

# **Specifying the Integral Water Repellent For Concrete Masonry Units**

(Short Form Specification)

Specification

## **RAINBLOC™ Admixture for Water Repellent Concrete Masonry Unit Production**

Integral Water-Repellent

Short-form Specification

(For inclusion in Section 04200, Unit Masonry)

**[Note to Specifier: The RainBloc™ System is comprised of RainBloc™ for Mortar admixture which is added to the mortar mix on site by the mason contractor and RainBloc™ concrete masonry unit admixture, specified in this short-form specification, 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.**

**In addition to this short-form specification for the CMU admixture, the short-form specification for the mortar integral water-repellent, RainBloc™ for Mortar from ACM Chemistries must be incorporated into your project mortar specification, either in Section 04200, Unit Masonry, or in a separate Section 04100, Mortar. 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 concrete masonry units at the time of manufacture.

**[Note to Specifier: If mortar is specified in Section 04100, include 2 below. If mortar is specified in Section 04200, delete 2 below.]**

2. Product Installed But Not Furnished Under This Section: Install mortar containing compatible integral liquid polymeric water-repellent admixture furnished in Section 04100.
3. 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 CMU: ASTM C 426, "Standard Test Method for Drying Shrinkage of Concrete Masonry Units."
4. Submittals:

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

  - (1) ASTM E 514-74.
  - (2) ASTM E 514-02.
  - (3) ASTM C 1357.
  - (4) ASTM C 1314.
  - (5) ASTM C 426.
5. Quality Assurance: CMU producer shall be certified by the manufacturer of integral CMU water-repellent admixture.
6. 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 any coatings or sealants specified for the project. 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.

7. Warranty:
  - a. Integral CMU water-repellent admixture shall be warranted by admixture manufacturer to be free of defects and to meet manufacturer's published physical and chemical properties.
  - b. CMU producer shall warrant that integral CMU water-repellent admixture has been provided at appropriate dosage rate in all CMU units shipped to project site for use in exterior wall construction.
  - c. Installer shall warrant that only CMUs containing integral CMU water-repellent admixture have been placed in exterior CMU walls.

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

- A. Integral CMU Water-Repellent:
  1. Description: Integral liquid polymeric admixture mixed with concrete during production of CMUs.
  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 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 CMU: No statistically higher drying shrinkage of the CMU shall occur as a result of adding integral water-repellent CMU admixture when compared to a control (containing no admixtures) CMU when tested according to ASTM C 426.
6. Product: RainBloc™ Water Repellent Masonry Unit Admixture, an integral liquid polymeric water-repellent admixture manufactured by ACM Chemistries, Inc.

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

- A. Integral Water-Repellent CMU:
  1. Installer shall use only mortar containing compatible integral liquid polymeric water-repellent mortar admixture at the manufacturer's recommended addition rate and mixed according to manufacturer's recommended instructions for construction of water-repellent masonry exterior walls.
  2. Cover top of unfinished masonry work to protect it from the weather and to prevent accumulation of water in the cells of the CMU.
  3. 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 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.]**

- 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, Inc. 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 holes. Coordinate with Section 01200.]**

4. 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 CMU admixture. Advise the architect of the scheduled meeting date.