PRODUCT SPECIFICATION SHEET
BELZONA 5891
FN10105

GENERAL INFORMATION

Product Description:
A two component, epoxy/amine system containing mineral and ceramic fillers. Provides excellent corrosion resistance when immersed in water/hydrocarbon mixtures up to 194°F(90°C). Applied by brush or heated airless spray. May also be applied by injection to create irregular shims.

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:

- Effluent tanks and channels
- Water boxes
- Separators
- Condensers
- Knock out drums
- Evaporators
- Condensate tanks
- Strippers and scrubbers

APPLICATION INFORMATION

Working Life
Will vary according to temperature. At 68°F (20°C) the usable life of mixed material is 45 minutes.

Coverage Rate
The **Belzona 5891** shall be applied to achieve a minimum thickness of 16 mils (400 microns). At this thickness the theoretical coverage rate is 27sq.ft. (2.5 m^2)/litre.
Refer to the Instructions For Use for practical coverage rate guidelines.

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

In certain instances it may be necessary to post cure material prior to putting into service where chemical contact is involved or service temperature is below 86°F (30°C).

Base Component	
Appearance	Viscous liquid
Color	Grey
Density	1.75 - 1.79 g/cm^3

Solidifier Component	
Appearance	Thin liquid
Color	Amber
Density	0.95 - 0.99 g/cm^3

Mixed Properties	
Mixing Ratio by Weight (Base : Solidifier)	13 : 1
Mixing Ratio by Volume (Base : Solidifier)	7.2 : 1
Density	1.65 - 1.69 g/cm^3
Time to peak exotherm	125-160 mins.
Peak exotherm temperature	122-149°F (50-65°C)
Viscosity	55-65 poise
Sag resistance	>25 mil (635 micron)

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
When tested in accordance with ASTM D1002, using mild steel, grit blasted to a 3-4 mil profile, typical values are:

2,690 psi (18.54 MPa)	ambient cure
3,470 psi (23.92 MPa)	post cure
3,350 psi (23.10 MPa)	post cure and tested at 212°F (100°C)

Pull Off Adhesion
When tested in accordance with ASTM D4541/ ISO 4624, the pull off strength from grit blasted steel will be typically:

4,800 psi (33.09 MPa)	ambient cure
5,700 psi (39.30 MPa)	post cure

CATHODIC DISBONDMENT

When tested in accordance with ASTM G42 at 158°F (70°C) the disbondment diameter is typically 0.4 in (10.2mm).

CHEMICAL RESISTANCE

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 STRENGTH

When tested in accordance with ASTM D695, typical values obtained are:

13,800 psi (95.15 MPa)	ambient cure
20,000 psi (137.90 MPa)	post cure

ELECTRICAL PROPERTIES

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

Dielectric strength	31.8 kV/mm

EXPLOSIVE DECOMPRESSION

When tested to NACE TM 0185, using a seawater/hydrocarbon test fluid, the coating will exhibit no breakdown after a 21 day immersion period at 158°F(70°C) and 70 bar pressure followed by decompression over 15 minutes.

FLEXURAL STRENGTH

When tested to ASTM D790 typical values obtained are:

6,500 psi (44.82 MPa)	ambient cure
9,600 psi (66.19 MPa)	post cure

HARDNESS

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

87	ambient cure
87	post cure

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

85 seconds	ambient cure
142 seconds	post cure

HEAT RESISTANCE

Heat Distortion Temperature
Tested to ASTM D648 (264 psi fiber stress), typical values obtained will be:

124°F (51°C)	ambient cure
252°F (122°C)	post cure

Heat Resistance
Atlas Cell
When tested in accordance with NACE TM 0174 the coating will exhibit no rusting (ASTM D714 rating 10) or blistering (ASTM D610 rating 10) after 6 months immersion in water at 194°F (90°C).

Seawater immersion
When tested in accordance with ISO 2812, no blistering, rusting, cracking or delamination was observed after 6 months immersion in seawater at 104°F (40°C).

Steam-out Resistance
Once fully cured the coating will exhibit no blistering, cracking or delamination after 96 hours exposure to pressurised steam at 410°F (210°C).

Dry Heat Resistance
The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 446°F (230°C).
For many applications the product is suitable down to -40°F (-40°C).

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IMPACT RESISTANCE

Izod Impact Strength
The Izod impact strength of the material when tested in accordance with ASTM D256 is typically:

Notched	Un-notched	
27 J/m	29 J/m	ambient cure
48 J/m	83 J/m	post cure

THERMAL PROPERTIES

Low Temperature Thermal Shock
Coated steel panels will exhibit no blistering, cracking or delamination after multiple cycles of rapid cooling from 212°F to -76°F (100°C to -60°C).

Thermal Cycling
When tested in accordance with section 9 of NACE TM0304, the coating passed after 252 cycles between +140°F and -22°F (+60°C and -30°C).

THICK FILM CRACKING

When tested in accordance with Section 12 of NACE TM0104, the coating at three times recommended thickness, exhibited no cracking after 12 weeks immersion in seawater at 104°F (40°C).

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).

APPROVALS/ACCEPTANCES

The material has received recognition from organizations worldwide including:

USDA

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WARRANTY

Belzona guarantees 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 further guarantees that all its products are carefully manufactured to ensure the highest quality possible and tested strictly in accordance with universally recognised 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 5891 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.

MANUFACTURER

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

Belzona Inc.
2000N.W. 88th Court,
Miami, Florida, USA, 33172

HEALTH AND SAFETY

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

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.

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