BELZONA® World leaders in the conservation of man-made resources and the environment

PRODUCT SPECIFICATION SHEET

# BELZONA® 2131

## 1. PRODUCT NAME

**Belzona® 2131**
**(D & A Fluid Elastomer)**
A casting grade elastomeric repair system for resurfacing and tooling applications.

## 2. MANUFACTURER

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

**Belzona Polymerics Ltd.,**
Claro Road, Harrogate,
HG1 4AY, England.

## 3. PRODUCT DESCRIPTION

A two component, fluid consistency resurfacing material designed for resurfacing/coating applications and for use as a casting material in the fabrication of components.

Applications
Surfacing pumps.
Repairing diaphragms.
Replacing drive couplings.
Casting flexible molds.
Casting shock absorbers.
Casting guide bearings.

## 4. TECHNICAL DATA

Base Component

| | |
|---|---|
| Appearance | Oil white viscous liquid |
| Density | 1.06 - 1.09 g/cm³ |
| Viscosity | 22,000 - 32,000 cps at 77°F (25°C) |

Solidifier Component

| | |
|---|---|
| Appearance | Thin black liquid |
| Odor | Slightly glycolic |
| Density | 0.99 - 1.01 g/cm³ |
| Viscosity | 200 - 400 cps at 77°F (25°C) |

### • *Shelf Life:*

Separate base and solidifier components shall have a shelf life of at least 3 years when stored between 32°F (0°C) and 86°F (30°C).

### • *Working Life:*

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 10 minutes.

### • *Coverage Rate:*

Applied at a thickness of 10 mil. (250 microns), each 500 gram unit will cover an area of 19.5 sq.ft. (1.81 sq.m.).

### • *Volume Capacity:*

The volume capacity of mixed **Belzona® 2131** is 28.5 cu.in. (468 ccs) per 500 gram unit.

### • *Cure Time:*

Will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately 1/10 inch (0.25 mm), allow to solidify for the times shown in the chart below before subjecting it to the conditions indicated.

## 5. PHYSICAL/MECHANICAL PROPERTIES

Determined after 7 days cure at 77°F (25°C).

### • *Abrasion Resistance:*

**DIN**
The abrasion resistance of the material when tested to DIN 53-516 will be typically 130 (relative volume loss).

**Taber**
The Taber abrasion resistance with 1 kg load is typically:
H18 Wheels (Wet)
at 70°F (21°C) 10 mm³
at 170°F (77°C) 192 mm³
loss per 1000 cycles

H18 Wheels (Dry)
at 70°F (21°C) 33 mm³
at 170°F (77°C) 187 mm³
loss per 1000 cycles

### • *Adhesion:*

Typical adhesion values achieved when the material is used in conjunction with the designated surface conditions are:

| | |
|---|---|
| Mild steel | ASTM D429<br>180 pli (3214 kgs/m) |
| Copper | ASTM D429<br>180 pli (3214 kgs/m) |
| Aluminum | ASTM D429<br>80 pli (1428 kgs/m) |
| Concrete | Elcometer<br>Pulloff Test<br>900 psi (63.3 kgs/cm²)* |
| GRP | ASTM D413<br>60 pli (1071 kgs/m) |
| Natural rubber | ASTM D413<br>14 pli (250 kgs/m)* |
| Polychloroprene | ASTM D413<br>47 pli (839 kgs/m)* |
| PVC | ASTM D413<br>18 pli (321 kgs/m)* |
| Styrene-butadiene | ASTM D413<br>80 pli (1428 kgs/m)* |
| Polyurethane | ASTM D413<br>80 pli (1428 kgs/m)* |

** Cohesive failure in the substrate material*

### • *Chemical Resistance:*

Once fully cured, the material will demonstrate excellent resistance to the following chemicals;

carbonic acid
15% hydrochloric acid
10% hydrofluoric acid
20% sulfuric acid
stearic acid
tartaric acid
10% ammonia solution
barium hydroxide
calcium hydroxide
lime water
magnesium hydroxide
25% potassium hydroxide
25% sodium hydroxide
grease
mercury
oil/water mixture
emulsion paint
distilled water
sea water
wax emulsion
fertilizer solution
starch
silicone oil
inorganic salts

** For a more detailed description of chemical resistance properties, refer to Product Data E504.*

**CURE TIMES**

| TEMPERATURE | 41°F (5°C) | 50°F (10°C) | 59°F (15°C) | 68°F (20°C) | 77°F (25°C) | 86°F (30°C) |
|---|---|---|---|---|---|---|
| Movement or use involving no loading or immersion | 6 hrs | 4 hrs | 3 hrs | 2 hrs | 1½ hrs | 1 hr |
| Full mechanical or thermal loading | 3 days | 2 days | 2 days | 1 day | 1 day | 1 day |
| Immersion in chemicals | 5 days | 3½ days | 3 days | 2½ days | 2 days | 1½ days |

### • *Compression Set:*
When tested in accordance with BS903 Part A6 typical compression set is 4.9%.

### • *Electrical Properties:*
**Dielectric Strength**
Tested to ASTM D149 is typically 500 volts/mil (20,000 volts/mm).

**Dielectric Constant**
Tested to ASTM D150 is typically 7.5 at 1 MHz

**Dissipation Factor**
Tested to ASTM D150 is typically 0.07 at 1 MHz

**Volume Resistivity**
Tested to ASTM D257 is typically $1.3 \times 10^{12}$ ohm cm.

**Surface Resistivity**
Tested to ASTM D257 is typically $1.3 \times 10^{11}$ ohm.

### • *Elongation:*
Tested in accordance with ASTM D412 (Die C) is typically 550%.

### • *Heat Resistance:*
For many typical applications the product is suitable for operation in the temperature range -40°F to 150°F (-40°C to 65°C).

### • *Leachable Chlorides:*
The leachable chloride levels of the solidified material when tested to ASTM D512C will be less than 20 ppm.

### • *Radiation Resistance:*
The material, when tested to BS 4247, Part 1, 1981, "Surface materials for use in radioactive areas" has a typical Decontamination Factor (DF) of 35 and an Ease of Decontamination (ED) classifiaction of Fair.

This test determines the ease with which a radiation contaminated surface may be rendered free from contamination.

### • *Sag Resistance:*
10 mil (250 microns) maximum.

### • *Shore A Hardness:*
Tested in accordance with ASTM D2240 is 85.

### • *Tear Strength:*
Tested in accordance with ASTM D624 id typically 350 pli.

### • *Tensile Strength:*
Tested in accordance with ASTM D412 (Die C) id typically 2000 psi ($141$ kgs/cm$^2$).

## 6. SURFACE PREPARATION AND APPLICATION PROCEDURES
For proper technique, refer to the Belzona Instructions For Use leaflet which is enclosed with each packaged product.

## 7. AVAILABILITY AND COST
**Belzona® 2131** 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.

## 8. WARRANTY
Belzona® guarantees this product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona® Instructions 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, etc.). Since Belzona® has no control over the use of the product described herein, no warranty for any application can be given.

## 9. TECHNICAL SERVICES
Complete technical assistance is available and includes fully trained Technical Consultants, technical service personnel and fully staffed research, development and quality control laboratories.

## 10. HEALTH AND SAFETY
Prior to using this material, please consult the relevant Material Safety Data Sheets.

## 11. APPROVALS/ ACCEPTANCES
ABS
GENERAL MOTORS
FORD

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