**SECTION 03 01 30**

**MAINTENANCE OF CAST-IN-PLACE CONCRETE**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SPECIFIER NOTE: THIS SPECIFICATION INCLUDES SOME OPTIONS AND CHOICES WITHIN THE TEXT. EDIT ACCORDINGLY.

To view non-printing Editor's Notes that provide guidance for editing, click on the Show/Hide button or Press the Ctrl key, Shift key, and the number 8 simultaneously.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**PART 1 – GENERAL**

1. **SUMMARY**
	1. Section Includes:

Revise paragraph below to suit Project.

* + 1. Maintenance and repair of cast-in-place concrete spalls, cracks and pin-holes to interior, exposed concrete slabs prior to concrete polishing.
	1. Related Requirements:

Revise list below to suit Project.

* + 1. Section 01 33 00 – Submittal Procedures.
		2. Section 01 60 00 – Product Requirements.
		3. Section 03 30 00 – Cast-In-Place Concrete.
		4. Section 03 35 43 – Polished Concrete Finishing.
1. **REFERENCES**
	1. Reference Standards:
		1. The date of the standard is that in effect as the date of receipt of bids for the project.
		2. ACI 302.1R – Guide to Concrete Floor and Slab Construction.
		3. ASTM International (ASTM):
			1. D412-Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
			2. D695- Standard Test Method for Compressive Properties of Rigid Plastics.
			3. D882- Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
			4. D1308-Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
			5. D2240-Standard Test Method for Rubber Property—Durometer Hardness.
2. **SUBMITTALS**
	1. Product Data: Submit product data sheets for each type of product specified.
	2. VOC Certification: Submit certification that products furnished comply with regulations controlling use of volatile organic compounds (VOC).
	3. Certificates:
		1. Certificates by manufacturer stating that installer is an approved installer and has completed the necessary training.
3. **QUALITY ASSURANCE**
	1. Installer Qualifications:
		1. Installer to be certified by the manufacturer in the installation of concrete repair material on exposed concrete floors.
		2. Installer should have successfully performed a minimum of 5 projects of similar scope and complexity.
		3. Installer must use proper equipment to perform work within scope of this project, as recommended by the manufacturer.
4. **DELIVERY, STORAGE, AND HANDLING**
	1. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.
	2. Deliver materials in original containers, with seals unbroken, bearing manufacturer labels indicating brand name and directions for storage.
5. **FIELD CONDITIONS**
	1. Environmental Limitations: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer’s written instructions.
	2. Do not apply repair material to concrete that does not comply with manufacturer’s published instructions and ACI 302.1R.
		1. Do not apply to wet concrete.
		2. Allow adequate time for concrete to cure before application of repair material.
	3. Close areas to traffic during and after application for time period as recommended in writing by manufacturer.

**PART 2 – PRODUCTS**

1. **MANUFACTURER**
	1. HI-TECH Systems: 1190 N Del Rio Place, Ontario, CA, (800) 454-5530, [www.hitechpolyurea.com](http://www.hitechpolyurea.com).
	2. Substitutions: Refer to Section 01 60 00 - Product Requirements.
2. **MATERIALS**
	1. Concrete repair filler material: Two-part, 100 percent solids, rapid-set, high strength, low viscosity concrete repair material shall be:
		1. HT-Spall TX3, manufactured by HI-TECH Systems, Ontario, CA, (800) 454-5530, www.hitechpolyurea.com.
		2. Subject to compliance with the following requirements:
			1. Comply with national, state and district AIM VOC regulations.
			2. Shore hardness of at least 67 when tested in accordance to ASTM D2240.
			3. Elongation: Minimum 6 to 8 percent when tested in accordance with ASTM D412.
			4. Tensile strength: Minimum 4600 psi when tested in accordance with ASTM D412.
			5. Compressive Strength: Minimum 3900 psi (Neat) and 4800 psi (SAND) when tested in accordance with ASTM D695.
			6. Bond Strength: Minimum 3450 psi when tested in accordance with ASTM D882.
			7. Stain Resistance: Achieve limited or no discoloration when tested in accordance with ASTM D1308.

**PART 3 – EXECUTION**

1. **EXAMINIATION**
	1. Verification of Conditions:

Revise one or both of the authorities having jurisdiction in the subparagraph below.

* + 1. Examine the slab notify the [Architect][Owner] in writing of any deficiencies.
		2. Concrete must be sound, clean and free of dust, grease, curing compounds, waxes and other contaminants that would adversely affect the quality or durability of the repair material.
		3. Work area must be free of obstructions and other trades.
		4. Work shall commence upon acceptance of the project conditions.
1. **PREPARATION**
	1. Surface Preparation:
		1. Crack and Spall Repair:
			1. Run dry-cut, vacuum-equipped saw to cut and clean the concrete cracks and spalls.
			2. Cut vertical edge on large spalls a minimum ¼ inch deep around the perimeter.
			3. Vacuum the thoroughly and ensure the cracks and spalls are dry and free of debris.
		2. Do not proceed until unsatisfactory conditions have been corrected.
2. **CRACK AND SPALL REPAIR MATERIAL INSTALLATION**
	1. General: Comply with manufacturer’s written instructions for mixing, dispensing and installation of the of repair material.
	2. Apply repair material bottom-up in cracks and spalls.
		1. For repairs at a depth greater than ¼ inch:
			1. First apply repair material and subsequently add sand into the product. Repeat as necessary until repair material has overfilled repair area.
	3. Allow product to cure before grinding, scraping or cutting excess repair material. Ensure the repair material is flush with finished floor.
3. **PIN-HOLE REPAIR MATERIAL INSTALLATION**
	1. General: Comply with manufacturer’s written instructions for mixing, dispensing and installation of the of repair material.
	2. Apply repair material to fill pin-holes after initial dry, metal grinding step.
	3. Spread repair material with smoother trowels.
	4. Allow product to cure before proceeding with dry, diamond grinding polishing process.
4. **PROTECTION**
	1. Protect installed repair material for period recommended manufacturer prior to opening floor to foot traffic or vehicular traffic.

**END OF SECTION**