

**SECTION 09699**  
**RECOMMENDED SPECIFICATION FOR CMP SPECIALTY PRODUCTS LOCKDOWN 100% SOLIDS, TWO COMPONENT, RESIN BASED, MEMBRANE FORMING, MOISTURE MITIGATION SYSTEM**

**PART 1- GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 03, Division 07 and Division 09 Specification Sections, apply to this Section.
- B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

**1.02 SUMMARY**

- A. This is the recommended specification for CMP SPECIALTY PRODUCTS LOCKDOWN 100% solids, two component, resin based, membrane forming, moisture mitigation system.

**1.03 SECTION INCLUDES**

- A. CMP SPECIALTY PRODUCTS LOCKDOWN 100% solids, two component, resin based, membrane forming, moisture mitigation system used to reduce MVER of existing concrete when the levels of moisture exceed the maximum allowable by flooring, adhesive or coatings manufacturers that also serves as a broadcast primer or crack repair.
  - 1. CMP SPECIALTY PRODUCTS 210 calcium aluminate/Portland cement based self-leveling underlayment and topping
  - 2. CMP SPECIALTY PRODUCTS LIQUICEM premium, highly fluid, calcium aluminate/Portland cement based self-leveling underlayment
  - 3. CMP SPECIALTY PRODUCTS AS-100 premium acrylic underlayment/topping primer
- B. Related Sections include the following:
  - 1. Section 03 30 00, Cast-In-Place Concrete
  - 2. Section 07 26 19, Topical Moisture Vapor Mitigation
  - 3. Division 09 Flooring Sections

**1.04 REFERENCE STANDARDS**

- A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.
- C. All materials, installation and workmanship shall comply with all applicable requirements and standards.
- D. ASTM F3010, Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings

- E. 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
- F. ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
- G. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- H. ASTM F1869, Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
- I. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores

#### **1.05 QUALITY ASSURANCE**

- A. Provide CMP SPECIALTY PRODUCTS LOCKDOWN from as manufactured by CMP SPECIALTY PRODUCTS, 1445 Ford Road Bensalem, PA 19020.
- B. Installation of CMP SPECIALTY PRODUCTS LOCKDOWN must be by a trained applicator regularly engaged and properly equipped for application of moisture mitigating systems. Please contact your local CMP SPECIALTY PRODUCTS distributor for a list of Installers.
- C. CMP SPECIALTY PRODUCTS LOCKDOWN shall be able to be installed as a vapor barrier from 250 square feet per kit to 350 square feet per kit (11 wet mils to 16 wet mils), depending upon conditions.
- D. CMP SPECIALTY PRODUCTS LOCKDOWN shall be able to be installed as a broadcast primer from 200 square feet per kit to 400 square feet per kit (10 wet mils to 20 wet mils), depending upon substrate.
- E. CMP SPECIALTY PRODUCTS LOCKDOWN shall be able to be primed in 4 hours. Temperature effects ready time.
- F. CMP SPECIALTY PRODUCTS LOCKDOWN shall be able to have excess broadcast sand removed in 4 hours. Temperature effects ready time.
- G. CMP SPECIALTY PRODUCTS LOCKDOWN shall be able to receive adhesives rated for non-porous substrates in 4 hours. Temperature effects ready time.

#### **1.06 SUBMITTALS**

- A. Product Data: Product data in the form of CMP SPECIALTY PRODUCTS technical data, specifications, and installation instructions.

#### **1.07 DELIVERY, STORAGE AND HANDLING**

- A. Deliver CMP SPECIALTY PRODUCTS materials in manufacturer's original undamaged packages or acceptable bulk containers.
- B. Store packaged CMP SPECIALTY PRODUCTS materials to protect them from elements or physical damage.
- C. Do not use CMP SPECIALTY PRODUCTS which shows indications of damage, leakage, crystallization, or other signs of deterioration.

#### **1.08 PROJECT CONDITIONS**

- A. Do not place CMP SPECIALTY PRODUCTS LOCKDOWN when ambient temperature is below 40 degrees F (5 degrees C) or above 90 degrees F (32 degrees C).

- B. Do not place CMP SPECIALTY PRODUCTS LOCKDOWN if surface temperature is less than 5 degrees F (less than 3 degrees C) above dew point. Do not install flooring or coatings if the CMP SPECIALTY PRODUCTS LOCKDOWN surface is wet.
- C. Do not place CMP SPECIALTY PRODUCTS LOCKDOWN over slabs with hydrostatic pressure.
- D. Do not place CMP SPECIALTY PRODUCTS LOCKDOWN over gypsum or other moisture sensitive substrates.
- E. Do not place CMP SPECIALTY PRODUCTS LOCKDOWN without approved Protective Equipment per OSHA guidelines and CMP SPECIALTY PRODUCTS LOCKDOWN MSDS, including properly rated dust mask, respirator, goggles, chemical resistant gloves and clothing. Use a NIOSH - MSHA approved respirator when working with CMP SPECIALTY PRODUCTS LOCKDOWN in poorly ventilated areas.

## **PART 2 – PRODUCTS**

### **2.01 GENERAL**

- A. All CMP SPECIALTY PRODUCTS materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.

### **2.02 MATERIALS**

- A. Vapor Mitigation and Remediation Product: 100% solids, two component, resin based, membrane forming, moisture mitigation system.
  - 1. CMP SPECIALTY PRODUCTS “LOCKDOWN”
    - a. Pot Life Working Time: 20 minutes
    - b. Ready Time at 70 degrees F (21 degrees C) 50 percent relative humidity
      - i. CMP SPECIALTY PRODUCTS AS-100: 4 hours
      - ii. Removal of Excess Broadcast Sand: 4 hours
      - iii. Adhesives rated for non-porous substrates: 4 hours
    - c. VOC: Less than 50g/L, calculated SCAQMD 1168
    - d. Moisture Mitigation Systems: Compliance, ASTM F3010
    - e. Water Vapor Transmission and Permeance, ASTM E96
      - i. Water Vapor Transmission: 0.032 grains per square foot per hour
      - ii. Vapor Permeance: 0.08 perms
- B. Underlayment/Topping Primer: Premium Acrylic primer designed for use with CMP’s line of underlayments and toppings.
  - 1. CMP SPECIALTY PRODUCTS “AS-100”
- C. Self-Leveling Underlayment and Topping: Free-flowing, self-leveling, pumpable, calcium aluminate/Portland cement based compound for applications from 1/4 inch to 2 inches thickness.

1. CMP SPECIALTY PRODUCTS "210"
  - a. Flow Working Time: 25 minutes
  - b. Final Set: Approximately 60 minutes, ASTM C191
  - c. Compressive Strength:
    - i. 2000 psi at 4 hours, ASTM C109M
    - ii. 5500 psi at 28 days, ASTM C109M
  - d. Flexural Strength: 1100 psi at 28 days, ASTM C348
  - e. Tensile Strength: 570 psi at 28 days, ASTM C190
  - f. Bond Strength:
    - i. 400 psi at 28 days, ASTM C1583
    - ii. 375 psi at 28 days, ASTM C4541
  - g. VOC: 0g/L, calculated SCAQMD 1168

D. Self-Leveling Underlayment: Premium free-flowing, self-leveling, pumpable, calcium aluminate/Portland cement based compound for applications from 1/8 inch to 1/2 inch thickness.

1. CMP SPECIALTY PRODUCTS "LIQUICEM"

D. Protective Equipment: Properly rated dust masks and respirators, goggles, chemical resistant gloves and clothing as per OSHA guidelines and CMP SPECIALTY PRODUCTS LOCKDOWN MSDS

E. Equipment

1. Low Speed (300 RPM) drill
2. Jiffy type mixing paddle
3. Soft-edge notched squeegee
4. 3/8" non-shed synthetic roller
5. Paint brush
6. Metal athletic cleats or coatings spikes

## **2.03 MIXING EQUIPMENT**

A. CMP SPECIALTY PRODUCTS LOCKDOWN is supplied in the proper mix ratios; only mix complete KITS. Do not thin or alter. Add ALL of Part B to Part A. Use a paint stick to scrape ALL material from the sides and bottom of pail. Mix thoroughly using a low speed (300 rpm) drill and Jiffy type wand to avoid any mixing action that would entrap air.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Concrete subfloors: Prepare substrate in accordance with CMP SPECIALTY PRODUCTS' instructions.
1. Refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring before proceeding.
  2. Concrete subfloors must be at least 40 degrees F (5 degrees C), sound, clean and have a minimum of 145 psi (1.0 MPa) tensile strength when tested per ASTM C1583. Concrete subfloors must have a minimum of 3000 psi (21 MPa) tested per ASTM C42 and a density greater than 100 pounds per cubic foot.
  3. Remove all wax, dirt, oil, grease, laitance, densifiers, curing compounds, urethane, paint, adhesives, underlayment and any substance that may act as a bond breaker. If necessary, mechanically clean and remove contaminants by chipping, shot-blasting, grinding or scarifying. Removal with solvents, strippers and acid etching are not acceptable. Burn off and vacuum up any exposed reinforcing fibers.
  4. Concrete substrates may be dry or damp (up to Saturated Surface Dry) with no standing water.
  5. All cracks in the subfloor must be repaired or treated to minimize crack telegraphing through the CMP SPECIALTY PRODUCTS LOCKDOWN.
    - a. Only chase static, non-moving cracks and control joints to ¼ inch x ¼ inch with a diamond V-blade.
    - b. Clean thoroughly and fill with CMP SPECIALTY PRODUCTS LOCKDOWN using a U-shaped squeegee.
    - c. Larger cracks (1/8 inch to ¼ inch)
      - i. Prefill with Broadcast sand and fill all cracks to rejection.
      - ii. Alternatively, a measured amount of mixed CMP SPECIALTY PRODUCTS LOCKDOWN can be combined with anyone of CMP SPECIALTY PRODUCTS' cement based products to create a trowelable epoxy mortar that can be applied into cracks. This IS NOT a crack repair but it will prevent CMP SPECIALTY PRODUCTS LOCKDOWN from leaking into an open substrate so the coating can be applied.
    - d. Treat all dynamic joints such as expansion and isolation by applying a layer of CMP SPECIALTY PRODUCTS LOCKDOWN into the joint with a paint brush. Completely coat the walls of the cavity. After curing 4 hours, fill with flexible joint filler specifically designed for that purpose.
  6. Substrates shall be inspected and tested for moisture in accordance with ASTM F1869 and/or ASTM 2170 to determine the required CMP SPECIALTY PRODUCTS LOCKDOWN coverage rate.
    - a. Coverage rate up to 100 percent relative humidity and 15 pounds per 1000 square feet per day is a maximum of 350 square feet per kit (average 11 wet mils, 10 wet mils minimum).
    - b. TOTAL LOCKDOWN coverage rate is a maximum of 250 square feet per kit (average 16 wet mils, 14 wet mils minimum).

7. Substrates shall be inspected and cored in accordance with ASTM C42 for testing of certain contaminants that can cause system failure not covered by warranty.
- B. Non-Porous floors: Prepare substrate in accordance with CMP SPECIALTY PRODUCTS' instructions.
1. Epoxy, Terrazzo, and ceramic and quarry tile must be abraded by grinding or shotblasting. Vacuum or wet vacuum abraded substrate to remove dust and laitance.
- C. Metal: Prepare substrate in accordance with CMP SPECIALTY PRODUCTS' instructions.
1. Metal substrates must be dry, structurally sound and free of deflection (maximum L-360).
  2. Prepare metal substrates by abrasive cleaning to a White metal finish.
  3. Remove ALL residues using a dry cleaning method or wipe down with Xylene.

### **3.02 MIXING**

- A. CMP SPECIALTY PRODUCTS LOCKDOWN should be acclimated to between 60 degrees F and 70 degrees F (15 degrees C and 21 degrees C) before mixing. Provide a low speed drill (300 rpm) with a Jiffy type mixing blade to mix CMP SPECIALTY PRODUCTS LOCKDOWN completely without entraining excess air
- B. CMP SPECIALTY PRODUCTS LOCKDOWN is supplied in the proper mix ratios. Only mix complete KITS. Do not thin or alter. Add Part B to Part A using a paint stick to scrape ALL material from the sides and bottom of pail. Mix thoroughly for 1-2 minutes until a uniform homogeneous color is achieved without any streaks. Use a low speed (300 rpm) drill and Jiffy type wand. Avoid any mixing action that would entrap air; be sure that ALL material on the sides and bottom is thoroughly incorporated. Do not over mix. Immediately pour out mixed material in the designated area.

### **3.03 INSTALLATION**

- A. Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.
- B. Place CMP SPECIALTY PRODUCTS LOCKDOWN in accordance with CMP SPECIALTY PRODUCTS' instructions, using equipment and procedures to facilitate continuous placement.
- C. All installation shall be in accordance with CMP SPECIALTY PRODUCTS published recommendations.
- D. To ensure proper coverage, measure and mark out sections for each KIT of CMP SPECIALTY PRODUCTS LOCKDOWN, depending on the application.
- E. Vapor Barrier Application: Wear metallic athletic cleats or coatings spikes when applying CMP SPECIALTY PRODUCTS LOCKDOWN.
1. Immediately after mixing CMP SPECIALTY PRODUCTS LOCKDOWN, pour out bands in the defined area and quickly distribute it evenly with a notched squeegee or split tip broom. Back roll with a 3/8" non-shed roller.
  2. Frequently check coverage rate with a wet film thickness gauge. Porosity and surface profile will affect coverage. Pre-dampening and maintaining a Surface Saturated Dry (SSD) condition during installation on very porous substrates can aid in preventing pin-holing and make application easier.

3. If pinholes develop, reapply CMP SPECIALTY PRODUCTS LOCKDOWN after grinding the cured surface and cleaning with Isopropyl alcohol.
  4. Certain coverings, such as sheet vinyl and rubber, are extremely sensitive to pin-holing. When installing such coverings over CMP SPECIALTY PRODUCTS LOCKDOWN, a two coat application at the rate of 500 square feet per kit, per coat, is recommended.
- F. Broadcast Priming Application: Wear metallic athletic cleats or coatings spikes when applying SPECIALTY PRODUCTS LOCKDOWN.
1. Immediately after mixing CMP SPECIALTY PRODUCTS LOCKDOWN, pour out bands in the defined area and quickly distribute it evenly with a notched squeegee or split tip broom. Back roll with a 3/8" non-shed roller.
    - a. Porous Concrete or Self Leveling: 200 square feet to 250 square feet per KIT
    - b. Standard Concrete: 300 square feet per KIT
    - c. Non-Porous substrates: 400 square feet per KIT
  2. Frequently check coverage rate with a wet film thickness gauge. Porosity and surface profile will affect coverage. Pre-dampening and maintaining a Surface Saturated Dry (SSD) condition during installation on very porous substrates can aid in preventing pin-holing and make application easier.
  3. Immediately after back rolling, broadcast CLEAN, DRY, 50 to 60 Mesh (0.25 mm to 0.297 mm) sand at the rate of 3/4 pounds to 1 pound per square foot to "BEACH" the surface using a NIOSH approved dust mask. None of the CMP SPECIALTY PRODUCTS LOCKDOWN should remain visible after the broadcast.
  4. After 4 hours (depending on temperature and humidity), sweep and vacuum to remove excess sand. Twisting the ball of your foot in the sand is a good indicator if the CMP SPECIALTY PRODUCTS LOCKDOWN is ready for sweeping, vacuuming and subsequent coatings. If the CMP SPECIALTY PRODUCTS LOCKDOWN feels gummy or the sand is not locked-in when twisting your foot, wait an additional 30 minutes and repeat test. A uniform, intact layer of sand should remain after cleanup.
  5. Frequent bare areas and bare areas larger than the size of a quarter needs to be retreated per Section 3.03.E.4.
- F. Crack Repair Application:
1. Clean thoroughly and fill prepared 1/4 inch X 1/4 inch static (non-moving) joints with CMP SPECIALTY PRODUCTS LOCKDOWN using a U-shaped squeegee.
  2. Use one of the following application methods for prepared cracks from 1/8 inch to 1/4 inch.
    - a. Prefill with Broadcast sand and fill all cracks to rejection.
    - b. Alternatively, a measured amount of mixed CMP SPECIALTY PRODUCTS LOCKDOWN can be combined with anyone of CMP SPECIALTY PRODUCTS' cement based products to create a trowelable epoxy mortar that can be applied into cracks. This IS NOT a crack repair but it will prevent CMP SPECIALTY PRODUCTS LOCKDOWN from leaking into an open substrate so the coating can be applied.

3. Treat all dynamic joints such as expansion and isolation by applying a layer of CMP SPECIALTY PRODUCTS LOCKDOWN into the joint with a paint brush. Completely coat the walls of the cavity. After curing 4 hours, fill with flexible joint filler specifically designed for that purpose.

#### 3.04 CURING AND PROTECTION

- A. Cure and protect CMP SPECIALTY PRODUCTS LOCKDOWN applications and finishes as specified by CMP SPECIALTY PRODUCTS.
- B. Do not install CMP SPECIALTY PRODUCTS LOCKDOWN or coatings on top of CMP SPECIALTY PRODUCTS LOCKDOWN if surface temperature is less than 5 degrees F (less than 3 degrees C) above dew point. Temperature must be maintained at least 4 hours during curing. Do not install flooring or coatings if the CMP SPECIALTY PRODUCTS LOCKDOWN surface is wet.
- C. CMP SPECIALTY PRODUCTS LOCKDOWN must cure at least 4 hours (depending on temperature and humidity), before installing subsequent materials.
  1. Applying any CMP SPECIALTY PRODUCTS cement based product over CMP SPECIALTY PRODUCTS LOCKDOWN.
    - a. The CMP SPECIALTY PRODUCTS LOCKDOWN must be primed with CMP SPECIALTY PRODUCTS AS-100.
      - i. If CMP SPECIALTY PRODUCTS LOCKDOWN has cured longer than 48 hours, abrade using a floor machine with 60 grit sand paper. Remove all dust prior to priming.
    - b. Apply CMP SPECIALTY PRODUCTS AS-100 primer undiluted (Neat) using a 3/8" nap roller at 500 square feet to 600 square feet per gallon.
    - c. Leave no bare spots or puddles and allow CMP SPECIALTY PRODUCTS AS-100 to dry 2 hours to 24 hours before applying CMP SPECIALTY PRODUCTS cement based products.
  2. Water based adhesives not rated for non-porous surfaces require a 1/8 inch minimum application thickness of self-leveling underlayment (not Hand Patching) in order to flash properly.
    - a. Use CMP SPECIALTY PRODUCTS 210 for underlayment applications 1/4 inch to 2 inches in depth.
    - b. Use CMP SPECIALTY PRODUCTS LIQUICEM for underlayment applications 1/8 inch to 1/2 inch in depth.
  3. Coatings and adhesives rated for non-porous surfaces can be applied directly over CMP SPECIALTY PRODUCTS LOCKDOWN. If the CMP SPECIALTY PRODUCTS LOCKDOWN has cured longer than 48 hours abrading and cleaning may be required.
  4. Always test for proper adhesion and compatibility with CMP SPECIALTY PRODUCTS LOCKDOWN prior to application.
  5. No additional priming is required with the sand broadcasting application. The surface is ready for topping with CMP SPECIALTY PRODUCTS cement based products.

**END OF SECTION 09699**