

CSI SPECIFICATIONS

WATER-REPELLENT MASONRY MORTARING

Section 04 05 13.15



This section is to be used in combination with a project-specific masonry mortar specification in Division 04 or plastering/stucco specification in Division 09.

Krytol Mortar Admixture (KMA) is a hydrophilic crystalline admixture used to provide long-term protection of masonry mortars and rendering and plastering mortars against water and waterborne contaminants by reducing permeability and absorption of the mortar.

Alternatively, this section could be numbered and titled as "Section 09 24 00.13 - Water-Repellent Plastering" if the KMA admixture will be used solely for plastering and/or stucco finishing.

Part 1 General

1.1 SUMMARY

- A. Hydrophilic crystalline water-repellent mortar admixture added to [masonry mortar][rendering mortar][plastering mortar] to protect from water and waterborne contaminants by reducing permeability and absorption.

1.2 SECTION INCLUDES

- A. Integral crystalline water-repellent mortar admixture for [masonry][rendering][plastering] mortars [and stuccos].

1.3 RELATED SECTIONS

In this article, indicate those sections that inter-rely on this section. The listing below is only partial and should be edited to include those sections specific to the project that describes subjects or products that affect this section directly.

- A. [Section 04 05 13 - Masonry Mortaring.]
- B. [Section 04 20 00 - Unit Masonry.]
- C. [Section 04 26 16 - Veneer Masonry: Installation of mortar.]
- D. [Section 04 26 19 - Reinforced Unit Masonry: Installation of [mortar.]
- E. [Section 09 24 00 - Cement Plastering.]
- F. [Section 09 24 23 - Cement Stucco.]
- G. [Section 09 24 33 - Cement Parging.]

1.4 REFERENCES

Edit this article after editing the rest of this section. Only list reference standards below, that are included within the text of this section, when edited for a project specification - delete other references that do not apply. Comparable Canadian and US are listed for some products.

- A. American Concrete Institute (ACI).
 - 1. ACI 308.1-11 - Specification for Curing Concrete.
- B. American Society of the International Association for Testing and Materials (ASTM).
 - 1. ASTM C270-14a - Standard Specification for Mortar for Unit Masonry.

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2. ASTM C926-16b - Standard Specification for Application of Portland Cement-Based Plaster.
 3. ASTM C1328 / C1328M-12 - Standard Specification for Plastic (Stucco) Cement.
- C. British Standard Institution.
1. BS EN 480-12:1998 - Admixtures for Concrete, Mortar and Grout. Test Methods. Determination of the Alkali Content of Admixtures.
- D. Canadian Standards Association (CSA).
1. CSA A23.1-09/A23.2-09 (R2014) - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
 2. [CAN/CSA-A179-04 (R2014) - Mortar and Grout for Unit Masonry.]
- E. German Institute for Standardization (DIN).
1. DIN 1048 Part 5, Testing Concrete: Testing of Hardened Concrete Water Permeability.

1.5 PERFORMANCE REQUIREMENTS

- A. Water Absorption: 50% reduction in water absorption when tested to BS EN 480.
- B. Water Reduction: 5% reduction in water to ASTM C270.
- C. Permeability: No measurable leakage or dampness when tested to DIN 1048 Part 5 at hydrostatic pressure of <0.5 MPa><<72.5 psi>> for 10 days.
- D. Self-Sealing: Autogenous crack sealing of cracks with width of <0.5mm><<0.02 inches>> or greater; verified by independent testing.
- E. Chemical Resistance: The crystalline water-repellent mortar admixture shall improve sulphuric acid resistance of cement-based materials by blocking capillary pores to reduce acid penetration.

1.6 ADMINISTRATIVE REQUIREMENTS

- A. Section [01 31 00]: Project management and coordination procedures.
- B. Pre-Installation Conference:
1. A meeting shall be held prior to placement of water-repellent mortars with the Contractor, [bricklayer][plasterer], [and Owner's testing agency] and the Consultant in attendance.
 2. Review schedule, testing requirements, batching, construction methods, [jointing], and placement, finishing and curing.

1.7 SUBMITTALS FOR REVIEW

- A. Section [01 33 00]: Submission procedures.
- B. Product Data: Provide technical data on crystalline water-repellent mortar admixture certifying compliance with specified performance requirements, storage and handling recommendations and application instruction method.
- C. Include design mix, [indicate whether the Proportion or Property specification of [ASTM C270][CAN/CSA-A179] is to be used], required environmental conditions, and admixture limitations.
- D. Independent Test Reports:
1. Submit reports on mortar indicating conformance of component mortar materials to requirements of [ASTM C270][CAN/CSA-A179][ASTM C1328].

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1.8 SUBMITTALS FOR INFORMATION

The following submittals are for information only.

- A. Section [01 33 00]: Submission procedures.
- B. Installation Data: Manufacturer's special installation requirements.

1.9 CLOSEOUT SUBMITTALS

The following submittals are for project close-out purposes.

- A. Section [01 78 10]: Submission procedures.
- B. Warranty Documents: Manufacturer's warranty documentation for specified coverage executed in the Owner's name.

1.10 QUALITY ASSURANCE

- A. Source Quality Control: Obtain all crystalline water-repellent mortar admixtures from a single manufacturer.
- B. Manufacturer:
 - 1. Company specializing in manufacturing the Products specified in this section with minimum [twenty-five (25)] years [documented] experience.
- C. Installer:
 - 1. Company specializing in performing the work of this section with minimum [three (3)] years documented experience.
- D. Test Batches:
 - 1. Provide test batches as recommended by the crystalline water-repellent mortar admixture manufacturer to determine air content, plastic and hardened properties, and slump.
 - 2. Provide test results to the Consultant.

1.11 DELIVERY, STORAGE, AND PROTECTION

- A. Section [01 61 00]: Transport, handle, store, and protect products.
- B. Deliver packaged crystalline water-repellent mortar admixture materials in original undamaged containers, with manufacturer's labels and seals intact.
- C. Store materials in dry environment at a temperature above <7 degrees C><<45 degrees F>>.

1.12 ENVIRONMENTAL REQUIREMENTS

In the following paragraphs, consider the effect on related work and site operations regarding these requirements.

- A. Section [01 35 26]: Environmental conditions affecting products on site.
- B. Maintain materials and surrounding air temperature to minimum [<5 degrees C><<40 degrees F>>] [<10 degrees C><<50 degrees F>>] prior to, during, and forty-eight (48) hours after completion of masonry work.

1.13 WARRANTY

- A. Section [01 78 10]: Warranties.
- B. Manufacturer's Warranty: Provide warranty limited to waterproofing materials for a period of [ten (10)] years from date of Substantial Performance of the Work.

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Part 2 Products

Coordinate cross references to other sections where mortar or plastering materials and mixes are specified.

2.1 MATERIALS

- A. [Mortaring Materials and Aggregates: Refer to Section 04 05 13.]
- B. [Cementitious Materials: Refer to Section 04 05 13.]
- C. [Plastering Materials: Refer to Section 09 24 00.]
- D. Water: Clean and potable.

2.2 ADMIXTURE

- A. Crystalline Water-Repellent Mortar Admixture: proprietary admixture consisting of quartz silica and active ingredients; Provide as a powdered water-repellent admixture for use in [masonry mortar][rendering mortar][plastering mortar][stucco].
 - 1. Shape of crystal: when observed under 30x magnification, crystal growth will be long and needle shaped, allowing crystals to grow deeper and pack more tightly.
 - 2. Product: Krytol Mortar Admixture (KMA).
 - 3. Manufacturer - Basis of Design:
 - 1. Kryton International Inc.
Toll Free: 1.800.267.8280
E-mail: info@kryton.com
Website: www.kryton.com
 - 2. Substitutions: Not permitted.

2.3 MIXES

- A. [Mortar Mixes: Refer to Section 04 05 13; 2% by weight of cement.]
- B. [Plastering Mixes: Refer to Section 09 24 00.]

2.4 MORTAR MIXING

- A. Mix mortar ingredients to [ASTM C270][CAN/CSA-A179][ASTM C1328] in quantities needed for immediate use.
- B. Add crystalline water-repellent mortar admixtures to manufacturer's written instructions.
- C. Do not use antifreeze liquids, calcium chloride, frost inhibitors based on calcium chloride, salts or other substances used for lowering the freezing point or accelerating setting time.
- D. If moisture is lost by evaporation, retemper as directed by the manufacturer.
- E. Use mortar within period specified by crystalline water-repellent mortar admixture manufacturer.

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Part 3 Execution

3.1 EXAMINATION

- A. Section [01 70 00]: Verify existing conditions before starting work.

3.2 INSTALLATION

- A. Apply crystalline water-repellent mortar admixture to [mortar][plaster] mix in accordance with manufacturer's written instructions and approved test batches.

Select from the following paragraphs and coordinate section text to eliminate conflicts.

- B. Install to [ASTM C270][CAN/CSA-A179][ASTM C1328].
- C. Install masonry mortar [to manufacturer's written instructions] [as specified in Section [04 05 13]].
- D. Install [rendering][plastering] mortar [to manufacturer's written instructions] [as specified in Section [09 24 00]].
- E. Curing:
 - 1. Cure in accordance with [ACI 308][CSA-A23.1] guidelines.
 - 2. Wet cure the mortar with a fog mist spray, sprinkler or wet burlap for 3 to 7 days.

3.3 PROTECTION OF FINISHED WORK

- A. Section [01 78 40]: Protecting installed work.
- B. Protect completed work from damage after application.
- C. Protect applications from wind and direct sunlight.
- D. Protect masonry wall from damage during construction.
- E. Mortar must be cured a minimum of 28 days before applying paint or other coatings.

3.4 SCHEDULES

The following article will assist in preparing a schedule for crystalline admixture locations for the project. The following schedule includes are EXAMPLES only. Edit the paragraphs below to create a project specific schedule. Do not repeat statements that may exist on drawings.

- A. [Exterior brick masonry walls: Provide crystalline water-repellent mortar admixture to pointing mortar.]

END OF SECTION