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Section 03 05 00

Concrete Sealants ConBlock CDA Liquid Admixture for Densifying and Waterproofing Concrete

PART 1 – GENERAL

1.1 SUMMARY

- A. **Section Includes:** Materials, procedures, and best practices for liquid admixtures for densifying and waterproofing concrete.

1.2 SYSTEM DESCRIPTION

- A. **Liquid Admixture for Densifying and Waterproofing Concrete:** Integral liquid admixture for waterproofing and/or improved durability in most concrete 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 C494, “Standard Specification for Chemical Admixtures for Concrete”
 3. ASTM C1585, “Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic-Cement Concretes”
- 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”
- C. **U.S. Army Corps of Engineers:**
1. CRD-C48, “Standard Test Method for Water Permeability of Concrete”

D. **European Standards:**

1. BS EN 2390-8, "Testing Hardened Concrete Depth of Penetration of Water Under Pressure"

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 plant start instructions.

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 at temperatures above 40 degrees Fahrenheit. Keep containers tightly closed in a dry, cool, and well-ventilated place.

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 liquid admixtures for densifying and waterproofing concrete from a single manufacturer.

2.2 MATERIALS

A. **System Description:** Integral liquid admixture for waterproofing and/or improved durability in most concrete structures.

B. **Compliance:** The product shall conform to ASTM C494 Type S.

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 reduce the rate of water absorption by at least 15% when tested in accordance with ASTM C1585.
2. Shall reduce depth of water penetration under pressure by at least 30% when tested in accordance with BS EN 12390-8.
3. Shall reduce concrete permeability by least 95% when tested in accordance with CRD-C48.

D. **Acceptable Product:** Concrete Sealants ConBlock CDA.

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:** Batch and mix materials in accordance with ASTM C94. Stir ConBlock CDA well prior to use. Polycarboxylate ether high range water reducers are required for ConBlock CDA.

- B. **Compatibility:** ConBlock CDA 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 CDA with other additives or admixtures being used in the concrete mix.
- C. **Mix Proportioning and Dosage:** Use 21 fluid ounces of ConBlock CDA per 100 pounds of cementitious materials. For every 1 gallon of ConBlock CDA used, the mix water content should be reduced by 0.75 gallons to maintain the design water-to-cementitious materials ratio.
 - 1. Conventional or Flowable Concrete: ConBlock CDA is expected to reduce the concrete's slump. Increase the mix design's slump by 1"-2" more than the target slump prior to adding ConBlock CDA.
 - 2. Self-Consolidating Concrete: ConBlock CDA is expected to reduce the concrete's slump flow. Increase the mix design's slump flow by 1.5"-2" more than the target slump flow prior to adding ConBlock CDA.
- D. **Batching:** ConBlock CDA must be the last product added to the concrete mix, immediately – within 30 seconds – after the last ingredient. ConBlock CDA must not be pre-mixed with batch water. It is also acceptable to hold back up to one gallon of mix water per cubic yard of concrete and add it to the mixer with ConBlock CDA.
- E. **Mixing:** After adding ConBlock CDA to the mixer, mix for 75 equivalent revolutions, unless using a planetary mixer in which case mix for 30-40 seconds after adding ConBlock CDA, or when using a truck mixer in which case mix for 3-5 minutes after adding ConBlock CDA.

3.3 PROJECT CONDITIONS

- A. Work shall be performed in accordance with ACI 301.
- B. Conform to ACI 305 as appropriate for hot weather concreting.
- C. Conform to ACI 306 as appropriate for cold weather concreting.
- D. Cure and protect concrete in accordance with ACI 308.1.

3.4 CLEANING AND PROTECTION

- A. **Cleaning:** Soak up product spillage with inert absorbent material and transfer to properly labeled containers.

End of Section 03 05 00