

SECTION 071900 CLEAR WATER REPELLENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Division 01 Specification Sections, Drawings, General Conditions, Supplementary General Conditions, and Special Conditions apply to this section.

1.2 SUMMARY

- A. Section Includes: Provide clear water repellent treatment for exposed exterior surfaces of special color and texture concrete masonry construction. Products installed, but not furnished, under this Section:

LIMIT BELOW TO CLARIFYING COORDINATION AND TO PREVENT DUPLICATION OF BIDS.

- B. Related Sections:

Edit the following list as needed.

1. Section 042200 Concrete Unit Masonry: Mock-ups and testing requirements for systems with clear water repellent treatment.
2. Section 042200.13 Concrete Unit Veneer Masonry: Mock-ups and testing requirements for systems with clear water repellent treatment.
3. Section 042713 Composite Unit Masonry: Mock-ups and testing requirements for systems with clear water repellent treatment.
4. Section 079200 Joint Sealants: Coordination for compatibility.
5. Section 099653 Elastomeric Coatings: Opaque elastomeric waterproof coatings.

1.3 REFERENCES

- A. ASTM C 140 - Methods for Sampling and Testing Concrete Masonry Units.
- B. ASTM E 96 - Test Methods for Water Vapor Transmission of Materials.
- C. ASTM E 514 - Standard Test Method for Water Penetration and Leakage Through Masonry.
- D. ASTM G 53 - Standard Practice for Operating Light- and Water-Exposure Apparatus for Exposure of Nonmetallic Materials.

1.4 SYSTEM DESCRIPTION

- A. Performance Requirements:

1. Absorption: Provide treatment materials which have been tested on concrete masonry to indicate degree of change of absorption of concrete masonry units based on ASTM C 140.
 - a. Effectiveness: Minimum 85% over control units.
2. Water Vapor Transmission: Provide treatment materials which have been tested on concrete masonry to indicate degree of change of water vapor transmission through concrete masonry units based on ASTM E 96.
 - a. Change: No significant change in water vapor transmission.
3. Water Permeance: 98% min. reduction of water penetration through the masonry wall in accordance with ASTM E 514.
4. Weathering and UV Stability: Provide treatment materials tested on concrete masonry in accordance with ASTM G 53.

WHERE GLOSS IS INTENDED, REVISE CHANGE TO READ “NO SIGNIFICANT CHANGE IN UNIT GLOSS, COLOR OR ABSORPTION.”

- a. Change: No significant change in unit color or absorption.

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer’s literature for clear water repellent treatment.
- B. Samples: Submit samples of concrete masonry units approved for use in Project with water repellent treatment applied to half of each sample face; indicate which half has been coated.
- C. Quality Assurance Submittals:
 1. Test Reports. Submit test reports indicating compliance with performance requirements for absorption, water vapor transmission, and weathering and UV stability.
 2. Certificates.
 - a. Submit installer qualification certificates.
 - b. Submit manufacturer’s installer approval certificate.
 - c. Submit certification indicating materials comply with applicable VOC limitations.
 3. Manufacturer’s Instructions: Provide copies of manufacturer’s installation instructions to field office.
 4. Manufacturer’s Field Reports: Submit report of manufacturer’s representatives indicating materials have been installed in accordance with manufacturer’s instructions and recommendations.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 1. Qualification of Manufacturer: Firm with minimum five years record of successful in-service experience of clear water repellent treatments manufactured for concrete masonry unit application.
 2. Qualification of Installers: Applicator with minimum five years successful experience in projects of similar scope using specified or similar treatment materials and approved by treatment manufacturer.

WHERE KNOWN, VOC LIMITATIONS SHOULD BE INCLUDED BELOW. WHERE UNKNOWN OR SUBJECT TO REGULAR REVISION, USE FOLLOWING GENERAL STATEMENT.

- B. Regulatory Requirements: Provide materials with not more than the maximum volatile organic compounds (VOC) as required by applicable authorities.
- C. Mock-Up: Prior to commencing work, including bulk purchase and delivery of material, apply clear water repellent treatment to concrete masonry mock-up indicated in Contract Documents.
 - 1. Testing: Provide field testing of concrete masonry system mock-up, including clear water repellent treatment; test to be observed by Owner's representative and water repellent treatment manufacturer's representative

MODIFY BELOW WHERE RILEM OR ASTM E 514 TESTS ARE TO BE USED INSTEAD OF OR IN ADDITION TO AAMA 501.2.

- a. Application: Apply clear water repellent treatment to left side of mock-up and allow to cure prior to application of treatment to right side of mock-up.
 - b. Test: Twenty days after completion of application of treatment, test mock-up with 5/8 inch garden hose with spray nozzle located ten feet from wall and aimed upward so water strikes wall at 45 degree downward angle.
 - 1) Run water continuously for two hours.
 - 2) Observe back side of mock-up for water penetration and leakage; where leakage is detected make changes as needed to correct and retest.
 - c. Results: Cooperate with testing procedures and modify Project treatment application as required to pass mock-up tests for water penetration and leakage resistance.
 - 2. Approval: Proceed with clear water repellent treatment work only after completion of field test application and approval of mock-up.
- D. Pre-Installation Meeting:
- 1. Attend pre-installation meeting required prior to commencement of concrete masonry installation.
 - 2. Review procedures and coordination required between concrete masonry and clear water repellent treatment work and between treatment work and work which could be affected by or affect treatment.
 - 3. Convene additional pre-installation meeting prior to water repellent treatment application for coordination with work not previously coordinated including joint sealers as needed.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver water repellent treatment products to job site in manufacturer's container with label intact and listing product identification, batch number and date of manufacture.
- B. Storage: Keep materials in original, unopened containers; prevent contamination by foreign materials.

1.8 SITE CONDITIONS

- A. Environmental Requirements: Comply with manufacturer's recommendations; do not apply clear water repellent treatments under following conditions.
 - 1. During inclement weather, when air temperature is below 50 degrees Fahrenheit or above 100 degrees Fahrenheit.

2. When rain or temperatures below 40 degrees Fahrenheit are predicted for a period of 24 hours before or after treatment application.
3. Earlier than 3 days after surfaces became wet.
4. When substrates might be frozen.
5. When surface temperature is less than 40 degrees Fahrenheit.

1.9 WARRANTY

BELOW IS SPECIAL PROJECT WARRANTY, NOT STANDARD MANUFACTURER MATERIAL WARRANTY. MODIFY WHERE LONGER TERM IS CONSIDERED NECESSARY OR WHERE REPAIR OF MATERIALS DAMAGED BY LEAKS IS TO BE INCLUDED.

- A. Special Warranty: Provide for correcting failure of water repellent treatment to resist penetration of water.
 1. Warranty Period: Minimum of five years.

PART 2 - PRODUCTS

2.1 MATERIALS

PROVIDE INFORMATION REGARDING ACCEPTABLE MANUFACTURERS AND PRODUCTS, OR SUFFICIENT DESCRIPTION TO ALLOW COMPETITIVE BIDDING.

- A. Clear Water Repellent Treatment:

MODIFY BELOW AS APPLICABLE. REQUIREMENTS FOR TYPE (PENETRATING OR SURFACE SEAL), CHEMICAL COMPOSITION, GLOSS, PERCENTAGE OF SOLIDS, AND OTHER ATTRIBUTES CAN BE INCLUDED AS APPLICABLE—VERIFY.

1. Appearance: Clear, non-yellowing water repellent treatment shall not alter appearance, color, or texture of substrate under any lighting conditions.
- B. Compatibility: Provide products which are recommended by manufacturer to be fully compatible with indicated substrates and joint sealers which are in contact with water repellent treatment.

PART 3 - EXECUTION

3.1 EXAMINATION

NOTE THAT SOME WATER REPELLENT TREATMENTS SHOULD BE APPLIED TO DAMP SURFACES.

- A. Verification of Conditions: Examine substrates; do not apply treatment to damp, dirty, dusty, or otherwise unsuitable surfaces; comply with manufacturer recommendations.
 1. Do not begin application of clear water repellent treatment until voids and beeholes visible from 5 feet, and cracks greater than 0.02" wide in masonry substrate have been repaired.

3.2 PREPARATION

- A. Protection: Provide masking or covering for materials which could be damaged by application of clear water repellent treatment.

VERIFY REQUIREMENTS BELOW BASED ON COMPATIBILITY OF TREATMENT AND SEALANTS. WHERE COMPATIBILITY IS UNKNOWN USE FOLLOWING.

- 1. Sealant Coordination: Assure treatment compatibility with each type of joint sealer within or adjacent to surfaces receiving clear water repellent treatment.
 - a. Coordinate treatment application with joint sealers; where recommended by joint sealer manufacturer, apply treatment after application and cure of joint sealers.
 - b. Mask surfaces indicated to receive joint sealers which would be adversely affected by clear water repellent treatment where treatment must be applied prior to application of joint sealers.

CHECK WITH MANUFACTURER FOR ITEMS REQUIRING PROTECTION.

- 2. Protect glass, glazed products, and prefinished products from contact with water repellent treatment.
 - 3. Protect landscape materials with breathing type drop cloths; plastic covers are not acceptable.
- B. Surface Preparation: Prepare substrates in accordance with water repellent treatment manufacturer's recommendations.
 - 1. Clean surfaces of dust, dirt and foreign matter detrimental to proper installation of water repellent treatment.

3.3 APPLICATION

REVIEW MANUFACTURER'S LITERATURE; AVOID UNNECESSARY REPETITION. WHERE ITEMS NOTED AS RECOMMENDATIONS ARE GIVEN, SPECIFICATIONS CAN LIST THEM AS REQUIREMENTS WHERE DESIRED AND WHERE APPROPRIATE.

- A. General: Apply treatment in accordance with clear water repellent treatment manufacturer's instructions and applicable recommendations, including number of coats, maximum allowable coverage, and equipment.
 - 1. Review procedures used for application of treatment to mock-up and recommendations for changes needed based on water penetration tests conducted on mock-up.
 - 2. Consult with manufacturer's representative for site inspections, for proper application techniques not fully covered in manufacturer instructions, and for applicable recommendations.

3.4 REPAIR

- A. Repair or replace materials damaged by application of water repellent treatment.

3.5 FIELD QUALITY CONTROL

- A. Site Inspections: Manufacturer's representative shall inspect application of water repellent treatment in progress to verify compliance with manufacturer instructions and recommendations.

3.6 CLEANING

- A. Clean water repellent treatment from surfaces not indicated to be treated immediately; comply with recommendations of materials manufacturers for proper cleaning techniques to prevent damage.

END OF SECTION 071900