

# PRODUCT SPECIFICATION SHEET

## BELZONA 5111

FN10128



### GENERAL INFORMATION

#### Product Description:

A two-part modified urethane, solvent based system for protecting metallic and masonry surfaces against chemical, abrasive and corrosive attack. The system produces a coating of extreme hardness, durability and chemical resistance, yet giving a highly decorative, aesthetically pleasing, non-toxic surface. The material can be applied by brush or spray.

Prior to application of **Belzona 5111** there are two kinds of pre-treatment required, dependent on substrate type:

- 1) On steel and other ferrous surfaces apply two coats of **Belzona 6111** (Liquid Anode) and two coats of **Belzona 5111**.
- 2) On cementitious and non-ferrous metallic surfaces apply one coat of **Belzona 5911** (Ceramic Conditioner) and one coat of **Belzona 5111**.

#### Application Areas:

- All structural steelwork
- Tanks (external surfaces)
- Pipes
- Cooling towers
- Bridges
- Walls
- Floors

### APPLICATION INFORMATION

#### Working Life

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is:

|                     |         |
|---------------------|---------|
| <b>Belzona 5111</b> | 8 hours |
| <b>Belzona 5911</b> | 8 hours |

#### Coverage Rate

The coverage rate depends on roughness, porosity, profile and the nature of the substrate. Refer to the Belzona IFU for guidance on practical coverage rates.

#### Cure Time

At 77°F (25°C) the mixed materials shall conform to the guidelines in the Belzona IFU.

#### VOC Content

|                     |       | lbs/US gal | g/liter |
|---------------------|-------|------------|---------|
| <b>Belzona 5111</b> |       |            |         |
| Base                | White | 4.12       | 494     |
|                     | Gray  | 4.14       | 497     |
| Solidifier          |       | 2.26       | 271     |
| Mixed               | White | 3.54       | 425     |
|                     | Gray  | 3.56       | 427     |
| <b>Belzona 5911</b> |       |            |         |
| Base                | White | 3.49       | 419     |
|                     | Gray  | 3.44       | 413     |
| Solidifier          |       | 3.21       | 385     |
| Mixed               | White | 4.12       | 495     |
|                     | Gray  | 4.07       | 489     |

#### Belzona 5111 Base Component

|                  |       |                                |
|------------------|-------|--------------------------------|
| Appearance       |       | Moderately viscous liquid      |
| Color            |       | White or gray                  |
| Odor             |       | Solvent                        |
| Viscosity        |       | 4.4 - 6.4 poise at 77°F (25°C) |
| Density          | Gray  | 1.185 g/cm <sup>3</sup>        |
|                  | White | 1.221 g/cm <sup>3</sup>        |
| Solids by weight | Gray  | 60%                            |
|                  | White | 58%                            |
| Solids by volume | Gray  | 46.2%                          |
|                  | White | 45.9%                          |

#### Belzona 5111 Solidifier Component

|                  |  |                                 |
|------------------|--|---------------------------------|
| Appearance       |  | Clear moderately viscous liquid |
| Color            |  | Pale yellow                     |
| Odor             |  | Solvent                         |
| Viscosity        |  | 1.5 - 3.5 poise at 77°F (25°C)  |
| Density          |  | 1.06 - 1.08 g/cm <sup>3</sup>   |
| Solids by weight |  | 75.0%                           |
| Solids by volume |  | 70.8%                           |

#### Mixed Components

|                  |       |                               |
|------------------|-------|-------------------------------|
| Density          | Gray  | 1.14 - 1.16 g/cm <sup>3</sup> |
|                  | White | 1.16 - 1.18 g/cm <sup>3</sup> |
| Solids by weight | Gray  | 64.6%                         |
|                  | White | 63.2%                         |
| Solids by volume | Gray  | 53.8%                         |
|                  | White | 53.6%                         |

#### Belzona 5911 Base Component

|            |       |                               |
|------------|-------|-------------------------------|
| Appearance |       | Viscous free flowing liquid   |
| Color      |       | White or Gray                 |
| Odor       |       | Solvent                       |
| Viscosity  | Gray  | 6 - 9 poise at 77°F (25°C)    |
|            | White | 5 - 8 poise at 77°F (25°C)    |
| Density    | Gray  | 1.52 - 1.56 g/cm <sup>3</sup> |
|            | White | 1.53 - 1.57 g/cm <sup>3</sup> |

#### Belzona 5911 Solidifier Component

|                         |  |                                 |
|-------------------------|--|---------------------------------|
| Appearance              |  | Clear viscous liquid            |
| Color                   |  | Water white                     |
| Odor                    |  | Solvent                         |
| Viscosity               |  | 15 - 25 poise at 77°F (25°C)    |
| Density                 |  | 1.15 - 1.17 g/cm <sup>3</sup>   |
| <b>Mixed Components</b> |  |                                 |
| Density                 |  | 1.465 - 1.475 g/cm <sup>3</sup> |
| Solids by weight        |  | 78.7%                           |
| Solids by volume        |  | 39.0%                           |

*The above application information serves as introductory guide only. For full application details including the recommended application procedure/technique, refer to the Belzona IFU which is enclosed with each packaged product.*

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### ABRASION

#### Taber

The sliding abrasion resistance when tested in accordance with ASTM D 4060 Using CS17 wheels dry and 1 kg load is 30 mm<sup>3</sup> loss/1000 cycles.

#### Scratch Resistance

Pass 2000 grams, when tested in accordance with BS 3900 Part E2.

### ACCELERATED WEATHERING RESISTANCE

Tested in accordance with BS 3900 Part F3, the system will show no discoloration, loss of gloss, blistering, flaking, rusting or other breakdowns after 3000 hours exposure.

### ADHESION

#### Cross Hatch

When tested to BS 3900 Part E6 on steel is Class "0" (100% pass).

#### Pull Off Adhesion

When tested in accordance with ASTM D 4541/ ISO 4624, the pull off strength from grit blasted steel will be typically:

|                     |                     |
|---------------------|---------------------|
| <b>Belzona 5911</b> | 550 psi (3.79 MPa)  |
| <b>Belzona 6111</b> | 1500 psi (10.3 MPa) |

### CHEMICAL RESISTANCE

Although not recommended for total immersion applications, the material has excellent resistance to a broad range of chemicals.

### CORROSION RESISTANCE

The system demonstrates no rusting, blistering or flaking when exposed to 2000 hours in the salt spray cabinet operating to BS 3900 Part F4.

### EXTENSIBILITY

Tested in accordance with ASTM D522 Conical Mandrel test extensibility is >34%.

### FOOD CONTACT

#### Incidental Food Contact (USDA)

USDA compliant as an Incidental food contact surface.

#### Direct Food Contact (FDA)

Meets extraction requirements as set out in 21 CFR 175.300 (paragraph c) for Water in Condition of Use E (paragraph d). Please contact Belzona for more comprehensive data.

### HARDNESS

#### Koenig Pendulum

When tested to ISO 1522 the Koenig damping time of the coating will typically be:

| Cure temp.    | Time        |
|---------------|-------------|
| 68°F (20°C)   | 116 seconds |
| 140°F (60°C)  | 139 seconds |
| 212°F (100°C) | 151 seconds |

### IMPACT RESISTANCE

#### Impact Resistance

Pass 1/16 inch (1.5 mm) when tested in accordance with BS 3900 Part E3.

### SHELF LIFE

All separate base and solidifier components shall have a shelf life of 5 years from date of manufacture when stored in their original unopened containers between 41°F (5°C) and 86°F (30°C).

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### WARRANTY

This product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona Information For Use leaflet. Belzona ensures that all its products are carefully manufactured to ensure the highest quality possible and are tested strictly in accordance with universally recognized standards (ASTM, ANSI, BS, DIN, ISO, etc.). Since Belzona has no control over the use of the product described herein, no warranty for any application can be given.

### AVAILABILITY AND COST

**Belzona 5111** is available from a network of Belzona Distributors throughout the world for prompt delivery to the application site. For information, consult the Belzona Distributor in your area.

### HEALTH AND SAFETY

Prior to using this material, please consult the relevant Material Safety Data Sheets.

### MANUFACTURER

Belzona Polymerics Ltd.  
Claro Road, Harrogate,  
HG1 4DS, UK

Belzona Inc.  
2000 N.W. 88<sup>th</sup> Court,  
Miami, Florida, USA, 33172

### TECHNICAL SERVICE

Complete technical assistance is available and includes fully trained Technical Consultants, technical service personnel and fully staffed research, development and quality control laboratories.

The technical data contained herein is based on the results of long term tests carried out in our laboratories and to the best of our knowledge is true and accurate on the date of publication. It is however subject to change without prior notice and the user should contact Belzona to verify the technical data is correct before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for rates of coverage, performance or injury resulting from use. Liability, if any, is limited to the replacement of products. No other warranty or guarantee of any kind is made by Belzona, express or implied, whether statutory, by operation of law or otherwise, including merchantability or fitness for a particular purpose.

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