PRODUCT SPECIFICATION SHEET
BELZONA 1341
FN10139

GENERAL INFORMATION

Product Description:
A drinking water certified two component coating system for improving the efficiency of fluid handling systems and protecting metals from the effects of erosion-corrosion. Also used as a high strength structural adhesive for bonding or for creation of irregular load bearing shims with good electrical insulation characteristics. For use in Original Equipment Manufacture or repair situations.

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:

- Pumps
- Valves
- Heat exchangers
- Water tanks
- Water boxes
- Pipes

APPLICATION INFORMATION

Working Life
Will vary according to temperature. At 77°F (25°C) the working life will be 40 minutes.

Limitations of Use
Belzona 1341 should not be used at temperatures below 50°F (10°C). Where material has been stored below this temperature, warm the Base and Solidifier units until they attain a temperature of 68-77°F (20-25°C).

Coverage rate
Belzona 1341 should be applied as a two coat system at a recommended average thickness of 10 mil (250 µm) per coat.
At the minimum recommended two coat system thickness of 16 mil (400 µm), the theoretical coverage rate will be 18.9 ft^2 (1.76m^2)/kg.

Cure Time
Allow to cure for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

Volume Capacity
43 in^3 (0.71 litres) /kg.
215 in^3 (3.52 litres)/5 kg unit
21.5 in^3 (352 cm^3)/500 gm unit

Base Component	
Appearance	Thixotropic paste
Colour	Grey or Blue
Density	1.63 g/cm^3
Solidifier Component	
Appearance	Clear liquid
Colour	Pale straw
Density	1.18 g/cm^3
Mixed Properties	
Mixing ratio by weight	100 : 70
Mixing ratio by volume	1 : 1
Density	1.42 g/cm^3
Viscosity at 25°C (BS EN 12092)	61 poise
VOC (ASTM D2369)	0.042 lb/gal (5g/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.

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ABRASION

Taber
The Taber abrasion resistance determined in accordance with ASTM D4060 using H10 Wheels Wet and with 1 kg load is typically:

68°F (20°C)/7 days cure	76 mm^3 loss per 1000 cycles

ADHESION

Tensile Shear
When tested in accordance with ASTM D1002, using degreased strips, grit blasted to a 3-4 mil (75 micron) profile, typical values will be:

68°F (20°C)/7 days cure	
Mild steel	3,800 psi (26.2 MPa)
Stainless steel	3,600 psi (24.8 MPa)
Copper	3,500 psi (24.1 MPa)
Aluminum	1,800 psi (12.4 MPa)
140°F (60°C)/7 days cure	
Mild steel	5,100 psi (35.2 MPa)
Stainless steel	4,100 psi (28.3 MPa)
Copper	3,600 psi (24.8 MPa)
Aluminum	2,500 psi (17.2 MPa)

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

68°F (20°C)/7 days cure	>4,500 psi (31.0 MPa)

CATHODIC DISBONDMENT

Cathodic Disbondment
When tested in accordance with ASTM G95 at 68°F (20°C), the average disbondment radius will typically be 0.103 inch (2.62 mm).

CHEMICAL RESISTANCE

Once fully cured, the material will demonstrate excellent resistance to a broad range of chemicals. For a more detailed description of chemical resistance properties, refer to relevant Chemical Resistance chart.

COMPRESSIVE PROPERTIES

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

Compressive Strength

68°F (20°C)/7 days cure	8,300 psi (57.2 MPa)
140°F (60°C)/7 days cure	9,980 psi (68.8 MPa)

Compressive modulus

68°F (20°C)/7 days cure	1.66x10^5 psi (1145 MPa)
140°F (60°C)/7 days cure	1.72 x 10^5 psi (1185 MPa)

EFFICIENCY ENHANCEMENT

Surface Roughness
When measured using a "Talysurf 120L" profiling system the surface roughness (Ra) of **Belzona 1341** applied by brush is typically 0.09µm.

Pump efficiency
Belzona 1341 technology has been shown to be capable of improving pump efficiency by up to 7% in Independent tests.

ELECTRICAL PROPERTIES

When tested in accordance with ASTM D149, method A, with voltage rise of 2kV/s, typical value will be:

Dielectric strength	19.7 kV/mm

ELONGATION & TENSILE PROPERTIES

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

Tensile Strength:

68°F (20°C)/7 days cure	4,003 psi (27.6 MPa)
140°F (60°C)/7 days cure	5,884 psi (40.57 MPa)

Youngs modulus:

68°F (20°C)/7 days cure	7.51 x 10^5 psi (5,178 MPa)
140°F (60°C)/7 days cure	6.86 x 10^5 psi (4,730 MPa)

Elongation:

68°F (20°C)/7 days cure	0.79%
140°F (60°C)/7 days cure	1.34%

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BELZONA
Repair • Protect • Improve

FLEXURAL PROPERTIES

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

Flexural strength

68°F (20°C)/7 days cure	6,500 psi (44.8 MPa)
140°F (60°C)/7 days cure	8,900 psi (61.4 MPa)

Flexural modulus

68°F (20°C)/7 days cure	6.15 x 10^5 psi (4240 MPa)
140°F (60°C)/7 days cure	5.48 x 10^5 psi (3780 MPa)

HARDNESS

Shore D

The Shore D hardness of the material tested to ASTM D2240 is typically:

68°F (20°C)/7 days cure	80
140°F (60°C)/7 days cure	82

Koenig Pendulum

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

68°F (20°C)/7 days cure	149 seconds
140°F (60°C)/7 days cure	154 seconds

Barcol

Tested to ASTM D2583 the Barcol hardness will be typically:

68°F (20°C)/7 days cure	73
140°F (60°C)/7 days cure	79

HEAT RESISTANCE

Heat Distortion Temperature (HDT)

When tested in accordance with ASTM D648 typical values obtained will be:

68°F (20°C)/7 days cure	109°F (43°C)
140°F (60°C)/7 days cure	181°F (83°C)

Atlas Cell Cold Wall Immersion Test

When tested in accordance with NACE TM 0174 procedure A, the coating will exhibit no blistering or rusting (ASTM D714 rating 10; ASTM D610 rating 10) after 6 months immersion in water at 140°F (60°C).

Glass transition temperature (Tg)

When tested in accordance with ISO 11357-2 typical values obtained will be:

68°F (20°C)/7 days cure	117°F(47°C)
140°F (60°C)/7 days cure	187°F (86°C)

Dry Heat Resistance

The degradation temperature based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 266°F (130°C).

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

Wet Heat Resistance

For many typical applications the material is suitable for continuous immersion in aqueous solutions up to 140°F (60°C).

IMMERSION RESISTANCE

When tested in accordance with NACE TM 0174 the coating will exhibit no blistering or rusting (ASTM D714 rating 10; ASTM D610 rating 10) after 6 months immersion in de-ionized water at 140°F (60°C).

Electrochemical Impedance Spectroscopy (EIS)

The EIS results ($\log_{10} |Z|_{0.1Hz}$) determined in accordance with ISO 16773 following the above immersion testing will be typically;

Unexposed	10.93Ωcm²
Liquid phase	10.81Ωcm²
Vapor phase	10.95Ωcm²

IMPACT RESISTANCE

Izod

When tested in accordance with ASTM D256 typical values obtained will be:

	Notched	Un-notched
68°F (20°C)/7 days cure	3.03 KJ/m²	3.62 KJ/m²
140°F (60°C)/7 days cure	5.24 KJ/m²	7.42 KJ/m²

Falling weight

When tested in accordance with ASTM D2794 typical values for direct impact will be:

68°F (20°C)/7 days cure	28.35 in.lb (0.33kg.m)
140°F (60°C)/7 days cure	33.07 in.lb (0.38kg.m)

POTABLE WATER APPROVAL

KC

Listed in Barrier Materials as epoxy resin-based waterproof and anticorrosion material, which has passed full test of sanitation and safety.

수 도 용
위생안전기준
인증번호 : KCW-2014-0174

WRAS

Listed in the UK Water Fittings Directory under "Materials which have passed full tests of effect on water quality".

WRAS
WATER REGULATIONS ADVISORY SCHEME

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 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 1341 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 Limited,
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Belzona Inc.
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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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