

Adsil MicroGuard® Advanced Siloxane Technology

Adsil MicroGrip™ Anti-Skid Floor Media

HARD TILE - CLEAR PROTECTIVE TREATMENT SYSTEM SPECIFICATION

DOCUMENT NUMBER AD0500-02

SECTION 09800 – SPECIAL CLEAR ANTI-SKID FLOOR SYSTEM

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 shall be proficient in anti-skid floor installation systems
 - 1. Installer shall be trained and certified, by Adsil or its appointed agents, using Specification #AD0500-02 procedures, established in accordance with Adsil methods and standards for hard tile anti-skid floor installation systems.
 - 2. Installer shall ensure that all technicians utilized for work in this section–
 - a. are trained and certified journeymen in the Adsil MicroGrip™/MicroGuard® Hard Tile Anti-Skid Flooring 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. 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 Sheet TS-54; MicroKleen™ Phosphoric Acid Etch & Clean PLC-35
 - 2. Technical Sheet TS-45; MicroKleen™ Industrial Cleaner & Degreaser PLC-1
 - 3. Technical Sheet TS-44; MicroKleen™ Equipment Cleaner AD1-919
 - 4. Technical Sheet TS-43; MicroKleen™ Retarder Solvent AD1-103
 - 5. Technical Sheet TS-33; MicroGuard® Hard Tile Clear Gloss Treatment AD708
 - 6. Technical Sheet TS-50; MicroGrip™ Anti-Skid Floor Media AD5-050

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 MicroGrip™/MicroGuard® anti-skid system only under these prevailing conditions:
 - 1. Hard tile must be matte, eggshell or satin in sheen. This system is not recommended to be installed over glossy or semi-gloss hard tile unless a suitable anchor profile can be achieved using acid washes to dull the sheen.
 - 2. Air, surface and material temperatures are not below 60° F. or above 95° F.
 - 3. Prevent wide temperature variations, which might result in condensation forming on the freshly treated surfaces or could affect hydrolyzing or curing of the treatment.
 - 4. Avoid product mixing or installation when rain, heavy dew or fog conditions are imminent or could occur within 8 hours of system installation (*caution for exterior use only*). Avoid water contact of any sort, on freshly installed system, for 8 hours.
- B. Mask off and place drop cloths over surfaces not to receive this anti-skid system.

PART 2, PRODUCTS

2.01 Manufacturer

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

2.02 Materials

- A. Cleaners and Conditioners
 - 1. Adsil MicroKleen™ PLC-35 Phosphoric Acid Etch & Clean
 - 2. Adsil MicroKleen™ AD1-919 Spray & Equipment Cleaner
 - 3. Adsil MicroKleen™ AD1-103 Flow Agent Retarder Solvent
 - 4. Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser
- B. Protective Hard Tile Surface Treatments
 - 1. Adsil MicroGuard® AD708 Hard Tile Clear Gloss Treatment
 - 2. Adsil MicroGrip™ AD5-050 Anti-Skid Floor Media

2.03 Product Requirements

- A. Cleaners
 - 1. Cleaners shall be free from any known carcinogen or teratogen materials.
 - 2. Cleaners shall be phosphorous free.
 - 3. Cleaners shall be d'limonene free.
- B. Hard Tile 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 adhesion methods.
 - 3. Surface Treatment shall produce a dry film thickness no greater than 15 microns, on average (1 mil = 25.4 microns), per coat.
 - 4. Surface Treatment shall have passed ASTM G-21, with a zero (0) microbial spore growth development rating*.
 - 5. Surface Treatment shall not lose more than 25 mg of film, when tested according to ASTM D 4060 Taber Abrasion; using the CS-17 wheel*.

*Standard ASTM testing must have been conducted and validated 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. Access information in the 'Document Section' of the company web site (www.adsil.com).
- B. Thinning: MicroGuard® Hard Tile Clear Gloss Treatment AD708 should be thinned with MicroKleen™ AD1-103 Retarder Solvent, only. Thin up to 10% by volume, as needed.

PART 3, EXECUTION

3.01 Pre-work Inspection

- A. Examine hard tile surface to be treated and report any conditions that would adversely affect the appearance or performance of the anti-skid flooring system and which cannot be put into an acceptable condition by specified surface preparation methods.
- B. Do not proceed with the mixing or installation of the specified protective system until the hard tile surface can be placed in an acceptable condition.

3.02 Equipment Requirements

- A. Spray Equipment
 - 1. Electric air compressor, which can deliver 3 CFM of air @ 90 PSI
 - 2. Adsil Dual Regulated Stainless Steel Pressure Pot (2 gallon tank)
 - 3. Adsil Spray Gun/Wand with #5 cone tip (45° connector for floors)
 - 4. Adsil Chemical Resistant Hoses with quick connect couplers
 - 5. Adsil Product Mixer and Paddle with Timer
 - 6. Adsil NMS-1 Media Application Gun
- B. Clean, white or clear HDPE plastic buckets (5 gallon).
- C. Roller Frame, extension handle, solvent resistant, short nap roller covers (*back up*).
- D. Assorted tools, extension cords, water hose & nozzle, squeegee, clean buckets, clean rags, etc;
- E. 175 RPM Swing Machine with assortment of pads, nylon brush attachments, etc;
- F. Rinse & Reclaim Equipment (truck mount or portable).
- G. Tarps, drops, plastic sheathing & masking tape.
- H. Safety Equipment – ½ Face NIOSH respiratory (black cartridge), eye goggles, latex gloves, first aid kit, eye wash station, MSD sheets & Technical Sheets.

3.03 Surface Preparation

A. General

1. Prior to all surface preparation and product installation operations, mask, remove or other wise adequately protect all fixtures or adjacent surfaces from preparation and installation procedures.
2. Place drop cloths, tarps, plastic sheathing or other protection over any fixtures, baseboards, wall surfaces, appliances, etc; that should be protected from the surface cleaning and protective treatment installation.

B. Specific Acid Etching

1. In certain instances, it may be necessary to etch bare hard tile & grout surfaces using various inorganic acid solutions. This step is necessary if:
 - a. The pH of the grout is between 9 and 14.
 - b. The hard tile has been freshly grouted with lime grout and a superficial layering of grout invariably remains on the tile facing.
 - c. The hard tile is either glazed or glossy (profile development by micro-etch)*.
2. Begin by establishing the pH of the grout and tile facing. Use standard (pH) paper, per manufacturer's instructions. Etching is required if the pH is 9 or greater.
3. If etching is determined to be required, due to a high basic pH, dilute MicroKleen™ PLC-35 Phosphoric Acid Etch & Clean, 1 part acid to 8 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, safety eye goggles and latex gloves. Never add any other chemical to this solution.
4. Apply by pouring this acid solution onto the surface and evenly "brooming" 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 when contact is made with lime grout. This means the acid is working.
5. Allow the acid to set on the surface until the fizzing stops (approx. 10 minutes), then, immediately pick up using rinse & reclaim equipment. Note: Unspent acid can be neutralized on the surface before reclaiming by using a 5% ammonia solution.
6. If no drains are present, or if regulations require, collect the rinse water and spent acid and neutralize before disposal.

***IMPORTANT WARNING** – If the hard tile exhibits a high gloss or semi-gloss surface profile and the installation of this anti-skid system is desired, phone Adsil Technical Services before proceeding (800-549-2539).

C. Specific Cleaning

1. Liberally flood the hard tile floor surface with Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser. Pre-dilute the PLC-1 Concentrated Cleaner, 1 part PLC-1 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 solution, or a very light spray of tap water to keep the cleaner functioning in a moist environment.
2. After the PLC-1 has "worked" on the surface for 5 minutes, use mechanical agitation (Swing Machine) with a brush attachment or black pad to dislodge dirt and debris. Then, pick up the cleaning solution with Rinse & Reclaim Equipment. In many instances, the hard tile to be treated may be overly soiled, particularly the grout areas. A second and even a third cleaning may be required in order to remove all surface contaminates. A stiff bristled scrub brush mounted on a handle can also be utilized for smaller or confined surface areas. Continue the cleaning process, as specified above, until the surface is clean and free from contaminates.
3. In some jurisdictions, the 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, collection and neutralizing of material for proper disposal, according to regulations.

D. Specific Final Drying

1. Allow the surface to dry completely following all cleaning & rinsing of the floor tile surfaces to be treated. Grout areas retain moisture much longer than the tile facing. Sufficient drying of the grout is determined to be achieved when a moisture content of 10% or less has been substantiated using a standard probe moisture meter.
2. The use of fans and de-humidifiers will help accelerate drying.

3.04 Mixing and Catalyzing

- A. MicroGuard® AD708 Hard Tile Clear Treatment is a three-component product. Proper mixing must be accomplished for curing to occur. The product is packaged, in kit form, with separate Components for **A, B & C**. For proper mixing:
1. Pour the **A** component into a 5 gallon clean, white or clear HDPE plastic bucket, only. Then, add the **B** component into the **A** component.
 2. Using the Adsil Mixer and paddle with timer, blend the **A** and **B** components together for **15** minutes. You will notice a moderate exothermic heat reaction of the components, as the mixing occurs. This is a normal product reaction. Always cover the bucket with a 'V' cut/notched lid during mixing.
 3. Now, pour the **C** component into the admixture of the **A** and **B** components. Mix for an additional **15** minutes.
 4. After mixing, cover the bucket with a full lid 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 chemically knit the 3 components together.
 5. For best installation results, apply this properly catalyzed product within **72** hours of the final mixing and induction process. The usable pot life of catalyzed MicroGuard® AD708 is **72** hours, depending on ambient temperature.

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

3.05 Installation - MicroGuard® AD708 Clear/MicroGrip™ AD5-050 Media

- 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. MicroGuard® AD708 Clear shall be applied in an even and full continuous film, free from skips, holidays or pinholes. The MicroGrip™ Anti-Skid Media shall be applied evenly and fully embedded and encapsulated by the MicroGuard® AD708 Clear.
- D. MicroGuard® AD708 shall be applied using the Adsil conventional spray
1. Spray Application – This method is best accomplished using a two-person team; one person for spraying the MicroGuard® AD708 Clear and one person for immediately broadcasting the MicroGrip™ AD5-050 Media.
 2. Use an electric air compressor that can deliver a minimum of 3 CFM @ 90 PSI. Use an Adsil dual regulated pressure pot. A special **Adsil** Spray Gun/Wand housing a #5 cone tip will be attached, by hose, to the fluid (pot) regulator and will be used to apply the AD708 Clear. A special **Adsil** Media Application Gun (NMS-1) will be attached by hose to the air regulator and will be used to broadcast the anti-skid media into the wet AD708 Clear.
 3. Set the fluid (pot) pressure at 80 to 85 PSI. Apply an initial thin coat of AD708 Clear using the Spray Gun/Wand housing the #5 cone tip mounted on a 45° connector. Immediately, while the AD708 Clear is still wet, broadcast the MicroGrip™ Anti-Skid Media into the wet coating using the special NMS-1 gun, allowing the media particles to rain down and imbed onto the coating.
 4. Then, apply a full coat (wet-on-wet) of AD708 Clear over the anti-skid media in order to encapsulate the particle.
 - a. Broadcasting the anti-skid media particles is best accomplished using the special Media Application Gun (NMS-1). Fill the gun hopper $\frac{3}{4}$ full with MicroGrip™ AD5-050 Media. Always be careful to not let the media additive pour out of the three breather holes located on top of the gun hopper.

- b. Set the air pressure regulator on the pot to a minimum of 20 PSI. Connect one end of the hose to the media gun regulator (at the handle) and the other end to the air pressure regulator on the pot. Set the media gun regulator at 7 to 10 PSI, depending on the desired distance for broadcasting the media particles. In a safe area, hold the media gun horizontally and squeeze the trigger to start air-flow. Slowly open the “flow valve” until the desired amount of media is being broadcast from the gun nozzle. Hold the media gun horizontally to, and approximately 3 feet above the floor. Broadcast media into the wet AD708 Clear in sections approximately 3 to 4 feet deep and progress across the floor. Broadcast the media using a side-to-side sweeping motion and allow the media to lightly “rain” down into the wet AD708 Clear.
 - c. For best results, apply the MicroGrip™ Anti-Skid Media AD5-050 at between 1,000 ft², per pound, depending on desired amount of concentration.
- E. MicroGuard® AD708 should yield between 500 and 600 ft² per gallon. Allow 12 hours dry time for light foot traffic. Allow 24 hours dry time for heavy foot traffic. Full cure occurs after 5 days.
- F. NOTE: After 4 hours dry time, the Installer may walk gently on the freshly coated surface in order to remove masking and tape. Just be very careful not to twist on the soles of your shoes or shuffle your feet over the “still green” coating. Place walk off mats at entryways. Placing non-rubber backed runners in foot traffic wear areas for 2 days is advisable.

3.06 Equipment & Site 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 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 treatment 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 Spray & Equipment Cleaner has been evacuated.
 3. Flush one more pint of MicroKleen™ Spray & 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™ Spray & 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.
- B. Following final acceptance, prepare two “benchmark” proof paper/pencil rub verification standards for evaluating the degree of erosion of the MicroGrip™ Anti-Skid System, over the time.
 1. Using a light stock, white paper and a #1 graphite pencil, prepare 2 rubbings of a representative area of the floor surface. Preferably, these rubbings should be taken from a known traffic pattern area. At least 1 square foot should be validated and archived.
 2. These rubbings establish the concentration of anti-skid material, per square foot, imbedded and encapsulated within the Adsil clear protective treatment.
 3. Complete the Adsil Field Application Data Form.
 4. A copy of the Adsil Field Application Data Form and one of the pencil-rub validation sheets should then be given to the particular Specifier. The second copy set should be kept on file by the Installer.

3.08 Protective Surface Treatment Schedule

- A. As indicated on schedule
 - 1. Hard Tile & Grout Flooring
 - a. Apply Adsil MicroGuard® Hard Tile Clear Gloss Treatment AD708 onto cleaned and properly prepared surfaces, per specification.
 - b. Imbed and encapsulate Adsil MicroGrip™ Anti-Skid Media AD5-050 into the wet MicroGuard® AD708 Clear.

3.09 Post Cleaning Maintenance Care

- A. General Purpose Cleaning – Pour 1 part of MicroKleen™ PLC-1 Industrial Cleaner & Degreaser into 20 parts of clean, hot water. Wet mop the surface with this diluted cleaning solution. Follow by wet mopping with clean water. Change out water, as needed.
- B. Heavy Duty Cleaning – Pour 1 part of MicroKleen™ PLC-1 into 10 parts of clean, hot water. Wet mop this diluted cleaning solution onto the surface. Using rinse & reclaim equipment pick up the cleaning solution.

END OF SECTION – 09880

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