Specifying the
Integral Water Repellent
For
Masonry Mortar

(Short Form Specification)

Specification

RainBloc® for Mortar

Integral Water Repellent for Mortar

Short-form Specification
(For inclusion in Section 04 05 13, Masonry Mortaring; 04 05 00, Common Works for Masonry; or 04 20 00, Unit Masonry)

[Note to Specifier: The RainBloc® System is comprised of RainBloc® for Mortar admixture, specified in this short-form specification, which is added to the mortar mix onsite by the mason contractor, and RainBloc® concrete masonry unit admixture which is mixed throughout the low slump concrete during the manufacture of the Concrete Masonry Unit (CMU) by a Certified RainBloc® Producer. The admixtures provide effective water repellency in typical masonry construction.

You may elect to include this short-form specification into either Section 04 05 13, Masonry Mortaring or Section 04 05 00, Common Work Results for Masonry, for mortar materials. Alternatively, if Section 04 20 00, Unit Masonry, includes the mortar specification, then this this short-form specification should be incorporated in the mortar portions of the section.

In addition to this short-form specification for the mortar admixture, the short-form specification for RainBloc® concrete masonry unit admixture, from ACM Chemistries, Inc., must be incorporated into your project specification in Section 04 20 00, Unit Masonry. Both the CMU and mortar admixtures are required in your project specifications to achieve a water-repellent masonry wall.

Finally, it is important to understand that while the RainBloc® System greatly enhances the water-resistant properties of the masonry, the RainBloc® System should not be considered as a substitute for good design practices and quality construction procedures (workmanship). Proper flashing details and control joint specifications should also be included in your project specifications. Refer to information in National Concrete Masonry Association (NCMA) TEK 19-2A, 19-4A and 19-5A for flashing details, as well as NCMA TEK 10-1A and 10-2B for crack control and control joint recommendations. This short-form specification directly specifies the RainBloc® System and is important to the water penetration performance of the wall. The RainBloc® System components should be incorporated into your project specifications along with other important requirements, such as those specified in TMS 602/ACI 530.1/ASCE 6, "Specification for Masonry Structures."]

[Note to Specifier: Incorporate the following information in Part 1 – General]

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes liquid polymeric water-repellent admixture added to the mortar at the time of mixing for use in the construction of water-repellent concrete masonry.

[Note to Specifier: If choosing to retain optional "Related Sections" paragraph below, edit to correspond to sections used in Project.]

B. Related Sections:
   1. Section 04 20 00 UNIT MASONRY for compatible integral liquid polymeric admixture added to the concrete masonry units at the time of manufacture.

[Note to Specifier: Optional "References" Article below is included here for information purposes.]

1.2 REFERENCES

A. ASTM C1072 Standard Test Methods for Measurement of Masonry Flexural Bond Strength
B. ASTM C1384 Standard Specification for Admixtures for Masonry Mortar
C. ASTM E514 Standard Test Method for Water Penetration and Leakage through Masonry
D. National Concrete Masonry Association (NCMA): NCMA TEK 08-02A Removal of Stains from Concrete Masonry
E. National Concrete Masonry Association (NCMA): NCMA TEK 08-04A Cleaning Concrete Masonry

1.3 SUBMITTALS

A. Product Data: Submit for specified products.
B. Certificate: From masonry Installer stating that only mortar containing specified water-repellent mortar admixture at the manufacturer's recommended dosage has been used for construction of water-repellent masonry.
C. Test and Evaluation Reports: Prepared by qualified independent laboratory indicating compliance with performance requirements for water-repellent CMU admixture.

1.4 QUALITY ASSURANCE

A. Sample Panel: Construct sample masonry panel to verify compatibility of materials and effects of materials and construction procedures on final appearance of masonry work. Incorporate range of CMU and mortar textures and colors permissible.
   1. Construct panel using jobsite materials to construct sample panel, including specified water-repellent CMU and mortar containing water-repellent mortar admixture.

2. Prepare more than one sample batch of mortar, especially when coloring pigments are added to the mortar, to establish acceptable visual and performance characteristics.
3. Perform specified construction procedures on sample panel, including cleaning of one-half of panel, and application of specified coatings, if any, and joint sealants.
4. Construct additional sample panels as necessary to obtain Architect approval.
5. Retain approved sample panel during construction as standard for judging completed masonry work.
6. Acceptance of sample panel does not constitute approval of deviations from materials contained in sample panel, unless such deviations are specifically approved by the Architect in writing.

[Note to Specifier: It is strongly recommended by ACM Chemistries, Inc. that the following section be included in your project specification, especially for larger scale projects. The pre-installation conference can establish your strong desire to enforce the requirements for water-repellency, proper flashing techniques, and the use of weeps. Coordinate with Division 01 Section "Project Management and Coordination."]

B. Pre-installation Conference: At least two weeks prior to commencing above-grade masonry work, schedule pre-installation conference at the jobsite. Attendees shall include Contractor, masonry installer, flashing installer, CMU supplier and/or integral water-repellent admixture manufacturer's representative, and related subcontractors. Give at least two weeks' notice to the participants and advise the architect of the scheduled meeting date. Include as agenda items the following:
   1. Interface of flashing, waterproofing, and air barrier work with masonry installation.
   2. Preparation of mortar mix including water-repellent mortar admixture.
   3. Mortar handling and tooling techniques to increase water resistance of completed masonry work.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store integral water-repellent mortar admixture in an area where temperature is maintained between 40 to 110 ºF (4 to 43 ºC).

B. Do not allow integral water-repellent mortar admixture to freeze; discard any frozen admixture.

[Note to Specifier: Incorporate the following in Part 2 – PRODUCTS]

PART 2 - PRODUCTS

2.1 DESCRIPTION

A. Water-Repellent Mortar Admixture: Integral liquid polymeric water-repellent admixture for mortar added to the mortar at the time of mixing for use in the construction of water-repellent concrete masonry.

[Note to Specifier: Delete the following subparagraph if proprietary specification method is not allowed.]

1. Product: Provide the following: RainBloc® for Mortar, an integral liquid polymeric water-repellent admixture manufactured by ACM Chemistries, Inc.

2.2 PERFORMANCE REQUIREMENTS

A. Water-Repellent CMU Admixture:
   1. Water Permeance of Masonry, ASTM E514: Capable of achieving a Class E Rating when evaluated using ASTM E514 with the test extended to 72 hours, using the rating criteria specified in ASTM E514-74.
   2. Flexural Bond Strength of Masonry, ASTM C1072: No statistically lower masonry flexural bond strength shall occur as a result of adding integral water repellent CMU and mortar admixtures when compared to a control (containing no admixtures) CMU and mortar tested in accordance with ASTM C1072 as directed by ASTM C1384.
   3. Water Repellent Mortar Admixture Classification: Capable of meeting all of the requirements for a Water Repellent Classification when evaluated in accordance with ASTM C1384.

[Note to Specifier – ASTM E 514 Modification Clarification: Note that this guide specification recommends modifying the current ASTM E 514 standard by extending the test period to 72 hours and applying the Rating Scale found in ASTM E 514-74, an earlier version of the test method. Both versions subject test specimens to a 140 mm (5½ in.) per hour rainfall and a 100.6 km/hr (62.5 mph) wind. Under the 1974 version of the test method, the test period lasted for 72 hours and the laboratory was instructed to rate the wall on an objective Rating Scale in one of five categories from L" (indicating leakage), to "E" (for Excellent). Under the current version of the ASTM E 514 the minimum test period is only 4 hours; and the laboratory is instructed only to record their observations on the specimen. The current version of the standard is not as demanding as the previous version and does not provide the same level of performance required by the 1974 version. If you want the kind of performance the RainBloc® System can achieve for your project, do not change the wording in this guide specification, which extends the test period to 72 hours and applies the rating criteria found in ASTM E 514-74 to the results.]

[Note to Specifier: Incorporate the following in Part 3 – Execution]

PART 3 - EXECUTION

3.1 MORTAR BEDDING AND JOINTING

A. Water-Repellent CMU Masonry:
   1. Installer shall use only concrete masonry units containing a compatible integral water-repellent admixture added to the concrete masonry units (CMU) at the time of manufacture for construction of water-repellent masonry walls.
   2. Installer shall use only mortar containing integral liquid polymeric water-repellent admixture at the manufacturer's recommended addition rate and mixed according to the manufacturer's recommended instructions for construction of water-repellent masonry walls.

B. Installing Units: Use face shell bedding to provide the greatest resistance to water penetration.

[Note to Specifier: ACM Chemistries, Inc. recommends all of the requirements in the "Mortar Joint Tooling" Section to provide greatest resistance to water penetration.]

C. Mortar Joint Tooling:
   1. Tool mortar joints to [concave] [V-profile] to provide the greatest resistance to water penetration.
   2. Do not use raked, flush, extruded, struck, beaded weathered, or other joint profiles due to their reduced water-resistance.
   3. Tool the mortar joints when they are thumbprint hard to provide the greatest resistance to water penetration and to help minimize hairline crack between the mortar and the CMU.

D. In-Progress Cleaning: Promptly remove excess wet mortar containing integral water-repellent mortar admixture from face of masonry as work progresses by dry brushing.

E. Protection of Work: Cover top of unfinished masonry work to protect it from the weather and to prevent accumulation of water in CMU cores.

[Note to Specifier: Requirements in "Cleaning" Section are important, since standard methods for removing hardened mortar involve the use of methods or materials such as strong acid, overaggressive sandblasting, and high-pressure cleaning, which are harmful to masonry units and are not recommended by ACM Chemistries, Inc.]

3.2 CLEANING

A. Final Cleaning: Clean masonry work once mortar is set and cured.
   1. Test cleaning methods on one-half of sample panel prior to cleaning masonry work.
   2. Remove dirt or stains from masonry walls exposed in the finished work in accordance with the manufacturer's recommendations and NCMA TEK 08-02A.
   3. Do not clean using strong acids, overaggressive sandblasting, or high-pressure cleaning methods.
   4. Clean in accordance with manufacturer's recommendation and NCMA TEK 08-04A.
   5. Comply with environmental laws and restrictions of authorities having jurisdiction.

END OF SECTION INSERT