

# POSIMIX RESIN BOLT SYSTEM

**TB**

20mm Debonded Bolt

| Product Code Guide | Bolt Type | Diameter | Length | Drive Nut & Accessories | Coating | Packaging |
|--------------------|-----------|----------|--------|-------------------------|---------|-----------|
|                    | TB        | 2        | 240    | DFPHHPDB1               | G       |           |

## Physical Properties

|                             | Minimum |       | Typical             |       |
|-----------------------------|---------|-------|---------------------|-------|
| Yield Strength              | 540MPa  | 160kN | 615MPa              | 185kN |
| Tensile Strength            | 660MPa  | 195kN | 725MPa              | 215kN |
| Calculated Shear Strength   | 120kN   |       | 130kN               |       |
| Standard Elongation         | 16%     |       | 19%                 |       |
| Uniform Elongation          |         |       | 12%                 |       |
| Mass Per Metre              |         |       | 2.47kg              |       |
| Bar Diameter                |         |       | 20.0mm              |       |
| Cross Sectional Area of Bar |         |       | 300 mm <sup>2</sup> |       |
| Major Bar Diameter          |         |       | 22.1mm maximum      |       |

## Key Features

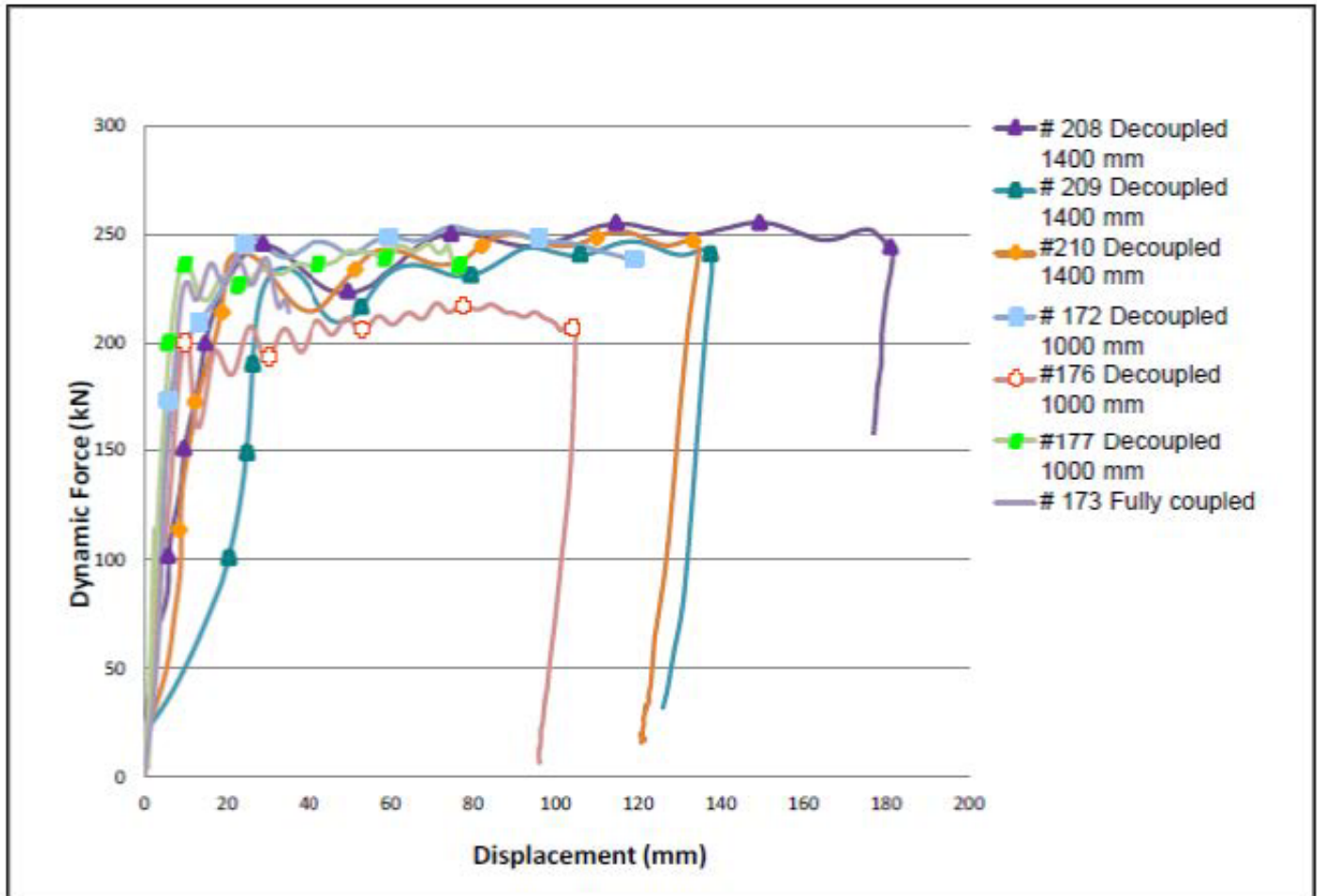
- The 20mm debonded Posimix bolt system is designed to allow for a specified amount of ground deformation according to the rock mass demand requirements.
- The system is fully resin encapsulated with various debonded lengths available on the bolt for particular mining situations. The debonded region of the bolt means the majority of the energy is dissipated by deformation of the bolt within this region.
- The debonded Posimix section is provided in lengths of 1m-1.4m for most practical mining applications.
- Extensive dynamic testing has been completed by the WA School of Mines.
- The Posimix bolting system was designed to assist in the installation of rock bolts with chemical anchors in larger diameter holes 35-38mm by providing:
  - Substantially enhanced mixing of the chemical anchors
  - Increased load transfer capabilities
  - Ability to be installed with a face jumbo as well as hand held machines
- The Posimix device centralizes the bolt in the hole allowing an even distribution of the chemical anchor around the bolt. It also acts as an Archimedes screw pump forcing the chemical towards the back of the hole, assisting in mixing whilst consolidating the anchor for improved load transfer properties.
- Recommended hole size is 35-38mm in diameter
- Corrosion protection alternatives to hot dip galvanizing may be provided.



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Dynamic load-displacement response on various decoupled Posimix configurations.



Energy dissipation – Posimix bolts

| Sample Number | Bolt Length<br>mm | Debonded Length<br>mm | Deformation at Discontinuity<br>mm | Energy Dissipated<br>kJ | Test Result | Demand Category Application |
|---------------|-------------------|-----------------------|------------------------------------|-------------------------|-------------|-----------------------------|
| 173           | 2400              | 0                     | 35                                 | 7                       | Rupture     | Low                         |
| 172           | 2400              | 1000                  | 115                                | 26                      | Rupture     | Medium                      |
| 176           | 2400              | 1000                  | 96                                 | 21                      | Stable      | Medium                      |
| 177           | 2400              | 1000                  | 77                                 | 27                      | Rupture     | Medium                      |
| 208           | 2400              | 1400                  | 171                                | 42                      | Stable      | High                        |
| 209           | 2400              | 1400                  | 113                                | 29                      | Stable      | High                        |
| 210           | 2400              | 1400                  | 128                                | 33                      | Stable      | High                        |

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## Installation Guidelines

- The rock bolt hole is drilled as per mine support designs.
- Hole depth is critical. Hole depth should be shorter than the bolt to allow for the height of the washer and nut.
- After insertion of the resin anchors the bolt is rotated through the anchors while being pushed to the back of the hole. In the case of full encapsulation, anchors of different setting times are often used and the higher speed anchor is to be inserted first followed by the slower speed anchors.
- It is important to follow the resin anchor recommended mixing and hold times as printed on the resin anchor cartons. Do not over mix.


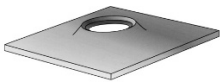




To watch a video demonstration of the Posimix Bolt product, scan the above code with a QR Code Scanning App available on your smartphone

## Product Accessories Examples

- DSI Underground manufactures a comprehensive range of plates specifically designed for this range of Bolts.
- For the full range refer to our product catalogue on our App; available on iOS and Android devices by searching “DSI Underground”.

Typically, plates used are:

|                     | Products  |   |  |   |
|---------------------|---|---|--|---|
| Product Group       | Star Plates   | Dome Plates   | Butterflies  | OSRO Strap  |
| Product Imagery     |  |  |  |  |
| Product Code Prefix | STP   | D   | BUTT   | OS  |

## Standard Length & Packaging

- Standard bolt lengths range from 1500 to 3000mm in 300mm increments.
- Non-standard lengths are available by negotiation.
- Bolts are packaged in bundles with threads protected by heavy duty polyethylene bags.
- Bolt fittings, such as nuts, anti-friction washers and dome balls, are supplied fitted to rock bolts in the configuration requested.

## Notes

- Only DSI Underground rock bolt components should be used to enable the optimum performance of the bolt system to be obtained.
- Assistance should be sort from DSI Underground Technical Services Engineers in selection of the correct Posimix bolt for the application together with its product code.
- DSI Underground is Quality Assured to ISO 9001:2015.



ROCK BOLTS – SOLID BAR

Product Code Prefix

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## Phone APP

Want to know more; our full product range, knowledge centre, and other details are available via the App; available on iOS and Android devices by searching “DSI Underground”.



iOS



Android

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*All dimensions, weights, quantities and specifications are those applicable at the time of this publication and may be amended from time to time. Please contact your local DSI Underground representative for final confirmation of any key specifications.*