

PRODUCT SPECIFICATION SHEET

BELZONA 4351

FN10087



GENERAL INFORMATION

Product Description:

A high performance, two-component, solvent free, static dissipative barrier coating with outstanding resistance to a broad range of chemicals.

APPLICATION INFORMATION

Cure Time

Allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

Note: Below 59°F (15°C), solidification times will be significantly extended and the resultant chemical resistance capability of the **Belzona 4351** will be reduced.

For optimum results, **Belzona 4351** should be force cured at 180-210°F (80-100°C). This will ensure maximum chemical resistance.

Coverage Rate

Theoretical coverage rate is 31.0 sq.ft. (2.9m²)/kg at the recommended thickness of 10 mils (250 micron) per coat.

Application to rough or irregular surfaces may reduce this coverage by 20 - 25%.

Volume Capacity

44.5 cu.ins. (730 cm³) per kg.

Base Component

| | |
|--------------------------|-------------------------------|
| Appearance | Thixotropic liquid |
| Color | Black |
| Gel Strength (paddle FF) | 140-210 g/cm |
| Density | 1.42 - 1.46 g/cm ³ |

Solidifier Component

| | |
|------------|-------------------------------|
| Appearance | Clear Liquid |
| Color | Amber |
| Viscosity | 0.4 - 1 poise at 77°F (25°C) |
| Density | 1.02 - 1.04 g/cm ³ |

Mixed Properties

| | |
|--|-------------------------------|
| Mixing Ratio by Weight (Base : Solidifier) | 6 : 1 |
| Mixing ratio by Volume (Base : Solidifier) | 4.3 : 1 |
| Density | 1.35 - 1.39 g/cm ³ |
| Sag Resistance | > 30 mil (750 micron) |
| Time to Peak Exotherm at 68°F (20°C) | 30 - 45 minutes |
| Peak Exotherm Temperature | 320 - 374°F (160 - 190°C) |
| Useable Life at 68°F (20°C) | 20 - 25 minutes |

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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ADHESION

Tensile Shear

The tensile shear adhesion on grit blasted mild steel, as determined in accordance with ASTM D1002, will typically be:

| Cure temperature | Tensile Shear Adhesion |
|------------------|------------------------|
| 68°F (20°C) | 2400 psi / 16.5 MPa |
| 212°F (100°C) | 2730 psi / 18.8 MPa |

Pull Off Adhesion

The PosiTest dolly pull off strength on 10mm thick grit blasted mild steel, as determined in accordance with ASTM D4541 and ISO 4624, will typically be:

| Cure temperature | Pull off strength |
|------------------|------------------------|
| 68°F (20°C) | >3070 psi / >21.2 MPa* |
| 212°F (100°C) | >4890 psi / >33.7 MPa* |

*Failure of dolly adhesive

CHEMICAL RESISTANCE

This material offers excellent resistance to a broad range of chemicals particularly acids and alkali's

* For a more detailed description of chemical resistance properties, determined in accordance with ISO 2812-1, please refer to relevant Chemical Resistance chart.

COMPRESSIVE PROPERTIES

Compressive Strength

When determined in accordance with ASTM D695, typical values will be:

| Cure temperature | Compressive strength |
|------------------|-----------------------|
| 68°F (20°C) | 13910 psi / 95.9 MPa |
| 212°F (100°C) | 16880 psi / 116.4 MPa |

Compressive Modulus

When determined in accordance with ASTM D695, typical values will be:

| Cure temperature | Compressive modulus |
|------------------|---------------------------------------|
| 68°F (20°C) | 1.74 x 10 ⁵ psi / 1200 MPa |
| 212°F (100°C) | 1.66 x 10 ⁵ psi / 1140 MPa |

FLEXURAL PROPERTIES

Flexural Strength

When determined in accordance with ASTM D790, typical values will be:

| Cure temperature | Flexural strength |
|------------------|---------------------|
| 68°F (20°C) | 7570 psi / 52.2 MPa |
| 212°F (100°C) | 8340 psi / 57.5 MPa |

Flexural Modulus

When determined in accordance with ASTM D790, typical values will be:

| Cure temperature | Flexural modulus |
|------------------|---------------------------------------|
| 68°F (20°C) | 7.94 x 10 ⁵ psi / 5470 MPa |
| 212°F (100°C) | 7.0 x 10 ⁵ psi / 4830 MPa |

HARDNESS

Shore D

When determined in accordance with ASTM D2240 will be typically:

| Cure temperature | Shore D Hardness |
|------------------|------------------|
| 68°F (20°C) | 82 |
| 212°F (100°C) | 84 |

Barcol

When determined in accordance with ASTM D2583 will be typically:

| Cure temperature | Barcol Hardness |
|------------------|-----------------|
| 68°F (20°C) | 78 |
| 212°F (100°C) | 83 |

Koenig Pendulum

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

| Cure temperature | Koenig Hardness |
|------------------|-----------------|
| 68°F (20°C) | 139 |
| 212°F (100°C) | 151 |

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HEAT RESISTANCE

Heat Distortion Temperature (HDT)

Tested in accordance with ASTM D648 (264 psi fiber stress), typical values obtained will be:

| Cure temperature | HDT |
|------------------|--------------|
| 68°F (20°C) | 113°F (45°C) |
| 212°F (100°C) | 185°F (85°C) |

Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 392°F (200°C).

For many applications the product is suitable down to -40°F (-40°C).

Wet Heat Resistance

Suitable for service at temperatures up to 140°F (60°C) but refer to chemical resistance data for chemical contact limitations.

IMPACT RESISTANCE

Izod Pendulum

Notched Izod impact strength, when determined in accordance with ASTM D256, will typically be:

| Cure temperature | Impact strength |
|------------------|-----------------------|
| 68°F (20°C) | 4.7 KJ/m ² |
| 212°F (100°C) | 6.4 KJ/m ² |

SURFACE RESISTIVITY

Surface Resistivity

The surface resistivity of the cured coating applied to the following substrates and tested in accordance with ANSI/ESD S7.1 will typically be:

| | |
|---|--|
| Concrete: | 10 ⁶ - 10 ⁷ ohm/square |
| Concrete (using Belzona 4911 as Conditioner): | 10 ⁷ - 10 ⁸ ohm/square |
| Steel: | 10 ⁵ - 10 ⁶ ohm/square |

TENSILE PROPERTIES

Tensile Strength

When determined in accordance with ASTM D638, typical values will be:

| Cure temperature | Tensile strength |
|------------------|---------------------|
| 68°F (20°C) | 2750 psi / 18.9 MPa |
| 212°F (100°C) | 2690 psi / 18.5 MPa |

Young's Modulus

When determined in accordance with ASTM D638, typical values will be:

| Cure temperature | Young's Modulus |
|------------------|--------------------------------------|
| 68°F (20°C) | 8.5 x10 ⁵ psi / 5860 MPa |
| 212°F (100°C) | 7.49 x10 ⁵ psi / 5170 MPa |

SHELF LIFE

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 32°F (0°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 4351 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

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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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