By CTS Cement Manufacturing Corp.

CSI SECTION 03 01 00 – MAINTENANCE OF CONCRETE
04 01 00 – MAINTENANCE OF MASONRY
07 11 16 – CEMENTITIOUS DAMPROOFING
07 16 00 – CEMENTITIOUS AND REACTIVE WATERPROOFING

Polymer Modified, Cementitious Waterproofing Mortar

EDITOR NOTE: *The following guideline specification has been prepared to assist architects and design professionals in the preparation of project master specifications. It is intended for use by qualified design professionals and is not intended to be used verbatim. Appropriate modifications to meet specific project requirements are required. Make appropriate [selections] where options are provided and delete items that are not applicable to the project. Contact CTS Cement Technical Service for additional information or project specification assistance.*

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Supply and installation of an early strength, Waterproofing repair mortar on new construction and rehabilitation of existing structures.

1.2 RELATED SECTIONS

[A. Section 03 01 40 – Maintenance of Precast Concrete
[B. Section 03 30 00 – Cast-in-Place Concrete
[C. Section 03 40 00 – Precast Concrete
[D. Section 03 41 00 – Precast Structural Concrete
[E. Section 03 70 00 – Mass Concrete
[F. Section 04 20 00 – Unit Masonry

1.3 REFERENCES

A.	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
B.	ASTM C191	Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
C.	ASTM C307	Tensile Strength of Chemical Resistant Mortar, Grouts, and Monolithic Surfacings.
D.	ASTM C348	Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
E.	ASTM C666	Procedure A, Rapid Freezing and Thawing in Water
F.	ASTM C1583	Bond Pull Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)
G.	ASTM E96	Water Vapor Transmission of Materials
H.	CRD-C 48	Water Permeability of Concrete
I.	ASTM C1600	Standard Specification for Rapid Hardening Hydraulic Cement

1.4 SUBMITTALS

A. General: Submit samples and manufacturer's product data sheets, installation instructions, etc. in accordance with Division 01 General Requirements Submittal Section.

B. Test Data: Submit qualified testing data that confirms compliance with specified performance

requirements.

QUALITY ASSURANCE

C. Qualifications:

1. Manufacturer:

a. Must have marketed very early high strength, low shrinkage, hydraulic cement materials in the United States for at least five years and must have completed projects of the same general scope and complexity.

b. Complementary admixture materials must be manufactured by or approved for use by CTS Cement Manufacturing Corp. (800-929-3030, www.CTScement.com) and distributed by the same or an authorized CTS Cement dealer.

2. Applicator:

a. Must be experienced and competent in installation of rapid hardening hydraulic cement materials and provide evidence of experience in work similar in size and scope to that required by this section.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver products in original, unopened, undamaged packaging with manufacturer's identification (i.e., brand logo, product name, weight of packaged unit, lot number).

B. Storage: Store products in a dry location, covered, out of direct sunlight, off the ground, and protected from moisture. Maintain storage temperature required by the manufacturer. Keep materials dry until used. Store bulk sand in a well-drained area on a clean, solid surface. Take necessary precautions to prevent contamination of materials.

C. Handling: Handle products in accordance with manufacturer’s published recommendations.

1.6 SITE / ENVIRONMENTAL CONDITIONS

A. Temperature: Maintain ambient and surface temperatures between 45°F (7°C) to 90°F (32°C). Do not apply hydraulic cement-based materials if substrate is frozen (32°F/0°C). Protect repair material from uneven and excessive evaporation during dry weather, windy conditions and strong blasts of dry air.

B. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.

C. Substrate: Prior to installation, substrates must be inspected for surface contamination or other conditions that may adversely affect the performance of the repair mortar.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. CTS Cement Manufacturing Corp., 12442 Knott Street, Garden Grove, CA 92841 (800-929-3030, www.CTScement.com).

B. Components: Obtain cement and other complementary admixture and materials manufactured by CTS Cement from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from the manufacturer for this project.

2.2 MATERIALS

A. Polymer Modified, Cementitious Waterproofing Mortar

1. Rapid Set® Waterproofing Mortar: is a polymer modified, calcium sulfoaluminate hydraulic cement based product used to waterproof surfaces. It offers high bond strength, and abrasion resistance to achieve the highest durability and long-term performance.
2. Additives and admixture materials must be approved for use by CTS Cement Manufacturing Corp. prior to use. (800-929-3030, www.CTScement.com)

B. Water: Clean, potable water free of deleterious amounts of silt and dissolved salts conforming to ASTM C1602.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify project site conditions under provisions of Section 01 00 00.

B. Compliance: Comply with manufacturer's instructions for installation of materials.

C. Coordinate installation with adjacent work to ensure proper sequencing of construction.

3.2 PREPARATION

A. Follow guidelines provided in ACI 548.4, Section 3.1.1—Surface Prep.

B. Remove all loose, unsound, contaminated material to create a clean, sound surface free from any materials that may inhibit such as oil, dirt, paint, asphalt, sealing and curing compounds, acids, wax and loose dust and debris.

C. Repair holes, and cracks found on substrate prior to installation.

D. Relieve hydrostatic pressure in concrete block applications with weep holes.

E. Minimum substrate temperature must be 45°F (7°C) and maximum substrate temperature 90°F (32°C).

3.3 MIXING

A. Use 5 to 7 quarts of clean potable water per 50-lb bag of Waterproofing Mortar, and follow manufacturer instructions. Water amount will depend on consistency of mix, and application method, but should not exceed maximum amount recommended.

B. Admixtures must be approved for use in writing by an authorized CTS Cement Manufacturing Technical Representative prior to use.

3.4 APPLICATION

A. Comply with manufacturer’s printed instructions and the following:

1. Verify that all substrates and ambient temperatures are between 45°F (7°C) to 90°F (32°C) and will remain within range until the repair mortar has reached final set.
2. Dampen substrate with water, but do not saturate surface before application of Waterproofing Mortar.
3. Apply Waterproofing Mortar by trowel, brush or roller, thoroughly working first coat to fill voids.
4. Allow first coat to cure for four hours at room temperature, then apply second coat perpendicular to first coat.
5. To prevent joint read through on block or masonry walls allow first coat to cure for two days before applying second coat.
6. Allow Waterproofing Mortar to cure for three to five days before immersion in water.

CURING

A. Waterproofing Mortar requires light mist water curing during the first 24 hrs.

3.5 CLEAN-UP

A. Clean excess material from surrounding areas and all tools immediately, before material reaches final set. If material has cured, remove using mechanical methods that will not damage the application or substrate.

B. Clean adjacent surfaces as needed using appropriate materials and methods to prevent damage to materials being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Engineer or Owner.

END OF SECTION

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