

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

1. PRODUCT NAME Belzona® 4151

(Magma-Quartz Resins) A concrete protection system for the treatment of surfaces exposed to chemical attack and abrasion. Also for grouting and bonding.

2. MANUFACTURER

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

Belzona Polymerics Ltd.,

Claro Road, Harrogate, HG1 4AY, England.

3. PRODUCT DESCRIPTION

A two component clear amber resin system with excellent adhesion to masonry and metallic surfaces. Specifically designed for the protection of general concrete areas. Provides a tough seamless coating suitable for heavy duty dust proofing or protection from chemicals. Can be easily tinted.

4. TECHNICAL DATA

Base Component Appearance Colour Viscosity Density	Clear Liquid Light amber 5-7 poise at 77°F (25°C) 1.13-1.15 g/cm ³
<u>Solidifier Componen</u> Appearance Color Viscosity Density	t Clear Liquid Amber 0.5-1.5 poise at 77°F (25°C) 0.98-1.10 g/cm³
Mixing Ratio: For mixing small qua of the components is Base : Solidifier	ntities the mixing ratio ::-

Base : Solidifier		
by weight:	2.5 : 1	
by volume:	2:1	

• Shelf Life:

All components will have a shelf life of at least 5 years when stored between $32^{\circ}F(0^{\circ}C)$ and $86^{\circ}F(30^{\circ}C)$.

• Working Life:

Will vary according to temperature. At 77°F (25°C), use all mixed material within 13 minutes.

• Coverage Rates:

Film thickness and coverage rate will vary with porosity and profile of the substrate. Each 6kg unit will give a practical coverage rate of 205 sq.ft. (19 sq. m.)

• Volume Capacity

The volume capacity of a 6kg unit is 336 cu. in. (5500ccs)

• Cure Time:

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 $77^{\circ}F(25^{\circ}C)$

• Abrasion Resistance: Taber

Tested using the Taber Abraser with CS17 grinding wheels under a 1kg load, after 7 days cure at $77^{\circ}F(25^{\circ}C)$ is 0.1086 cm³ loss/1000 cycles tested dry.

Using H10 grinding wheels is 0.3019 cm³/1000 cycles tested wet.

Adhesion:

Elcometer

Dry concrete Wet concrete Dry quarry tiles Wet quarry tiles *cohesive failure within substrate Dry concrete Met concrete 575 psi (40 kgs/cm²)*

Tensile Shear

The tensile shear adhesion to steel when tested in accordance with ASTM D1002 after 7 days cure at 77°F (25°C), is typically 2,400 psi (169 kgs/cm²).

Chemical Resistance:

This material offers resistance to a broad range of chemicals and will demonstrate excellent resistance for permanent immersion to the following chemical environments.

- 38% Hydrochloric Acid 50% Sulphuric Acid Sulphurous Acid 10% Nitric Acid 10% Acetic Acid 10% Lactic Acid 10% Ammonia Solution Lime Water 20% Potassium Hydroxide 40% Sodium Hydroxide Diethanolamine 1,1,1, - Trichloroethane Kerosene Gasoline Bleach (Clorox) 37% Formalin
- * For a more detailed description of chemical resistance properties, refer to Product Data Q506.

• Compressive Strength:

The compressive strength of the material when tested to ASTM D695 after 7 days cure at $77^{\circ}F$ (25°C), is typically 8,800 psi (619 kgs/cm²).

• Flexural Strength:

The flexural strength of the material when tested to ASTM D790 after 7 days cure at 77°F (25° C), is typically 10,900 psi (766 kgs/cm²).

Heat Distortion Temperature:

Tested in accordance with ASTM D648 (264 psi fiber stress) after 7 days cure at 77°F (25°C) is typically 100°F (38°C).

CURE TIMES					
Temperature	41°F (5°C)	59°F (15°C)	77°F (25°C)	86°F (30°C)	
To resist pedestrian traffic Full mechanical hardness Full chemical resistance	16 hrs 2 days 14 days	6 hrs 24 hrs 10 days	4 hrs 16 hrs 5 days	3 hrs 14 hrs 4 days	

PRODUCT SPECIFICATION SHEET BELZONA® 4151

Heat Resistance

For many typical applications, the product is thermally stable to $300^{\circ}F(149^{\circ}C)$ dry and 140°F (60°C) wet and down to -40°F (-40°C).

• Shrinkage:

The material, when tested in accordance with ASTM C157, will show no measurable shrinkage during cure.

6. SURFACE PREPARATION AND APPLICATION PROCUDURES

For proper techniques, refer to Belzona® Instructions For Use which is enclosed with each packaged product.

7. AVAILABILITY AND COST

Belzona® 4151 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 U.S.D.A.

Belzona Polymerics Ltd., Claro Road, BS EN ISO 9002 : 1994 Harrogate, HG1 4AY, Certificate No. Q/09335 England. Tel: +44 (0) 1423 567641 Fax:+44 (0) 1423 505967 E-Mail: Belzona@belzona.co.uk Belzona Inc., 2000 N.W. 88 Court, Miami, Florida 33172, U.S.A. Tel: +1 (305) 594 4994 Fax:+1 (305) 599 1140 E-Mail: Belzona@belzona.com www.belzona.com

Copyright © 2002 by Belzona International Limited. All rights reserved. Certain portions of this work copyright © 1998 by Belzona International Limited. No part of this work covered by the copyrights hereon may be reproduced or used in any form or by any means - graphic, electronic or mechanical including photocopyring, recording, taping or information storage and retrieval systems - without written permission of the publisher.

Belzona® is a registered trademark

Printed in England 01/02 UK

Private and Confidential - For Internal Use Only

Belzona® 4151 - Product Specification Sheet (2)