slow	Extrafast/ Slow	Fast/ Slow	Medium/ Slow
Hold time (s)	10 - 60	12 - 60	14 - 60	19 - 60

Refer to individual box label for spin and hold installation instructions

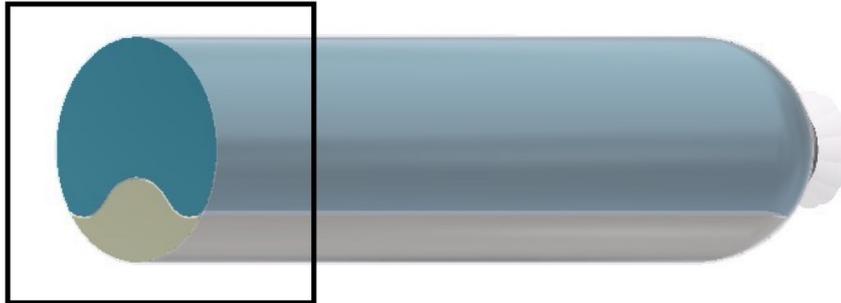
Available in standard or grit limestone filler configurations

Capsules  $\geq$  1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules < 1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## '5 Star' Single Speed (Water Based Catalyst) Resin Capsules



### Features:

- Water based catalyst as 20 – 30% of capsule volume compared to the traditional 5-10%
- Provides superior mixing
- Available in diameters of 25, (nominal), 26, 30, 36mm
- For anchoring of all types of rock bolts
- Cost effective

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	800 – 1000	1100 – 1500	1600 – 1700
Quantity / box	25	20	15
Quantity / pallet	1050	840	720

Speed	Superfast	Extrafast	Fast	Medium	Slow
Hold time (s)	4	4	4	8	80

Refer to individual box label for spin and hold installation instructions

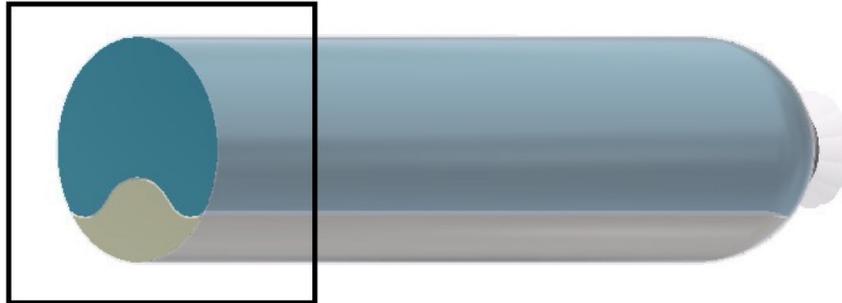
Available in standard or grit limestone filler configurations

Capsules  $\geq$  1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules < 1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## Post Grout Cable (Water Based Catalyst) Resin Capsules



### Features:

- Designed for Point Anchoring of cable bolts for tensioning prior to being post grouted
- Catalyst compartment comprising 20 % of the capsule volume
- Improved mixing of resins in larger diameter drill holes
- Cost effective
- Comes with resin retainer

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	650	800 – 1000	1200
Quantity / box	15	10	9
Quantity / pallet	720	420	378

Speed	Medium	Slow
Hold time (s)	19	80

Refer to individual box label for spin and hold installation instructions

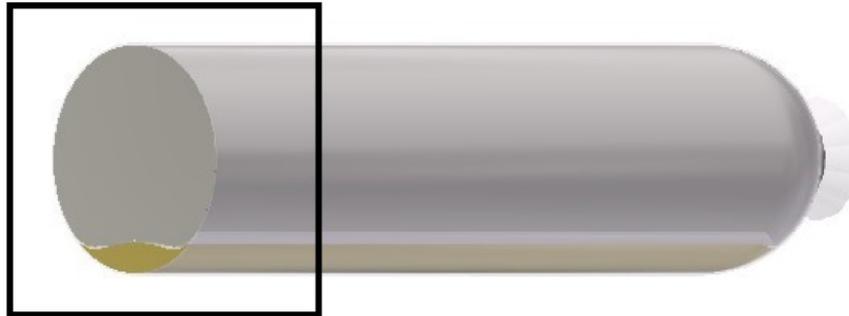
Available in standard or grit limestone filler configurations

Capsules  $\geq$  1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules < 1000mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## Post Grout Cable (Oil Based Catalyst) Resin Capsules



### Features:

- Designed for Point Anchoring of cable bolts for tensioning prior to being post grouted
- Catalyst compartment comprising 7% of the capsule volume
- Comes with resin retainer

Punched shear strength (MPa)	>22 MPa		
Shelf life (months)	4		
Capsule length (mm)	650	800 – 1000	1200
Quantity / box	15	10	9
Quantity / pallet	720	420	378

Speed	Medium	Slow
Hold time (s)	19	80

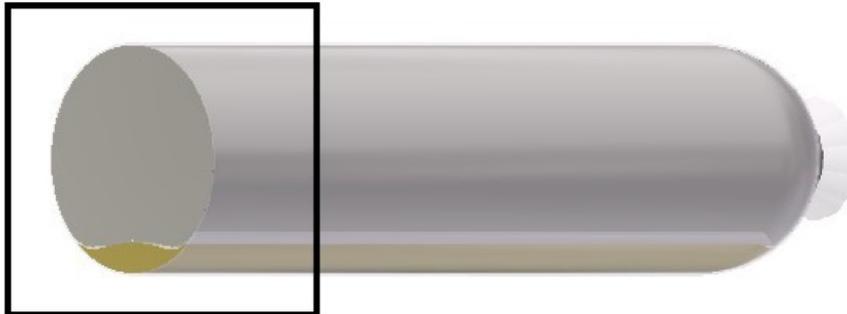
Refer to individual box label for spin and hold installation instructions

Capsules  $\geq 1000$ mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

Capsules  $< 1000$ mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule. Continue mixing until the total mix time = 10 sec then wait for the resin to set.

# Resin Capsules

## Twin 'H' Resins (Oil Based Catalyst) Resin Capsules



### Features:

- Low insertion force formulation
- For anchoring flexible cable tendons in a small annulus
- Separate resin mastic and catalyst encased within a thin plastic film, sealed at each end by wire clips
- Oil based catalyst as 7% of capsule
- Typical nominal diameter of 25mm
- Available gel times of 90 seconds and 20 minutes

Punched shear strength (MPa)	>22 MPa	
Shelf life (months)	4	
Capsule length (mm)	1650	2200
Capsule diameter (mm)	32	25.5
Quantity / box	8	11

Speed	Fast/XXSlow	Medium/XXSlow
Hold time (s)	12 - 1200	19-1200

Refer to individual box label for spin and hold installation instructions

Available in standard, grit and LIF limestone filler configurations

Capsules  $\geq 1000$ mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100mm of capsule (eg 1200mm capsule = 12 sec). Continue mixing at the back of the hole for an additional 2-4 seconds then wait for the resin to set.

# CUTTABLE SUPPORT & CUTTABLE SUPPORT ACCESSORIES



# Cutable Support

## 32mm Torque Tension Bolt



### Features:

- High capacity support for coal rib support where extraction includes cutting of bolts
- 46mm Hex nut
- Break-out cap is designed to break into small pieces to clear easily from spanners/dollies
- "V" Notch end to promote shredding of the resin capsule film
- Continuous rope thread providing deformations for resin mixing and high bond strength with the rock
- J-Lok resin capsules available in 32 – 36mm diameter for maximum encapsulation
- Both 200mm and 300mm square plastic steel inserted plates with 51mm holes available to suit this product
- Do not store these products in direct sunlight

Property	Minimum Value
Ultimate Tensile Strength of Rod (kN)	500
Ultimate Tensile strength with Nut (kN)	90
Single Shear Strength (kN)	110
Rod Torsional Strength (Nm)	200
Elongation %	2
Cross sectional area (mm <sup>2</sup> )	730
Thread pitch (mm)	10
Mass/meter (kg/m)	1.45

Break-out Nut	White
Torque Setting (N.m)	130 - 175
Rod Colour	

To suit drill bit 38 - 42mm

# Cuttable Support

## 32mm GEODOWEL



### Features:

- High capacity post groutable fibreglass dowel
- Used where coal extraction includes cutting of rib support dowels
- Suitable for use with common mine site cable bolting consumables:
  - 36mm diameter resin capsules
  - Cable bolt grouts
- 46mm Hex Nut
- Purpose designed installation spanners and grout connectors available
- Custom configurations are available including;
  - Resin anchored, tensioned, post grouted dowel
  - Simple fully grouted dowel
- Hollow dowels stocked in 3m and 4m lengths
- Do not store these products in direct sunlight

Property	Minimum Value
Ultimate Tensile Strength of Rod (kN)	500
Ultimate Tensile strength with Nut (kN)	160
Shear Strength (kN)	140
Rod Torsional Strength (Nm)	150
Elongation %	2
Cross sectional area (mm <sup>2</sup> )	610
Thread pitch (mm)	10
Mass/meter (kg/m)	1.3

Rod Colour	White
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To suit drill bit 42 - 45mm

# Cuttable Support

## 22mm Thrust Dowel

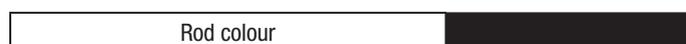


### Features:

- Used for coal rib support where extraction includes cutting of bolts
- Patented high strength over-moulded polymer head achieves double the strength of standard fiberglass nuts
- Coloured over-moulding polymer provides length colour code after installation
- Thrust dowels eliminate tails protruding
  - Reducing the risk of damage to rib support by mobile equipment
  - Reduces risk of personal injury when walking around equipment installations
- "V" Notch end to promote shredding of the resin capsule film
- Continuous rope thread providing large deformations for resin mixing and high bond strength with the rock
- 22mm diameter dowel for high strength and maximum encapsulation by volume
- Do not store these products in direct sunlight

Property	Minimum Value
Ultimate Tensile Strength of Rod (kN)	230
Molded Head Tensile Strength (kN)	110
Single Shear Strength (kN)	50
Rod Torsional Strength (Nm)	80
Elongation %	2
Cross sectional area (mm <sup>2</sup> )	340
Thread pitch (mm)	10
Mass/meter (kg/m)	0.61

Bolt length (mm)	Head colour code
1150	
1450	
1750	



To suit drill bit 27 – 28mm

# Cuttable Support

## 25mm Thrust Dowel



### Features:

- Used for coal rib support where extraction includes cutting of bolts
- Thrust dowels eliminate tails protruding
  - Reducing the risk of damage to rib support by mobile equipment
  - Reduces risk of personal injury when walking around equipment installations
- "V" Notch end to promote shredding of the resin capsule film
- Continuous rope thread providing large deformations for resin mixing and high bond strength with the rock
- 25mm diameter dowel for high strength and maximum encapsulation by volume
- Do not store these products in direct sunlight

Property	Minimum Value
Ultimate Tensile Strength of Rod (kN)	300
Ultimate Tensile strength with Nut (kN)	110
Single Shear Strength (kN)	70
Rod Torsional Strength (Nm)	110
Elongation %	2
Cross sectional area (mm <sup>2</sup> )	434
Thread pitch (mm)	10
Mass/meter (kg/m)	0.95

Bolt length (m)	Rod & Head colour	
1150mm	Black	Blue
1450mm	Yellow	Yellow
1750	Black	Red

To suit drill bit 28mm

# Cutable Support

## 22mm Extra High Torsion (XHT) Tensionable Bolt



### Features:

- Used for coal rib support where extraction includes cutting of bolts
- Extra high torsional strength material minimises risk of damage to fiberglass when tightening
- Break-out cap is designed to break into small pieces to clear easily from spanners/dollies
- "V" Notch end to promote shredding of the resin capsule film
- Continuous rope thread providing large deformations for resin mixing and high bond strength with the rock
- 22mm diameter dowel for high strength and maximum encapsulation by volume
- Recommended for drill hole diameters 27 - 28mm

Property	Minimum Value
Ultimate Tensile Strength of Rod (kN)	210
Ultimate Tensile strength with Nut (kN)	60
Single Shear Strength (kN)	50
Rod Torsional Strength (Nm)	250
Elongation %	2
Cross sectional area (mm <sup>2</sup> )	340
Thread pitch (mm)	10
Mass/meter (kg/m)	0.61

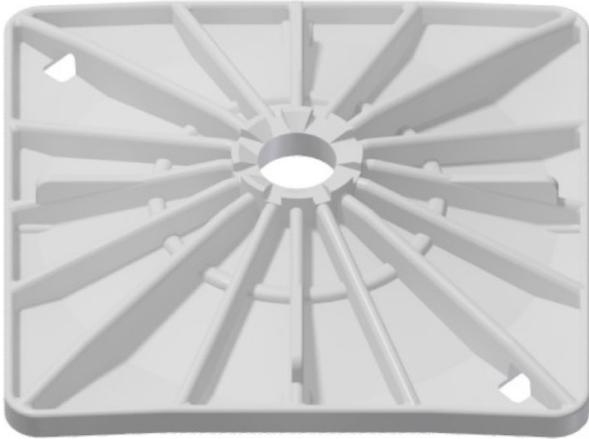
Break-out Nut	Torque Setting (N.m)
White	80 - 110
	30 - 50

Rod colour	
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To suit drill bit 27 – 28mm

# Cutable Support

## Plastic Plates: 22 - 25mm Dowels



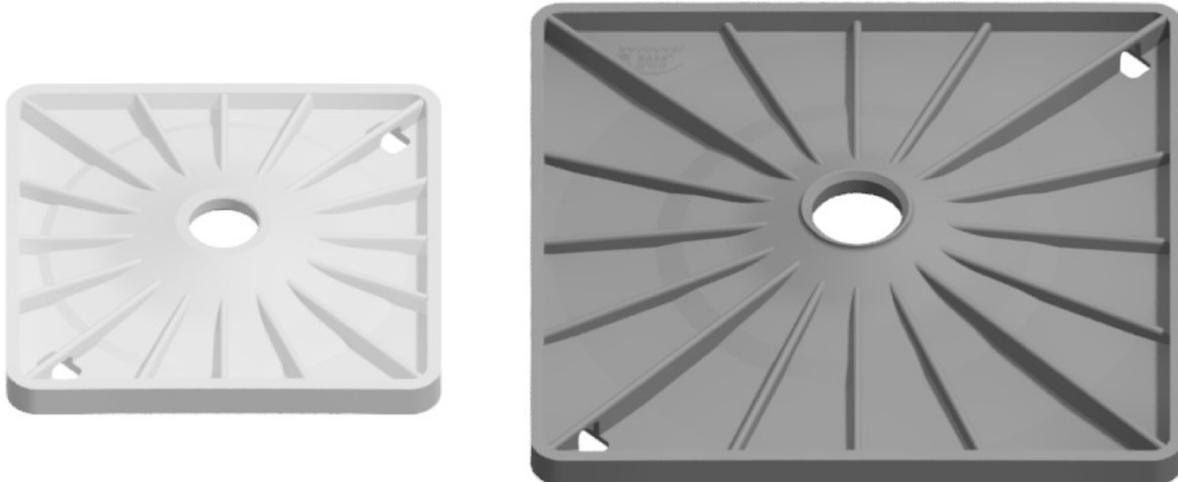
### Features:

- Used as coal rib surface support where extraction involved cutting the support
- Compatible with Jenmar 22mm dowels
- Flexibility of all plastic allow conforming to shape of uneven coal rib
- Tested to ensure no splitting under severe deformation found in uneven coal ribs
- Square plate is designed to visually turn corners upon applying hydraulic rib bolter thrust
- Do not store these in direct sunlight

Dimension (mm)	Hole diameter (mm)	Minimum Pull through load (kN)	Mass (kg)	Standard pack	Compatible Bolt dia (mm)
230 round	33	20	0.3	1000	22 and 25
230 square	33	12	0.3	1000	22 and 25

# Cuttable Support

## Plastic Steel Combination Plates: 22-25mm Dowels



### Features:

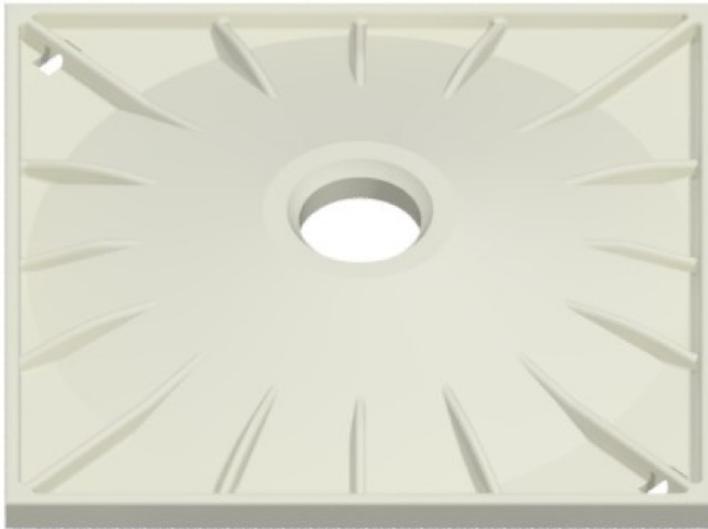
- Used as coal rib surface support where extraction involved cutting the support
- Thin 3mm steel plate encased within the main plate provides up to 3 times the strength of a standard plastic plate
- Superior strength is compatible with new improved fiberglass dowels
- Steel inserts allow use of bolting rig magnetic holders
- Steel plate thin gauge and rounded corners minimize risk of conveyor belt damage
- Do not store these products in direct sunlight

Dimension (mm)	Hole diameter (mm)	Minimum Pull through load (kN)	Mass (kg)	Standard pack	Compatible Bolt diameter (mm)
230 round	33	50	0.6	500	22
200 x 200 square	33	50	0.7	1000	22
200 x 200 square	42	50	0.7	1000	22 and 25
300 x 300 square	33	50	1	1000	22
300 x 300 square	42	50	1	1000	22 and 25

Tested over a 150mm span

# Cutable Support

## Plastic Steel Combination Plates: 32mm Dowels



### Features:

- Used as coal rib surface support where extraction involved cutting the support
- Thin 3mm steel plate encased within the main plate provides up to 3 times the strength of a standard plastic plate
- Superior strength is compatible with new improved fiberglass dowels
- Steel inserts allow use of bolting rig magnetic holders
- Steel plate thin gauge and rounded corners minimize risk of conveyor belt damage
- Do not store these products in direct sunlight

Dimension (mm)	Hole diameter (mm)	Minimum Pull through load (kN)	Mass (kg)	Standard pack	Compatible Bolt diameter (mm)
200 x 200 square	51	90	0.7	1000	32
300 x 300 square	51	90	1	1000	32

## Cuttable Support Accessories

### 46 A.F. Dolly



**Features:**

- 25mm locking square drive to suit standard coal mining bolting equipment
- Socket designed to promote clean cap break-out on Jenmar 32mm dowel

Drive (mm)	Length (mm)	Socket (mm)
25 square	300 – 600	46 Hex

MM\_D\_JDOLENGTH46-Rev1

### Grout Connector Suit 32mm Dowels



**Features:**

- Adapts to 32mm hollow fibreglass dowel for:
  - Installation mixing using a standard 36mm A.F. roof bolt dolly
  - Grouting connection by BSP thread within the Hex section
- Can be re-used

Hex (mm)	Length (mm)	Diameter (mm)	Rated Working Pressure (Bar)
36 A.F.	90	45	34.5

MM\_CU\_JFG32GROUTCON-Rev1

Can be used to spin the dowel through the resin, and also to pump grout after anchoring

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