

PRODUCT SPECIFICATION SHEET

BELZONA 4301

FN10083



GENERAL INFORMATION

Product Description:

A high performance, two-component paste grade system with outstanding resistance to a broad range of chemicals, especially acids and alkalis. The material is ideally suited for rebuilding surfaces wasted through chemical attack and for repairing and rebuilding damaged chemical resistant linings. Also used for profiling and fairing rough surfaces, prior to application of **Belzona 4311**.

Application Areas:

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system is ideally suited for application to the following:

- Acid retaining walls
- Chemical drains and channels
- Chemical transfer and holding areas
- Glass lined reactors
- Pump bases
- Pump casings
- Tank pads
- Tanks

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 4301** will be reduced.

For optimum results, **Belzona 4301** should be force cured at 180°F (80°C) for 4 hours. This will ensure the very best chemical resistance.

Volume Capacity

44 cu.ins. (720 cm³)/1 kg unit.

Base Component

| | |
|--------------|----------------------------|
| Appearance | Thixotropic liquid |
| Color | White |
| Gel Strength | 180 -220 g/cm ³ |
| Density | 1.42 g/cm ³ |

Solidifier Component

| | |
|--------------|---------------------------|
| Appearance | Thixotropic liquid |
| Color | Black |
| Gel Strength | 70 - 90 g/cm ³ |
| Density | 1.32 g/cm ³ |

Mixed Tests

| | |
|---|---------------------------|
| Mixing Ratio by Weight (Base : Solidifier) | 3.22 : 1 |
| Mixing ratio by Volume (Base : Solidifier) | 3 : 1 |
| Density | 1.39 g/cm ³ |
| Sag Resistance | >0.5 inch (12.5 mm) |
| Time to Peak Exotherm at 68°F(20°C) | 30 - 40 minutes |
| Peak Exotherm Temperature | 284 - 338°F (140 - 170°C) |
| Useable Life at 77°F (25°C) | 25 minutes |
| Resistance to 98% Sulfuric Acid, percent weight loss, of cured coupon after 7 days immersion at 77°F (25°C) is < 2.0. | |

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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ADHESION

Tensile Shear

The tensile shear adhesion shall be tested to ASTM D1002. Surface preparation shall be grit blasting with a profile of 0.003 - 0.004 inch. Typical values obtained will be:

| | |
|----------|---------------------|
| Steel | 2900 psi (20.0 MPa) |
| Copper | 2550 psi (17.6 MPa) |
| Aluminum | 2450 psi (16.9 MPa) |

CHEMICAL ANALYSIS

The mixed **Belzona 4301** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities in accordance with ASTM E165, ASTM D4327 and ASTM E1479. Typical results are displayed as follows:

| Analyte | Total Concentration (ppm) |
|----------|---------------------------|
| Fluoride | 38 |
| Chloride | 894 |
| Bromide | ND (<12) |
| Sulfur | 318 |
| Nitrite | ND (<5) |
| Nitrate | 4 |

Antimony, Arsenic, Bismuth, Cadmium, Lead, Tin, Silver, Mercury, Gallium, Indium and Zinc ND (<3.0)

ND : Not Detected

CHEMICAL RESISTANCE

The product has excellent resistance to a broad range of chemicals, particularly acids and alkalis.

* For a more detailed description of chemical resistance properties, refer to relevant Chemical Resistance chart.

COMPRESSIVE PROPERTIES

The compressive yield strength of the material when tested to ASTM D695 is typically:

14,200 psi (97.9 MPa).

FLEXURAL PROPERTIES

The flexural strength of the material when tested to ASTM D790 is typically:

13,000 psi (89.6 MPa).

HEAT RESISTANCE

Heat Distortion Temperature (HDT)

The heat distortion temperature (HDT) of the material shall be tested in accordance with ASTM D648, under 264 psi fiber stress. Typical results obtained using different cure schedules will be as follows:

| Cure Schedule | HDT Values |
|-------------------------|--------------|
| 77°F (25°C) cure | 129°F (54°C) |
| 122°F (50°C) post cure | 158°F (70°C) |
| 212°F (100°C) post cure | 170°F (77°C) |

Heat Resistance

For many typical applications, the product is thermally stable to 392°F (200°C) dry and 140°F (60°C) wet, and down to -40°F (-40°C).

IMPACT RESISTANCE

Izod Impact

The impact strength, when tested in accordance with ASTM D256, is typically:

0.26 ft.lb./in. (14J/m).

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 4301 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 Safety Data Sheets.

MANUFACTURER / SUPPLIER

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

Belzona Inc.
14300 NW 60th Ave,
Miami Lakes, FL, 33014, USA

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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