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

PRODUCT SPECIFICATION SHEET
BELZONA® 1251

1. PRODUCT NAME
Belzona® 1251
(HA-Metal)
Heat activated engineering grade repair system for repairing and rebuilding machinery and equipment.

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 single component paste grade system based on a silicon steel alloy blended with a heat activated resin. When cured, the material is durable and corrosion resistant.

Designed to be applied to hot surfaces 158 - 302°F (70 - 150°C), such as under insulation metalwork.

4. TECHNICAL DATA

Appearance	Paste
Color	Dark gray
Gel strength at 77°F (25°C)	>200 g/cm HF
Density	2.4 - 2.5 g/cm^3

• *Shelf Life:*
Belzona® 1251 will have a shelf life of at least 24 months when stored at 68°F (20°C). Refrigeration of this product will extend the shelf life.

• *Working Life:*
Cure will not commence until the product is heated, hence the working life of **Belzona® 1251** is effectively unlimited.

• *Volume Capacity:*
The volume capacity of 1 kg. of **Belzona® 1251** is 24.6 in.^{3} (403 cm^3).

• *Cure Time:*
The cure time of **Belzona® 1251** is primarily dependent on the heat-cure temperature - see table below. The minimum recommended cure temperature for **Belzona® 1251** is 158°F (70°C).
N.B. Increased thickness (>1/8in. or 3mm) may require additional heating time.

5. PHYSICAL/MECHANICAL PROPERTIES
Determined by testing at ambient after heat-cure at the stated temperature(s).

• *Tensile Shear Adhesion:*
When tested in accordance with ASTM D1002, typical values will be:

2000 psi (141 kgs/cm^2) after cure at 158°F (70°C) applied onto clean, ground steel.

2200 psi (155 kgs/cm^2) after cure at 212°F (100°C) applied onto clean, ground steel.

3200 psi (225 kgs/cm^2) after cure at 248°F (120°C) applied onto clean, ground steel.

1200 psi (84 kgs/cm^2) after cure at 212°F (100°C) applied onto rusty steel prepared to ISO 8501-1 St 2 (wire brushed)

2100 psi (148 kgs/cm^2) after cure at 212°F (100°C) applied onto rusty steel prepared to ISO 8501-1 St 3 (manually abraded)

• *Chemical Resistance:*
Once fully cured, the material will demonstrate excellent resistance to most commonly found inorganic acids and alkalis at concentrations up to 20%. The material is also resistant to hydrocarbons, mineral oils, lubricating oils and many other commonly found chemicals.

• *Compressive Strength:*
When tested in accordance with ASTM D695, typical values obtained will be:

17,400 psi (1223 kgs/cm^2) after 7 days cure at 158°F (70°C)

14,000 psi (984 kgs/cm^2) after 1 day cure at 212°F (100°C)

18,100 psi (1273 kgs/cm^2) after 7 days cure at 212°F (100°C)

• *Corrosion Resistance:*
Will show no visible signs of corrosion after 5,000 hours exposure in the ASTM B117 salt spray cabinet.

• *Flexural Strength:*
When tested to ASTM D790, typical values obtained will be:

8700 psi (612 kgs/cm^2) after 7 days cure at 158°F (70°C)

7700 psi (541 kgs/cm^2) after 1 day cure at 212°F (100°C)

9000 psi (633 kgs/cm^2) after 7 days cure at 212°F (100°C)

• *Hardness:*
The hardness of the material when tested to ASTM D2240 is typically 88 Shore D after cure at 212°F (100°C).

CURE TIMES

TEMPERATURE	158°F (70°C)	185°F (85°C)	212°F (100°C)	239°F (115°C)
Light loading	1¼ hrs	25 min	15 min	15 min
Full thermal or mechanical loading	5 hrs	2 hrs	1 hr	1 hr
Optimum heat resistance	7 days	5 days	3 days	1 day

• *Heat Distortion Temperature:*

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

225°F (107°C) after 7 days cure at 158°F (70°C)

248°F (120°C) after 7 days cure at 212°F (100°C)

• *Heat Resistance:*

For many typical applications, the product is thermally stable up to 356°F (180°C).

• *Impact Strength:*

The un-notched impact strength when tested to ASTM D256 is typically:
1.04 ft.lb./in., 56 J/m
after cure at 212°F (100°C)

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® 1251 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.

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