

PRODUCT SPECIFICATION SHEET

BELZONA 3412

FN10189



GENERAL INFORMATION

Product Description:

A two-component isocyanate free peelable system, used for encapsulating flanges and bolt fastenings to protect against moisture and prevent corrosion. Used in conjunction with **Belzona 8411** to achieve an optimum level of corrosion protection and to allow easy access to bolts and flanges in the event of required maintenance.

Application Areas:

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system is ideally suited for application to steel flanges, fastenings and pipe sections.

APPLICATION INFORMATION

Belzona 3412

Application Method

Brush or spray

Coverage Rates

The theoretical coverage rate to achieve the correct minimum two coat system thickness of 50 mil (1270 microns) is 6.7 sq.ft (0.63 m²)/kg.

Working Life

The working life will vary according to the temperature and humidity. At 68°F/20°C and 50% relative humidity, the usable life of mixed material will typically be 40 minutes. Consult the Belzona IFU for specific details.

Cure Time

Cure times will vary depending on the ambient conditions. At 68°F/20°C and 50% relative humidity the cure time will typically be 2 hours. Consult the Belzona IFU for specific details.

Belzona 8411

Application Method

Non-pressurized spray pump
Brush

Coverage Rates

The theoretical coverage rate at 5 mil (125 microns) is 43 sq.ft. (4.0 m²) per 0.5 liter unit.

Drying Time

Drying times will vary depending on the ambient conditions. At 68°F/20°C the drying time will typically be 60 minutes. Consult the Belzona IFU for specific details.

Base Component

Appearance:

Thixotropic liquid

Color:

Grey or Orange

Density:

1.27 - 1.31 g/cm³

Solidifier Component

Appearance:

Clear, colorless liquid

Density:

0.95 - 0.99 g/cm³

Mixed Properties

Density:

1.24 - 1.28 g/cm³

Sag Resistance (BS 5350-B9):

1000 µm / 40 mils

VOC content (ASTM D2369 / EPA ref. 24) at 100°C:6.76% / 85.88 g/L

Mix Ratio (Base : Solidifier)

13 : 1 (pbw)

Properties

Appearance:

Opaque liquid

Color:

Brown

Density:

0.84 - 0.86 g/cm³

VOC content (ASTM D2369 / EPA ref. 24):

57.62% / 489.77 g/L

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.

PRODUCT SPECIFICATION SHEET

BELZONA 3412

FN10189



ACCELERATED WEATHERING RESISTANCE

After 2000 hours ISO 11341 UV exposure typical values for the unreinforced coating tested in accordance with ASTM D412 (Die C) will be:

| | | |
|-------|------------------|-------------------|
| (i) | Elongation | 42% |
| (ii) | Tear strength | 43 pli (770 kg/m) |
| (iii) | Tensile strength | 260 psi (1.8 MPa) |

CHEMICAL ANALYSIS

The mixed **Belzona 3412** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following results:

| Analyte | Total Concentration (ppm) |
|----------------------------------|---------------------------|
| Fluoride | 5 |
| Chloride | 8 |
| Bromide | ND (<7) |
| Sulfur | 1439 |
| Nitrite | 4 |
| Nitrate | 6 |
| Zinc | 8 |
| Tin | 1 |
| Antimony | 2 |
| Bismuth | 3 |
| Arsenic | ND (<6.0) |
| Cadmium | <1 |
| Mercury | <3 |
| Lead, Silver, Gallium and Indium | ND (<6.0) |

ND : Not Detected

CORROSION RESISTANCE

The combined system of **Belzona 3412** and **Belzona 8411** demonstrates excellent resistance to corrosion (no rusting or blistering) when exposed for 6000 hours in the salt spray cabinet operating to ASTM B117.

DRY HEAT RESISTANCE

After exposure for 2000 hours at 158°F/70°C, typical values for the unreinforced coating tested in accordance with ASTM D412 (Die C) will be:

| | | |
|-------|------------------|-------------------|
| (i) | Elongation | 86% |
| (ii) | Tear strength | 52 pli (930 kg/m) |
| (iii) | Tensile strength | 290 psi (2.0 MPa) |

ELONGATION

When tested to ASTM D412 (Die C) the elongation will typically be:

| | | |
|------|-------------------------------------|------|
| (i) | Reinforced with Belzona 9311 | 85% |
| (ii) | Unreinforced | 270% |

FLEXIBILITY

Maintains flexibility down to -8°F (-22°C) passing ASTM D522 mandrel test at minimum 3.2mm diameter.

HARDNESS

When tested to ASTM D2240 the Shore A hardness will typically be:
47

PEEL ADHESION

When tested in accordance with ASTM D429, typical 90° peel adhesion values achieved when the material is used in conjunction with the designated surface will be:

| | |
|--|--------------------|
| Manually prepared carbon steel (ISO 8501-1 St 2) | >22 pli (390 kg/m) |
| Manually prepared solvent-free epoxy paint | >16 pli (290 kg/m) |
| Manually prepared solvent-borne polyurethane paint | >17 pli (300 kg/m) |

TEAR STRENGTH

When tested to ASTM D624 (Die C) the tear strength will typically be:

| | | |
|------|-------------------------------------|---------------------|
| (i) | Reinforced with Belzona 9311 | 110 pli (1960 kg/m) |
| (ii) | Unreinforced | 46 pli (820 kg/m) |

TENSILE STRENGTH

When tested to ASTM D412 (Die C) the tensile strength will typically be:

| | | |
|------|-------------------------------------|-------------------|
| (i) | Reinforced with Belzona 9311 | 420 psi (2.9 MPa) |
| (ii) | Unreinforced | 260 psi (1.8 MPa) |

SHELF LIFE

Separate base and solidifier components shall have a shelf life of 2 years from date of manufacture when stored in their original unopened containers between 32°F (0°C) and 86°F (30°C).

PRODUCT SPECIFICATION SHEET

BELZONA 3412

FN10189



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 3412 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. 88th 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.

Nothing in the foregoing statement shall exclude or limit any liability of Belzona to the extent such liability cannot by law be excluded or limited.

Copyright © 2017 Belzona International Limited. Belzona® is a registered trademark.

*Belzona products are
manufactured under an
ISO 9001 Registered
Quality Management System*

