

**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 04100, Mortar or Section 04200, 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 on site by the mason contractor, and RainBloc® concrete masonry unit admixture, which is added to each batch of concrete used to manufacture each concrete masonry unit (CMU) by a Certified RainBloc® Producer. The admixtures provide effective water repellency in typical masonry construction.

In addition to this short-form specification for the mortar admixture, the short-form specification for the ACM Chemistries integral water repellent CMU admixture, RainBloc® concrete masonry unit admixture, must be incorporated into your project specification in Section 04200, Unit Masonry. If Section 04200 for your project includes the mortar specification, this short-form specification should be incorporated in the mortar portions of the section. If Section 04200 does not include the mortar specification, this short-form specification should be incorporated into your Section 04100. Both 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 ACI 530.1, “Specification for Masonry Structures.”]

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

1. Summary: Section includes liquid polymeric admixture added to the mortar for wall construction at the time of mixing.
2. Performance Requirements:
 - a. Water Permeance of Masonry: ASTM E 514, “Standard Test Method for Water Penetration and Leakage through Masonry.”
 - b. Flexural Bond Strength of Masonry: ASTM C 1357, “Standard Test Method for Evaluating Masonry Bond Strength.”
 - c. Compressive Strength of Masonry Prisms: ASTM C 1314, “Standard Test Method for Constructing and Testing Masonry Prisms Used to Determine Compliance with Specified Compressive Strength of Masonry.”
 - d. Drying Shrinkage of Mortar: ASTM C 1148, “Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar.”
3. Submittals:

Test Reports prepared by a qualified independent laboratory indicating compliance with the performance requirements for integral mortar water repellency as tested using:

 - (1) ASTM E 514-74.
 - (2) ASTM C 1357.
 - (3) ASTM C 1314.
 - (4) ASTM C 1148.
4. Sample Panel: Construct a sample panel to determine the compatibility of materials and the effect of the materials and construction procedures on the final appearance of the wall. Use jobsite materials, including specified water repellent CMU and mortar to construct sample panel. The CMU sample panels erected shall represent the range of texture and color permitted for the project. Prepare more than one sample batch of mortar, especially when coloring pigments are added to the mortar, to establish desired aesthetics and performance. Perform all construction procedures on sample panel, including cleaning and application of coatings and sealants. Retain sample panel during construction as standard for judging completed masonry work. Acceptance of sample panel does not constitute approval of deviations from materials

contained in sample panel, unless such deviations are specifically approved by Architect in writing.

5. Site Storage:
 - a. Store integral water repellent mortar admixture in an area where temperature is maintained between 4°C (40°F) to 43°C (110°F).
 - b. Do not allow integral water repellent mortar admixture to freeze; discard any frozen admixture.

6. Warranty:
 - a. Integral water repellent mortar admixture shall be warranted by admixture manufacturer to be free of defects and to meet manufacturer's published physical and chemical properties.
 - b. Installer shall warrant that only mortar containing integral water repellent mortar admixture at the manufacturer's recommended addition rate has been placed in exterior walls.

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

- A. Integral Water Repellent Mortar Admixture:
 1. Description: Integral liquid polymeric admixture for mortar added during mixing.
 2. Water Permeance of Masonry: Capable of achieving a Class E Rating when evaluated using ASTM E 514-74.
 3. Flexural Bond Strength of Masonry: 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 when tested according to ASTM C 1357.
 4. Compressive Strength of Masonry Prisms: No statistically lower compressive strength of prisms 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 when tested according to ASTM C 1314.
 5. Drying Shrinkage of Mortar: No statistically higher drying shrinkage of mortar shall occur as a result of adding integral water repellent mortar admixture when compared to a control (containing no admixture) mortar when tested according to ASTM C 1148.

6. Product: RainBloc® for Mortar Admixture, an integral water repellent mortar admixture manufactured by ACM Chemistries, Inc.

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

- A. Integral Water Repellent Mortar Admixture:
 1. Installer shall use only concrete masonry units containing compatible integral water repellent CMU admixture for exterior wall construction.
 2. Installer shall use only mortar containing integral water repellent mortar admixture at the manufacturer's recommended addition rate and mixed according to the manufacturer's recommended instructions.
 3. Use faceshell bedding to provide the greatest resistance to water penetration.
 4. Tooling:
 - a. Tool the mortar joints concave or to a V-profile to provide the greatest resistance to water-penetration. Do not use raked, flush, extruded, struck, beaded, weathered, or other joint profiles due to their reduced water-resistance.
 - b. Tool the mortar joints when they are thumbprint hard to provide the greatest resistance to water-penetration and to help minimize hairline cracks between the mortar and the CMU.
 5. Cover the top of unfinished masonry work to protect it from the weather and to prevent accumulation of water in the cores of the CMU.
 6. Cleaning:
 - a. Remove "primary" efflorescence from masonry walls exposed in the finished work in accordance with the manufacturer's recommendations and the NCMA TEK Bulletin #8-3A.
 - b. Remove dirt or stains from masonry walls exposed in the finished work in accordance with the manufacturer's recommendations and the NCMA TEK Bulletin #8-2A.

[Note to Specifier: Including the following in project specifications is important because standard methods for removing hardened mortar involve the use of methods and 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.]

- c. Promptly remove excess wet mortar containing integral water repellent mortar admixture from the face of the masonry as work progresses. Do not use strong acids, overaggressive sandblasting or high-pressure cleaning methods.
- d. Comply with applicable environmental laws and restrictions.

[Note to Specifier: It is strongly recommended by ACM Chemistries that the following be included in Section 04100 or 04200 of your project specification. 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 Section 01200.]

- 7. At least two weeks before starting above-grade masonry work, schedule a pre-installation conference at the jobsite in accordance with requirements of Section 01200 to discuss compliance with the requirements of the contract documents. Give two weeks advance notice to the participants, including the contractor, mason contractor, flashing installer, CMU producer and/or the manufacturer of the integral water repellent mortar admixture. Advise the architect of the scheduled meeting date.