

# **Adsil MicroGuard® Advanced Siloxane Technology**

## **HARD TILE – CLEAR PROTECTIVE TREATMENT SYSTEM SPECIFICATION**

### **DOCUMENT NUMBER AD1135-01**

#### **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 (Installers shall be proficient in hard tile protective treatment systems)
  - 1. Installer shall be trained & certified, by Adsil, or its' appointed agents, using Specification #AD1135-01 procedures, which are established in accordance with Adsil methods and standards for hard tile clear protective treatments.
  - 2. Installer shall ensure that all technicians utilized for work in this section have been –
    - a. trained and are certified journeymen in the Adsil MicroGuard® clear hard tile protective treatment system.
    - b. shall have demonstrated a proficiency, in this area, by citing past projects treating ceramic, porcelain, quarry tile, etc;
  - 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. 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-45; MicroKleen™ Industrial Cleaner & Degreaser PLC-1
  - 2. Technical Data Sheet TS-54; MicroKleen™ Phosphoric Acid Etch & Clean PLC-35
  - 3. Technical Data Sheet TS-44; MicroKleen™ Equipment Cleaner AD1-919
  - 4. Technical Data Sheet TS-43; MicroKleen™ Retarder Solvent AD1-103
  - 5. Technical Data Sheet TS-32; MicroGuard® Hard Tile Clear Gloss Treatment AD708 (for ceramic, porcelain & quarry tile or epoxy terrazzo)
- B. Third Party Data: Submit any relevant test studies, relative to tile treatment systems, when using MicroGuard® systems on new or in use hard tile 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 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.
- B. Mask or drop cloth surfaces not to be protective treated.

#### **PART 2, PRODUCTS**

##### **2.01 Manufacturers**

- A. Products of Adsil, Inc., Daytona Beach, Florida 32137 USA. (Phone: 386-274-1382)

## **2.02 Materials**

- A. Cleaners and Conditioners
  - 1. Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser
  - 2. Adsil MicroKleen™ PLC-35 Phosphoric Acid Etch & Clean
  - 3. Adsil MicroKleen™ AD1-919 Equipment Cleaner
  - 4. Adsil MicroKleen™ AD1-103 Retarder Solvent
- B. Protective Hard Tile Surface Treatment
  - 1. Adsil MicroGuard® AD708 Hard Tile Clear Gloss Treatment

## **2.03 Product Requirements**

- A. Cleaners
  - 1. Cleaners shall be free from any known carcinogen or teratogen materials.
  - 2. Cleaners shall be free from d'limonene.
- B. Hard Tile Protective Surface Treatments
  - 1. Surface Treatments shall be inorganic, clear film structures.
  - 2. Surface Treatments shall adhere to substrate by London Force methods.
  - 3. Surface Treatments shall produce a dry film thickness no greater than 12 microns, on average (1 mil = 25.4 microns).
  - 4. Surface Treatments 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, third party, independent laboratory.

## **2.04 Material Preparation**

- A. Catalyze and/or mix materials strictly in accordance to manufacturer's most current published technical literature.
- B. Thinning: MicroGuard® Hard Tile Clear Gloss Treatment AD708 shall be thinned with MicroKleen™ AD1-103 Retarder Solvent, only.

## **PART 3, EXECUTION**

### **3.01 Pre-work Inspection**

- A. Examine hard tile to be treated and report any conditions that would adversely affect the appearance or performance of the protective treatment system and which cannot be put into an acceptable condition by specified surface preparation methods.
  - 1. Product installations are not suitable over high gloss or high semi-gloss tiles as there is not a sufficient surface anchor profile to support long-term adhesion.
  - 2. In these instances, it may be advantageous to only seal grout areas.
- B. Do not proceed with the mixing or application of the specified protective treatment until the hard tile can be placed in an acceptable condition.

### **3.02 Equipment Requirements**

- A. Surface Preparation Equipment
  - 1. 175 RPM Swing Machine
  - 2. Assorted black, green & white pads, clean-grit brush attachments; doodle pads
  - 3. Assorted sanding screens (non-aggressive)
  - 4. Rinse & Reclaim Equipment (portable or truck mount)
  - 5. Floor Fans and De-humidifiers
  - 6. Pump Delivery System for Soaps & Cleaners
  - 7. Wet Floor Signs & Caution Tape
  - 8. Assorted mops, buckets, etc;
- B. Spray Equipment (for spray & back roll application method)
  - 1. Air compressor, which can deliver a minimum of 3 CFM of air @ 90 PSI.
  - 2. Dual Regulated Stainless Steel Pressure Pot
  - 3. Adsil Spray Gun/Wand with #5 cone tip (45° connector for floors, straight connector for walls)
  - 4. Chemical Resistant Hoses with quick connect couplers
  - 5. Regulator assemblies & safety valves
- C. Clean, white or clear HDPE plastic buckets (5 gallon) & lids.
- D. Roller Frame, extension handle, short nap roller covers; or mohair pad applicators.
- E. Assorted tools, extension cords, water hose & nozzle, squeegee, clean buckets, clean rags, etc;

### 3.03 Surface Preparation

#### A. General

1. Prior to all surface preparation and application operations, completely mask, remove or other wise adequately protect all fixtures or adjacent surfaces not to be protective treated.
2. Place drop cloths, tarps, plastic sheathing or other protection over any plants, bushes or grass areas that should be protected from the cleaning and protective treatment installation.

#### B. Specific Cleaning

1. Liberally flush the hard tile area with Adsil MicroKleen™ Industrial Cleaner & Degreaser PLC-1. Pre-dilute the PLC-1 Cleaner, 1 part cleaner to 1 part clean, hot water. Avoid contact with any surfaces not to be cleaned and treated. 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, mechanically agitate with a Swing Machine using a black pad for smooth tile or nylon brush attachment for textured tile. Then, pick up soiled cleaning solution with Rinse & Reclaim Equipment. A second and even a third cleaning may be required in order to remove all surface contaminates. The use of a mechanical floor scrubber utilizing pads or scrub brushes will improve the cleaning efficiency on floor areas. A soft bristled scrub brush can also be utilized for smaller surface areas. Continue the cleaning process, as specified above, until the surface is clean and free from contaminates.
3. Pick up all soap residues with water Rinse and Reclaim Equipment, such as Hydro-Force™, or equivalent. Check the pH of the floor with standard pH paper to ensure a neutral surface.
4. In the case of freshly installed lime grout, the surface should be etched/conditioned with MicroKleen™ PLC-35 Phosphoric Acid Etch & Clean. Mix 1 part acid into 6 parts water. Apply to surface and let ‘work’ for 15 minutes. Pick up all spent acid residues with Rinse and Reclaim equipment.

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 applicator must control the cleaning material waste stream.
- b. To provide means of containment and collection of material for proper disposal, according to regulations.

#### C. Specific Final Conditioning

1. Next, wet mop the surface with MicroKleen™ AD1-919 Spray & Equipment Cleaner (Isopropyl Alcohol). Allow the IPA solution to air dry normally.
  - a. Check for the presence of any pilot lights and extinguish these flame sources when using Isopropyl Alcohol.
  - b. Close off any air handling ducts during this process.
2. Allow the surface to dry completely following all conditioning of the hard tile surfaces to be protective treated. Grout areas retain moisture much longer than the tile facing. It is prudent to check grout areas with a standard probe moisture meter. Never coat if the moisture content is higher than 10%.
3. Use floor fans or de-humidifiers to help facilitate thorough drying.

### 3.04 Mixing and Catalyzing

- A. MicroGuard® Hard Tile Clear Treatment AD708 is a three-component product. Proper mixing must be accomplished for drying and curing to occur. The product is packaged, in kit form, as an “A” component, “B” component and “C” component. For proper mixing:

1. Pour the “A” component liquid into a 5 gallon (depending on batch size) clean, white, HDPE plastic bucket, only. Then, add the “B” component liquid into the “A” component.
2. Using the Adsil Product Mixer with timer, blend the “A” and “B” components together for **15** minutes. The low speed will create a vortex in the product without splashing material out of the bucket. You will notice a moderate exothermic heat reaction of the components, as the mixing occurs. This is a normal product reaction. Make every effort to keep the mixing paddle from striking the side of the bucket, while the paddle is rotating. Keep the bucket covered with a ‘V’ cut notched lid during mixing.
3. Now, pour the “C” component liquid into the admixture of the “A” and “B” components. Mix for an additional **15** minutes.
4. After mixing, cover the bucket and set the product aside in a protected area and out of direct sunlight for **12** hours, before use. This induction (“sweat-in”) period will allow the material to begin to chemically knit the 3 components together.
5. For best application results, apply this properly catalyzed product within **72** hours of the final mixing and induction process. The useable pot life of catalyzed MicroGuard® AD708 is up to **72** hours, depending on ambient and product temperature.

**Important** – Always wear safety glasses and respiratory protection devices, while mixing and applying this product. Do not smoke during or mix product close to possible ignition sources.

### 3.05 Application of Treatments

- 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 continuous film, free from skips, holidays or pinholes.
- D. MicroGuard® Hard Tile Clear Gloss Treatment AD708 can be applied by two preferred methods; application by short nap mohair or lambs wool roller/pad or by conventional spray (and back roll, if needed).
  1. **Spray & Back Roll/Pad Application** – This method is best accomplished using a two-person team. One person for spraying and one person for back rolling/padding. Spray the MicroGuard® AD708 onto the tile and into all grout areas to be treated, using the spray equipment detailed in Section 3.02. Set the fluid pressure gauge at 80 - 85 psi and the air pressure gauge at 0 psi. Over lap each spray pass by 50%. Fully wet the surface, allowing the treatment to flow over and migrate into all grout areas. If necessary, use a solvent resistant, short nap roller cover or pad mounted on a frame with extension handle to gently back roll/pad the product into a thin, uniform film deposit. Use a series of one directional strokes. It is important to achieve complete wetting of all surface areas to be protected, while maintaining a thin and even film deposit. Take care to minimize skips or holidays. Avoid over working the product. Avoid excess lapping into previously coated areas. Use grout lines as natural breaks.
    - a. When applying MicroGuard® AD708 Hard Tile Clear Gloss Treatment onto large surface areas or when the ambient air or surface temperatures are above 85° F., post add MicroKleen™ AD1-103 Retarder Solvent to 1 gallon of MicroGuard® AD708. Post add a minimum of 4 ounces of AD1-103 Retarder Solvent following the induction period, but before application of MicroGuard® AD708. Using a variable speed drill and mixing paddle, at low speed, blend the AD1-103 Retarder Solvent into the MicroGuard® AD708 until uniformly dispersed.

MicroGuard® AD708 should yield up to 650 square feet per gallon.

- a. Allow 8 to 12 hours dry time for light to moderate foot traffic. Allow 48 hours dry time for heavy foot traffic. Full cure occurs after 5 to 7 days.

2. Roller/Pad Application – Pick up a small amount of mixed material into the roller cover/pad. Using a short nap roller cover/mohair pad, mounted on a frame with extension handle, gently roll/pad the material into place using a series of one directional roller strokes, making sure the treatment is evenly and thinly deposited onto the surface. Avoid over working the product and avoid excess lapping into previously coated areas. Make sure the grout areas have been sufficiently saturated with product. MicroGuard® AD708 should yield between 600 & 650 square feet per gallon.
  - a. Allow 8 to 12 hours dry time for light to moderate foot traffic. Allow 48 hours dry time for heavy foot traffic. Full cure occurs after 5 to 7 days.

### **3.06 Clean up**

- A. Thorough cleaning of the spray equipment is essential to ensure its continued operational efficiency.
  1. Purge all remaining MicroGuard® AD708 from the pressure pot and fluid hose. Pour at least one quart of MicroKleen™ Equipment Cleaner AD1-919 into the pot reservoir. Make sure that all interior surfaces of the pot reservoir have been cleaned free from the treatment residue.
  2. Next, pressurize the pot reservoir and spray the Equipment Cleaner through the gun, wand and nozzle, until the entire quart of Equipment Cleaner has been evacuated into a collecting bucket.
  3. Spray one more quart of MicroKleen™ Equipment Cleaner AD1-919 through the gun, wand and nozzle. This will remove all traces of latent product residue from the fluid hose and gun assembly.
  4. Remove the nozzle/tip from the gun/wand assembly and immerse into the MicroKleen™ 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 Treatment, can be cleaned using a cotton cloth saturated with MicroKleen™ Equipment Cleaner AD1-919. Remove drips, spills or over spray before the Protective Treatment dries to touch.
- C. Remove any masking and 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 Treatment Schedule**

- A. As indicated on schedules
  1. Hard Tile & Grout
    - a. Apply one coat of Adsil MicroGuard® Hard Tile Clear Gloss Treatment AD708 onto cleaned and properly prepared surfaces.

**END OF SECTION – 09880**

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