

Section 03 05 00

Concrete Sealants ConBlock MIC Liquid Antimicrobial Admixture for Cementitious Materials

PART 1 – GENERAL

1.1 SUMMARY

- A. **Section Includes:** Materials, procedures, and best practices for liquid antimicrobial admixtures for cementitious materials.

1.2 SYSTEM DESCRIPTION

- A. **Liquid Antimicrobial Admixture for Cementitious Materials:** Integral antimicrobial liquid admixture for defense against microbial induced corrosion in most concrete or cementitious-lined sanitary structures.

1.3 RELATED SECTIONS

- A. Section 03 30 00 – Cast-in-Place Concrete
B. Section 03 40 00 – Precast Concrete

1.4 REFERENCES

- A. **American Society of Testing and Materials International (ASTM):**
1. ASTM C94, “Standard Specification for Ready-Mixed Concrete”
 2. ASTM C1904, “Standard Test Methods for Determination of the Effects of Biogenic Acidification on Concrete Antimicrobial Additives and/or Concrete Products”
 3. ASTM D4783, “Standard Test Methods for Resistance of Adhesive Preparations in Container to Attack by Bacteria, Yeast, and Fungi”
- B. **American Concrete Institute (ACI):**
1. ACI 301, “Specifications for Concrete Construction”
 2. ACI 305, “Guide to Hot Weather Concreting”
 3. ACI 306, “Guide to Cold Weather Concreting”

4. ACI 308.1, “Standard Specification for Curing Concrete”

1.5 SUBMITTALS

- A. **General:** If any portion of the Contract Documents do not conform to the manufacturer’s standard recommendations, submit notification of portions of design at variance with manufacturer’s specifications.
- B. **Product Data:** Submit manufacturer’s product technical data sheet including directions for use.

1.6 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Manufacturer shall be ISO 9001 registered.
- B. **Technical Consultation:** The admixture manufacturer’s representative shall provide technical consultation and support as needed.

1.7 DELIVERY, STORAGE AND HANDLING

- A. **Ordering:** Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. **Delivery:** Deliver packaged sealing materials to project site or to concrete production facility in original undamaged containers with manufacturer’s labels and seals intact.
- C. **Identification:** Containers shall be fully identified with manufacturer’s label listing type, grade, class, and other qualifying information. Provide product’s safety data sheet.
- D. **Storage:** Store admixture materials in a secure area, in accordance with local regulations, and at temperatures above 40 degrees Fahrenheit. Keep in properly labeled containers. Keep containers tightly closed in a dry, cool, and well-ventilated place. Protect from direct sunlight. Keep away from food, drink, and animal feeding stuffs.

1.8 WARRANTY

- A. **Project Warranty:** Refer to conditions of the Contractor for project warranty provisions.
- B. **Manufacturer’s Warranty:** This information is presented in good faith, but we cannot anticipate all conditions under which this information and our products, or the products of other manufactures in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combinations for their own purposes. It is the **users’ responsibility** to satisfy himself as to the suitability and completeness of such information for his own particular use. We sell this product without warranty, and buyers and users assume all

responsibility and liability for loss or damage arising from the handling and use of this product, whether used alone or in combination with other products.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. **Acceptable Manufacturer:**
Concrete Sealants, Inc.
9325 State Route 201; Tipp City, OH 45371
Phone: (800) 332-7325; Fax: (937) 845-3587
E-mail: hello@conseal.com; Website: www.conseal.com
- B. **Substitutions:** No substitutions permitted.
- C. **Source Quality:** Obtain all antimicrobial liquid admixtures from a single manufacturer. The product shall be sourced from a U.S. EPA registered manufacturer. Supplemental distributors are not permitted.

2.2 MATERIALS

- A. **System Description:** Integral antimicrobial liquid admixture for defense against microbial induced corrosion in most concrete or cementitious-lined sanitary structures.
- B. **Registration:** Product shall be U.S. EPA registered and labeled for concrete and stone applications.
- C. **Performance:** When used in accordance with the manufacturer's recommendations, the product shall satisfy the following requirements when compared to an identical concrete mixture without the admixture:
1. Shall prevent concrete surface pH from dropping below 4.2 when tested in accordance with ASTM C1904 Test Method B.
 2. Shall provide a reduction in sulfate and calcium concentration, and an increase in flexural strength when tested in accordance with ASTM C1904 Test Method B.
 3. Shall reduce bacterial growth by at least 99% when tested in accordance with ASTM D4783 adapted for determination of antibacterial resistance of concrete to Thiobacillus.
- D. **Acceptable Product:** Concrete Sealants ConBlock MIC.

PART 3 – EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Comply with manufacturer's product technical data sheet regarding directions for use, dosage, and best practices.

3.2 APPLICATION PROCEDURES

- A. **Preparation:** When used in concrete, batch and mix materials in accordance with ASTM C94. Stir ConBlock MIC well prior to use. Do not thin or dilute ConBlock MIC.
- B. **Precautions:** Potable water is required. Ideally, the mix water should have a pH between 5.5 and 8.0. Water which is alkaline or has a hardness level greater than 600 ppm may cause the active ingredient in ConBlock MIC to form flakes and come out of solution. Solutions which appear milky or which have a solid precipitate (little white pieces) should be neutralized and disposed of properly. Be aware that hot water can cause ConBlock MIC to separate from the solution.
- C. **Compatibility:** ConBlock MIC is compatible with most admixtures used in the production of quality concrete. However, Concrete Sealants makes no representations or warranties regarding such compatibility of ConBlock products with other additives or admixtures. It shall be the responsibility of the concrete contractor to take whatever measures are necessary, including testing, to ensure compatibility of ConBlock MIC with other additives or admixtures being used in the concrete mix.
- D. **Mix Proportioning and Dosage:** When used in concrete, use 12-24 fluid ounces of ConBlock MIC per 100 pounds of cementitious materials. When used in mortar for shotcrete or relining, use 12 fluid ounces of ConBlock MIC for every 100 pounds of cementitious materials. For every 1 gallon of ConBlock MIC used, the mix water content should be reduced by 1 gallon to maintain the design water-to-cementitious materials ratio.
- E. **Batching:** ConBlock MIC shall be the last product added to the concrete mix, or ConBlock MIC may be pre-mixed with the batch water, or ConBlock MIC may be added with the batch water.
- F. **Mixing:** If ConBlock MIC is the last product added to the concrete mix, continue mixing for 5 minutes after adding ConBlock MIC. If ConBlock MIC is pre-mixed with the batch water or added simultaneously with the batch water, mix as usual after adding ConBlock MIC.

3.3 PROJECT CONDITIONS

- A. When used in concrete:
 - 1. Work shall be performed in accordance with ACI 301.
 - 2. Conform to ACI 305 as appropriate for hot weather concreting.
 - 3. Conform to ACI 306 as appropriate for cold weather concreting.
 - 4. Cure and protect concrete in accordance with ACI 308.1.

3.4 CLEANING AND PROTECTION

- A. **Cleaning:** Contain and collect spillage with non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in a container for disposal according to local/national regulations.

End of Section 03 05 00