

Adsil MicroGuard® Advanced Siloxane Technology

DECORATIVE BRICK PAVER – CLEAR TREATMENT SYSTEM SPECIFICATION

DOCUMENT NUMBER AD1130-03

SECTION 09800 - SPECIAL CLEAR PROTECTIVE TREATMENT

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 (installer shall be proficient in decorative brick-paver treatment systems).
1. Installer shall be trained & certified, by Adsil or its appointed agents, using Specification #AD1130-03 procedures, established in accordance with Adsil methods and standards for clay or concrete brick-paver protective treatments.
 2. Installer shall certify, in writing, that all technicians utilized for work in this section have been –
 - a. trained and are certified journeymen in the Adsil MicroGuard® Inorganic Clear Protective Coating System.
 - b. shall have demonstrated a proficiency, in this area, by citing past projects.
 3. Installer shall ensure use of any specialized equipment, as required by the manufacturer, for work in this section.

1.03 Submittals

- A. 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 installation instructions for each material specified. Identify by manufacturer's catalog number and general classification.
1. Technical Data Sheet TS-54; MicroKleen™ Phosphoric Acid PLC-35
 2. Technical Data Sheet TS-45; MicroKleen™ Industrial Cleaner & Degreaser PLC-1
 3. Technical Data Sheet TS-43; MicroKleen™ Retarder Solvent AD1-103
 4. Technical Data Sheet TS-44; MicroKleen™ Spray & Equipment Cleaner AD1-919
 5. Technical Data Sheet TS-22; MicroGuard® Concrete Clear Treatment AD703
- B. Third Party Data: Submit any relevant test studies, relative to treatment systems, when using MicroGuard™ Inorganic Clear Protective Coating Systems on new or in use decorative brick-paver 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° and 85° F.

1.05 Job Conditions

- A. Apply MicroGuard® protective treatment 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 clear treatment.
 3. Avoid product mixing or installation when rain, heavy dew or fog conditions are imminent or could occur within 4 hours of treatment installation (caution for exterior use only).
- B. Mask or place protective drop clothes over surfaces not to receive protective treatment.

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-35 Phosphoric Acid
 2. Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser
 3. Adsil MicroKleen™ AD1-103 Retarder Solvent
 4. Adsil MicroKleen™ AD1-919 Spray & Equipment Cleaner
- B. Protective Paver Surface Treatment
 1. Adsil MicroGuard® AD703 Concrete Clear Gloss Treatment

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. Paver Clear Protective Surface Treatment
 1. Surface Treatment shall be ambient temperature cured inorganic film structures.
 2. Surface Treatment shall adhere to substrate by London Force Bonding methods.
 3. Surface Treatment shall be installed as a wet-look, impregnating sealer.
 4. Surface Treatment shall have passed ASTM G-21, with a zero (0) microbial spore growth development rating. The standard ASTM G-21 test must have been conducted by an accredited and independent third party 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 material, upon specific need, should only be accomplished using MicroKleen™ Retarder Solvent AD1-103 for MicroGuard™ AD703 Clear.

PART 3, EXECUTION

3.01 Pre-work Inspection

- A. Examine the paver-brick to be treated and report any conditions that would adversely affect the general appearance or performance of the protective coating system and which cannot be repaired or put into an acceptable condition by repair or specified surface preparation methods.
- B. Do not proceed with the mixing or installation of the specified protective coating until the surface can be placed into an acceptable condition.

3.02 Equipment Requirements

- A. Spray Equipment (for spray or spray & back roll application method)
 1. Electric air compressor, which can deliver 3 CFM of air @ 90 PSI (minimum).
 2. Adsil Dual Regulated Stainless Steel Pressure Pot (2 gallon tank)
 3. Adsil Spray Gun/Wand with 45° connector
 4. Adsil #10 cone tips (4 tips)
 5. Adsil Chemical Resistant Hose with quick connect couplers
 6. Adsil Product Mixer and Paddle, with Timer
- B. Clean, white or clear HDPE plastic buckets (5 gallon size).
- C. Roller Frame, extension handle, solvent resistant, 1/2" nap roller covers.
- D. Assorted tools, extension cords, water hose & nozzle, squeegee, clean buckets, clean rags, etc;
- E. 175 RPM Swing Machine with clean-grit nylon brush attachments.
- F. Pressure Washer with soap injection capability.
- G. Tarps, drops, plastic sheathing and masking tape.
- H. Safety Equipment - ½ Face Respiratory NIOSH Black Cartridge, eye goggles, latex gloves, first aid kit, eye wash station; Adsil Product MSDS & Technical Sheets.

3.03 Surface Preparation

A. General

1. Prior to all surface preparation and installation operations, mask, remove or otherwise adequately protect all appurtenances or adjacent surfaces from preparation and coating procedures.
2. Place drop cloths, tarps, plastic sheathing or other protection over any fixtures, wall surfaces, plants, bushes or grass areas that should be protected from the cleaning and protective treatment installation.

B. Specific Acid Etching (optional – depending on surface requirements)

1. In certain instances, it may be necessary to etch the paver-brick surface using MicroKleen™ PLC-35 Phosphoric Acid. This step is necessary if:
 - a. The pH of the surface is between 8 and 12.
 - b. There is visual evidence of powder efflorescence.
2. Begin by establishing the pH of the surface. Use standard pH paper or a pH pencil, per manufacturer's instructions. Etching is required if the pH is 8 or greater.
3. If etching is determined to be required, dilute the MicroKleen™ Phosphoric Acid PLC-35, 1 part acid to 6 parts clean water. Always add acid to water, not water to acid. Always use a non-metallic container when mixing water and acid. Always wear respirator protection, eye goggles and rubber gloves. Never add any other chemicals to this solution.
4. Apply this acid solution by either pouring directly onto the surface and evenly "brooming" the solution around or pour the acid solution into a non-metallic sprayer or sprinkler and evenly apply onto the surface. You will notice a moderate fizzing action. This means the acid is working.
5. Allow the acid to set on the surface until the fizzing stops (15 - 20 minutes), then immediately and completely rinse with clean tap water.
6. If regulations require, pick up the rinse water and spent acid with rinse and reclaim equipment or neutralize unspent acid residue with a 5% ammonia solution, then, pressure wash the surface.

C. IMPORTANT: Crystalline Efflorescent Removal

1. If severe efflorescence has occurred on concrete type paver-bricks, causing a build up of powder efflorescence into compacted, crystalline efflorescence, then, do not attempt removal via acid etching. In this case, use dry mechanical means, such as using a swing machine with a nylo-grit brush attachment, or other suitable means. Following mechanical removal, blow off efflorescent dust with an electric leaf blower or pick up with a shop vacuum.

D. Specific Cleaning

1. If localized oil spots or other contamination exists, liberally flush the specific surface area with Adsil MicroKleen™ Industrial Cleaner & Degreaser PLC-1. Pre-dilute the PLC-1 Cleaner, 1 part cleaner to 1 part clean, hot water and apply to affected areas. Avoid contact with adjacent 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.
2. After the PLC-1 Cleaner has "worked" on the surface for 5 minutes, work area using a 175 RPM Swing Machine with nylon brush (nylo-grit) attachment.
3. Liberally rinse the surface with high pressure water. In many instances, the surface to be treated may be overly soiled or oil laden. A second cleaning may be required in order to remove all surface contaminates. Continue the cleaning process, as specified above, until the surface is clean and free from contaminates.
4. In some jurisdictions, the use and collection of cleaning materials may be regulated. It is the responsibility of the Installer 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 Installer 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. Rinse and reclaim equipment should be used and then rinsate should be placed in drums for material collection, neutralizing and disposal.

E. Surface Drying

1. Full drying of the surface must occur prior to the installation of MicroGuard® AD703 Clear Treatment. It is strongly urged to use a probe type moisture meter to establish the condition of the paver-brick. A reading of 10% moisture content or less must be achieved before product installation proceeds.

3.04 Mixing and Catalyzing MicroGuard® AD703

A. MicroGuard® Concrete Clear Treatment AD703

1. MicroGuard® AD703 is a three-component material and must be properly mixed for curing to occur. This product is packaged, in kit form, with separate containers for **Components A, B & C**. To properly mix:
 - a. Pour the **A & B Components** into a clean, white or clear HDPE plastic bucket, only. Using the Adsil Product Mixer, blend the **A & B Components** for **15** minutes. You will notice a moderate exothermic heat reaction during mixing. This is normal. Keep bucket covered during mixing.
 - b. Next, add the **C Component** into the admixture of the **A & B Components**. Blend for **15** additional minutes.
 - c. Cover the bucket with a lid or pour back into the original Component **A** container and set aside in a protected area. For best results, allow the mixed material to induct ("sweat in") for **12** hours before use.
 - d. The usable pot life of mixed material is up to **72** hours.
2. In certain installation situations, such as applying the treatment in hot, dry environments, or when coating very large surface areas where maintaining a longer wet line is desirable, it may be advisable to post add MicroKleen™ Retarder Solvent AD1-103 into the MicroGuard® AD703.
 - a. For proper use of the Retarder Solvent AD1-103, allow the mixed AD703 to chemically induct its full 12 hours.
 - b. Following the induction period, but prior to installation, add up to 10% Retarder Solvent AD1-103 into the properly mixed AD703. Blend the solvent into the AD703 until the solvent is uniformly dispersed.

3.05 Installation of MicroGuard® AD703

- 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 as a wet-look, impregnating sealer, **only**. No appreciable surface film should be developed.
- C. Materials shall be applied in an even & full continuous film deposit, free from skips, holidays or pinholes.
- D. MicroGuard® AD703 is best applied by conventional spray and back rolling method onto the clean and dry paver-brick surface.
 1. Conventional Spray – Use an air compressor that is rated for 3 CFM @ 90 PSI, minimum. Use an Adsil dual regulated pressure pot with a special wand/gun housing a #10 cone tip seated into a 45° connector.
 2. 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.
 3. With the fluid (pot) pressure only, spray by overlapping each spray pass by 50%. Always spray in a thin and uniform film deposit. Always make sure the masking,

and drops remain secure so that other adjacent surfaces are protected from possible over spray. Configure your spray application so that a working wet line is maintained. Spray to natural breaks, wherever possible.

4. Immediately after spray installation, follow by back rolling. Use a ½” nap cover mounted onto a roller frame with extension handle. Even out all ‘bird bath’ areas by distributing the treatment into adjacent ‘hungry’ areas. Make sure the clear treatment is fully and evenly absorbed into the paver-brick, leaving an even, uniform wet-look appearance.
 - a. MicroGuard® AD703 will yield 400 to 500 ft² per gallon on fired, clay paver-bricks and 200 to 300 ft² on concrete paver-bricks. Actual field & surface conditions will determine the final product yield.
- E. Dry/Cure Times – MicroGuard® AD703 will dry to touch in about 2 hours. Allow at least 8 hours cure time before opening the coated surface to foot traffic and at least 24 hours before vehicle traffic. MicroGuard® AD703 will reach full cure and durability after 5 days.
 - a. Note: After 2 to 4 hours dry time, the Installer can generally walk on the coated surface. Just be very careful not to twist on the soles of your shoes or shuffle your feet over the “still green” coating.
 - b. Protect the freshly treated surface from any and all water contact for a minimum of 4 hours following product installation.

3.06 Clean Up

- A. Thorough cleaning of the spray equipment is essential to ensure its continued operational efficiency.
 1. Purge all remaining MicroGuard® from the pressure pot and fluid hose. Pour at least one pint of MicroKleen™ Spray & Equipment Cleaner AD1-919 into the pot reservoir. Make sure that all interior surfaces of the pot reservoir have been cleaned free from the coating residue.
 2. Next, pressurize the pot reservoir to about 10 PSI and flush the Equipment Cleaner through the gun, wand and nozzle, until the entire pint of Equipment Cleaner has been evacuated into a collecting bucket.
 3. Flush one more pint of fresh MicroKleen™ Spray & Equipment Cleaner AD1-919 through the gun, wand and nozzle. This will remove any latent residues from the fluid hose and gun assembly.
 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. Dispose of the cleaning material according to current local standards.
- B. Any drips, spills or over spray, of the Protective Coatings, can be cleaned using a cotton cloth saturated with MicroKleen™ Spray & Equipment Cleaner AD1-919. Remove drips, spills or over spray before the Protective Treatment dries to touch.
- C. Remove any 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.

3.08 Protective Surface Coatings Schedule

- A. As indicated on schedules
 1. Decorative Paver-Bricks
 - a. Apply one coat of Adsil MicroGuard® Concrete Clear Treatment AD703 onto properly prepared fired clay or concrete paver-bricks as a wet-look, impregnating sealer, only.

END OF SECTION – 09880

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