

Adsil MicroGuard® Advanced Siloxane Technology

ANTI-GRAFFITI - CLEAR TREATMENT SYSTEM SPECIFICATION

DOCUMENT NUMBER AD1000-01

SECTION 09800 – SPECIAL PROTECTIVE TREATMENT

PART 1, GENERAL

1.01 General requirements of the Maintenance Schedule Manual shall apply to all work specified in this section.

1.02 Quality Assurance

- A. Installer (installers shall be proficient in anti-graffiti protective treatment systems)
 - 1. Installer shall be trained, by Adsil or its appointed agents, using Specification AD1000-01 procedures, established in accordance with Adsil methods and standards for application of its anti-graffiti clear protective treatment.
 - 2. Installer shall ensure that all technicians utilized for work in this section are –
 - a. Trained & certified journeymen in the Adsil MicroGuard® clear protective treatment system.
 - b. Shall have demonstrated a proficiency, in this area, by citing past usage of these products as a complete system.
 - 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-45; MicroKleen™ Industrial Cleaner & Degreaser PLC-1
 - 2. Technical Sheet TS-44; MicroKleen™ Equipment Cleaner AD1-919
 - 3. Technical Sheet TS-43; MicroKleen™ Retarder Solvent AD1-103
 - 4. Technical Sheet TS-52; MicroGuard® Anti-Graffiti Clear Surface Treatment AD00
 - 5. Technical Sheets for Sherwin Williams H & C Brand or Coronado Paints Final Finish Brand Clear Concrete Sealer(s); solution acrylic or water-based acrylic

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® AD00 Anti-Graffiti Clear Surface 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 application of MicroGuard® AD00 when rain, heavy dew or fog conditions are imminent or could occur within 4 hours of treatment installation.
- B. Mask, drop cloth or construct adequate containment in order to protect surfaces not to be cleaned or protective treated.

PART 2, PRODUCTS

2.01 Manufacturer

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

2.02 Materials

- A. Surface Cleaners and Conditioners
 - 1. Adsil MicroKleen™ PLC-1 Industrial Cleaner & Degreaser
 - 2. Adsil MicroKleen™ AD1-919 Equipment Cleaner
- B. Clear Protective Surface Treatments
 - 1. Adsil MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment
- C. Reducing Solvent Blend for MicroGuard® AD00
 - 1. Adsil MicroKleen™ AD1-103 Retarder Solvent

2.03 Product Requirements

- A. Surface Cleaners
 - 1. Cleaners shall be free from any known carcinogens or teratogen materials.
 - 2. Cleaners shall be phosphorous free.
 - 3. Cleaners shall be free from d'limonene.
- B. Clear Surface Treatment
 - 1. Surface Treatment shall be inorganic, ambient temperature cured film structures. Surface Treatment shall be non-sacrificial type and must pass 50 standard MEK solvent rub cycles.
 - 2. Surface Treatment shall adhere to reactive (bare, non-ferrous metal) substrates by direct atom-to-atom covalent bonding methods. Surface Treatment shall adhere by London Force bonding method on properly prepared bare concrete, rigid fiberglass or fully cured painted surfaces.
 - 3. Surface Treatment shall produce a dry film thickness no greater than 12 microns per coat, on average (1 mil = 25.4 microns).
 - 4. Surface Treatment shall have passed ASTM G-21 testing, with a zero (0) microbial spore growth development rating. The standard ASTM G-21 test must have been conducted and verified by an accredited, third party, independent laboratory.
 - 5. Surface Treatment shall be free from all lead or chromate materials.
- C. Graffiti Removal Cleaners
 - 1. Any commercially available remover, such as Krud Kutter, or equivalent.

2.04 Material Preparation

- A. Catalyze and/or mix materials strictly in accordance with manufacturer's most current printed technical literature.
- B. Thinning/Reducing: Use MicroKleen™ AD1-103 Retarder Solvent only, if thinning of MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment is desired.

PART 3, EXECUTION

3.01 Pre-work Inspection

- A. Examine all surfaces to be treated and report any conditions that would adversely affect the appearance or performance of the anti-graffiti treatment system and which cannot be put into an acceptable condition by specified surface preparation methods.
- B. Remove, repair and/or replace any surfaces, which cannot be put into an acceptable condition.
- C. Do not proceed with the mixing or application of the specified protective treatment until all surfaces can be placed into an acceptable condition.

3.02 Equipment Requirements

- A. Spray Equipment for MicroKleen™ PLC-1 Cleaner & Degreaser application:
 - 1. Adsil Pump & Wand Soap Delivery System.
 - 2. Pressure Washer with soap injection capability.
- B. Spray Equipment (option 1) for MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment
 - 1. Airless Sprayer; either piston or diaphragm pump, capable of pumping 1/3 gallon of material, per minute of continuous operation.
 - 2. A liquid filled glycerin gauge to be mounted between the pump and fluid hose.

3. Standard production airless gun capable of accepting in excess of 3,000 psi.
4. Reverse-a-clean tip, from a 313 to a 613 orifice/fan size.
5. Standard chemical resistant airless fluid hose with swivel whip attachment.
- C. Spray Equipment (option 2) for MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment
 1. Binks HVLP Mach 1 Gun (maximum of 18 psi), or equivalent
 2. Fluid Nozzles from 9 to 12 orifice/fan size
 3. External Mix Air Cap
 4. Air Hose rated up to 200 psi
 5. Oil & Water Separators
 6. Dual Regulated Pressure Pot
 7. Air Compressor (pressure gauge adjustable) capable of delivering 3 CFM @ 90 PSI.
- D. Pressure Washer capable of delivering 3 GPM @ 1,200 PSI.
- E. Natural Hair Bristle or Foam Trim Brushes.
- F. Lambs wool or mohair ½" nap roller covers, roller frame, extension handle, roller screen.
- G. Clean, white HDPE plastic buckets (5 gallon size)
- H. Adsil Product Mixer with paddle attachment and timer.
- I. Assorted tools, extension cords, water hose & nozzle, clean buckets, clean cotton cloths, scrub brushes mounted on pole extension handles, ladders, etc;
- J. 180 to 220 grit sandpaper/screen or fine abrasive foam sander.
- K. Rolls of 6 mil plastic sheathing (minimum thickness) and/or other drop cloths.
- L. Hygrometer and Standard Probe Moisture Meter. Distilled water and pH paper kit.
- M. Plastic protective gloves, safety glasses, NIOSH carbon-filtered respirator.

3.03 Surface Preparation

- A. General Area Preparation
 1. Prior to all surface preparation operations, completely mask, tarp, build containment, remove or other wise adequately protect all surfaces not to be cleaned and/or protective treated.
 2. Using 6 mil plastic sheathing or drop cloth, completely protect any areas not to be cleaned. Remove automobiles from the area (spray coating in exterior locations).
 3. Cordon off and place signage indicating work is in process. The work area is closed to any/all persons not involved in the coating process.
- B. Specific Cleaning (previously painted surfaces)
 1. Lightly abraid glossy painted surfaces in acceptable condition with 180 to 220 grit sand paper in order to open the surface film and develop a fine surface profile (SSPC SP2 or SP3 Methods).
 2. Using the Adsil Pump & Wand Soap Delivery system or a pressure washer with soap injection apply the properly diluted MicroKleen™ PLC-1 Cleaner & Degreaser to the area to be cleaned.
 3. Using the pressure washer, thoroughly flush the area with clean water. Repeat the cleaning process, if necessary. Continue working until the entire surface area has been thoroughly and completed cleaned free from surface contamination, e.g., graffiti, oxidation, exhaust fumes, oil, fluids, bond release agents, dirt, bird droppings, mildew, mold, etc;
- C. Specific Cleaning (bare concrete or rigid fiberglass)
 1. Using the Adsil Pump & Wand Soap Delivery system or a pressure washer with soap injection apply the properly diluted MicroKleen™ PLC-1 Cleaner & Degreaser to the area to be cleaned.
 2. For difficult or deep seated oily residues, scrub the surface with a stiff bristled brush mounted on a pole extension handle, until all surface contaminants dislodge from the surface.
 3. Using the pressure washer, thoroughly flush the area with clean water. Repeat the cleaning process, if necessary. Continue working until the entire surface area has been thoroughly and completed cleaned free from surface contamination.

- D. In some jurisdictions, the use and collection of cleaning materials may (and generally are) 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.
- In these instances, the Installer must control the material waste stream.
 - To provide a means of diking or containment of material and collection of material for proper disposal, according to regulations.
 - To collect, place in sealed drums and properly label any regulated waste stream material per the specifications outlined in Section E.
- E. Waste Disposal (Jobsite)
- All liquid composed of cleaning solution, coatings and solvents must be poured into closed top drums and these drums must be sealed with bungs, when not in use, as required by the regulatory agency of the State (Installer responsibility).
 - All drums must be properly labeled, according to the hazardous rating of the material in the drum, complete with accumulation date (Installer responsibility).
 - All empty coating bottles, with caps removed, must be deposited into a designated roll-off area that is provided by the Customer's Environmental Department (Installer & Customer responsibility).
 - Drums must be picked up for disposal on a first-in-first-out (FIFO) basis and within 90 days of the accumulation date (Customer responsibility).
 - Drums containing spent cleaning solution, solvents and coating will require weekly inspection (Installer & Customer responsibility).
 - Any leaking drums must be transferred immediately by notification to the Customer's Environmental Department (Installer & Customer responsibility).
 - The Installer must notify the Customer's Environmental Department of all full drums that are ready to be picked up or are approaching the 90 day accumulation date (Installer responsibility).
 - All usable coating containers and solvent containers must be kept in a designated place and must be marked clearly for good housekeeping practice (Installer responsibility).
 - Every effort should be made to avoid spills, to the ground, or by overfilling the drums, causing spills to the ground. Notify the Customer's Environmental Department immediately of any spills (Installer responsibility).
- F. Specific Priming/Sealing (Bare Concrete)
- Dense vertical concrete, such as tilt-up or pre-cast should be sealed preliminary to the installation of MicroGuard® AD00. Use either clear solution acrylics or water-based acrylics, such as Sherwin Williams H & C Brand or Coronado Paint Company's Final Finish Brand, or equivalent. Follow manufacturer's label instructions.
 - Standard concrete masonry unit (CMU) block and mortar should be filled with quality concrete block filler, per label instructions. Coat block-filled concrete to desired color with appropriate paint.
 - Note: Extremely porous concrete surfaces such as split-faced block, cinder block or heavy textured stucco are not suitable surfaces to receive MicroGuard® AD00.

3.04 Mixing and Catalyzing

A. MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment

- MicroGuard® AD00 is a three-component material and must be properly mixed for drying and curing to occur. This product is packaged, in kit form, with separate containers for **Components A, B & C**. For proper mixing –
 - Using a clean, white HDPE plastic bucket (only), pour the **Component A** liquid into the bucket and then the **Component B** into the **Component A**.
 - Using the Adsil Product Mixer with mixing paddle and timer, blend the **A & B Components** for 15 minutes. You will notice a moderate exothermic heat reaction, as the components are blended together. This is a normal reaction.

- c. Then, add the **Component C** liquid into the admixture of the **A & B Components**. Again, blend for 15 additional minutes. Following the final mixing process, allow the material to induct (“sweat-in”) for 12 hours before use. This 12 hour induction period allows the mixed material to begin to chemically cross-link. The useable pot life of mixed material is up to 72 hours, depending on ambient air storage temperature.
- e. The MicroGuard® AD00 Clear is now ready for application.

3.05 Application of Protective Treatment

- A. Strictly follow these Adsil 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. Never mix or apply MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment if the ambient temperature is, or will be, below 60° F. for 5 days or above 100° F during installation.
- D. Never apply MicroGuard® AD00 if the ambient air temperature is within 5° of dew point.
- E. All materials shall be applied in an even and full continuous film, free from skips, holidays or pinholes and at a maximum of 1.5 mils, wet film thickness or 12 microns, dry film thickness.
- F. MicroGuard® AD00 is best applied by Airless Spray or HVLP/Conventional Spray methods. Apply as follows:
 1. Method 1 - Using the airless spray equipment, as indicated in Section 3.02, paragraph C, prime the airless pump by picking up and siphoning the properly mixed MicroGuard® AD00 into the pump. Then, with the pump pressure set at 550 to 650 PSI, trigger the gun, without the tip and housing in place, so the fluid line is filled with material. It is best to purge about 4 ounces of AD00 into a bucket in order to ensure that unadulterated product is available at the tip and free from any solvent contamination, which may have been in the fluid line.
 2. Attach the nozzle housing, with the 313 to 613 tip in place, onto the gun and tighten into place so there is no leakage.
 3. Adjust the pump pressure so the glycerin pressure gauge stabilizes at 550 to 650 PSI. Check the spray delivery fan by spraying the product onto a piece of cardboard or other such substrate. Optimum pressure setting for spraying is the lowest PSI gauge reading possible, while still delivering a consistent spray pattern, free from tailing or streaming, at the tip.
 4. Beginning in a corner or some other natural break, apply the MicroGuard® AD00 material using vertical sweeps of the gun. Follow the vertical sweep application by a horizontal cross-hatch application. Work in areas of arms length, which are most comfortable for the individual. Keep the gun tip parallel to the surface being sprayed.
 5. When coating concrete or masonry surfaces, it may be desirable to back roll the spray application in order to produce the most uniform film build. If needed, a second coat of MicroGuard® AD00 may be applied after 24 hours. Lightly sand between coats.
 6. Use good journeyman spray techniques in order to achieve a thin, uniform film deposit at 1.5 mils WFT, 12 microns DFT and free from skips, holidays or runs. If runs occur, use a natural hair bristle or foam brush to feather the runs into a smooth and continuous film.
1. Method 2 – Pour the properly catalyzed MicroGuard® AD00 into the pressure pot. Attach the nozzle (9 to 12 Orifice/Fan) and external mix air cap to the gun.
2. Turn the fluid needle screw setting (found on the back of the gun) to the closed position, then, rotate the screw setting 1 turn in a counter clockwise direction. Additional fine tune settings can be accomplished during the spraying process.
3. Attach the air hose to the compressor and pressure pot. Set the pressure pot fluid and air gauges at 20 psi maximum. Make adjustments as required.

4. Then spray a small amount of material onto a piece of cardboard in order to fine tune the gauge settings and the fluid needle screw setting. The objective is to operate at the lowest gauge pressures possible, while still maintaining a good spray pattern free from spits, tailing and breakage of the fan pattern.
 5. Begin spraying in vertical passes and overlap each subsequent pass by 50%. Keep the tip parallel to the surface being coated. Cross hatch spray at right angles to the first spray pass direction. Maintain a good wet edge and avoid over spraying back into partially set material.
 6. When coating more porous concrete or masonry surfaces, it may be desirable to back roll the spray application in order to produce the most uniform film build. If needed, a second coat of MicroGuard® AD00 may be applied after 24 hours.
 7. Use good journeyman spray techniques in order to achieve a uniform film deposit at 1.5 mils WFT, 12 microns DFT and free from skips, holidays or runs. If runs occur, use a natural hair bristle brush to feather the runs into a smooth and continuous film.
- D. The surface being treated and method of application will ultimately dictate the square foot per gallon yield of MicroGuard® AD00. As a general rule of thumb, the following guidelines can be used; 500 - 650 ft²/gallon, depending on surface density.
1. Continue application until the entire surface has been protective treated. MicroGuard® AD00 Anti-Graffiti Clear will dry to touch in approximately 1-2 hours and will thoroughly cure within about 5 days, depending on prevailing ambient temperature ranges. Never conduct any post graffiti removal procedures for at least 72 hours following application of MicroGuard® AD00.

3.06 Clean up

- A. Clean up spray equipment (Airless Equipment)
1. Pour 2 quarts of MicroKleen™ AD1-919 Equipment Cleaner (isopropyl alcohol) into a clean bucket. Purge the remaining MicroGuard® AD00 material out of the fluid line and cycle the equipment cleaner through the purge valve, pump, fluid hose and gun, with the tip in the reverse-a-clean position.
 2. Pour 2 more quarts of fresh MicroKleen™ AD1-919 Equipment Cleaner into the bucket and again, cycle the material through the purge valve, pump, fluid hose and gun, with the tip in the reverse-a-clean position.
 3. Remove the tip from the gun nozzle housing and further clean the tip orifice, so as to prevent future clogging.
 4. Collect and dispose of the MicroKleen™ Equipment Cleaner in a proper manner, consistent with all environmental regulations and job site specifications.
- B. Clean up spray equipment (HVL/Conventional Equipment)
1. Pour 1 quart of MicroKleen™ AD1-919 Equipment Cleaner into the pressure pot reservoir. Purge the cleaning solution through the fluid hose/gun into a collection bucket.
 2. Pour another 1 quart of MicroKleen™ AD1-919 Equipment Cleaner into the pot reservoir and repeat the purge process through the hose, gun and nozzle.
 3. Remove the air cap, nozzle and fluid needle from the gun and thoroughly clean before reinstallation into the gun.
 4. Collect and dispose of the MicroKleen™ AD1-919 Equipment Cleaner in a proper manner, consistent with all environmental regulations and job site specifications.
- C. Job Site Clean Up – General
1. Remove all 6 mil plastic sheathing material. Double bag into plastic garbage bags and dispose of this material consistent with environmental or land fill regulations.
 2. Any working materials, such as contaminated cloths, need to be disposed of in a safe and proper manner and consistent with site specifications, environmental or land fill regulations.
 3. All empty containers of Adsil products must be collected and placed in appropriate collection bins for proper disposal (designated roll-off area).

4. Remove all masking and other associated debris from the job site and leave the 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 this schedule
 1. Clear Anti-Graffiti Treatment installation onto all designated surfaces.
 - i. Apply MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment onto cleaned and properly prepared surfaces, per Project Manual.
 2. Graffiti removal from all designated surfaces.
 - ii. Allow the MicroGuard® AD00 film to cure for a minimum of 72 hours before attempting graffiti removal.
 - iii. Most common graffiti; e.g. off-the-shelf aerosol paints, permanent markers, ink, et al, can be most efficiently removed using commercially available graffiti removers, either in liquid or paste form.
 - iv. For more textured surfaces, the use of a stiff bristled scrub brush may be required to remove graffiti 'shadowing' from recessed areas. Depending on the depth of texture, all shadowing may not be fully removed.
 - v. A high pressure power-washer may also be used in combination with commercial graffiti removal products. Use a fan tip.

3.09 Adsil Specification AD1000-01

- A. This Specification is a general work order specification. It is intended for use, as a general guideline, for the successful application of Adsil MicroGuard® AD00 Anti-Graffiti Clear Surface Treatment onto stainless steel, non-ferrous metals, bare concrete or rigid fiberglass sound barrier surfaces, or pre-painted bridge/wall surfaces, which are subject to various graffiti tagging conditions. Extensive laboratory and field testing has shown that the inorganic film structure of cured MicroGuard® AD00 is non-sacrificial and resistant to a wide variety of aromatic solvents and cleaners associated with positive graffiti removal.

END OF SECTION – 09880

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