

## EPBOND 515

### Epoxy mastic - for use in Mark III

#### Product description

EPBOND 515 is a low-density, thixotropic epoxy mastic for Mark III systems. It secures insulation boxes and distributes loads evenly, while retaining good flexibility and adhesion at low temperatures.

#### Key features

- Thixotropic mastic: non-sagging and suitable for vertical application
- Low density
- Excellent resistance to compressive creep
- Easy to mix and apply

#### Physical properties

| Property                              | Test method       | EPBOND515 Resin              | EPBOND515 Hardener |
|---------------------------------------|-------------------|------------------------------|--------------------|
| Mix ratio by weight                   |                   | 100                          | 72                 |
| Mix ratio by volume                   |                   | 100                          | 100                |
| Maximum permissible deviation         |                   | ±7% of the hardener quantity |                    |
| Appearance                            | Visual inspection | Thixotropic paste            | Thixotropic paste  |
| Color                                 | Visual inspection | Dark green                   | Light beige        |
| Density before mixing at 25°C (g/cm3) | ASTMD4052         | Approx. 1.26                 | Approx. 0.91       |
| Density after curing at 25°C (g/cm3)  | ASTMD4052         | Approx. 1.12                 |                    |
| Viscosity at 25°C (Pa.s)              |                   | Approx. 900                  | Approx. 600        |
| Working time (500g) at 25°C (minutes) | Gel timer         | Approx. 120                  |                    |
| Glass transition temperature Tg       | TMA               | 68°C                         |                    |
| Glass transition temperature Tg       | TMA               | 36x10-6K-1                   |                    |

| Mechanical properties                                             |               |       |       |
|-------------------------------------------------------------------|---------------|-------|-------|
| Temperature                                                       |               | -25°C | +23°C |
| Tensile strength (MPa)                                            | ISO527-2:1996 | 39    | 25    |
| Elongation at break (%)                                           | ISO527-2:2006 | 1.2   | 1.0   |
| Young's modulus (MPa)                                             | ISO527-2:2006 | 4200  | 3800  |
| Compressive strength (MPa)                                        | ISO604:2002   | 100   | 62    |
| Compressive modulus (MPa)                                         | ISO604:2002   | 3800  | 3400  |
| Shear strength (MPa) (2017 aluminum / sanded with 150-grit paper) | ISO4587:1995  | 16    | 16.2  |

| Mechanical properties                                                                                              |               |  |              |
|--------------------------------------------------------------------------------------------------------------------|---------------|--|--------------|
| Compressive creep: 30x30x30mm, load 0.6MPa<br>- After 360 hours under load (mm)<br>- After 360 hours recovery (mm) | MH2004-CS/7.4 |  | 0.03<br>0.01 |

(1) Cure conditions: 23°C /14 days

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#### Processing procedure

EPBOND 515 epoxy mastic can be extruded using automatic metering and mixing equipment at a maximum pressure of 200Bar. Excessive pressure may crush the hollow microspheres. To facilitate pumping and extrusion, apply the resin and hardener at temperatures above 20°C.

#### Compressive strength

| Temperature          |               | °C  | -170 | -100 | -45  | +23  | +40  |
|----------------------|---------------|-----|------|------|------|------|------|
| Compressive strength | ISO 604: 2002 | MPa | 160  | 150  | 120  | 62   | 57   |
| Compressive modulus  |               | MPa | 6500 | 5200 | 4600 | 3400 | 3000 |

Cure conditions: 40°C /7 days

#### Cure conditions

After its open time, EPBOND 515 rapidly develops strength and reaches a high degree of cure. The mastic can be considered fully cured after 21 days at 23°C or 7 days at 40°C.

Cure rate and strength development can be characterised by measuring the increase in hardness with curing time at different temperatures, expressed as Shore D hardness.

| Shore D hardness | 1 days | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
|------------------|--------|--------|--------|--------|--------|--------|--------|
| 10°C             | 41     | 63     | 66     | 68     | 71     | 73     | 75     |
| 25°C             | 70     | 74     | 76     | 77     | 78     | 79     | 80     |
| 35°C             | 76     | 78     | 79     | 80     | 80     | 80     | 80     |

(3) Test specimen - ISO868:2003: diameter 55mm, thickness 20mm

#### Open time

| Temperature (°C) | Open time        |                  |
|------------------|------------------|------------------|
|                  | C2 Adhesive bead | C5 Adhesive bead |
| 15               | 260              | 230              |
| 20               | 180              | 110              |
| 25               | 120              | 75               |
| 30               | 75               | 60               |
| 35               | 45               | 45               |

## Packaging

| EPBOND515 Resin | EPBOND515 Hardener |
|-----------------|--------------------|
| 230kg           | 165kg              |

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## Storage

Unopened EPBOND 515 has a shelf life of 12 months when stored dry. The recommended storage temperature is 12-35°C for the resin and 5-35°C for the hardener. Prolonged storage below 10°C may cause the EPBOND 515 resin component to crystallise. Stop using the material if crystallisation occurs.

Safety precautions :

Avoid skin contact during application. Wear protective clothing, a mask and protective gloves as necessary, and work in a well-ventilated area. Refer to the material safety data sheet for further information.

Notes

All data above were measured under specified conditions. As actual processing methods and other factors may affect performance, customers should conduct the necessary tests before use to confirm suitability for their application. We guarantee that our products meet our quality specifications.

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## US customary-unit equivalents

US customary-unit equivalents are provided for convenience alongside the original SI test data. The original source values and test methods remain the controlling reference. Converted values are rounded.

| Source value | US equivalent |
|--------------|---------------|
| 25 °C        | 77 °F         |
| 500 g        | 1.102 lb      |
| 68 °C        | 154.4 °F      |
| -25 °C       | -13 °F        |
| 23 °C        | 73.4 °F       |
| 0.6 MPa      | 87 psi        |
| 23 °C        | 73.4 °F       |
| 20 °C        | 68 °F         |
| -170 °C      | -274 °F       |
| -100 °C      | -148 °F       |
| -45 °C       | -49 °F        |
| 160 MPa      | 23206 psi     |
| 150 MPa      | 21756 psi     |
| 120 MPa      | 17405 psi     |
| 62 MPa       | 8992 psi      |
| 57 MPa       | 8267 psi      |
| 6500 MPa     | 942745 psi    |
| 5200 MPa     | 754196 psi    |
| 4600 MPa     | 667174 psi    |
| 3400 MPa     | 493128 psi    |
| 3000 MPa     | 435113 psi    |
| 40 °C        | 104 °F        |
| 40 °C        | 104 °F        |
| 10 °C        | 50 °F         |
| 35 °C        | 95 °F         |
| 55 mm        | 2.165 in      |
| 20 mm        | 0.7874 in     |
| 230 kg       | 507.1 lb      |
| 165 kg       | 363.8 lb      |
| 12-35 °C     | 53.6 to 95 °F |
| 5-35 °C      | 41 to 95 °F   |