SECTION 09 05 61
COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, documents and general provisions of the Contract, and other related construction documents such as Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following: (***Specifier; delete or add appropriate sections***)

1. Section 03 06 30: Cast-In Place Concrete Installation and curing requirements according to ACI 302
2. Section 03 54 16: Hydraulic Cement Underlayment
3. Section 09 62 00: Specialty Flooring, Installation requirement
4. Section 09 64 00: Wood Flooring, Installation requirement
5. Section 09 65 00: Resilient Flooring, rubber sheet and vinyl tile installation requirements
6. Section 09 65 36: Static Control Flooring, Installation requirement
7. Section 09 67 00: Fluid Applied Flooring, Installation requirements
8. Section 09 68 00: Carpet, Installation requirements

1.2 SUMMARY

A. This is the recommended complete "Uzin System Specification" for treating concrete subfloors with high residual moisture vapor, without limitation to moisture values, and to provide a smooth and acceptable surface to meet the specification requirements of most all flooring manufacturers.

B. This complete Uzin System consists of Uzin PE 460 which is a two-component, 100% solids epoxy moisture vapor retarder designed to suppress excessive moisture vapor emissions in new (minimum 28 days) or existing concrete without limitation to moisture vapor values. Uzin PE 280 dispersion primer / bonding agent with carbon fiber technology produces a rough, keyed surface. Uzin NC 170 is a premium low stress Calcium Aluminate cementitious self-leveling compound for virtually all types of floor coverings, with no depth restrictions, which provides an extremely flat, level, smooth finish.

1. Uzin PE 460 2-part Epoxy Moisture Vapor Retarder.

2. Uzin PE 280 Carbon Fiber reinforced Dispersion Primer.

3. Uzin NC 170 Self-Leveling Compound.

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1.3 REFERENCES

A. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

B. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

D. 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

E. ASTM C1708 – Standard Test Method for Self-Leveling Mortars Containing Hydraulic Cements.

F. ASTM F3010 - Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings.

1.4 SUBMITTALS

A. Test Results: Moisture Test Data

B. Product Data: Submit manufacturer's product data sheets, installation instructions and Material Safety Data Sheets for each product used.

C. Qualification Data: For applicator, must be an approved Uzin applicator. UZIN recommends the use of INSTALL® (International Standards & Training Alliance) certified contractors.

1.5 QUALITY ASSURANCE

A. Application of the Uzin PE 460, PE 280 and NC 170 system must be by a factory trained applicator. Contact a Uzin Manufacturer Representative prior to application.

B. Manufacturer experience: Provide products from companies that manufacture all components of the system and have successfully specialized in the production of this type for more than 20 years.

C. Installer Qualifications: An authorized representative or INSTALL® (International Standards and Training Alliance) certified installer or equal, who is trained and approved by manufacturer.

1.6 WARRANTY

A. Uzin Utz North America, Inc. Limited Lifetime Warranty.
   a. Contact Uzin Utz North America, Inc. for details.

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B. INSTALL® Warranty on Labor program.
   a. Contact INSTALL® for details. www.installfloors.org/warranty/ or email: install@carpenters.org

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original unopened packaging, labeled with manufacturer name, product description and batch number.

B. Store products in a dry acclimatized area and protect from moisture, direct sunlight and freezing.

C. Handle all products in accordance with manufacturer's printed instructions.

1.8 SITE CONDITIONS

A. Optimum working conditions are 60 degrees to 77 degrees F. Do not apply below 50 degrees F surface and air temperatures. Temperature must be maintained prior, during and for a minimum of 48 hours after the application. Substrate surface and ambient air temperature conditions can alter working and set up time of the system.

1. Before installing underlayment, conduct moisture testing and pH testing as indicated in flooring specification sections. Do not install underlayment unless test results meet flooring manufacturers' requirements.
2. If test results indicate that moisture mitigation is required, apply moisture vapor retarder before primer and self-leveling underlayment.
3. In renovation areas install underlayment as required to provide a smooth flat floor. Fill troughs where existing partitions are removed. To eliminate any existing changes in elevation build up low areas as required.
4. Build up floor substrates as indicated to provide flush transitions between flooring material of different thicknesses.
5. When possible, install self-leveling underlayment before installing door frames and steel stud partitions.
6. Allow concrete or concrete repairs to cure to underlayment manufacturer's recommendations before applying moisture vapor retarder.
7. Protect adjacent materials and finishes from physical damage. Provide protection as required and remove from site at completion of work.
8. Repair or replace other work damaged by finishing operations, as directed by Architect.

PART 2 - PRODUCTS

2.1 MOISTURE MITIGATION SYSTEM

A. Two-Component 100% Solids Moisture Vapor Retarder for Concrete "without limitation to moisture vapor values" to receive Uzin Primer and Uzin Self-Leveling Compound.

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1. Acceptable Products:

   a. Uzin PE 460 Moisture Vapor Retarder; Manufactured by Uzin Utz North America, Inc.: 14509 E. 33rd Place Unit G, Aurora, CO 80011, USA 720-374-4810, us.uzin.com

2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (20° C+/-3°C) and 50% +/-5% relative humidity:

   a. Application: Appropriate notched squeegee, notched trowel, or Uzin Nylon Fiber Roller
   b. Coverage: 108 square feet per mixed gallon unit (applied over ICRI CSP 3)
   c. 14 pH solution: No effect, ASTM D1308
   d. Working Time: 25 to 30 minutes
   e. Pot Life: 10 – 15 minutes
   f. VOC Compliant – VOC does not exceed 10 grams per liter, compliant with California Section 01350 SCAQMD Rule #1168, may qualify for LEED EQ Credit 4.1

2.2 PRIMER BONDING AGENT

A. Pre-mixed dispersion primer with carbon fiber technology and the ability to be fully cured in 1 hour (for subsequent Uzin NC 170 Self-Leveling Compound depths not exceeding ½").

1. Acceptable Products:

   a. Uzin PE 280 Primer; Manufactured by Uzin Utz North America, Inc.: 14509 E. 33RD Place Unit G, Denver CO, 80011 USA, (720) 374-4810, us.uzin.com

2.3 CALCIUM ALUMINATE UNDERLAYMENT

A. Calcium Aluminate-based cementitious Self-Leveling Underlayment

1. Acceptable Products:

   b. Uzin NC 170 Self-Leveling Compound; Manufactured by Uzin Utz North America, Inc.: 14509 E. 33RD Place Unit G, Denver CO, 80011 USA, (720) 374-4810, us.uzin.com

2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (20° C+/-3°C) and 50% +/-5% relative humidity:

   a. Product must have very fine aggregate that allows the material to be placed from 1/8" to any depth in a single application

   b. Application: Barrel Mix or Pump

   c. Flow Time: 20 to 30 minutes

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d. Initial Set: Approx. 60 minutes

e. Final Set: Approx. 2 hours

f. Compressive Strength: exceeds 6000 psi at 28 days, ASTM C1708.

g. Flexural Strength: exceeds 1000 psi at 28 days, ASTM C1708.

h. VOC Compliant – VOC does not exceed 10 grams per liter, compliant with California Section 01350 SCAQMD Rule #1168, meets LEED EQ Credit 4.1

2.4 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

PART 3 – EXECUTION

3.1 PREPARATION

A. Concrete Subfloors: Prepare substrate in accordance with manufacturer's instructions.

1. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring and ASTM F3010 Standard Practice for Two Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.

2. The concrete must have a minimum tensile strength of at least 200 psi when tested in accordance with ASTM C1583.

3. Prior to beginning the application, measure the relative humidity within the concrete (ASTM F2170) or MVER (ASTM F1869) to determine if moisture mitigation is necessary. Uzin PE 460 may be used and has no restrictions as with limitation to moisture values.

B. Joint Preparation

1. Dormant Cracks and Saw-Cut Joints: To achieve a continuous moisture vapor barrier, Uzin Utz North America, Inc. recommends the use of Uzin PE 460 to fill small, non-moving cracks and saw-cut joints in existing concrete substrates. Dormant cracks greater than a hairline in width (1/32") and saw-cuts must be filled using UZIN KR 518 Two Component Joint Filler in strict accordance with the installation instructions provided by the Uzin Technical Service Department. After the dormant cracks and saw-cuts have been properly filled, immediately broadcast sand to refusal and allow these areas to cure thoroughly prior to proceeding with the Uzin NC 170 installation.

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2. Joints and Cracks: Joints and cracks that exhibit less than 3/16 inch of horizontal movement may be addressed with Uzin RR 203 Substrate Crack Bridging Material, please contact Uzin technical for details.

3. Expansion joints: Expansion joints must be honored up through the Uzin Moisture Vapor Retarder system.

3.2 APPLICATION OF Uzin PE 460:

A. Examine substrates and site conditions under which materials will be installed. Do not proceed with application until unsatisfactory conditions are corrected.

B. Coordinate application with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

C. Mixing: Comply with manufacturer's printed instructions and the following.

1. Uzin PE 460 Moisture Vapor Retarder is available in packaging sizes; 1 gallon (4.2 kg) & 2.5 gallon (10.5 kg). Both options are available in metal combi-can packaging, which is a small container inside a larger container. The unit comes with separate pre-measured quantities. The top small container, contains hardener (Part B) and the base container, contains resin (Part A). Only full units of Uzin PE 460 shall be mixed.

2. Before use, protect eyes and hands with suitable PPE for the purpose of mixing two-component epoxy. Allow Uzin PE 460 combi-can to acclimate to room temperature. Following acclimatization, remove the combi-can metal fasten band that holds containers A & B together. Briefly lift the upper container (part B), before placing back to its original position. Do this to ensure that both containers can be easily separated from one another. Using a long pointed object or screwdriver, punch several holes through the plastic plug on top and through the base of the upper container (hardener B). Allow the hardener to completely drain into the lower container (resin A). Do not twist or bend piercing instrument side to side as this may distort the base of upper container, preventing all the hardener from draining into lower container. After draining the upper container contents, place this into a clean plastic bucket. Mechanically blend combi-can lower container contents thoroughly for two minutes using a suitable whisk fitted to drill (> 300 rpm). Remove the upper container (hardener B) from the clean plastic bucket and dispose of. Pour the mixed contents of the combi-can lower container (resin A) into the clean plastic bucket and briefly mix again for one minute. While mixing, ensure that all of the material around the base and walls of the container is incorporated. NOTE: It is very important that all the hardener is completely mixed into the Uzin PE 460 resin. Immediately apply the material evenly onto the prepared concrete surface using a suitable notched squeegee, flat V notched 3/32" x 3/32" x 3/32" trowel, or Uzin Nylon Fiber Roller. Make sure the substrate is completely covered (sealed) when applying as a Moisture Vapor Barrier as missed spots will be ineffective. Observe the limited pot-life.

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D. Application: Comply with manufacturer's printed instructions and the following.

1. Uzin PE 460 can be applied in a one coat application using a suitable notched squeegee to install an even coat of 14 mils wet film thickness. Immediately after squeegee applying material, roll the wet surface with a pre-loaded Uzin Nylon Fiber Roller in a ninety degree direction to that of the squeegee application. A one coat cured application of Uzin PE 40 is to be covered with Uzin PE 280 Primer. A two coat application of Uzin PE 460 is applied using an Uzin Nylon Fiber Roller for each applied layer. Apply the second coat layer as soon as the first will accept foot traffic, not later than 24 – 36 hours. To visually distinguish the second coat from the first, add approx. 3 oz. of red color concentrate Uzin Epoxy Colorant. NOTE: If 48 hours have passed since the last coat of UZIN PE 460 has been applied, the Uzin PE 460 surface must be abraded with a 40 to 60 grit abrasive on a rotary sander to ensure a good bond.

2. When applying Uzin NC 170 up to a depth of ½" over Uzin PE 460 use Uzin PE 280 Primer. Allow Uzin PE 280 Primer to dry for minimum 1 hour before applying Self Leveling Compound. Leveling depths over ½" up to 1" require Uzin PE 280 to cure for minimum 12 hours before applying Self Leveling Compound. Leveling depths greater than 1" require grit-binding with a broadcast of clean, dry, graded sand (ASTM sieve # 20) into the second wet roller coat of Uzin PE 460. Always use the sand broadcast system when installing hardwood flooring and whenever using a polyurethane adhesive. Call the Uzin Utz North America, Inc. technical department for assistance.

   Note: When broadcasting sand use a NIOSH approved dust mask in conformance with OSHA requirements regarding handling of sand.

3. Before use, protect eyes and hands with suitable PPE for the purpose of mixing acrylic primer. Allow Uzin PE 280 Primer container to acclimate to room temperature. Following acclimatization, remove container lid and thoroughly stir contents with a stirring stick. Apply a thin, even coat over the entire surface of cured PE 460 using an Uzin Nylon fiber Roller. When applying more than one application of leveling compound, allow each layer to dry completely and then prime intermediate coats with Uzin PE 360 Plus Primer. When UZIN PE 360 Plus Primer coat is dry, apply the next layer of leveling material. Clean tools with water immediately after use.

4. Uzin NC 170 Self-Leveling Compound may be applied as soon as the Uzin PE 280 is dry, which is generally less than 1 hour (for subsequent Uzin NC 170 Self-Leveling Compound depths not exceeding ½"). When barrel mixing Uzin NC 170 pour 6.75 quarts (6.5 liters) of cold clean water into a clean Uzin 16 gallon. mixing drum. Water content may be adjusted between 6.25-6.75 quarts (6-6.5 liters) depending upon desired consistency. Slowly pour in the bag contents (50 lb.). Mechanically blend powder and water using a drill (minimum 650 rpm) fitted with an Uzin Mixing Whisk attachment and blend to a viscous, lump free consistency. Do not overwater Uzin NC 170. Pour the mixed material onto the primed substrate and distribute evenly with an Uzin Smoothing Trowel or the Uzin Gauge Rake. Where possible, apply to the desired depth in one application. Always apply a minimum 1/8" depth of Uzin Self-Leveling Compound.

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3.3 FIELD QUALITY CONTROL

A. Always perform a test to determine if the application is suitable for its intended use

3.4 PROTECTION

A. Always protect the surface of each application from contamination and damage.

END OF SECTION

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