PARAGON™
EPOXY RESINS

# The new, safer diamond standard


paragonbest.com

# Contents

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EPOXY RESINS

## Epoxy technology is a fundamental building block for innovation across broad and diverse industries around the world.

With 20 years of industrial epoxy technology behind them, Matrix Composites and Engineering Ltd (MCE) has created Paragon™, a range of epoxy resins that has significant advantages over comparable products.

Paragon Epoxy Resins are manufactured using less hazardous chemical ingredients. This reduces potential Occupational Health hazards to users that hitherto hasn't been available. The table adjacent highlights the hazard reduction the Paragon formula delivers.

All Paragon Epoxy Resins are made in Western Australia in state-of-the-art manufacturing facilities using the latest technologies. They can be supplied immediately, which means clients do not have to stock excess inventories or worry about production stoppages due to delivery issues.

Safer to use and quicker to obtain, Paragon Epoxy Resins represent the new diamond standard in epoxy resins.

| | CORROSIVE | AQUATIC TOXICITY | CERTAIN HEALTH[1] | CHRONIC HEALTH[2] | ACUTE TOXICITY |
|---|---|---|---|---|---|
| PARAGON™ |  |  |  | • | • |
| COMPETITOR A |  |  |  |  | • |
| COMPETITOR B |  |  |  |  | • |
| COMPETITOR C |  |  |  | • |  |

[1] Skin irritants, eye irritants, skin sensitisers.
[2] Carcinogens, respiratory sensitisers, reproductive toxicants, target organ toxicants, germ cell mutagens.
Table refers to crusher backing grout types.

# Paragon™ Epoxy Grouts

The Paragon diamond standard has been applied to these epoxy grout solutions.

- **Construction Grouts**
  - Paragon General Purpose – general purpose pourable epoxy resin based grout 0 – 50mm
  - Paragon Deep Pour – deep pour epoxy resin-based grout > 50mm
- **Crack injection**
  - Paragon High Flow – high flow epoxy resin for crack injection and repair priming
- **Trowel and Putty**
  - Paragon Trowel Grade – trowel grade epoxy resin-based grout
  - Paragon Aqua – high strength epoxy putty for application in submerged conditions

## Uses

- *Vertical grouting of starter bars*
- *Machine or column bed grouts*
- *Levelling chipped or spalled floors*
- *General purpose pourable grout*
- *Crusher backing*

## Packaging

- *One, five and 10kg kits*

## Handling precautions

- *Consult MSDS before use*
- *Use appropriate PPE*
- *Store all materials in sealed containers when not in use*
- *Avoid contact with skin and eyes*

# Paragon™ Crusher Backing Epoxy

Paragon Crusher Backing Standard and Paragon Crusher Backing Slow feature different pot life characteristics to accommodate use in different ambient temperatures. As with all Paragon Epoxy Resins, they are inherently safer to use than traditional crusher backing epoxies.

## Product benefits

- *Less hazardous to use*
- *Improves equipment life and asset reliability*
- *High compressive strength and impact resistance when cured providing support to crusher wear liners*
- *Easy pour to ensure complete void filling by eliminating formation of gaps*
- *Tinted hardener to facilitate visual mixing completeness*
- *Low shrinkage*
- *Low odour*
- *Non flammable*
- *Zero VOC*

## Technical data

| | | PARAGON™ STANDARD | PARAGON™ SLOW |
|---|---|---|---|
| PROPERTY | STANDARD | RESULT | RESULT |
| Tensile strength | ISO 527 | 37 MPa | 33 MPa |
| Tensile modulus | ISO 527 | 4930 MPa | 4971 MPa |
| Elongation at break | ISO 527 | 1.2% | 2.1% |
| Compressive strength | ISO 604 | 107 MPa | 107 MPa |
| Compressive modulus | ISO 604 | 2820 MPa | 2711 MPa |
| Flexural strength | ISO 178 | 65 MPa | 64 MPa |
| Flexural modulus | ISO 178 | 7470 MPa | 7324 MPa |
| Shore D hardness | ASTM D2240 | 90D | 90D |
| Tg | ASTM D7426 | 80°C | 88°C |
| Moisture absorption (23°C/10 days) | ISO 527 | 0.06% (10 days) | 0.08% (10 days) |
| Peak exotherm 700g | | 135°C | 130°C |

The figures stated above were determined by testing standard specimens cured at 23°C for 48 hours.

# Paragon™ General Purpose Grout

Paragon General Purpose Grout is a two-part pourable epoxy resin based grout.

- *40 – 60 minutes pot life*
- *High flow for pouring applications*
- *Compressive strength – (24 hours) 70 MPa, (7 days) 110 MPa*
- *Can bond to concrete (dry or damp), steel and most other surfaces*
- *Excellent chemical and water resistance.*

## Technical data

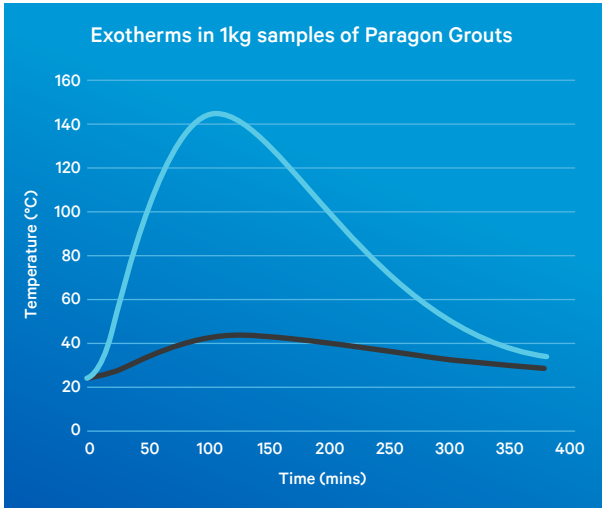
| PROPERTY | STANDARD | RESULT (MEAN) |
|---|---|---|
| Tensile strength | ISO 527 | 34 – 37 MPa |
| Tensile modulus | ISO 527 | 4500 – 5000 MPa |
| Elongation at break | ISO 527 | 1.0 – 1.2% |
| Compressive strength | ISO 604 | 100 – 110 MPa |
| Compressive modulus | ISO 604 | 2500 – 2800 MPa |
| Flexural strength | ISO 178 | 60 – 65 MPa |
| Flexural modulus | ISO 178 | 7200 – 7500 Mpa |
| Shore D hardness | ASTM D2240 | 90D |
| Tg | ASTM D7426 | 80C |
| Moisture absorption (23°C/10 days) | ISO 527 | 0.06% (10 days) |
| Peak exotherm 700 g | | 135°C |

The figures stated above were determined by testing standard specimens cured at 23°C.

# Paragon™ Deep Pour Grout

Paragon Deep Pour Grout is a three part deep pour epoxy resin based grout.

- *High flow for pouring applications*
- *Can be poured into applications up to 450mm deep*
- *Low exotherm*
- *Excellent chemical and water resistance.*




## Technical data

| PROPERTY | STANDARD | RESULT (MEAN) |
|---|---|---|
| Tensile strength | ISO 527 | 14 MPa (7 days) |
| Tensile modulus | ISO 527 | 3674 MPa (7 days) |
| Elongation at break | ISO 527 | 0.25% |
| Compressive strength | ISO 604 | 50 MPa (1 days),<br>68 MPa (7 days) |
| Compressive modulus | ISO 604 | 2021 MPa (1 days)<br>3027 MPa (7 days) |
| Flexural strength | ISO 178 | 25 MPa |
| Flexural modulus | ISO 178 | 5238 Mpa |
| Shore D hardness | ASTM D2240 | 87D |
| Tg | ASTM D7426 | 75°C |
| Peak exotherm (1kg) | | 42°C |

The figures stated above were determined by testing standard specimens cured at 23°C.

# Paragon™ High Flow Grout

Paragon High Flow Grout is a two-part high flow epoxy resin for crack injection and priming porous substrates.

- *High flow 400 – 600 cps*
- *Convenient mix ratio 2:1 by volume*
- *Can be injected into cracks between 0.2 and 5mm wide*
- *Can be brush or roller applied as a primer or sealer*
- *Excellent chemical and water resistance.*

## Technical data

| PROPERTY | STANDARD | RESULT (MEAN) |
|---|---|---|
| Tensile strength | ISO 527 | 39 – 42 MPa |
| Tensile modulus | ISO 527 | 1500-2000 MPa |
| Elongation at break | ISO 527 | 6 – 9% |
| Compressive strength | ISO 604 | 50 – 55 MPa |
| Compressive modulus | ISO 604 | 1100 – 1200 MPa |
| Flexural strength | ISO 178 | 65 – 67 MPa |
| Flexural modulus | ISO 178 | 1600 – 1700 Mpa |
| Adhesion to steel | ASTM D4541 | 7 – 12 MPa |
| Adhesion to concrete | ASTM D4541 | >4 MPa (cohesive concrete failure) |
| Tg | ASTM D7428 | 80°C |

The figures stated above were determined by testing standard specimens cured at 23°C.

# Paragon™ Trowel Grade

Paragon Trowel Grade is a two-part trowel grade resin-based grout.

- *60 – 80 minutes pot life*
- *Easily applied by trowel to vertical applications*
- *Tensile strength 20 MPa*
- *Compressive strength 80 MPa*
- *Can bond to concrete (dry or damp), steel and most other surfaces*
- *Excellent chemical and water resistance.*

## Technical data

| PROPERTY | STANDARD | RESULT (MEAN) |
|---|---|---|
| Tensile strength | ISO 527 | 21 – 24 MPa |
| Tensile modulus | ISO 527 | 2300 – 3000 MPa |
| Elongation at break | ISO 527 | 1 – 1.5% |
| Compressive strength | ISO 604 | 85 – 90 MPa |
| Compressive modulus | ISO 604 | 2700 – 3000 MPa |
| Flexural modulus | ISO 178 | 9 – 11 GPa |
| Flexural strength | ISO 178 | 46 MPa |
| Shore D hardness | ASTM D2240 | 90D |
| Adhesion to concrete | ASTM D4541 | >4 MPa (cohesive concrete failure) |

The figures stated above were determined by testing standard specimens cured at 23°C.

# Paragon™ Aqua Grade

Paragon Aqua Grade is a two-part high strength epoxy putty for application in submerged or wet conditions.

- *60 – 90 minutes pot life*
- *Can be applied underwater and will cure underwater*
- *Adheres to fully wet substrates*
- *Bonds bricks, steel and concrete*
- *Tensile strength 18 Mpa*
- *Compressive strength 80 Mpa*
- *Excellent chemical and water resistance.*
- *Can be mixed by hand.*

## Technical data

| PROPERTY | STANDARD | RESULT (MEAN) |
|---|---|---|
| Property | Standard | Result |
| Tensile strength | ISO 527 | 14 – 18 MPa |
| Tensile modulus | ISO 527 | 2200 – 3000 MPa |
| Elongation at break | ISO 527 | 1 – 1.4% |
| Compressive strength | ISO 604 | 75 – 83 MPa |
| Compressive modulus | ISO 604 | 2500 – 3000 MPa |
| Flexural strength | ISO 178 | 27 – 31 MPa |
| Flexural modulus | ISO 178 | 10 – 11 GPa |
| Adhesion to steel | ASTM D4541 | 7 – 10 MPa |
| Adhesion to concrete | ASTM D4541 | >4 MPa (cohesive concrete failure) |

The figures stated above were determined by testing standard specimens cured at 23°C for 48 hours.

Concrete pavers bonded underwater with Paragon Aqua Grade

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