



Section 07 10 00

Dampproofing and Waterproofing

## **Part 1 GENERAL**

### **1.1 SECTION INCLUDES**

- A. A treatment for porous surfaces which forms a clear and water-repellent barrier.

### **1.2 RELATED SECTIONS**

- A. Section 07 19 23 – Siloxane Water Repellents

### **1.3 REFERENCES**

- A. The testing conducted on Belzona 5122 did not adhere to a specific standard. For further details regarding the tests performed, please see Section 2.3, titled 'Materials'.

### **1.4 SUBMITTALS**

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  1. Product characteristics and Safety Data Sheets.
  2. Preparation Instructions and Recommendations.
  3. Storage and Handling Requirements and Recommendations.
  4. Installation Methods.

### **1.5 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: 23 years of experience manufacturing the product specified in this section and 30 plus years of experience manufacturing products like the product specified in this section.

### **1.6 REGULATORY REQUIREMENTS**

- A. Store products in manufacturer's original unopened packaging until ready for installation.
- B. Store products in temperature within limits recommended by manufacturer.

### **1.7 SITE CONDITIONS**

- A. Maintain environmental conditions (temperature and humidity) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.8 WARRANTY

- A. 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 recognized 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.

## Part 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturer: Belzona Limited, Claro Road, Harrogate, HG1 4DS, UK  
Tel: +44 1423 567641. Fax: +44 1423 505967 Web: <http://www.belzona.com>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 – Product Requirements.

### 2.2 APPLICATION AND SCOPE

- A. A masonry treatment in the form of an aqueous penetrating liquid which when applied to porous surfaces forms an invisible micro-porous, water repellent barrier with the substrate. Supplied as a concentrate for dilution with water prior to use.

### 2.3 MATERIALS

- A. Clear barrier, water repellent system.
  - 1. Belzona 5122 (Clear Cladding): Single Component, Solvent-free micro-porous clear waterproofing system for concrete and masonry surfaces.
    - a. Color: Yellow to Red clear liquid.
    - b. Coverage Rate of diluted product by different substrate:
      - 1. Asbestos cement: 28 ft<sup>2</sup> (2.6 m<sup>2</sup>)/liter.
      - 2. Smooth concrete: 28 ft<sup>2</sup> (2.6 m<sup>2</sup>)/liter.
      - 3. Rough concrete: 14 ft<sup>2</sup> (1.3 m<sup>2</sup>)/liter.
      - 4. Smooth brick 28: ft<sup>2</sup> (2.6 m<sup>2</sup>)/liter.
      - 5. Soft brick: 14 ft<sup>2</sup> (1.3 m<sup>2</sup>)/liter.
      - 6. Natural stone: 16.2-22.6 ft<sup>2</sup> (1.5-2.1 m<sup>2</sup>)/liter.
    - c. Chloride Ion Ingress:
      - 1. Weight gain after 21 days in 15% NaCl (%).
        - 1.1. Untreated: 2.14
        - 1.2. Treated: 0.037
        - 1.3. % Reduction: 80

2. Chloride ion content % by weight of concrete.
  - 2.1. Untreated: 0.223
  - 2.2. Treated: 0.037
  - 2.3. % Reduction: 83
- d. Water Absorption:
  1. Effect of Substrate pH on Water Absorption.
    - 1.1. pH of brick substrate: 7.8
      - 1.1.1. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Treated: 0.012
      - 1.1.2. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Untreated: 1.653
      - 1.1.3. % Reduction in H<sub>2</sub>O after treatment: 99.3
    - 1.2. pH of brick substrate: 8.1
      - 1.2.1. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Treated: 0.005
      - 1.2.2. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Untreated: 1.240
      - 1.2.3. % Reduction in H<sub>2</sub>O after treatment: 99.6
    - 1.3. pH of brick substrate: 9.7
      - 1.3.1. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Treated: 0.023
      - 1.3.2. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Untreated: 2.648
      - 1.3.3. % Reduction in H<sub>2</sub>O after treatment: 99.1
    - 1.4. pH of brick substrate: 9.9
      - 1.4.1. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Treated: 0.023
      - 1.4.2. % H<sub>2</sub>O Uptake (kg/m<sup>2</sup> 24 hr.) Untreated: 2.353
      - 1.4.3. % Reduction in H<sub>2</sub>O after treatment: 99.0
  2. Water Absorption. Typical values obtained after 24 hours (kg/m<sup>2</sup>).
    - 2.1. Substrate Limestone
      - 2.1.1. Untreated: 5.26
      - 2.1.2. Treated: 0.36
    - 2.2. Substrate Sandstone
      - 2.2.1. Untreated: 51.60
      - 2.2.2. Treated: 0.43
    - 2.3. Substrate Brick
      - 2.3.1. Untreated: 1.70
      - 2.3.2. Treated: 0.01
    - 2.4. Substrate Dolomite
      - 2.4.1. Untreated: 2.42
      - 2.4.2. Treated: 0.43

## Part 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine in accordance with manufacturer's instructions and recommendations.
- B. It is important that surface to be treated should be made good before work is started.
- C. Rake out and re-point defective mortal joints and fill all holes and voids.
- D. Hairline cracks are acceptable, but crack over 0.3 mm should be opened up and filled.
- E. Damaged expansion joints and faulty junctions between windows, doors, walls and roof should be renewed.

### **3.2 PREPARATION**

- A. Prepare substrates in accordance with manufacturer's instructions and recommendations.
- B. All surfaces should be thoroughly cleaned to remove dirt, salt, efflorescence, or any other foreign matter.
- C. For salt contamination water jetting will be required until there is no sign of salt contamination on the surface after drying.
- D. If fungicidal agents are being used to kill or remove mold growth, use these in accordance with the manufacture's instructions, and allow the surface to dry completely before application.

### **3.3 APPLICATION**

- A. Apply in accordance with manufacturer's instructions and recommendations.
- B. Should be applied to a dry or slightly damp surface but never to a wet surface as penetration will be impaired.
- C. Must be applied to the lowest section of the prepared surface first, working towards the highest area.
- D. Liberally apply by either a long bristled brush or low pressure spray such that as progress is made working up the wall, material should be allowed to run down and penetrate into the previously coated section underneath.
- E. Should not be applied when the ambient or substrate temperature is below 41° F (5 °C) and there is a risk of freezing.

### **3.4 CLEANING**

- A. Mixing tools should be cleaned immediately after use with Belzona 9111 or any other effective solvent such as methyl ethyl ketone or acetone.
- B. Brushes and any other application tools should be cleaned using a suitable solvent such as Belzona 9121, methyl ethyl ketone, acetone or cellulose thinners.

### **3.5 PROTECTION OF FINISHED WORK**

- A. Follow manufacturer's instructions and recommendations.

**END OF SECTION**

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