SECTION 03 54 16

HYDRAULIC CEMENT UNDERLAYMENT

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\*\* NOTE TO SPECIFIER \*\* Custom Building Products manufactures surface preparation and floor covering installation and maintenance products.
.
This section is based on the products of Custom Building Products, which is located at:
 10400 Pioneer Boulevard, Suite 3
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 Toll Free: (800) 282-8786
 Fax: (800) 200-7765
 E-mail: jackiel@cbpmail.net
 Web: [www.custombuildingproducts.com](http://www.custombuildingproducts.com) .
 Product Data
Custom manufactures industry-leading floor preparation products and ceramic and natural stone tile installation products; each is part of a proven system. The combination of having precisely the right product and professional technical consulting support makes Custom products the easiest to specify and provides you with the confidence to know your project will go smoothly. Custom's highly experienced team of architectural consultants collaborate with architects, builders, specifiers and contractors to ensure the tile and stone installation specifications meet the needs of your project. Custom offers several installation systems warranties that guarantee your installation will be free from defects for up to a Lifetime, provided our products are used as a complete installation system. For additional information on warranties call us at 800-282-8786 or view them on www.custombuildingproducts.com.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Self-leveling Underlayment.
		2. Cement Patching Materials.
		3. Primers.
		4. Moisture Reduction Barriers.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
		2. Section 07 27 19 - Plastic Sheet Air Barriers
		3. Section 09 60 00 - Flooring
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM F 1869 - Standard test method for measuring moisture vapor emission rate of concrete subfloor using anhydrous Calcium Chloride.
		2. ASTM F 2170 - Standard test method for determining relative humidity in concrete floor slabs using in situ probes.
		3. ASTM F 710 - Standard practice for preparing concrete floors to receive resilient flooring.
		4. ASTM C 627 - Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
		5. ASTM C 1708 - Standard test methods for self-leveling mortars containing hydraulic cements.
		6. ASTM C 109 - Compressive strength of cement mortars.
		7. International Concrete Repair Institute (ICRI) - Technical Guideline CSP #3.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing the products of this section with minimum ten years documented experience.
		2. Installer Qualifications: Company specializing in performing the work of this section, in projects of similar size and scope with minimum five years documented experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Locate mock-ups on site in locations and size directed by Architect.
			2. Finish areas designated by Architect.
			3. Do not proceed with remaining work until workmanship is approved by Architect.
			4. Refinish mock-up area as required to produce acceptable work.
			5. Retain and maintain mock-ups during construction in undisturbed condition as a standard for judging completed unit of work.
			6. Obtain Architect's acceptance of mock-ups before start of final unit of work.

\*\* NOTE TO SPECIFIER \*\* Include a Pre-Application Meeting if the project conditions quality warrant taking such a precaution.

* + 1. Pre-Application Meeting:
			1. Convene a pre-application meeting two weeks before the start of application of floor coating system.
			2. Require attendance of parties directly affecting work of this section, including the Contractor, hydraulic cement underlayment applicator and Manufacturer's Representative.
			3. Review the surface preparation, application, cleaning, protection and coordination with other work.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use.
		2. Prevent damage or contamination to materials by water, freezing, foreign matter and other causes.
		3. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
	2. SEQUENCING
		1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
		2. Environmental: For floor preparation install when surfaces and ambient temperature is minimum 50 degrees F (10 degrees C) and maximum 90 degrees F (32 degrees C). Consult with manufacturer for specific requirements.
		3. Do not install underlayment exterior when inclement weather conditions are expected within 48 hours after work is completed unless properly protected.
		4. Protection: Protect adjacent work surfaces during underlayment work. Close rooms or spaces to traffic of all types until products have fully cured.
		5. Safety: Observe the manufacturer's safety instructions including those pertaining to ventilation.

\*\* NOTE TO SPECIFIER \*\* Custom Building Products offers Installation Systems Warranties that will guarantee your installation will be free from defects for up to a Lifetime, provided our products are used as a complete installation system. Contact manufacturer at 800-282-8786 for warranty details or view warranty requirements on [www.custombuildingproducts.com](http://www.custombuildingproducts.com) .

* 1. WARRANTY
		1. Products shall be provided with the manufacturers standard warranty as follows:

\*\* NOTE TO SPECIFIER \*\* System must be installed to industry and Custom Building Products published specifications and use our full system of specified products. Coordinate with Custom Building Products and edit the following paragraph as required.

* + - 1. Installation Systems Limited Warranty:
				1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Custom Building Products, which is located at:10400 Pioneer Blvd., Suite 3Santa Fe Springs, CA 90670Toll Free Tel: 800-282-8786Fax: 800-200-7765Email: [request info (jackiel@cbpmail.net)](https://arcat.com/rfi?action=email&company=Custom%252BBuilding%252BProducts&message=RE%253A%2520Spec%2520Question%2520(03540cus)%253A%2520&coid=40625&spec=03540cus&rep=&fax=800-200-7765);Web: <http://www.custombuildingproducts.com/architects.aspx>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs as required for project requirements. Delete the paragraphs that are not applicable.

* 1. UNDERLAYMENT MATERIALS
		1. Self-Leveling Underlayment: Flow-able, self-leveling, hydraulic cement underlayment compounded to level and smooth substrate for subsequent finishes. Conforms with ASTM C 1708.
			1. Custom Building Products CustomTech TechLevel XP-1 Self-Leveling Underlayment.
				1. High strength, low prep self-leveling underlayment that levels floors prior to wide variety of floor covering.
				2. Suitable for traffic during construction
				3. Applies feather edge to 2 inches (51 mm)
				4. Foot traffic ready in 2-4 hours and floor covering in 16 hours
				5. Compressive strength 5500 psi in accordance with ASTM C 1708.
				6. Extra Heavy service rating per ASTM C-627
			2. Custom Building Products CustomTech TechLevel 150 Self-Leveling Underlayment.
				1. High flow, fiber reinforced calcium aluminate cement based, self-leveling underlayment that eliminates the need for reinforcing latch over exterior-glue plywood and oriented strand board (OSB) interior wood-framed subfloors
				2. Applies from 1/4 inch (6 mm) to 1-1/2 inches (38 mm)
				3. Compressive strength >3,500 psi in accordance with ASTM C 1708
				4. Foot traffic ready in 2-4 hours, at 70 degrees F (21 degrees C)
				5. Install ceramic tile in 4 hours at 70 degrees F (21 degrees C); other floor coverings in 16 hours at 70 degrees F (21 degrees C)
			3. Custom Building Products CustomTech TechLevel WSF Fiber Reinforced Self-Leveling Underlayment for Wood Subfloors.
		2. Patching: Hydraulic cement compound to correct imperfections in substrates prior to installation of floor finishes.
			1. Custom Building Products CustomTech SILKTM Patching & Finishing Compound.
				1. Fast setting, calcium aluminate compound that provides a smooth finish on interior and exterior subfloors prior to the installation of a wide variety of floor coverings.
				2. Compressive strength >3000 psi in accordance with ASTM F 710
				3. Install floor covering in as little as 30 minutes, at 70 degrees F (21 degrees C)
				4. Applies from featheredge to 1 inch (25 mm) over concrete, exterior-grade plywood, and other suitable substrates
			2. Custom Building Products CustomTech Tech Patch-MP Multipurpose Rapid Setting Skim Coat & Floor Patch.
				1. Fast setting, calcium aluminate compound that provides a smooth finish on interior subfloors prior to the installation of a wide variety of floor coverings.
				2. Compressive strength >3000 psi in accordance with ASTM F710
				3. Applies from featheredge to 1/2 inch (12.7 mm) thick over concrete and other suitable substrates Install floor covering in as little as 30 minutes at 70 degrees F (21 degrees C)
		3. Primers: For use in the installation of hydraulic cement self-leveling underlayment and patches.
			1. Custom Building Products CustomTech TechPrime A Acrylic Primer.
				1. Advanced acrylic primer/sealer that prepares surface for the application of self-leveling underlayment.
				2. Seals porous and non-porous surfaces
				3. Fast drying formulation
			2. Custom Building Products CustomTech TechPrime E 100% Solids Epoxy Primer.
				1. Low viscosity, two-component, 100 percent solids epoxy primer for surface preparation before installing self-leveling underlayment.
				2. Improves the bond of the self-leveling underlayment.
				3. Use for interior and exterior applications.
				4. Ready for foot traffic in 6 hours at 70 degrees F (21 degrees C).
		4. Moisture Barrier Coating: Liquid-applied water vapor emission and alkalinity control coating for interior concrete slabs to receive moisture sensitive floor coverings and/or adhesives.
			1. Custom Building Products CustomTech TechMVC Moisture Vapor and Alkalinity Barrier.
				1. A single coat, high-density moisture and alkali resistant, two-component, 100 percent solids epoxy coating, specifically formulated to control concrete moisture vapor emission and alkalinity beneath finished flooring.
				2. Use on concrete substrates with up to 100 percent rH (per ASTM F 2170 or 25 lbs MVT (per ASTM F 1869) and pH 14.
				3. Ready for traffic in as little as 5-6 hours at 70 degrees F (21 degrees C).
				4. High bond strength to concrete
1. EXECUTION
	1. EXAMINATION
		1. Examine surfaces, which are to receive tile.
		2. Do not proceed with work until defects or conditions which would adversely affect quality, execution and permanence of finished tile work are corrected.
		3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Prepare surfaces in accordance with ASTM F 710 using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
		2. Clean surfaces thoroughly prior to installation. Surfaces must be clean and free of dust, oil, grease paint, tar, wax, curing compound, primer, sealer, form release agent, laitance, loosely bonded topping, loose particles and all deleterious substance and debris which may prevent or reduce adhesion.
		3. Most uncoated concrete floors will only require sweeping and priming. Pre-coated or contaminated floors must be mechanically abraded to completely remove all paint, loosely bonded topping, loose particles and construction debris. Surface profile required is ICRI CSP #3. Surface is to be vacuumed to remove loose debris.
		4. Neutralize all traces of strong acid and alkali.
		5. Substrates must be dry and the moisture emissions must not exceed floor covering manufacturer's recommendations. If they exceed the requirements, the concrete is to be treated with moisture vapor remediation membrane.
		6. Turn off all forced ventilation and radiant heating systems and protect work against drafts during installation and for a period of at least 72 hours after completion. Use indirect auxiliary heaters to maintain the temperatures in the area at the recommended workable level. Vent temporary heater to exterior to prevent damage to surface prep work from carbon dioxide build-up.
		7. Before work commences examine the areas to be covered and report all flaws and adverse conditions in writing to the Architect and Contractor.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
	4. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION