SECTION 03540

SELF-LEVELING CAST UNDERLAYMENTS - LATICRETE NXT

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\*\* NOTE TO SPECIFIER \*\* LATICRETE International, Inc.; adhered masonry veneer, grout, underlayment, waterproofing, crack control.
This section is based on the products of LATICRETE International, Inc., which is located at:
1 LATICRETE Park N.
Bethany, CT 06524-3423
Toll Free Tel: 800-243-4788
Tel: 203-393-0010
Fax: 203-393-1684
Email: [request info (sldolata@laticrete.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=LATICRETE+International,+Inc.&coid=33748&rep=&fax=203-393-1684&message=RE:%20Spec%20Question%20(03540lat):%20%20&mf=)
Web: <https://laticrete.com/en>
 [ [Click Here](https://www.arcat.com/arcatcos/cos33/arc33748.html) ] for additional information.
LATICRETE is a 3rd generation family-owned, leading manufacturer of globally proven construction solutions for the building industry. LATICRETE offers a broad range of products and systems covering tile & stone installation and care, masonry installation and care, resinous and decorative floor finishes, concrete construction chemicals, and concrete restoration and care including the LATICRETE SUPERCAP System.
For over 65 years, LATICRETE has been committed to research and development of innovative installation products, building a reputation for superior quality, performance, and customer service. LATICRETE methods, materials and technology have been field and laboratory proven by Architects, Engineers, Contractors, and Owners. Offering an array of low VOC and sustainable products, LATICRETE products contribute to LEED certification, exceed commercial/residential VOC building requirements, and are backed by the most comprehensive warranties in the industry.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* This is the recommended guide specification for a two-course monolithic slab finishing method utilizing LATICRETE NXT Underlayment's; pumpable and/or pourable, low-alkali, premium self-leveling underlayment's used to finish new or existing concrete slabs, precast or cast-in-place, and/or level uneven floor surfaces. Apply them over concrete, wood, and other types of sound flooring before installing wood, resilient, cork, sports, ceramic, stone, carpet, or other flooring systems. Floor covering adhesives that are suitable for concrete can be used on all LATICRETE NXT Underlayment's.
LATICRETE NXT Self Leveling Underlayment's may be installed using two methods:
(1) traditional manual mixing.
(2) or portable mixer/pump.
If necessary, LATICRETEVAPOR BAN E, VAPOR BAN ER, or VAPOR BAN PrimerER can be applied prior to installation of the cement underlayment, to help the system achieve Moisture Mitigation requirements needed for finish flooring.

* + 1. Self-leveling concrete underlayments. (NXT LEVEL Plus Lite) (NXT LEVEL PLUS) (NXT LEVEL) (NXT LEVEL FLOW)
		2. Self-leveling concrete toppings and overlays. (NXT LEVEL DL) (NXT LEVEL SP)
		3. Primer. (LATICRETE NXT Primer) (PRIME-N-BOND)
		4. Vapor barrier. (LATICRETE VAPOR BAN E) (VAPOR BAN ER) (VAPOR BAN Primer ER)
	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 06 11 16 - Mechanically Graded Lumber.
	1. REFERENCES

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

* + 1. American Concrete Institute (ACI) 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
		2. American Concrete Institute (ACI) 318 - Building Code Requirements for Structural Concrete and Commentary.
		3. ASTM International (ASTM):
			1. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
			2. ASTM C1583 - Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method).
			3. ASTM C1708 - Standard Test Methods for Self-leveling Mortars Containing Hydraulic Cements.
			4. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
			5. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
			6. ASTM F3010 - Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
		4. International Concrete Repair Institute (ICRI):
			1. ICRI Guideline No. 03739 - Field Applications of In-Situ Tensile Pull-Off Tests.
			2. ICRI Guideline No. 03732 - Selecting and Specifying Concrete Surface Preparation for Coatings, Sealers, and Polymer Overlays.
		5. Underwriter's Laboratory (UL) 2818 - Greenguard - Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings.
	1. SYSTEM DESCRIPTION
		1. Pumpable and pourable, low-alkali, cement-based, self-leveling underlayment based on a proprietary mineral binder system that shall be used to finish concrete and level uneven floor surfaces. The underlayment shall be capable of placement over concrete, wood, and other types of sound flooring before installing wood, resilient, cork, sports, ceramic, stone, carpet, or other flooring systems. Floor covering adhesives that are suitable for concrete shall be suitable for use on the underlayment.
	2. 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.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Submit proof of warranty.
		2. Submit Health Product Declarations (HPD) for each tile installation material.
		3. For alternate materials, at least 30 days before bid date submit independent laboratory test results confirming compliance with specifications listed in Part 2 - Products.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
		2. Installer: Installation of LATICRETE NXT Underlayment's must be by a qualified applicator using specialized mixing equipment and tools approved by the Manufacturer.
			1. Contact LATICRETE at +1.800.243.4788 for the name of your local sales representative who can provide names of qualified applicators.
		3. Testing Agency Qualifications: If required, secure an independent agency qualified according to ASTM C1077 and ASTM E329 for testing indicated, as documented according to ASTM E548.
		4. Underlayment Applications:

\*\* NOTE TO SPECIFIER \*\* Refer to the product data sheet or consult LATICRETE Technical Services for pea gravel extension installation guidelines, or average depths outside of these ranges.

* + - 1. LATICRETE NXT LEVEL Plus Lite can be placed at a depth of 1/8 to 4 inches (3.17 to 102 mm).
			2. LATICRETE NXT LEVEL PLUS can be placed at a depth of 1/8 to 1-1/4 inches (3 to 32 mm).
			3. LATICRETE NXT LEVEL can be placed at a depth of 1/8 to 3 inches average depth (3 to 76 mm).
			4. NXT LEVEL FLOW can be place at a depth of 1/8 to 2 inches (3 to 51 mm).
			5. LATICRETE NXT LEVEL DL can be placed at a depth of 1/4 to 1-1/4 inches (6 to 32 mm).
				1. 1/2 inch (12 mm) is typically recommended for wear surface and/or polishing.
			6. LATICRETE NXT LEVEL SP can be placed at a depth of 1/4 to 2 inches (6 to 51 mm).
				1. 1/2 inch (12 mm) is typically recommended for wear surface and/or polishing.
		1. Finished Floor Goods may be Installed:
			1. 12 hours after application of NXT LEVEL PLUS.
			2. 24 hours after application of NXT LEVEL Plus Lite and NXT LEVEL.
			3. 48 hours after application of NXT LEVEL FLOW.
			4. Always refer to finished floor manufacturer's recommendations regarding installation instructions, restrictions, moisture conditions and compatibility. Always test performance suitability and compatibility of finished floor systems prior to their application. Sample surfaces should be installed as a field test to be representative of entire surface and tested for intended use.
		2. LATICRETE NXT Underlayment's: Cement-based products. As with any cementitious material, slight variations in color can occur as a function of job-site conditions. Some water-marks similar to veins in stone are a natural result of a pour/spread/smooth installation process.

\*\* 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. Place mockups of LATICRETE NXT Underlayment's (minimum 100 sq ft) to demonstrate typical joints, surface finish, bonding, texture, tolerances, and standard of workmanship.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	1. PRE-INSTALLATION MEETINGS
		1. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.
	2. DELIVERY, STORAGE AND HANDLING
		1. Deliver materials in their unopened packages and protect from moisture. Protect liquids from freezing and from excessive heat. Store off the floor on dry pallets or equivalent.
			1. LATICRETE NXT Self Leveling materials are packaged in plastic bags and should be used within 1 year of the date of manufacture.
		2. Use all means necessary to protect the materials of the section before, during and after installation and to protect the installed work and materials of all other trades.
	3. SITE CONDITIONS
		1. LATICRETE NXT Underlayment's are cementitious materials. Observe the basic rules of concrete work.
			1. Substrate Temperature: Should be a minimum of 40 degrees F (4 degrees C) during the application and the ambient temperature maintained at 50 to 90 degrees F (10 to 32 degrees C).
		2. If Floor is Warm: Install quickly. Follow hot weather precautions available from LATICRETE Technical Service Department or www.laticrete.com.
			1. Never mix with cement or additives other than LATICRETE approved products.
		3. During Application and Curing: Underlayment's should not be exposed to rapid air movement, especially if area is heated or cooled. Direct air flow from HVAC systems in areas of application away from the floor during application of Underlayment's for at least 24 hours after work is completed.
	4. PRE-INSTALLATION CONSIDERATIONS
		1. Applicator: Review TDS-230 - Substrate Preparation and Primer Guide for LATICRETE Self-Leveling Products, available at [www.laticrete.com](http://www.laticrete.com)
		2. When specifying or planning a new concrete slab, consider.
			1. LEAN CONSTRUCTION METHOD: When planning for new concrete slabs, the following process allows for installation time savings and optimal performance.

\*\* NOTE TO SPECIFIER \*\* Modify appropriate Division 3 Section in the project manual according to this guidance

* + - * 1. SIMPLIFY CONCRETE FINISH: Concrete contractor to bull-float trowel finish the surface of the slab to FF 15 minimum. Do not power trowel.
				2. PREPARE FOR LATICRETE NXT SELF LEVELING UNDERLAYMENT: See 1.08.B.2 through .4
				3. MITIGATE MOISTURE EMISSIONS IF REQUIRED FOR FLOOR GOODS INSTALLATION (Optional, based on conditions): See 1.08.C for details.
				4. INSTALL LATICRETE NXT SELF LEVELING UNDERLAYMENT: See Sections 2 and 3.
			1. New Concrete: For installation over concrete earlier than 28 days after placement, LATICRETE NXT Underlayment's may be installed when the substrate concrete has reached 70 percent of its 28-day design compressive strength. For further information, contact LATICRETE Technical Services.
			2. Use of curing compounds on new concrete slabs is not recommended. If a curing compound is used on new concrete, the curing compound (including "self-dissipating" curing compounds) must be removed by shot blasting, scarifying, or other mechanical means to a minimum CSP of 3 per ICRI Guideline No. 03732 then vacuumed clean.
			3. Precast systems: prepare concrete surface perLATICRETE Substrate Preparation and Primer Guide for LATICRETE Self-Leveling Products TDS230recommendations.
				1. Review finished floor goods recommendations for substrate moisture limitations. Flooring adhesive and floor goods manufacturers may separately specify maximum allowable moisture vapor emission rates or concrete relative humidity. If the concrete slab measures above these limits than a moisture vapor control system is required. If a moisture mitigation system is required LATICRETE VAPOR BAN Primer ER, VAPOR BAN ER, or VAPOR BAN E must be installed on the concrete slab prior to installation of LATICRETE NXT Underlayment's.
	1. WARRANTY
		1. Contractor: Warrants Work of this Section to be in accordance with Contract Documents and free from faults and defects in materials and workmanship for a period of 10 years.
		2. Underlayment Manufacturer: A written ten (10) year warranty.
			1. Reference LATICRETE Warranty Data Sheet DS-230.10 for complete details and requirements.
		3. Installations Under LATICRETE Tile and Stone Installation Systems:
			1. The project may qualify for a twenty-five (25) year warranty system warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: LATICRETE International, Inc., which is located at: 1 LATICRETE Park N.; Bethany, CT 06524-3423; Toll Free Tel: 800-243-4788; Tel: 203-393-0010; Fax: 203-393-1684; Email: [request info (sldolata@laticrete.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=LATICRETE+International,+Inc.&coid=33748&rep=&fax=203-393-1684&message=RE:%20Spec%20Question%20(03540lat):%20%20&mf=); Web: <https://laticrete.com/en>

\*\* 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.
			1. For alternate materials, at least thirty days before bid date submit independent laboratory test results confirming compliance with specified products performance and requirements.
	1. MATERIALS - BASIS OF DESIGN
		1. Cement Underlayment: Tested to ASTM C1708.

\*\* NOTE TO SPECIFIER \*\* Delete underlayment options not required.

* + - 1. Calcium Aluminate Based, High Strength, Fiber Reinforced Self-Leveling Cement Underlayment: LATICRETE NXT LEVEL Plus Lite.
				1. Compressive Strength: 4400 PSI (30.3 MPa) after 28 days.
			2. Calcium Aluminate Based, High Strength, Fiber Reinforced Self-Leveling Cement Underlayment: LATICRETE NXT LEVEL PLUS.
				1. Compressive Strength: 5300 PSI (36.5 MPa) after 28 days.
			3. Calcium Aluminate Based, Deep Pour Self-Leveling Cement Underlayment: LATICRETE NXT LEVEL.
				1. Compressive Strength: 5000 PSI (34.5 MPa) after 28 days.
			4. Calcium Aluminate Based, Self-Leveling Cement Underlayment: LATICRETE NXT LEVEL FLOW.
				1. Compressive Strength: 4000 PSI (27.6 MPa) after 28 days.
			5. Calcium Aluminate Based Self-Leveling Cement Topping/Wear Surface or Underlayment (Grey or White): LATICRETE NXT LEVEL DL.
				1. Compressive Strength: 5100 PSI (35.1 MPa) after 28 days.
			6. Calcium Aluminate Based High Strength Self-Leveling Cement Topping/Wear Surface or Underlayment (Salt & Pepper Appearance, Grey or White): LATICRETE NXT LEVEL SP.
				1. Compressive Strength: 7000 PSI (48.3 MPa) after 28 days.
		1. Underlayment Primer:

\*\* NOTE TO SPECIFIER \*\* Delete Primer option not required.

* + - 1. LATICRETE NXT Primer: Water Based Primer for all underlayment's and substrate types shall be as recommended by the Underlayment Manufacturer.
			2. LATICRETE PRIME-N-BOND: Ready-to-use, single coat, low VOC primer for underlayment's. Substrate types shall be as recommended by the Underlayment Manufacturer.

\*\* NOTE TO SPECIFIER \*\* When installing LATICRETE Concrete Topping/Overlay Wear Surface products use VAPOR BAN E, VAPOR BAN ER, or VAPOR BAN Primer ER with sand broadcast over properly prepared concrete ONLY. Refer to LATICRETE Substrate Preparation and Primer Guide for LATICRETE® Self-Leveling Products TDS230 for more detailed Epoxy Primer with sand broadcast information.

* + 1. Moisture Mitigation Barrier:

\*\* NOTE TO SPECIFIER \*\* Delete vapor control options not required.

* + - 1. Moisture Vapor Control: LATICRETE VAPOR BAN E.
				1. Applicable Standard: ASTM F3010.

Minimum Barrier Thickness to Meet Standard: 12 mils minimum.

* + - * 1. Moisture Vapor Emission Rate (MVER) Reduction: Per ASTM F1869.

Less than or equal to 25 lbs per 1000 sq ft per 24 hrs (1415 micrograms per sq m) to below 3 lbs per 1000 sq ft per 24 hrs (170 micrograms per sq m, at 12 mils thickness.

Concrete Substrate Humidity: Per ASTM F2170.

Up to 100 percent RH / 14 pH.

VOC Content: Less than 10 g/L.

UL GREENGUARD Gold Certified.

* + - * 1. Tensile Bond Strength to Concrete Substrate:

Per ASTM C1583. 410 psi (2.8 MPa) minimum in 7 days.

* + - * 1. Cure Time: Minimum of 12 hours at 50 to 90 degrees F (10 to 32 degrees C) prior to priming with NXT Primer or PRIME-N-BOND.
			1. Moisture Vapor Control Rapid Drying: LATICRETE VAPOR BAN ER.
				1. Applicable Standard: ASTM F3010.

Minimum Barrier Thickness to Meet Standard: 16 mils.

* + - * 1. Moisture Vapor Emission Rate (MVER) Reduction: Per ASTM F1869,

Less than or equal to 25 lbs per 1000 sq ft per 24 hrs (1415 micrograms per sq m) to below 3 lbs per 1000 sq ft per 24 hrs (170 micrograms per sq m), at 16 mils thickness.

Concrete Substrate Humidity: Per ASTM F2170.

Up to 100 percent RH / 14 pH.

* + - * 1. Tensile Bond Strength to Concrete Substrate:

Per ASTM C1583. Greater than 300 psi (2.8 MPa) minimum in 7 days.

* + - * 1. Cure Time: Minimum of 3 to 4 hours at 50 to 90 degrees F (10 to 32 degrees C) prior to priming with NXT Primer or PRIME-N-BOND.
			1. Moisture Vapor Control. Rapid One Step and SLU Primer: LATICRETE VAPOR BAN Primer ER.
				1. Applicable Standard: ASTM F3010.

Minimum Barrier Thickness to Meet Standard: 16 mils.

* + - * 1. Moisture Vapor Emission Rate (MVER) Reduction: Per ASTM F1869,

Less than or equal to 25 lbs per 1000 sq ft per 24 hrs (1415 micrograms per sq m) to below 3 lbs per 1000 sq ft per 24 hrs (170 micrograms per sq m), at 16 mils thickness.

Concrete Substrate Humidity: Per ASTM F2170.

Up to 100 percent RH / 14 pH.

* + - * 1. Tensile Bond Strength to Concrete Substrate:

Per ASTM C1583. Greater than 363 psi (2.5 MPa) minimum in 7 days.

* + - * 1. Cure Time: Minimum of 3 to 4 hours at 50 to 90 degrees F (10 to 32 degrees C) prior to applying NXT or SUPERCAP self-leveling underlayment. No primer needed prior to installing LATICRETE SLU's.
		1. Water: Clean, Potable, and Cool.
1. EXECUTION
	1. GENERAL

\*\* NOTE TO SPECIFIER \*\* Delete options not required. Refer to LATICRETE NXT LEVEL PLUS, NXT LEVEL, NXT LEVEL FLOW, NXT LEVEL DL, NXT LEVEL SP, NXT Primer, PRIME-N-BOND, VAPOR BAN E, VAPOR BAN ER and VAPOR BAN Primer ER product data sheets at www.laticrete.com for current product installation instructions.

* + 1. Concrete Slab Finishing in accordance with ACI 117 (Straight Edge Method).
		2. Provide ventilation to promote curing and reduce humidity.
		3. Do not install underlayment over moving cracks in substrate.
	1. INSPECTION
		1. Verify that installed work of other trades is complete to the point where work of this Section may properly commence.
		2. Verify conformance to Field Conditions specified by this Section and to manufacturer instructions.
		3. Examine the areas and conditions where the Underlayment is to be installed and notify the architect of conditions detrimental to the proper and timely completion of the work. Verify that substrate surfaces are protected from weather, wind, water and clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.
		4. Beginning work constitutes acceptance of site conditions and responsibility for defective installation caused by prior observable conditions.
	2. PREPARATION
	3. NOTE TO SPECIFIER: Some cast underlayment systems allow use of a cold, liquid-applied moisture barrier beneath cast underlayment. Consult underlayment manufacturer for specific installation recommendations when these systems are required. Delete below references to these systems when not required on project.
		1. Substrate finishing or remedial method for cast underlayment:

\*\* NOTE TO SPECIFIER \*\* SUBSTRATE PREPARATION - Refer to TDS-230 Substrate Preparation and Primer Guide for LATICRETE Self-Leveling Products - available at [www.laticrete.com](http://www.laticrete.com) .

* + - 1. Concrete:
				1. Concrete or lightweight concrete are acceptable substrates per TDS230. "Lightweight insulating concrete," typically containing expanded polystyrene or similar insulating materials and used for roofing applications, is not recommended as an acceptable substrate.
				2. New Slab Finishing Method: Bull Float to minimum FF15.

No finishing or hard troweling is needed prior to LATICRETE NXT underlayment application.

Just prior to Installation: Survey base slab following a 4 ft (1219 mm) grid depending on tolerances.

Install LEVEL PEGS to required heights.

Install LATICRETE NXT self-leveling underlayment over entire concrete base slab to meet levelness and flatness requirements without final finishing in conformance to ACI 318.

Install on open floor plates 28 days after base slab placement or prior to starting interior framing work or prior to finish paint and other finish work.

For installation over concrete earlier than 28 days after placement, LATICRETE NXT self-leveling underlayment's may be installed when the substrate concrete has reached 70 percent of its 28-day design compressive strength. For further information, contact LATICRETE Technical Services.

* + - * 1. Existing Slab: Evaluate and determine whether substrate needs to be mechanically prepared to ICRI CSP-3 by shot-blasting, scarification, or other treatments performed as instructed by manufacturer.
				2. Weak or Contaminated Surfaces:

Mechanically clean to ICRI CSP-3 by shot blasting, scarifying, or sanding.

If the substrate surface is suspected of having bond breakers, core test the slab to confirm depth and type of contamination.

* + - * 1. Do not acid etch or use chemicals to clean the substrates.
			1. Wood Substrates:
				1. Verify substrates are stable and structurally sound enough to support all total anticipated live, dead and impact loads.
				2. Substrates must be clean and free of contaminants.

Sand if necessary, then swept, vacuumed, and properly primed.

* + - * 1. If required for leakage control, install 6 mil thick polyethylene sheeting, overlapping by 6 inches (152 mm) and taping seams. Affix using staple or equivalent mechanical fastener.
				2. Fasten galvanized diamond metal lath over entire substrate using corrosion resistant fasteners every 6 inches (152 mm) overlapping lath seams by 1 inch (25 mm).
			1. Existing Finishes:
				1. Verify substrate and construction below existing finishes does not exceed industry deflection standards under all live, dead and impact loads for the type of finish flooring being installed.
				2. Acceptable existing floor finishes include Vinyl Tile, Cement Terrazzo, Ceramic Tile & Stone, and Cement Mortar Beds. Refer to previous section for installation over existing wood.
				3. Existing vinyl, linoleum or ceramic tile must be firmly bonded to a rigid substrate. Note that cushioned vinyl will not properly support tile. Sheet vinyl or linoleum must be fully adhered.
				4. Surface Preparation: Follow current preparation and priming instructions in TDS 230, available at www.laticrete.com
			2. Cleaning:
				1. Remove dirt, wax, sealers, curing compounds, efflorescence, and other unsuitable surface conditions not part of concrete matrix that may inhibit the underlayment bond to the surface.
				2. Broom clean and vacuum surfaces to pick up remaining dust and debris.
				3. Where removal of existing bond breaking substances is impractical, conform to manufacturer's instructions for application of bonding agent before installation of cementitious underlayment.
			3. Cracks in Subfloor: Repaired to minimize telegraphing through the Underlayment.
			4. Substrate Temperature:
				1. During Application: Minimum of 40 degrees F (4 degrees C)
				2. Ambient Temperature: Maintained at 50 to 90 degrees F (10 to 32 degrees C).
			5. LATICRETE NXT self-levelers may be installed on concrete having up to 100 percent relative humidity (RH) per ASTM F2170. The finished flooring and adhesive manufacturers' guidelines must be followed
				1. Do not install LATICRETE NXT products when there is standing water or visible moisture on the slab.
				2. Concrete Slabs: May be dry enough to install LATICRETE NXT products but may not be dry enough to meet moisture conditions required for finish flooring. LATICRETE Moisture Mitigation products may be used in these cases.

Test concrete slabs for appropriate moisture conditions in accordance with the finish flooring manufactures specifications prior to installing LATICRETE NXT products.

LATICRETE NXT Primer, PRIME-N-BOND, and self-leveling underlayment's are not moisture mitigation systems.

Moisture Mitigation Systems: LATICRETE VAPOR BAN E, VAPOR BAN ER, or VAPOR BAN Primer ER. Refer to Moisture Mitigation System section and the specified product data sheets for more information.

* + - 1. Surface Bond Strength of Substrate: 100 psi (0.7 MPa) per ASTM C1583 or ICRI Guideline No. 03739 for application of LATICRETE NXT underlayments.
				1. Weak or Contaminated Surfaces: Mechanically cleaned by shot blasting, scarifying, or sanding. Never use chemicals to clean the substrate.
				2. Installing LATICRETE Moisture Mitigation Products per ASTM F3010:

Concrete slabs receiving LATICRETE Moisture Mitigation products must have a tensile pull-off strength of 200 psi (1.4 MPa) or greater when tested in accordance with ASTM C1583.

* + - 1. LATICRETEVAPOR BAN E, VAPOR BAN ER, orVAPOR BAN Primer ER(when required):
				1. VAPOR BAN E: Apply to concrete substrates using squeegee and paint roller achieving a minimum thickness of 12 mils.
				2. VAPOR BAN ER, or VAPOR BAN Primer ERL; Apply to concrete substrates using squeegee and paint roller achieving a minimum thickness of 16 mils. LATICRETE VAPOR BAN E, VAPOR BAN ER, or VAPOR BAN Primer ER are only approved for concrete substrates.
			2. Containment: Close and seal floor openings and install dams at edges of floor area to receive treatment as necessary to contain self-leveling underlayment while in plastic state.
			3. Concrete Floor Flatness and Floor Levelness Benchmarks: Use a digital level device to determine elevations on a 4x4 foot grid, depending on tolerances, to establish and set self-adhering LEVEL PEGS at heights to indicate installation depths and top surface of underlayment application or other approved method.
			4. Joint Preparation:
				1. Expansion and Isolation Joints: Honor through underlayment by marking with screws or similar and saw cutting after self-leveling application.
				2. Static (Non-Moving) Saw Cuts and Control Joints: Fill with joint sealer under provisions of Section 03 30 00.
				3. Other Static (Non-Moving) Joints: Patch and repair using cementitious patching product.
				4. Dynamic (Active) Cracks: Bring to Architects attention for direction.
			5. Priming:
				1. Maintain adequate ventilation during and following primer application to promote faster drying.

Insufficient drying time, low temperatures, and high humidity may result insufficient drying, poor film formation, and pinholes in surface.

Do not apply at surface temperatures below 40 degrees F (4 degrees C).

* + - * 1. LATICRETE NXT Primer: Dilute primer concentrate with water according to the ratios given in LATICRETE NXT Primer Data Sheet.

Apply to substrates using stiff broom, roller or spray as instructed by manufacturer.

Roll, spray, or broom to uniform film thickness over prepared substrate. Avoid puddling and allow surface film to become dry to touch, typically 1 to 3 hours after application. For best results, and while primer is still fresh, it should be lightly brushed to ensure a complete, uniform film has been applied.

* + - * 1. LATICRETE PRIME-N-BOND: Apply to substrates using a 3/8 (9 mm) nap roller or brush. Apply a thin even film to the surface.

When used as primer for self-leveling products allow 2 to 5 hours for PRIMEN-BOND to dry before self-leveling products are poured.

If PRIME-N-BOND dries for more than 72 hours before application of the self-leveling cement, clean the surface, re-apply an additional coat of PRIME-N-BOND, and install the self-leveling products within 72 hours.

* + - 1. Installation of Embedded Cable Systems: Electric radiant heating loop wire:
				1. Just Prior to Priming: Lay out cable or wire and attach securely to substrate with a staple style fastener or spot adhesive that is appropriate for bonding the cable or wire to the substrate. Fasten along entire length of cable or wire every 6 inches (152 mm) or greater to prevent floating.
				2. Allow for 1/2 inch (13 mm) of LATICRETE NXT Self Levelers over highest point of embedded cable or wire.
	1. INSTALLATION OF UNDERLAYMENT
		1. Install underlayment in accordance with manufacturer's instructions, and after installation of moisture vapor mitigation (if needed) and underlayment primer.
		2. Mixing: Measure components and mechanically mix, as recommended by the manufacturer.
		3. Substrate Temperature:
			1. During Application: Must be a minimum 40 degrees F (4 degrees C)
			2. After Application: Maintained at 50 to 90 degrees F (10 to 32 degrees C).
			3. Protect areas from direct sunlight and exposure to weather.
		4. Pump or pour LATICRETE NXT Self Levelers onto substrate within the single lift thickness range listed forthe specified NXT self-leveling product, as listed on that products' data sheet.
			1. Wood Substrates: Require a minimum thickness of 1/2 inches (12 mm).
				1. Follow product data sheet and LATICRETE written installation instructions for installing over wood substrates.
		5. Immediately Following Placement: Lightly smooth surface and pour lines. When not using level pegs, the use of a gauge rake will assist in controlling material depth.
		6. Provide adequate ventilation to ensure uniform drying.
		7. Place underlayment before partition installation if construction schedule allows.
		8. If a fine, feathered edge is desired, steel trowel the edge after initial set, but before it is completely hard.
		9. Do not expose LATICRETE NXT self-levelers to rolling dynamic loads, such as forklifts or scissor lifts, for at least 72 hours after installation.
	2. CURING
		1. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
		2. Air cure in accordance with manufacturer's instructions.
		3. Provide continuous ventilation and adequate heat until walkable; provide mechanical ventilation if necessary.
		4. Do not install floor coverings over underlayment until all conditions required by the floor covering manufacturer have been met. Floor covering manufacturer's requirements may vary greatly.

\*\* NOTE TO SPECIFIER \*\* Field visits by LATICRETE SUPERCAP personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

* 1. FIELD QUALITY CONTROL
		1. Field flow tests should be performed by contractor on site periodically to ensure mix is homogeneous and free from separation.
		2. Provide written reports to Architect.
		3. Field visits by LATICRETE personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.
	2. PROTECTION
		1. Protect against direct sunlight, heat, weather, and wind. Prevent rapid drying to avoid shrinkage and cracking during the curing process.
		2. Protect Underlayment from Traffic as Follows:
			1. Foot Traffic: Not until underlayment surfaces are dry, typically 2 to 4 hours.
				1. Refer to data sheet of specified self-leveling products for more information regarding time to traffic.
			2. Vehicle Traffic: Not for 72 hours.
			3. Standing Water: Removed by squeegee or other acceptable method daily.

END OF SECTION