



# 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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# Contents

|                        |     |
|------------------------|-----|
| Mission Statement..... | 2   |
| Contacts .....         | 3-4 |

## ROCK BOLTS & ROCK BOLT ACCESSORIES

|                                       |    |
|---------------------------------------|----|
| M24 JX Torque Tension Bolt .....      | 7  |
| M24 JBX Torque Tension Bolt .....     | 8  |
| M24 JBS Torque Tension Bolt .....     | 9  |
| Hawkeye 'X' grade bolt .....          | 10 |
| $\frac{3}{4}$ " JSD Paddle Bolt ..... | 11 |
| 33 mm Friction Lok Bolt .....         | 12 |
| M36 Boot Bolt .....                   | 13 |
| M24 Tension Indicator Washer .....    | 14 |
| Cover Drive .....                     | 15 |
| Floor Bolt Extension.....             | 16 |
| Torque Test Nut.....                  | 17 |
| 36 A.F. Dolly .....                   | 17 |
| "U" Hanger Nuts .....                 | 18 |
| M24 Nut .....                         | 18 |
| M24 Dome Ball Washer.....             | 18 |

## CABLE BOLTS & CABLE BOLT ACCESSORIES

|  |    |
|--|----|
| 100T Goliath Cable Bolt.....                 | 20 |
| 100T Bulbed Goliath Cable Bolt.....          | 21 |
| 31 mm 70T SUMO TEX Cable .....               | 22 |
| 70T 12 Wire SUMO Cable Bolt.....             | 23 |
| 31 mm JW10 TEX Cable .....                   | 24 |
| 70T 10 Wire Hollow Cable Bolt.....           | 25 |
| Superstrand Cable Bolt .....                 | 26 |
| 15.2 mm Twin Strand Tendons & Trusses.....   | 27 |
| 15.2 mm Triple Strand Tendons & Trusses..... | 28 |
| 18 mm Twin Strand Tendons & Trusses.....     | 29 |
| 18 mm Triple Strand Tendons & Trusses.....   | 30 |
| 31 mm Barrel & Wedge.....                    | 31 |
| 28.6 mm Barrel & Wedge.....                  | 32 |
| 21.8 mm Barrel & Wedge.....                  | 32 |
| 18 mm Barrel & Wedge.....                    | 33 |
| 15.2 mm Barrel & Wedge .....                 | 33 |
| Trussing Splice Tube.....                    | 34 |
| Grout Guns .....                             | 34 |
| Grout Lance – Screw In.....                  | 35 |
| Push-Clamp on Grout Guns .....               | 35 |
| Grout and Breather Tube .....                | 36 |
| 30T Tensioners .....                         | 37 |
| Tiger Dollie.....                            | 38 |
| Dolly suit TEX cables .....                  | 38 |
| Dolly To 21.8 mm Superstrand .....           | 39 |

## PLATES

|   |    |
|---|----|
| Kanga Plate .....                                     | 41 |
| Roof Bolt Volcano Plate.....                          | 42 |
| Hawkeye Bolt Volcano Plate .....                      | 43 |
| Cable Volcano Plate TEX, 70T Sumo & Hollow Cables ... | 44 |
| Cable Volcano Plate - Goliath .....                   | 45 |
| Volcano Plates to suit Superstrand B&W and ToTo ..... | 46 |
| Flat Plate .....                                      | 47 |
| Domed Butterfly Plate.....                            | 48 |
| Surface Support Plates .....                          | 49 |

## MESH TILE

|                              |    |
|------------------------------|----|
| Steel Roof Mesh Module ..... | 51 |
| Steel Rib Mesh Sheet .....   | 52 |
| Plastic Mesh .....           | 53 |
| Fibreglass Mesh.....         | 54 |

## SPECIALTY GROUT & CEMENT

|  |    |
|--|----|
| Bottom-Up 100 MPa Grout .....                          | 56 |
| Top-Down 80 MPa Grout .....                            | 57 |
| J-URR GROUT (Jennchem Underground Roadway Repair)..... | 58 |

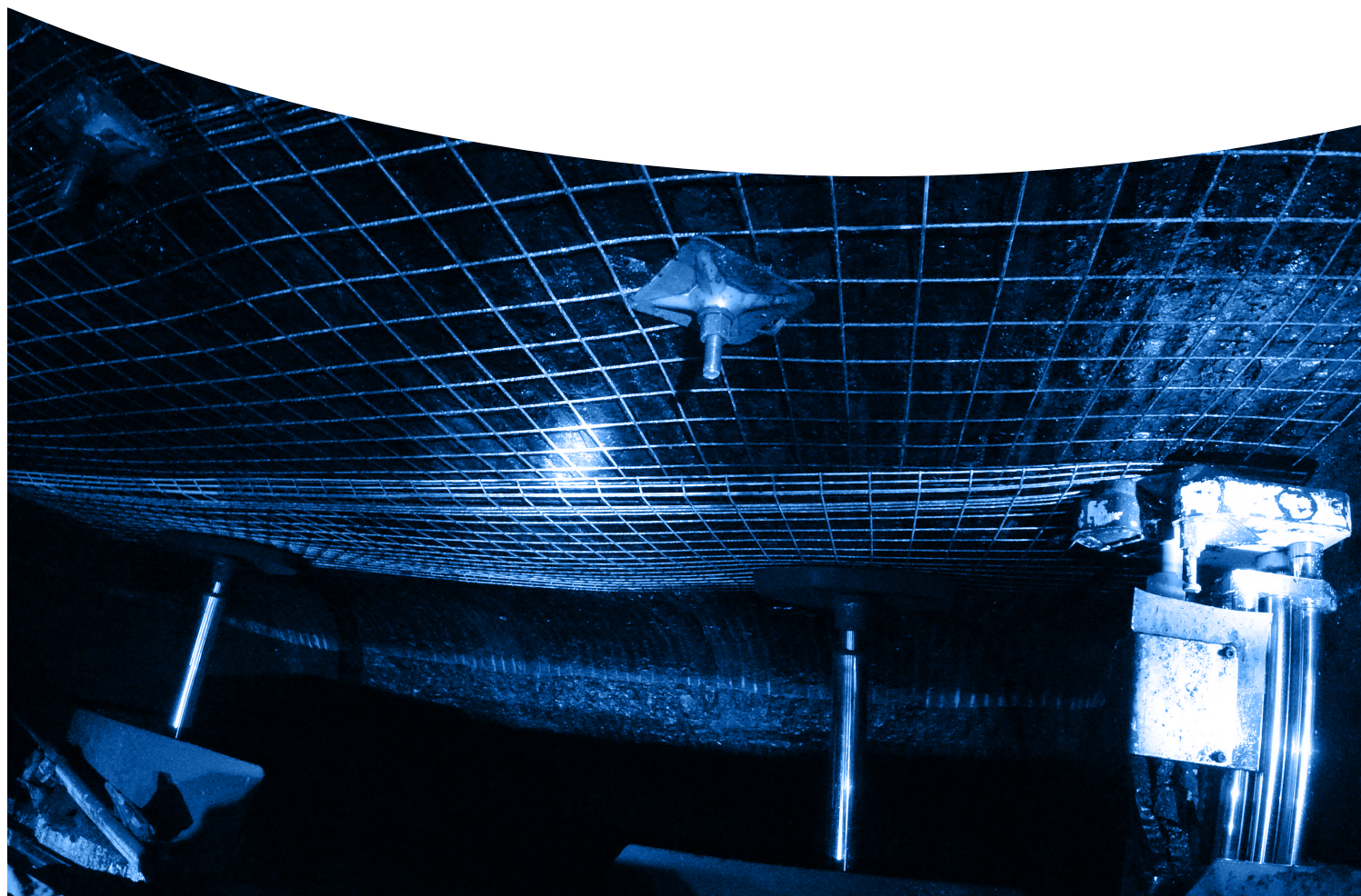
## RESIN CAPSULES

|   |    |
|---|----|
| SPIN2STALL® Resin Capsules .....                                  | 60 |
| Standard Dual Speed (Oil Based Catalyst) Resin Capsules .....     | 61 |
| Standard Single Speed (Oil Based Catalyst) Resin Capsules .....   | 62 |
| '5 Star' Dual Speed (Water Based Catalyst) Resin Capsules .....   | 63 |
| '5 Star' Single Speed (Water Based Catalyst) Resin Capsules ..... | 64 |
| Post Grout Cable (Water Based Catalyst) Resin Capsules .....      | 65 |
| Post Grout Cable (Oil Based Catalyst) Resin Capsules .....        | 66 |
| Twin 'H' Resins (Oil Based Catalyst) Resin Capsules.....          | 67 |

## CUTTABLE SUPPORT & CUTTABLE SUPPORT ACCESSORIES

|   |    |
|---|----|
| 32 mm Torque Tension Bolt.....                          | 69 |
| 32 mm Geodowel.....                                     | 70 |
| 22 mm Thrust Dowel.....                                 | 71 |
| 25 mm Thrust Dowel.....                                 | 72 |
| 22 mm Extra High Torsion (XHT) Tensionable Bolt.....    | 73 |
| Plastic Plates: 22-25 mm Dowels .....                   | 74 |
| Plastic Steel Combination Plates: 22-25 mm Dowels ..... | 75 |
| Plastic Steel Combination Plates: 32 mm Dowels.....     | 76 |
| 46 A.F. Dolly.....                                      | 77 |
| Grout Connector Suit 32 mm Dowels .....                 | 77 |

# 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 Jennmar has a superior toughness and ductility through the use of grain refining alloys. The Jennmar “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 27-28 mm  
 Available plain or hot dipped galvanized

# Rock Bolts


## M24 JBX Torque Tension Bolt








### Features:

- The “X” grade steel used by Jennmar has a superior toughness and ductility through the use of grain refining alloys. The Jennmar “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 27-28 mm

# 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 27-28 mm

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             | Blue        |
| 1.5             | Orange      |
| 1.8             | Red         |
| 2.1             | Green       |
| 2.4             | Yellow      |
| 2.7             | Purple      |



# Rock Bolts

## 3/4" JSD Paddle Bolt



### Features:

- 22 mm wide paddles on the insertion end promotes shredding of the resin capsule film and efficient mixing in 27-28 mm 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 3 mm ‘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 27-28 mm

## Rock Bolts

### 33 mm 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 30–32 mm

# 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 – 42 mm cable bolt drill bits, 36 mm 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 100 mm plate designed to fit the common “boot end” base plates.  
Accommodates installation angles up to 15 degrees
- Standard length 1800 mm

| 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             | Blue        |
| 1.5             | Yellow      |
| 1.8             | Red         |
| 2.1             | Green       |

To suit drill bit 42 mm

## Rock Bolt Accessories

### M24 Tension Indicator Washer



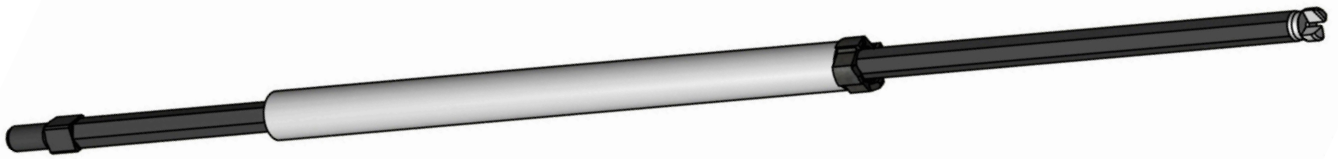
#### Features:

- 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 27-28 mm drill bits
- Patented

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

## Rock Bolt Accessories

### Floor Bolt Extension



#### Features:

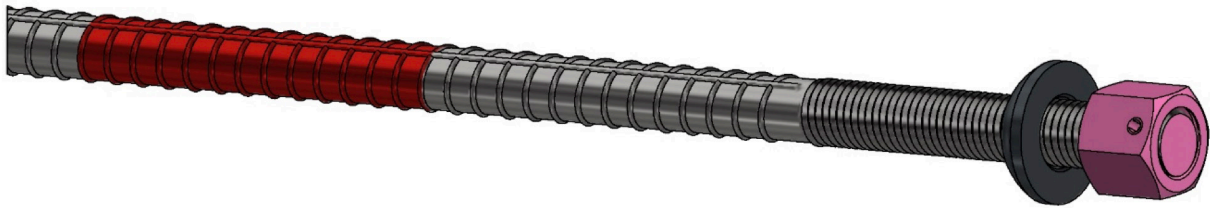
- Commonly used for forming floor bolts for pinning boot ends etc, this section is removed and re-used
- Can be used as extensions to existing mild steel rock bolts for hanging
- Hex drive allows for easy removal from floor bolts
- Optional to come with or without nut and dome balls
- After removal, 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:

- 36 mm A.F. socket to suit standard rock bolt installations
- 25 mm 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



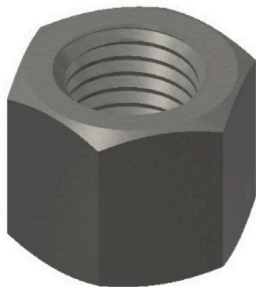
#### Features:

- 10 mm 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



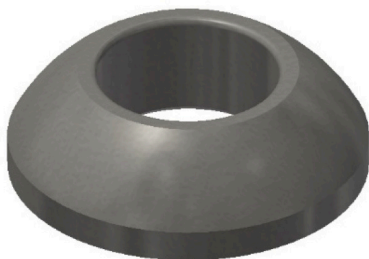
#### Features:

- 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



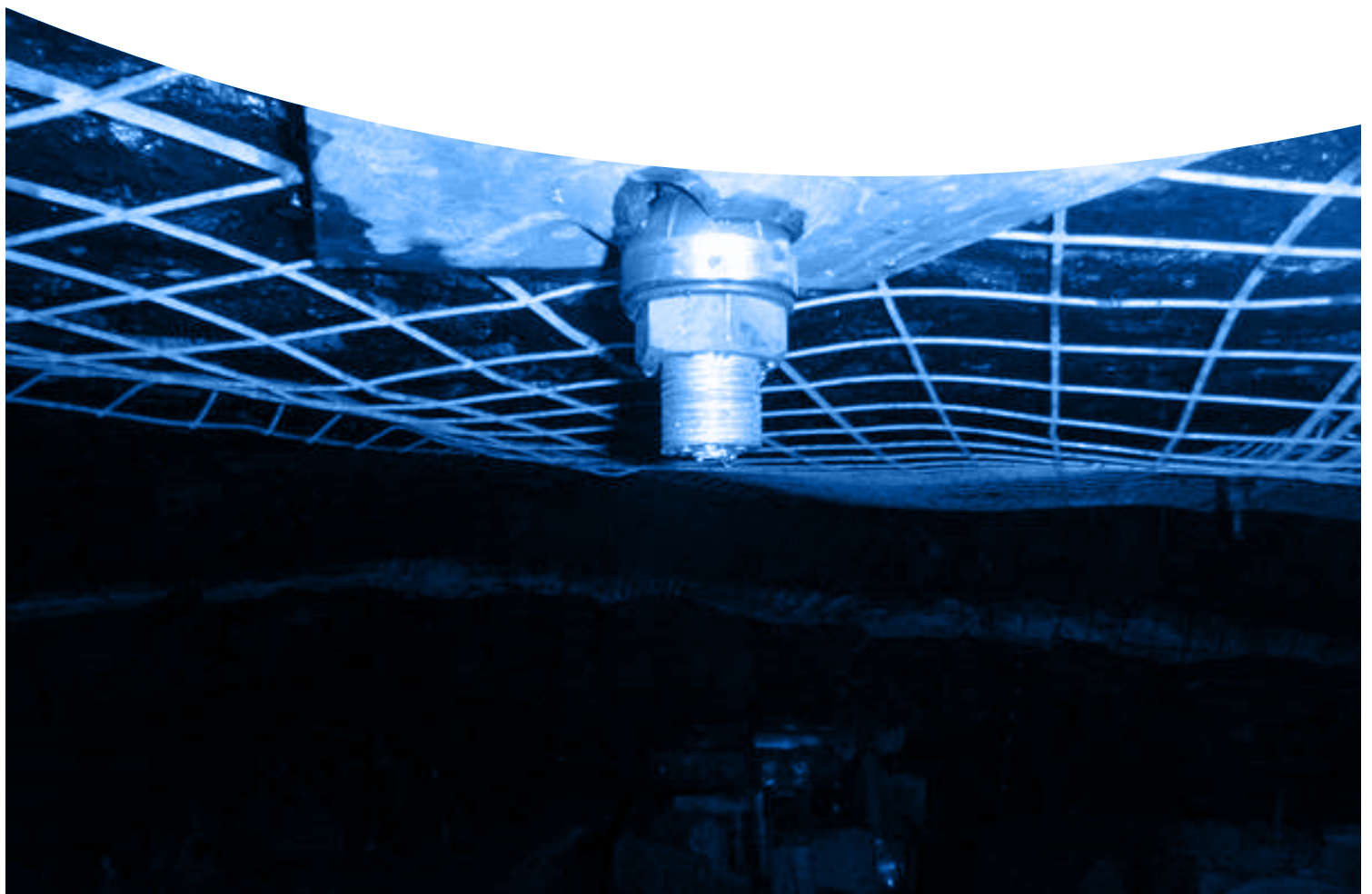
#### Features:

- 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 14 mm 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 4 m 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 35 mm

Resin capsules available to obtain encapsulation length up to 4 m

# 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 14 mm 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 42 mm

Resin capsules available to obtain encapsulation length up to 2.5 m

# Cable Bolts

## 31 mm 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 12 mm 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 42-45 mm



# Cable Bolts





## 70T 12 Wire SUMO Cable Bolt



### Features:

- Higher 70 tonne capacity SUMO cable bolt
- 12 wires increases flexibility and capacity
- Large 14 mm 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 31 mm 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 12 mm 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

## 31 mm 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 12 mm 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 31 mm 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 12 mm thick volcano plates with grout indicator slots. Available in 200x200 mm and 300x300 mm sizes.
- Plates available for trussing
- Lengths available up to 10 m

| 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 4 m 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 8 m 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 27–28 mm

Resin capsules available to obtain encapsulation length up to 4 m

# Cable Bolts








## 15.2 mm 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 180 mm 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

### 15.2 mm 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 180 mm 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              | Green       | 10.0             | White       |
| 6.0              | Red         | 11.0             | Blue        |
| 8.0              | Yellow      | 12.0             | Dark Blue   |
| 9.0              | Brown       |                  |             |

To suit drill bit 52-55 mm



# Cable Bolts








## 18 mm 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 180 mm 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

## 18 mm 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 180 mm 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              | Green       | 10.0             |             |
| 6.0              | Red         | 11.0             | Blue        |
| 8.0              | Yellow      | 12.0             | Dark Blue   |
| 9.0              | Brown       |                  |             |

To suit drill bit 52-55 mm

## Cable Bolt Accessories

### 31 mm 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 31 mm 12 wire SUMO and 31 mm 10 wire Hollow cable
- Bucket lid colour = white for 70 mm barrel
- Bucket lid colour = black for 90 mm 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

### 28.6 mm 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

### 21.8 mm 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 21.8 mm 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

### 18 mm 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 18 mm 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

### 15.2 mm 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 15.2 mm 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:

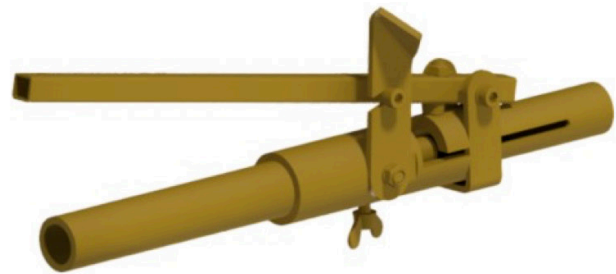
- Designed for joining truss tails
- All barrels & wedges to be pretensioned to a minimum 8 tonnes to ensure the wedge teeth penetrate the strand to achieve maximum load capacity
- Suit 15.2 mm or 18 mm Twin and Triple Strand Trusses



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

MM\_CA\_1518SPLICE-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 200 mm to 2000 mm
- 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

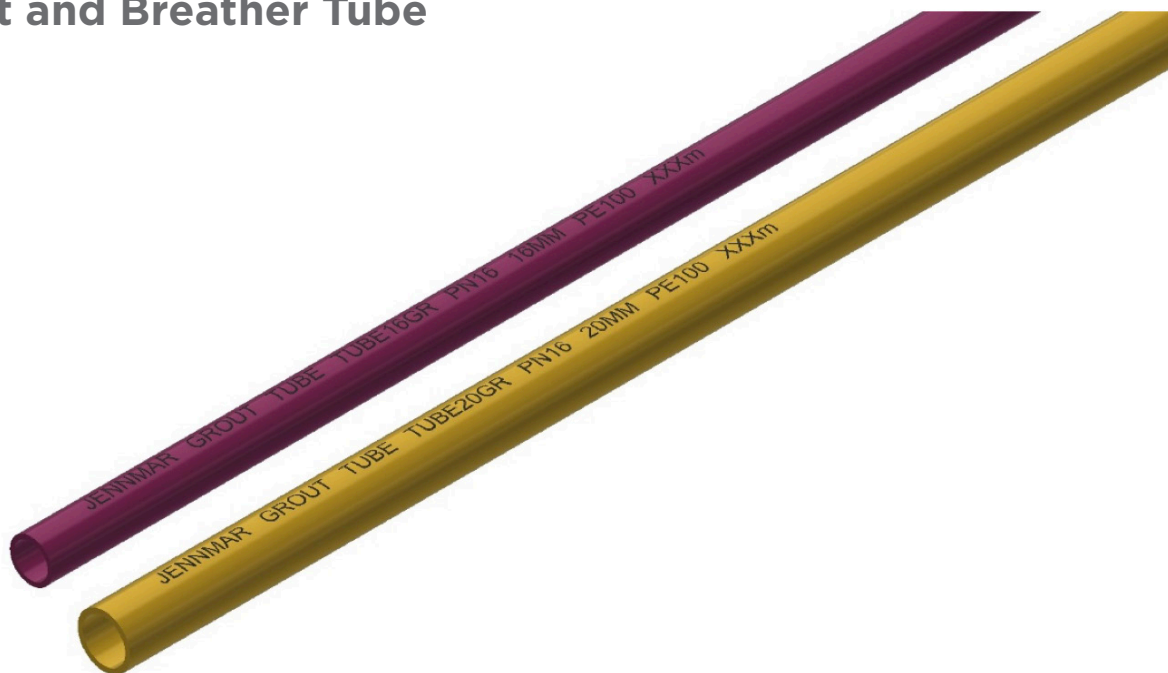
| Suit Cable | Colour Code | Rated Working Pressure (Bar) | Length (mm) |
|------------|-------------|------------------------------|-------------|
| SUMOTEX    | Red         | 34.5                         | 500 - 1800  |
| JW10TEX    | Yellow      | 34.5                         | 500 - 1800  |
| JW10       | 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 29 mm 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:

- 31 mm 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



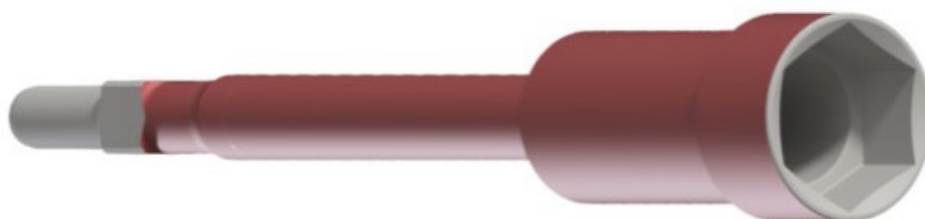
#### Features:

- 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      |
|--------------|-------------|-----------------------|-----------|-------------|
| 25 mm 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
- 55 mm 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 21.8 mm Superstrand



#### Features:

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

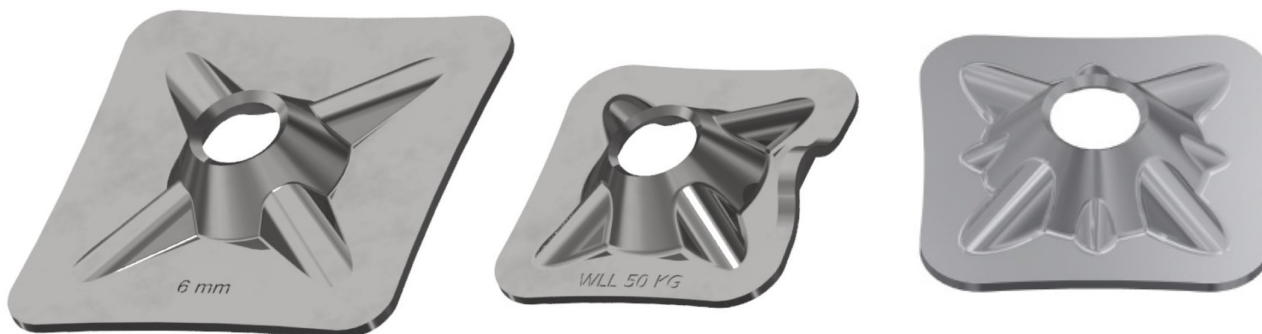
| Drive (mm) | Length (mm) | Cable drive | Socket (mm) |
|------------|-------------|-------------|-------------|
| 25 square  | 350         | Superstrand | 36 A.F.     |

# 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

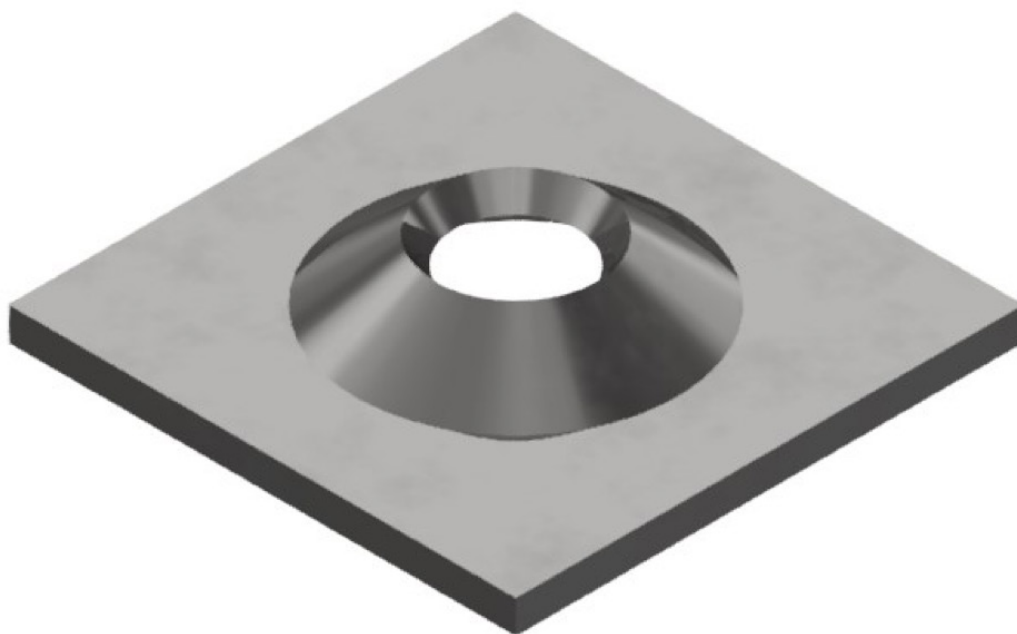
| Square dimension (mm) | Thickness (mm) | Hole diameter (mm) | Mass (kg) | Quantity/Pallet | Min Collapse Load (kN) |
|-----------------------|----------------|--------------------|-----------|-----------------|------------------------|
| 150 x 150 (4 rib)     | 5              | 38                 | 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

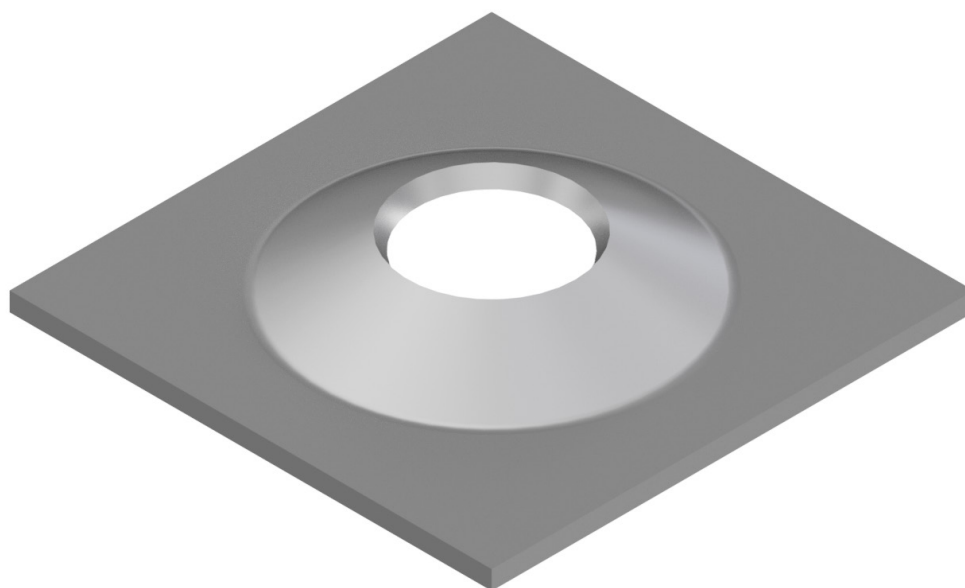
| Square dimension (mm) | Thickness (mm) | Hole diameter (mm) | Minimum Collapse load (kN) | Minimum Pull Through load (kN) | Mass (kg) | Standard pack |
|-----------------------|----------------|--------------------|----------------------------|--------------------------------|-----------|---------------|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

Available plain or hot dipped galvanised



## Plates

### 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

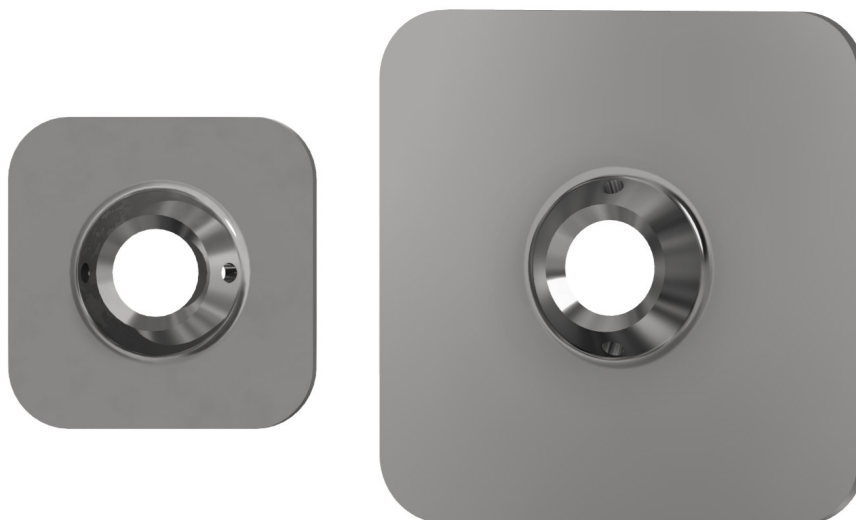
| Square dimension (mm) | Thickness (mm) | Hole diameter (mm) | Minimum Collapse load (kN) | Minimum Pull Through load (kN) | Mass (kg) | Standard pack |
|-----------------------|----------------|--------------------|----------------------------|--------------------------------|-----------|---------------|
| 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:

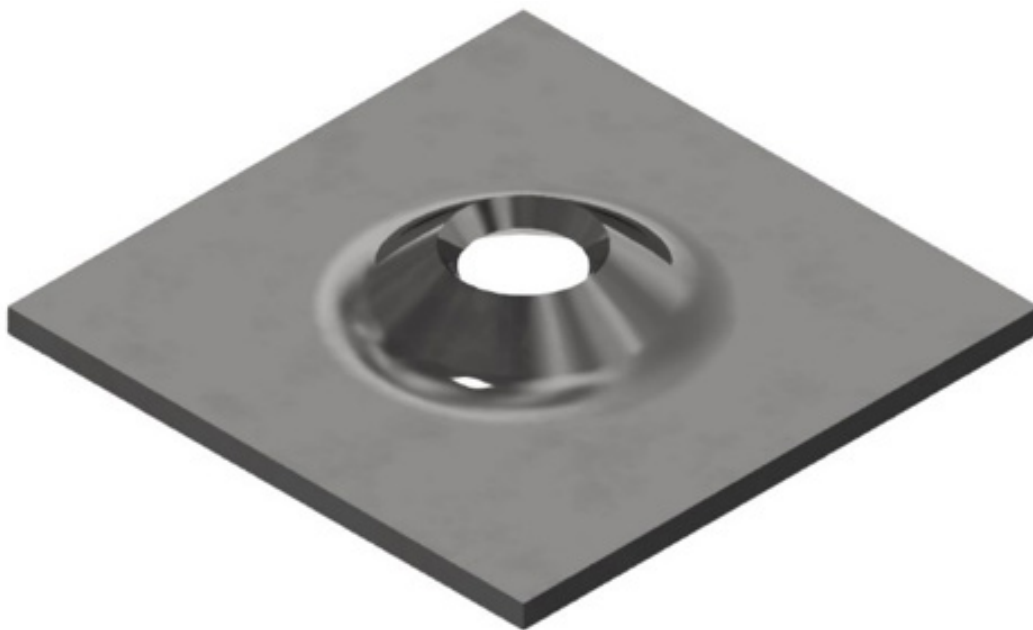
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel
- Grout indicator slots

| 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 150 mm span

## Plates

### Cable Volcano Plate - Goliath



#### Features:

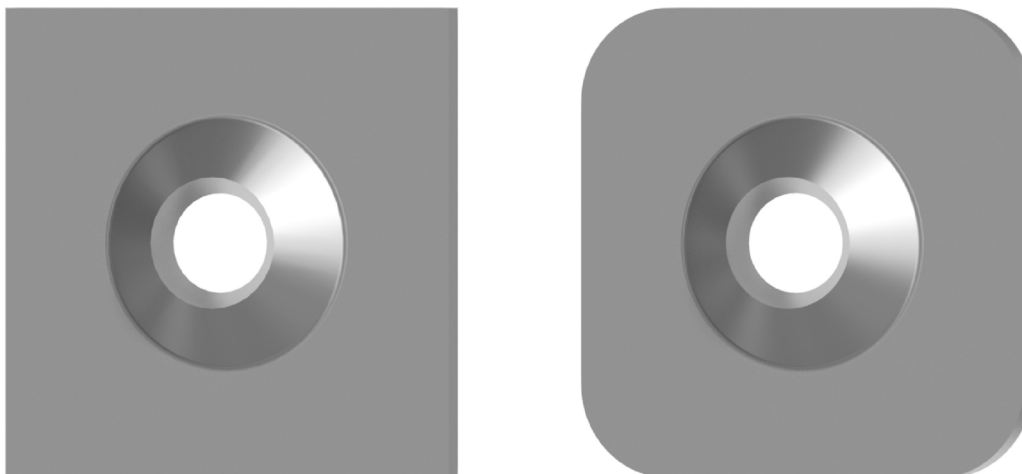
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel

| 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 150 mm span

## Plates

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



#### Features:

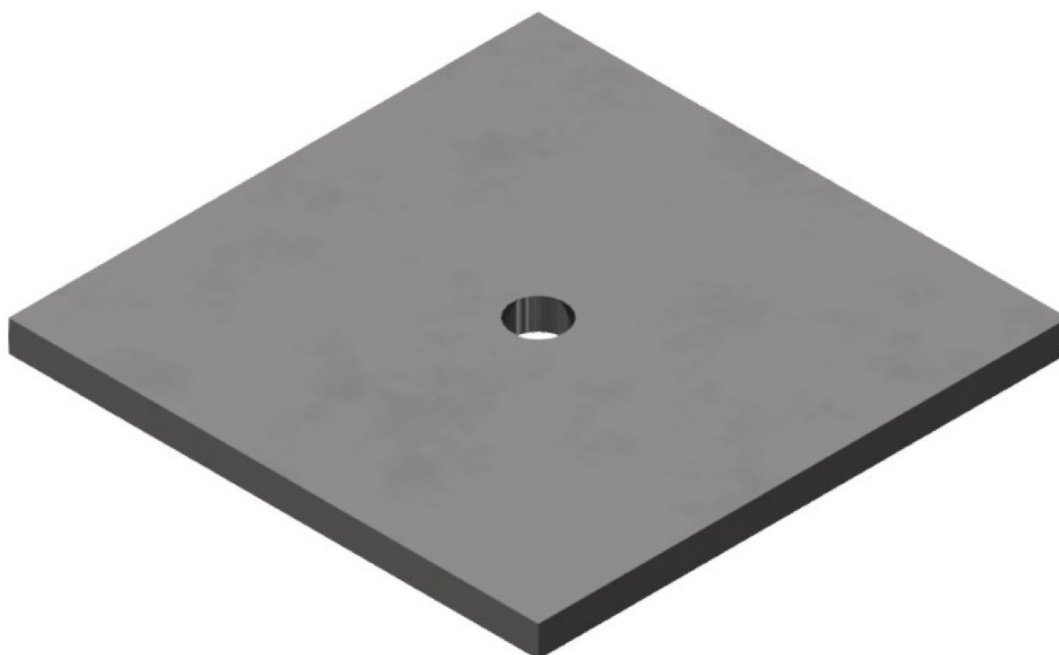
- Dome profile allows for 18° angles of alignment when installing the cable bolt with a domed barrel

| 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 150 mm span

# Plates

## Flat Plate



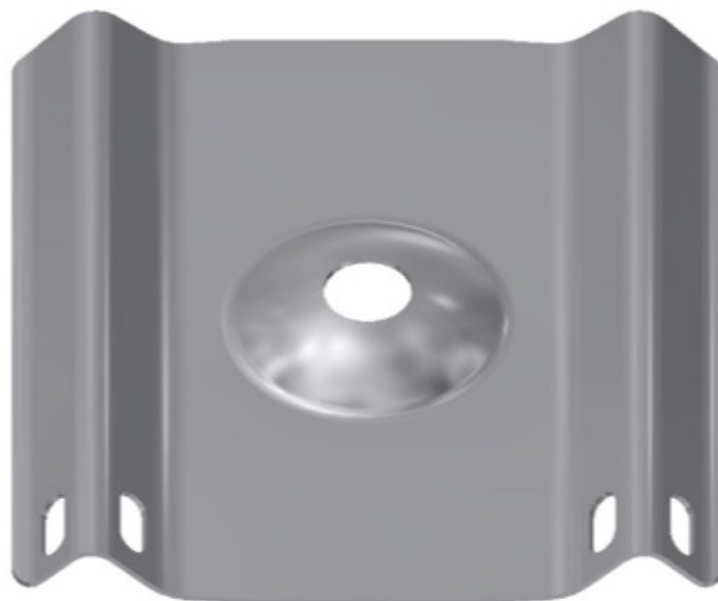
### Features:

- Can be supplied “rumbled” to take off edges. Unless specified, plates are supplied un-rumbled
- Used predominately with 15.2 mm cable bolts. Can be supplied with 2 holes for cable bolting and grout tube application
- 200 x 200 mm 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 2.4 mm 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

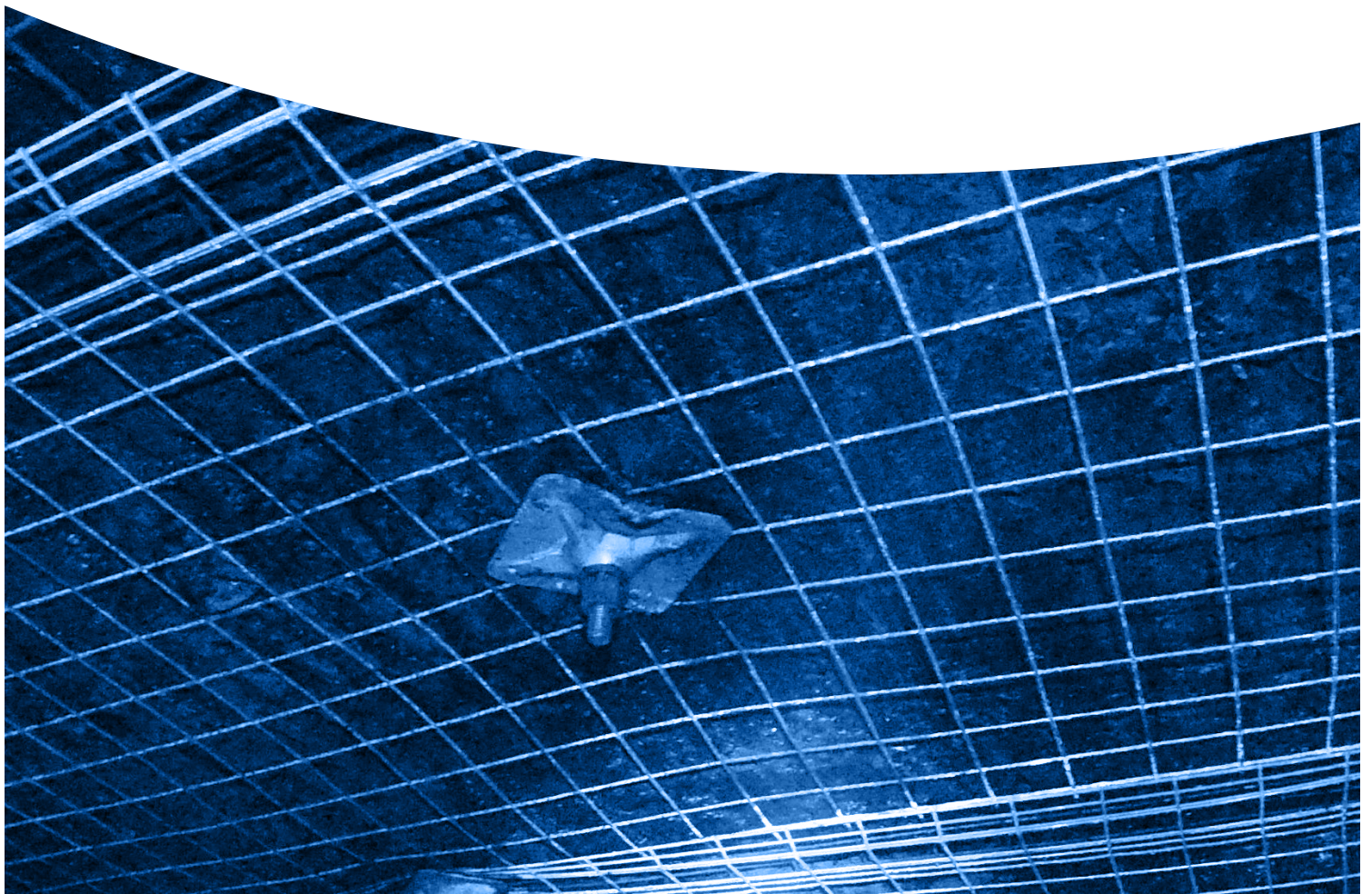


### Features:

- 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    |

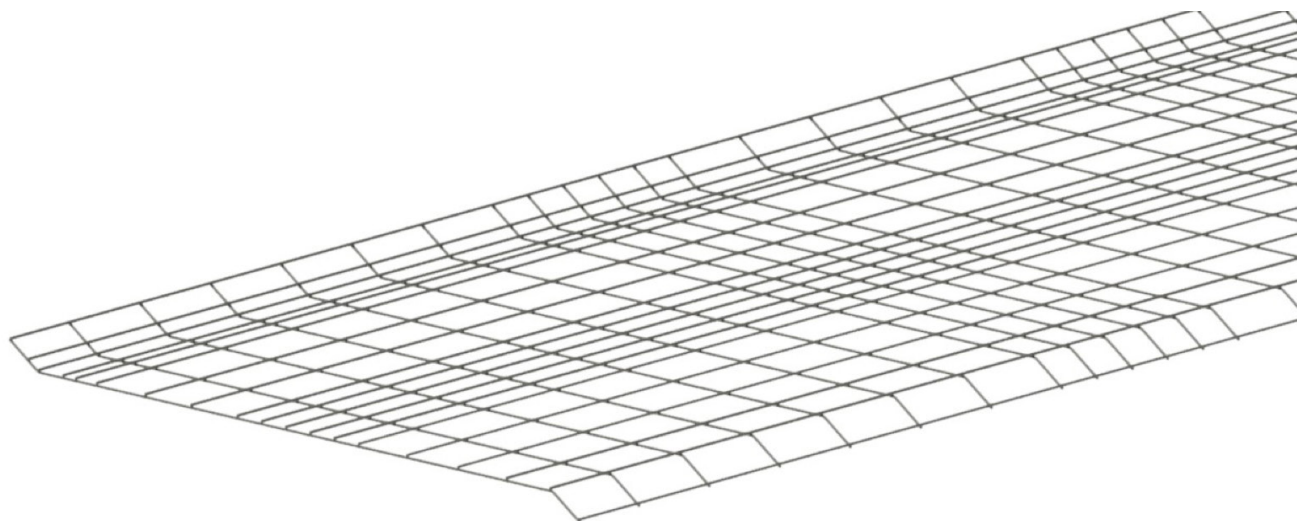
# MESH





# 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

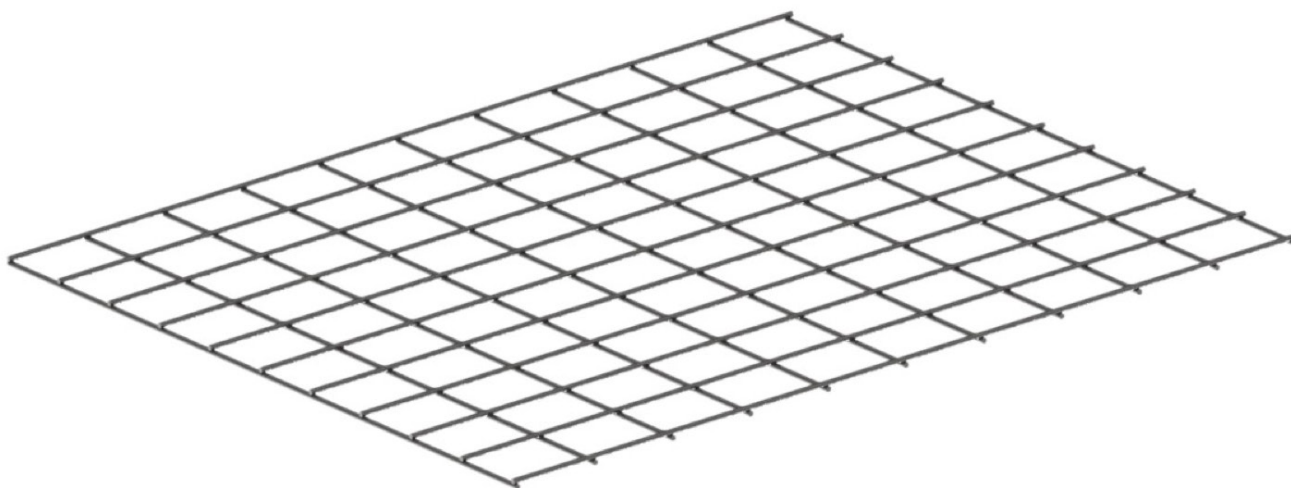
| Wire diameter (mm) | Wire Typical UTS (kN) | Weld Strength* (kN) |
|--------------------|-----------------------|---------------------|
| 4                  | 8.5                   | 7.5                 |
| 5                  | 12                    |                     |
| 5.6                | 18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

\*based on smallest wire diameter in welded joint



# Mesh

## Steel Rib Mesh Sheet



### Features:

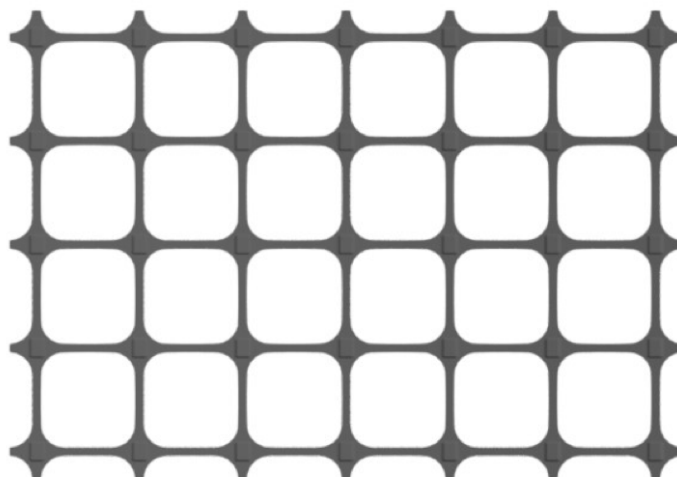
- Typically flat sheets of smaller wire diameter and dimensions suitable for rib support
- Wire diameters, spacing and overall dimensions can be customized to suit particular applications

| 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

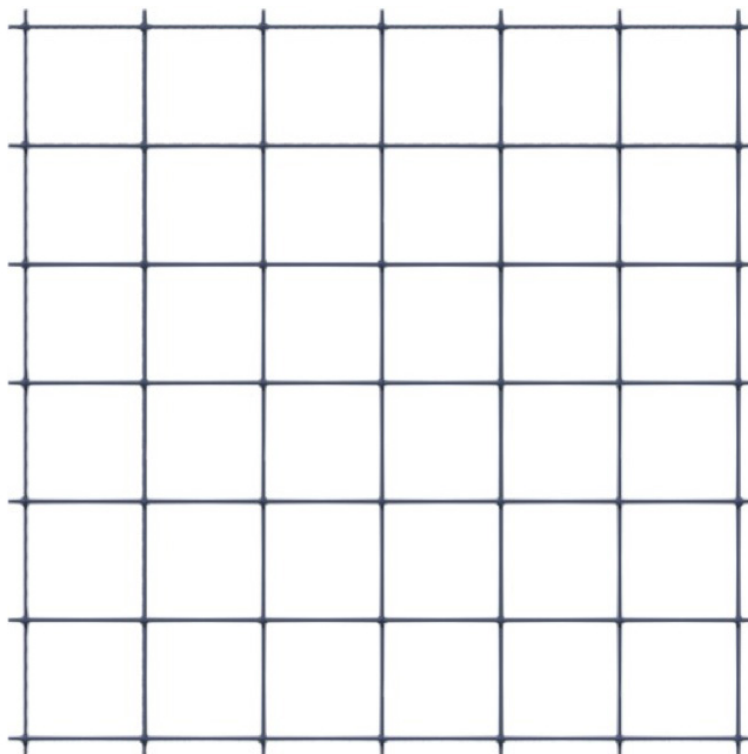
| Minimum Tensile Strength (kN/m) | Minimum Elongation at Yield % | Aperture (mm) | Roll Dimensions (m) |
|---------------------------------|-------------------------------|---------------|---------------------|
| 22                              | 10                            | 61 x 61       | 28 x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

Fire resistant to MDG3608

Available in flat sheets cut to custom dimensions

# Mesh

## Fibreglass Mesh



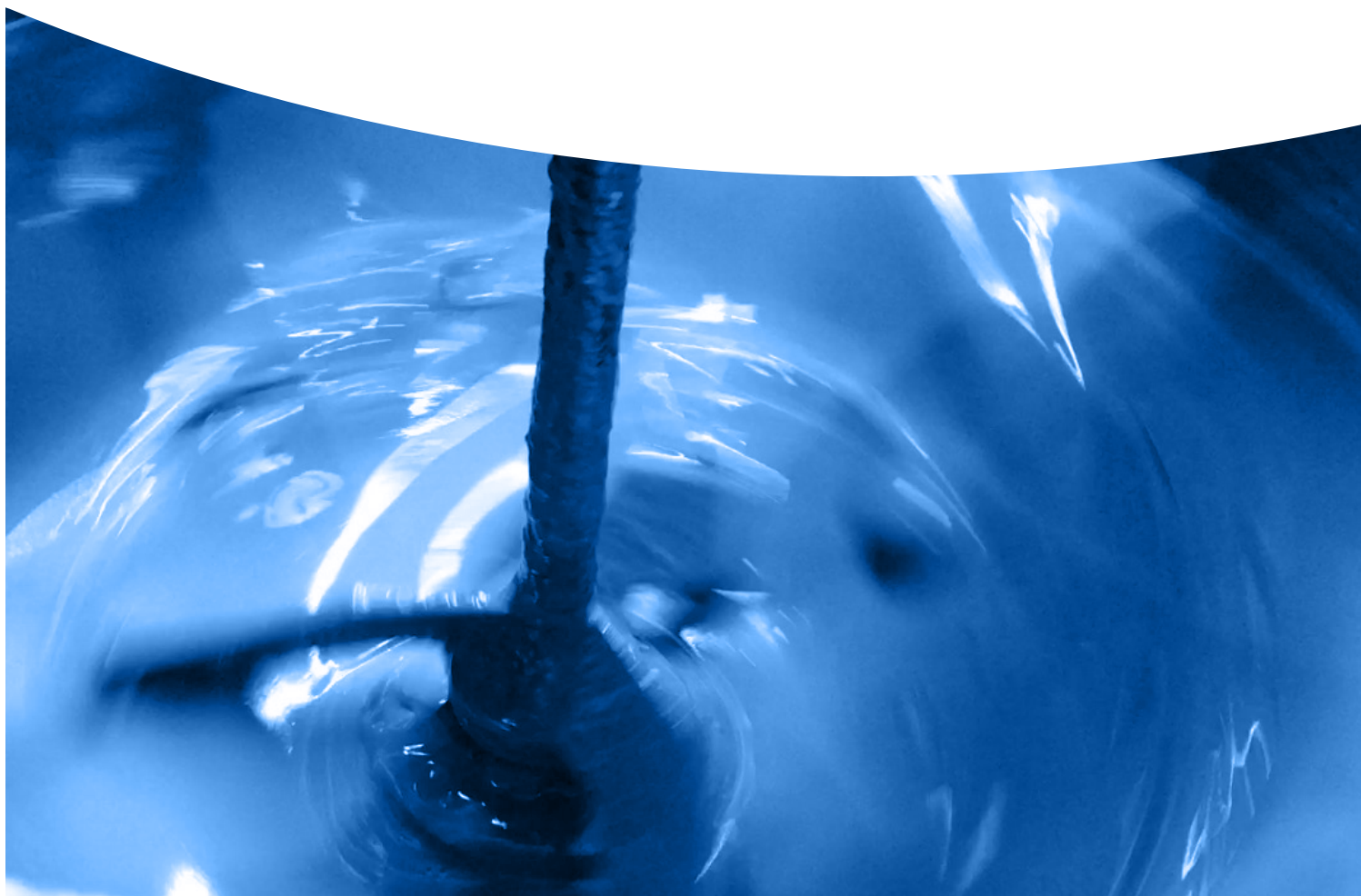
### Features:

- 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, 15.2 mm 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 50 mm 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 – TD80

TD-80 grout 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 resistant 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, requires only the addition of water and mixing
- Non shrink, unique shrinkage compensation formulation
- Excellent pumpability

#### Application:

- Top-down grouting of groutable cable bolts



#### Technical Data

|                   |  |
|-------------------|--|
| Fresh Wet Density | 2000 kg/m <sup>3</sup> (6L water per 20kg bag) |
| Yield Estimate    | 13-14 L per bag                                |
| Set Time          | 7 hours  |
| Expansion         | 1-3%   |

#### Uniaxial Compressive Strength\* (MPa)

| Days         | 1 DAY | 7 DAYS | 28 DAYS |
|--------------|-------|--------|---------|
| 6L/20kg bag  | 35    | 78     | 107     |
| 7L/20 kg bag | 25    | 70     | 96      |
| 8L/20 kg bag | 16    | 46     | 78      |

\*UCS independent test results were obtained using 50x50x50 mm cubes, tested per AS 1478.2

## 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-URR GROUT 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

#### 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.

#### Set / Cure Time

| Foot Traffic | Light Duty Traffic<br>(Driftrunner) | Heavy Duty Traffic<br>(Shuttle car, Jumbo) | Extreme Duty Traffic<br>(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.





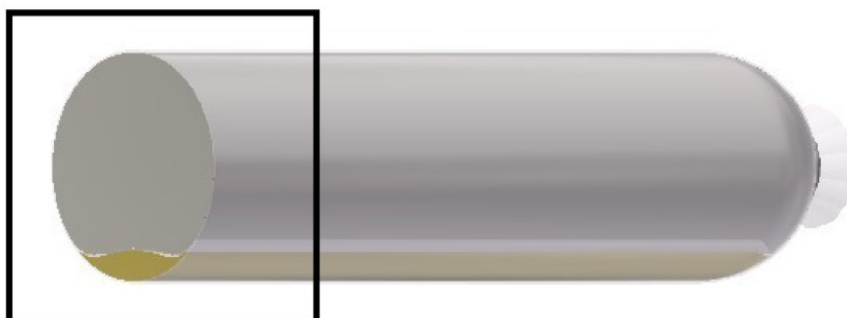
# RESIN CAPSULES





# 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.

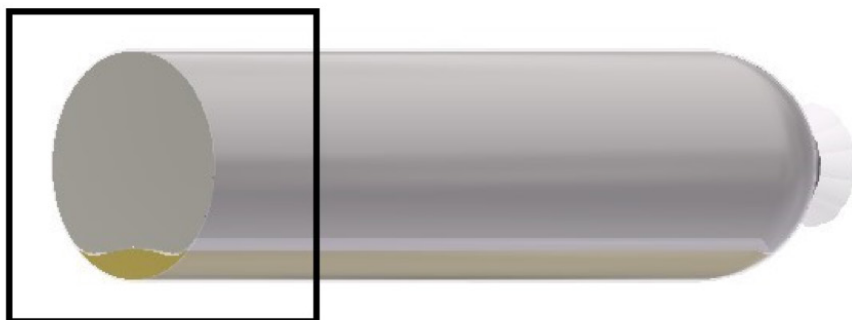
\*Relevant specifications are taken at 25°C

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 100 m of capsule (eg 1200 mm 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, 36 mm
- 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

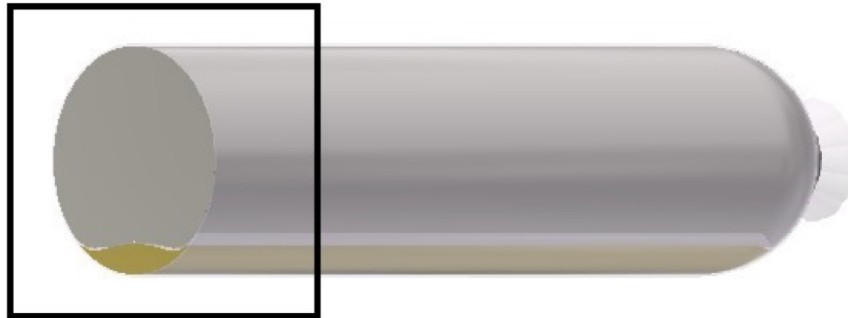
Available in standard, grit and LIF limestone filler configurations

Capsules  $\geq 1000$  mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100 mm of capsule (eg 1200 mm 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 100 mm 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, 36 mm
- 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

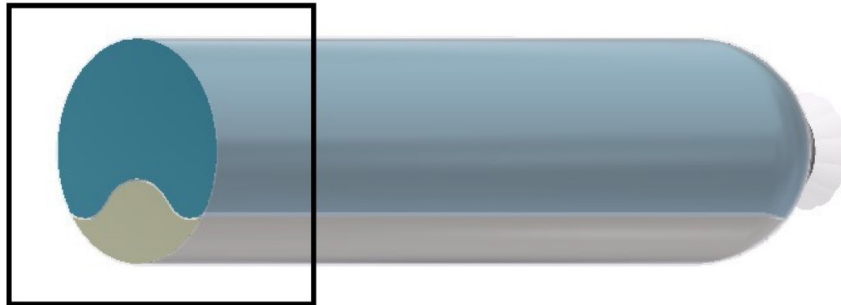
Available in standard, grit and LIF limestone filler configurations

Capsules  $\geq 1000$  mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100 mm of capsule (eg 1200 mm 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 100 mm 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, 36 mm
- 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

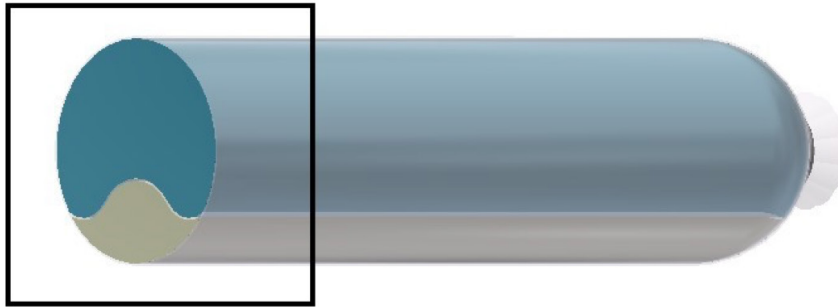
Available in standard or grit limestone filler configurations

Capsules  $\geq 1000$  mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100 mm of capsule (eg 1200 mm 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 100 mm 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, 36 mm
- 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

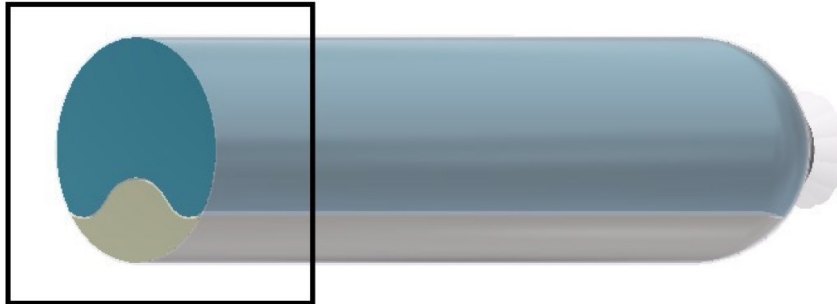
Available in standard or grit limestone filler configurations

Capsules  $\geq 1000$  mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100 mm of capsule (eg 1200 mm 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 100 mm 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   |

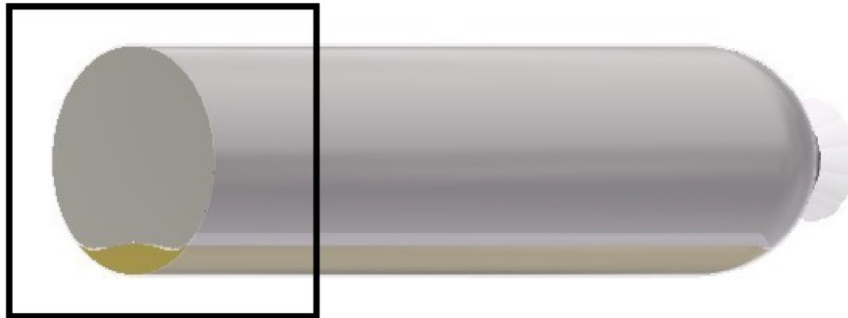
Refer to individual box label for spin and hold installation instructions  
Available in standard or grit limestone filler configurations

Capsules  $\geq 1000$  mm in length: To mix, apply rotation and feed the bolt up through the capsule at a rate of 1 sec per 100 mm of capsule (eg 1200 mm 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 100 mm 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   |

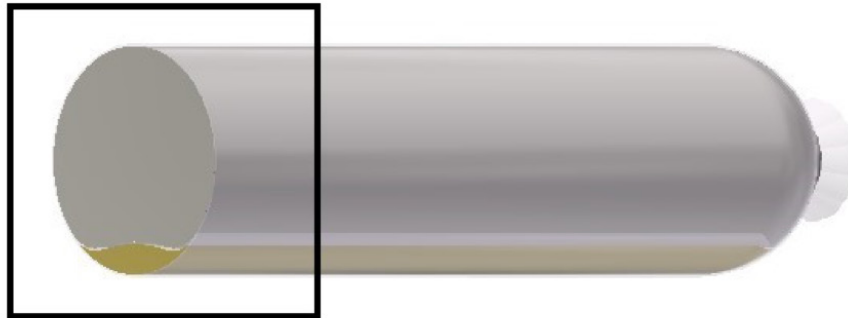
Refer to individual box label for spin and hold installation instructions

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 100 mm of capsule (eg 1200 mm 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 100 mm 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 25 mm
- 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 100 mm of capsule (eg 1200 mm 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**



## Cuttable Support

### 32 mm Torque Tension Bolt



#### Features:

- High capacity support for coal rib support where extraction includes cutting of bolts
- 46 mm 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 32–36 mm diameter for maximum encapsulation
- Both 200 mm and 300 mm 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 38-42 mm

## Cuttable Support

### 32 mm 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:
  - 36 mm diameter resin capsules
  - Cable bolt grouts
- 46 mm 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 3 m and 4 m 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 |
|------------|-------|

To suit drill bit 42-45 mm

# Cutable Support

## 22 mm 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
- 22 mm 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             | Blue             |
| 1450             | Yellow           |
| 1750             | Red              |

|            |       |
|------------|-------|
| Rod colour | Black |
|------------|-------|

To suit drill bit 27-28 mm

# Cuttable Support







## 25 mm 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
- 25 mm 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  |   |
|-----------------|--|---|
| 1150 mm         |  |  |
| 1450 mm         |  |  |
| 1750            |  |  |

To suit drill bit 28 mm

## Cutable Support

### 22 mm 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
- 22 mm diameter dowel for high strength and maximum encapsulation by volume
- Recommended for drill hole diameters 27-28 mm

| 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          |

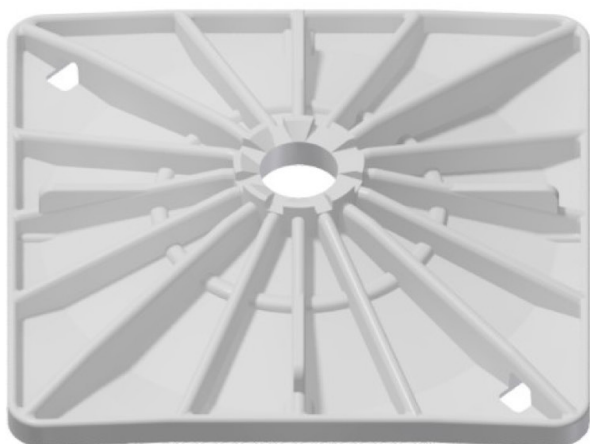
| Break-out Nut | Torque Setting (N.m) |
|---------------|----------------------|
| White         | 80 - 110             |
|               | 30 - 50              |

|            |  |
|------------|--|
| Rod colour |  |
|------------|--|

To suit drill bit 27-28 mm

## Cutable Support

### Plastic Plates: 22-25 mm Dowels



#### Features:

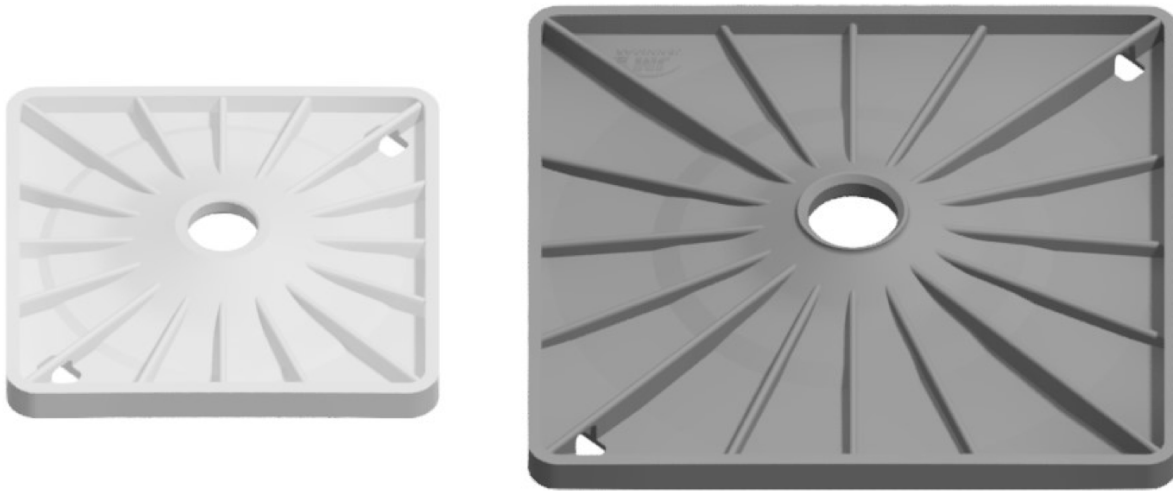
- Used as coal rib surface support where extraction involved cutting the support
- Compatible with Jennmar 22 mm dowels
- Flexibility of all plastic allow conforming to shape of uneven coal rib
- Tested to ensure no splitting under severe deformation found in uneven coal ribs
- Square plate is designed 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                |



## Cutable Support

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



#### Features:

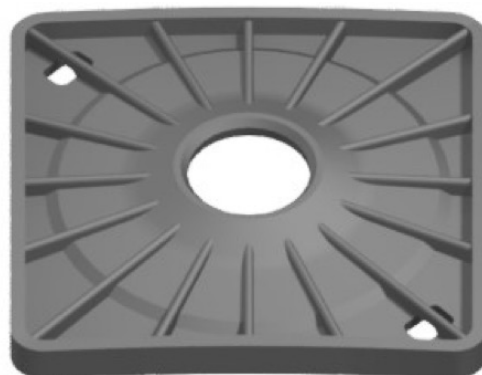
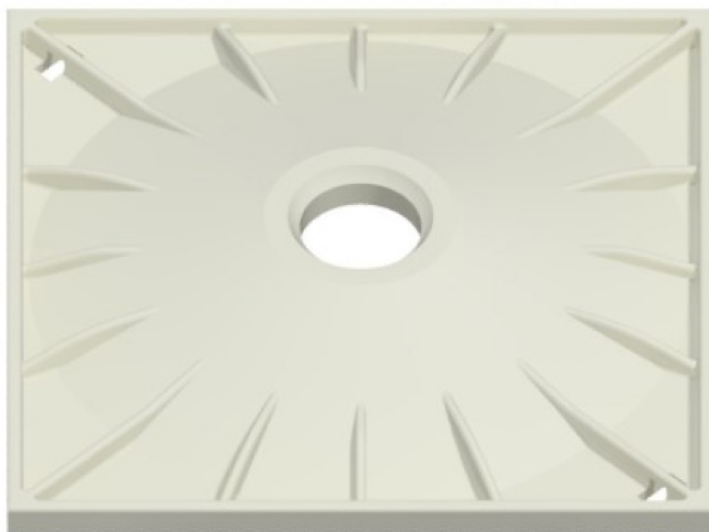
- Used as coal rib surface support where extraction involved cutting the support
- Thin 3 mm steel plate encased within the main plate provides up to 3 times the strength of a standard plastic plate
- Superior strength is compatible with new improved fiberglass dowels
- Steel inserts allow use of bolting 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 150 mm span

## Cuttable Support

### Plastic Steel Combination Plates: 32 mm Dowels



#### Features:

- Used as coal rib surface support where extraction involved cutting the support
- Thin 3 mm 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



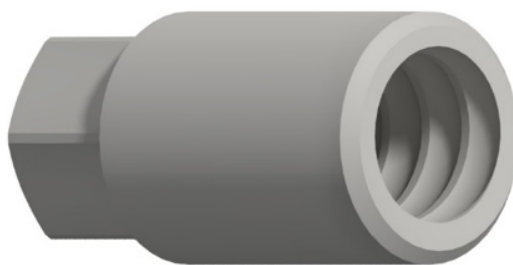
#### Features:

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

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

MM\_D\_JDOLENGTH46-Rev1

### Grout Connector Suit 32 mm Dowels



#### Features:

- Adapts to 32 mm hollow fibreglass dowel for:
  - Installation mixing using a standard 36 mm 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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