

Adsil MicroGuard® Advanced Siloxane Technology

CONCRETE FLOOR - VAPOR BARRIER TREATMENT SYSTEM SPECIFICATION

DOCUMENT NUMBER AD1130-02

SECTION 09800 - SPECIAL CLEAR INORGANIC WATERPROOFING SEALER
 (Applied onto concrete slab prior to the installation of other mastic adhered flooring, such as Hard Tile, VCT Tile, Wood Laminate, Carpeting, etc;)

PART 1, GENERAL

1.01 General Requirements of the Project Manual shall apply to all work specified in this section.

1.02 Quality Assurance

- A. Installer (installers shall be proficient in concrete floor vapor seal treatment systems)
 - 1. Installer shall be trained by Adsil or its appointed agents, using Specification #AD1130-02 procedures, established in accordance with Adsil methods and standards for concrete floor vapor barrier system seal treatments.
 - 2. Installer shall certify that all technicians utilized for work in this section are:
 - a. trained journeymen in the Adsil MicroGuard® inorganic concrete floor vapor barrier seal treatment system.
 - b. shall have demonstrated a proficiency, in this area, by citing past projects.
 - 3. Installer shall ensure that any specialized equipment, as required by the manufacturer, will be used for work in this section.

1.03 Submittals

- A. Adsil Product Data: Submit manufacturer's technical information, including Product Technical Data Sheets, Material Safety Data Sheets, detailing job site and personal safety instructions, product mixing instructions and application instructions for each material specified. Identify by manufacturer's catalog number and general classification.
 - 1. Technical Data Sheet TS-45; MicroKleen™ Industrial Cleaner & Degreaser PLC-1
 - 2. Technical Data Sheet TS-43; MicroKleen™ Retarder Solvent AD1-103
 - 3. Technical Data Sheet TS-44; MicroKleen™ Spray & Equipment Cleaner AD1-919
 - 4. Technical Data Sheet TS-35; MicroGuard® Concrete Clear Waterproofing Sealer AD702
- B. Third Party Data: Submit any relevant test studies, relative to floor treatment systems, when using MicroGuard® inorganic product treatment systems on new or in use concrete floor surfaces.

1.04 Delivery and Storage

- A. Deliver materials in sealed containers with manufacturer's labels intact.
- B. Store materials in a protected area at a temperature range between 50° F. and 85° F.

1.05 Job Conditions

- A. Apply MicroGuard® AD702 Concrete Sealer only under the following prevailing conditions:
 - 1. Air, surface and material temperatures are not below 60° F. or above 100° F.
 - 2. Prevent wide temperature variations, which might result in condensation forming on the freshly treated surfaces or could affect hydrolyzing or curing of the treatment.
- B. Mask or drop cloth surfaces not to be protective sealed/treated.

PART 2, PRODUCTS

2.01 Manufacturers

- A. Products of Adsil, Inc., Daytona Beach, Florida 32117 USA. (Phone: 386-274-1382)

2.02 Materials

- A. Cleaners, Conditioners & Solvents
 - 1. Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser
 - 2. Adsil MicroKleen™ AD1-103 Flow Agent Retarder Solvent
 - 3. Adsil MicroKleen™ AD1-919 Spray & Equipment Cleaner
- B. Protective Concrete Clear Floor Surface Treatment
 - 1. Adsil MicroGuard® AD702 Concrete Clear Waterproofing Sealer

- C. Calcium Chloride Permeability Field Test Kits
 - 1. Available through most concrete suppliers or flooring distributors

2.03 Product Requirements

- A. Surface Cleaners & Conditioners
 - 1. Cleaners shall be free from any known carcinogen or teratogen materials.
 - 2. Cleaners shall be phosphorous free..
- B. Concrete Protective Surface Treatments
 - 1. Surface Treatments shall be inorganic, ambient temperature cured film structures.
 - 2. Surface Treatments shall adhere to substrate by London Force Bonding methods.
 - 3. Surface Treatments shall produce a dry film thickness no greater than 12 microns, on average, per coat (1 mil = 25.4 microns), maximum of 3 coats.
 - 4. Surface Treatments shall have passed ASTM G-21, with a zero (0) microbial spore growth development rating. The standard ASTM G-21 test procedure must have been conducted by an accredited, third party independent testing laboratory.

2.04 Material Preparation

- A. Catalyze and/or mix materials strictly in accordance to manufacturer's most current published technical literature.
- B. THINNING of the MicroGuard® Clear Concrete Surface Sealer AD702 must only be accomplished using MicroKleen™ Retarder Solvent AD1-103 and only as directed.

PART 3, EXECUTION

3.01 Pre-work Inspection

- A. Examine concrete floor to be sealed and report any conditions that would adversely affect the performance of the vapor barrier treatment system and which cannot be put into an acceptable condition by specified surface preparation methods or other industry recognized repair methods.
- B. Do not proceed with the mixing or installation of the specified vapor barrier treatment system until the concrete floor can be placed into an acceptable condition.

3.02 Equipment Requirements

- A. Spray Equipment (for spray or spray & back roll application)
 - 1. Adsil Dual Regulated Pressure Pot
 - 2. Adsil Special Spray Wand/Gun
 - 3. Adsil 45° Connector
 - 4. Adsil #10 Cone Tips (4 sets)
 - 5. Adsil Fluid Hoses
- C. An air compressor that is rated for a minimum of 3 CFM @ 90 PSI.
- D. Adsil Product Mixer and Paddle, with Timer.
- E. Adsil Pump & Wand Cleaner Application System.
- F. Clean, white or clear HDPE plastic buckets (5 gallon) with lids.
- G. Roller Frame, extension handle, solvent resistant, short nap roller covers.
- H. Assorted tools, extension cords, water hose & nozzle, squeegee, clean buckets, clean rags, wet vacuum, etc;
- I. Wet/Dry Vacuum System or Steam Clean & Vacuum Recovery System, such as Turbo Clean®, or equivalent.
- J. Tarps, drops, plastic sheathing and masking tape.

3.03 Surface Preparation

- A. General
 - 1. Preliminary to all surface preparation and application operations, completely mask, remove or other wise adequately protect all fixtures or surfaces not to be sealed.
 - 2. Place drop cloths, tarps, plastic sheathing or other protection over areas that should be protected from the cleaning and sealer application processes.

B. Specific Cleaning

1. If present, remove any existing mastic using recognized industry standards.
2. Liberally flush the concrete floor area with Adsil MicroKleen™ Industrial Cleaner & Degreaser PLC-1. Pre-dilute the PLC-1 Cleaner, 1 part cleaner to 1 part hot water. Avoid contact with wall or column surfaces. Allow the PLC-1 Cleaner to soak on the surface for approximately 5 minutes, but do not allow the cleaning solution to dry. If drying in an area occurs, lightly refresh that area with more PLC-1 Cleaner, or a very light spray of tap water, to keep the PLC-1 Cleaner functioning in a moist environment.
3. After the PLC-1 Cleaner has “worked” on the surface for 5 minutes, liberally rinse the surface with clean tap water. Rinse the surface well past the phase when visual signs of suds have disappeared.
4. In many instances, the concrete floor to be sealed may be overly soiled or oil laden. A second and even a third cleaning may be required in order to remove all surface contaminants. The use of a Mechanical Floor Scrubber (175 RPM Swing Machine) utilizing non-aggressive scrub brushes can improve the cleaning efficiency. Continue the cleaning process, as specified above, until the surface is clean and free from contaminants. If no drains exist to accept rinse water, a wet vacuum or rinse reclaim equipment should be utilized to pick up soap residue and rinse water.
5. In some jurisdictions, the use and collection of cleaning materials may be regulated. It is the responsibility of the applicator to be aware of any such regulations and to take appropriate steps to collect and dispose of cleaning materials, in accordance with any such regulations.
 - a. In these instances, the applicator must control the cleaning material waste stream.
 - b. To provide means of containment of material and collection of material for proper disposal, according to regulations. A wet/dry shop vacuum or other equipment may be required for material collection and storage.
6. Allow the concrete surface to dry out for at least 24 hours following the completion of final surface preparation procedures.
7. Conduct the initial base line Calcium Chloride Permeability Testing by placing field kits onto the bare concrete surface, per kit manufacturer’s instructions. Place the field kits randomly over the surface area. Place one kit onto the surface for every 500 to 1,000 square feet of surface area. After 24 hours, the kits should be weighed using a properly calibrated digital scale. The initial base line readings should be recorded on the Adsil Field Application Data Form TS-67 for future reference.

3.04 Mixing and Catalyzing

- A. MicroGuard® Concrete Clear Waterproofin Sealer AD702 (small batch size, 1 quart kit)
 1. MicroGuard® AD702 is a three-component material, which must be properly mixed for curing to occur. The product is packaged, in kit form, as an “A” component, “B” component and “C” component. For proper mixing, use a standard lab magnetic mixture. Add the “B” component into the short filled container of “A” component. Drop in the magnetic peanut, place the white cap loosely onto the “A” component bottle and mix for 20 minutes at moderate speed.
 2. Then, add the “C” component into the admixture of the “A” and “B” components. Replace the cap and mix for an additional 15 minutes. You will notice a moderate rise in temperature of the material during mixing. This warming is a normal exothermic reaction. The product is properly mixed when the admixture becomes perfectly clear and free from any cloudiness.
 3. Set the product aside for 30 minutes induction (“sweat in”) prior to application. The useable pot life of mixed product is approximately up to 4 hours, timed from the end of the 30 minute induction period.
- B. MicroGuard® Concrete Clear Waterproofing Sealer AD702 (larger batch sizes, greater than 1 quart kit)
 1. When mixing MicroGuard® AD702 Sealer in larger batch sizes (>1 quart kits), it will be more efficient to mix and catalyze the material in a clean 5 Gallon HDPE Bucket.
 - a. Pour the “A” and “B” components into the 5 gallon (depending on batch size to be mixed) white or clear, clean HDPE plastic bucket. (Note: Use white or clear & clean HDPE buckets, only).
 - b. Using the Adsil Product Mixer and mixing paddle, blend the components together for 20 minutes (set the timer) to ensure total mixing has occurred. No exothermic heat will be generated. Place a ‘V’ cut/notched lid over the bucket while mixing.
 - c. Pour the “C” component into the admixture of the “A” and “B” components and mix for 15 more minutes. A moderate exothermic heat level will be generated. This is normal.

- d. Cover the bucket with a full lid and set the product aside for **30** minutes to properly induct (“sweat in”). Always set product aside in a protected area. For best results, apply the mixed material within **4** hours of final mixing.

C. Thinning MicroGuard® Concrete Clear Waterproofing Sealer AD702 (before application)

1. In certain application situations, such as applying the sealer in hot, dry conditions or when coating very large surface areas where maintaining a longer working wet line is needed, it may be desirable to post add MicroKleen™ Retarder Solvent AD1-103 to the MicroGuard® Sealer AD702.
2. For proper use of the MicroKleen™ AD1-103 Solvent, allow the properly mixed sealer to induct its full 30 minute period.
3. Following the induction, but prior to application, add up to 10% by volume of AD1-103 Solvent into the MicroGuard® Sealer AD702.
4. Slowly blend/stir the solvent until it is uniformly dispersed into the MicroGuard® Sealer AD702. This should only take about 30 seconds.

3.05 Installation of MicroGuard® Concrete Clear Waterproofing Sealer AD702

- A. Strictly follow Adsil’s recommendations and instructions regarding product material and mixing, so as to provide the best quality work.
- B. All materials shall be applied under adequate illumination, evenly distributed and properly applied.
- C. All materials shall be applied in an even and full continuous film, free from skips, holidays or pinholes.
- D. MicroGuard® Sealer AD702 can be applied by two preferred methods; application by short nap roller or by spray. Back rolling of the spray-applied sealer is also optional.

E. Short Nap Roller Application -

1. For roller application, use a short nap cover (1/4” – 3/8”) with a solvent resistant core mounted on a roller frame with extension handle. Place a roller screen onto a plastic HDPE bucket, which contains the properly catalyzed sealer.
2. Pick up the sealer into the roller cover. Remove excess sealer by gently rolling over the screen. Using a uniform and light pressure, apply the sealer using slow roller strokes.
3. Overlap each roller pass by ¼” to ½”. Avoid over rolling the sealer and avoid working back into the partially set film. Always strive to maintain a good working wet line during application. **Note: The use of a power roller is an acceptable means of application.**

F. Conventional Spray Method #1 -

1. Use an air compressor that is rated for 3 CFM @ 90 PSI. Use a dual regulated pressure pot with a special Adsil spray wand/gun housing a #10 cone tip in a 45° connector. Set the fluid (pot) pressure gauge at 85 PSI and the air pressure gauge at 0 PSI. No air hose to the gun is needed, only fluid hose.
2. With fluid (pot) pressure only, spray by overlapping each spray pass by 50%. Always apply in a thin and even film deposit. Always make sure the protective masking and tape are still secure so that adjacent surfaces are protected from over spray. Configure your work so that a working wet line is maintained. Apply to natural breaks, whenever possible.
3. If you are experiencing difficulty obtaining an even film deposit during spray application, you can back roll the sealer using a short nap roller cover mounted on a frame with extension handle.
4. MicroGuard AD702 Sealer should be installed at 1.5 WFT, to achieve a DFT of 12 microns, per coat.

G. Calcium Chloride Permeability Field Kit Testing Procedure -

1. Following the surface preparation and cleaning procedure, as detailed in Section 3.03, allow the surface to air dry for 24 hours.
2. Place the field kits randomly over the entire surface area. Place one field kit onto the surface for approximately every 500 to 1,000 square feet of surface area to be sealed.
3. The Calcium Chloride Permeability Field Kits should be left in place for 24 hours. Then, the kits should be weighed using a properly calibrated digital scale; the scale should accurately calculate weights to 100ths of a gram. The applicator can use a scale, on site, or submit the kits to a third party testing authority. The **base line** readings from each kit should be recorded for future reference. Note: it is not uncommon for the **initial base line** reading to be as high as 12 lbs/1000 ft²/24 hours. The primary objective is to seal the surface sufficiently so the **final reading** is 3 lbs/1000 ft²/24 hrs, or below.

4. If the **initial base line** results are >3 but <6 lbs/1000 ft²/24 hrs., apply one coat of MicroGuard[®] AD702, per Section 3.05 and retest after 24 hours dry time. If the **initial base line** results are >6 but <9 lbs/1000 ft²/24 hrs., apply two coats of MicroGuard[®] AD702, per Section 3.05 and retest after 24 hours dry time. Always allow 24 hours dry time before repeating the Calcium Chloride Permeability Testing. If the Calcium Chloride Permeability Testing indicates a 3 lbs/1000 ft²/24 hrs., or below result, the surface can be determined to be properly sealed and the flooring system can be installed.
 - a. Continue this process until; **(1)** the Calcium Chloride Permeability Test results indicate a 3 lbs/1000 ft²/24 hrs., or below, **(2)** or until a maximum of 4 coats of MicroGuard[®] AD702 have been applied. Never exceed 4 coats of MicroGuard[®] AD702. If, after 4 coats of MicroGuard[®] Sealer AD702 have been applied and a 3 lbs/1000 ft²/24 hrs., or less result has not occurred, this is an engineering problem, not a coating solution.
 - b. All test results should be recorded on the Adsil Perm. Field Data Application Form TS-67 and maintained as an archival record.

3.06 Clean Up

- A. Thorough cleaning of the spray equipment is essential to ensure its continued operational efficiency.
 1. Purge all remaining MicroGuard[®] Sealer AD702 from the fluid hose. Pour at least one quart of MicroKleen™ Spray & Equipment Cleaner AD1-919 into a clean bucket.
 2. Next, evacuate the Spray & Equipment Cleaner through the hose, gun/wand and nozzle/tip, until the quart of Spray & Equipment Cleaner has been evacuated into a collecting bucket.
 3. Spray one more quart of fresh MicroKleen™ Spray & Equipment Cleaner AD1-919 through the hose, gun/wand and nozzle/tip.
 4. Remove the nozzle/tip from the gun/wand assembly and immerse into the MicroKleen™ Spray & Equipment Cleaner AD1-919. Clean the nozzle thoroughly to prevent future clogging. Use a small brush to help with the tip and nozzle cleaning. Dispose of the cleaning material according to current local standards.
- B. Any drips, spills or over spray, of the MicroGuard[®] Sealer AD702, can be cleaned using a cotton cloth saturated with MicroKleen™ Spray & Equipment Cleaner AD1-919. Remove drips, spills or over spray before the sealer dries to touch. Dispose of alcohol saturated cloths safely.
- C. Remove any protective masking and other debris from job site and leave storage area clean.

3.07 Inspection

- A. Inspect and repair all work that is not acceptable to the Specifier and request the final acceptance. Provide a copy of the recorded test verification results of the Calcium Chloride Permeability Field Testing to the Specifier.

3.08 Vapor Barrier Mitigation Schedule

- A. As indicated on schedules
 1. Concrete Flooring to be sealed prior to the installation of other sub-flooring systems.
 - a. Apply Adsil MicroGuard[®] Clear Concrete Waterproofing Sealer AD702 onto cleaned and properly prepared concrete surfaces, per each applicable Section in this Standard Specification.

END OF SECTION – 09880

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