BELZONA 4331 Product Specification Sheet

1. PRODUCT NAME

Belzona® 4331 (Magma CR3)
A barrier coating for protecting surfaces against the effects of chemical attack.

2. MANUFACTURER

Belzona Inc.,
2000 NW 88th Court,
Miami, Florida 33172.

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

3. PRODUCT DESCRIPTION

A high performance, two-component barrier coating optimised for resistance to hot organic acids, such as acetic acid, and general chemical resistance. The system, which isolates concrete and metal substrates from deteriorating chemical environments, is ideally suited for application to:

Acid retaining walls.
Chemical drains and channels.
Chemical transfer and holding areas.
Pump bases.
Pump casings.
Tank pads.
Walkways (with non-slip aggregate incorporated).
Tanks.

4. TECHNICAL DATA

Base Component	
Appearance	Thixotropic liquid
Color	Red
Gel Strength	150 g/cm³
Density	1.58 g/cm³

Solidifier Component	
Appearance	Clear Liquid
Color	Amber
Density	1.05 g/cm³

Mixed Tests	
Mixing Ratio by Weight (Base : Solidifier)	10.75 : 1
Mixing ratio by Volume (Base : Solidifier)	7.16 : 1
Density	1.52 g/cm³
Sag Resistance	> 50 thou
Time to Peak Exotherm at 68°F 20°C)	28 minutes
Peak Exotherm Temperature	320°F (160°C)
Useable Life at 77°F (25°C)	20 minutes

• Shelf Life:
All components when stored between 32°F (0°C) and 86°F (30°C) will have a shelf life of 3 years.

• Coverage Rates:
As a guide, a 1.5 kg mix should be sufficient to cover an area of 20 sq.ft. (1.85 sq.m.) at the minimum recommended film thickness of 500 microns. Application to rough or irregular surfaces may reduce this coverage by 20 - 25%.

• Volume Capacity:
The volume capacity of mixed product is 975 cm³ per 1.5 kg unit.

• Cure Time:
Allow to solidify for the times shown in the chart below before subjecting it to the conditions indicated.

Note: Below 59°F (15°C), solidification times will be significantly extended and the resultant chemical resistance capability of the **Belzona® 4331** will be reduced.

For optimum results, **Belzona® 4331** should be forced cured at 180°F (80°C) for 4 hours. This will ensure the very best chemical resistance.

5. PHYSICAL/MECHANICAL PROPERTIES

• Adhesion:
Tensile Shear
The tensile shear adhesion shall be tested to ASTM D1002. Surface preparation shall be grit blasting with a profile of 0.003 - 0.004 inch. Typical values obtained will be:

Steel	20°C :	2300 psi
Steel	100°C :	2300 psi

Pull Off Adhesion
When tested in accordance with ASTM D 4541/ ISO 4624, the pull off strength from grit blasted steel will be typically:
4770 psi (335 kg/cm²) ambient cure

• Chemical Resistance:
Belzona® 4331 has been formulated for optimum resistance to hot organic acids up to 194°F (90°C).

It is recommended that all proposed applications are checked with TKL at Harrogate or Miami for suitability before proceeding.

• Compressive Strength:
The compressive yield strength of the material when tested to ASTM D695 is typically 10,400 psi (730 kgs/cm²).

• Flexural Strength:
The flexural strength of the material when tested to ASTM D790 is typically 6500 psi (455 kgs/cm²).

CURE TIMES

Temperature	50°F (10°C)	68°F (20°C)	86°F (30°C)
Light pedestrian traffic	16 hrs	8 hrs	4 hrs
Full chemical resistance	7 days	5 days	3 days

• Heat Distortion Temperature:
The heat distortion temperature (HDT) of the material has been tested in accordance with ASTM D648, under 264 psi fiber stress. Typical results obtained using different cure schedules are as follows:

Cure Schedule	HDT Values
68°F (20°C) cure	142°F (61°C)
122°F (50°C) cure	187°F (86°C)
212°F (100°C) cure	217°F (103°C)
302°F (150°C) cure	225°F (124°C)

• Heat Resistance:
For many typical applications, the product is thermally stable to 392°F (200°C) dry and 194°F (90°C) wet, and down to -40°F (-40°C).

6. SURFACE PREPARATION AND APPLICATION PROCEDURES
For proper techniques, refer to Belzona® Instructions For Use which is enclosed with each packaged product.

7. AVAILABILITY AND COST
Belzona® 4331 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.

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 © 2011 Belzona International Limited. Belzona® is a registered trademark.

ISO 9001:2008
Q 09335
ISO 14001:2004
EMS 509612
Manufactured under an ISO 9000 Registered Quality Management System

BELZONA®
Repair • Protect • Improve

Printed in England Publication No. 167-3-11