

**Adsil MicroGuard® Advanced Siloxane Technology**  
**STAINLESS STEEL & NON-FERROUS METAL SYSTEM SPECIFICATION**  
**DOCUMENT NUMBER AD1195-01**  
**SECTION 09800 – SPECIAL 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 shall be proficient in the installation of Adsil MicroGuard® AD95 Corrosion Protector Clear Treatment (inorganic protective coating system).
  - 1. Installer shall use the most current published technical documents of the manufacturer, for MicroGuard® AD95 Corrosion Protector Clear Treatment.
  - 2. Installer shall certify that all technicians utilized for work in this section are –
    - a. trained and certified journeymen, knowledgeable in the application of clear inorganic protective treatments.
    - b. shall have demonstrated a proficiency in this area from 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 preparation and/or mixing instructions and application instructions for each material specified. Identify by manufacturer's catalog number and general classification.

**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 protective treatment to stainless steel and/or non-ferrous metal 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. Protect all surfaces that have been properly cleaned from further contamination.
- C. Mask or drop cloth adjacent surfaces not to receive protective treatment.

**PART 2, PRODUCTS**

**2.01 Materials**

- A. Cleaners and Conditioners
  - 1. MicroKleen PLC-1 Industrial Cleaner & Degreaser
  - 2. Acid Pickling/Passiveness Solution – Blend
  - 3. MicroKleen AD1-919 Isopropyl Alcohol 99% anhydrous
- B. Protective Stainless and/or Non-Ferrous Metal Surface Treatment
  - 1. MicroGuard® AD95 Corrosion Protector Clear Treatment

**2.02 Material Preparation**

- A. Prepare and handle materials strictly in accordance to manufacturer's most current published technical literature.

## **PART 3, EXECUTION**

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

- A. Examine stainless steel/non-ferrous metal surfaces to be treated and report any conditions that would adversely affect the performance or appearance of the inorganic clear protective treatment system and which cannot be put into an acceptable condition by specified surface preparation methods.
- B. Do not proceed with the preparation, mixing or installation of the inorganic clear protective treatment until surfaces can be placed into an acceptable condition or authorization to proceed is granted.

### **3.02 Equipment Requirements**

- A. Surface Preparation Equipment
  - 1. Scaffolding, ladders, lifts, swing stages, as needed
  - 2. High Pressure Cleaner with fan tip and soap injection capability
  - 3. White Scotch Brite Pads (3M or equivalent)
  - 4. Copper Gauze
  - 5. Tarps or plastic sheeting to protect cleaned or adjacent surfaces
  - 6. All necessary personal safety equipment
  - 7. Assorted tools, hand held atomizers, extension cords, water hose & nozzle, ladders, buckets, clean rags, sponges, chamois, etc;
- B. Installation Equipment Options
  - 1. Adsil Spray System – Complete
  - 2. Commercial HVLP or LVLP Equipment
  - 3. Commercial airless spray pump & gun (313 to 613 tip)
  - 4. Hand installation tools, e.g. natural hair brushes, mohair staining pads, etc;
  - 5. Assorted tools, extension cords, buckets & lids, clean rags, etc;

### **3.03 Surface Preparation**

- A. General Preparation
  - 1. Assemble any ladders, scaffolding, lifts or swing stages that will be required to work on specified surfaces (if necessary).
  - 2. Preliminary to all surface preparation and application operations, completely mask, remove or other wise adequately protect necessary adjacent surfaces.
- B. Surface Cleaning (Exterior)
  - 1. Completely flush the stainless and/or non-ferrous metal surfaces with the specified MicroKleen PLC-1 Cleaner using injection into the pressure washer stream. Do not allow the cleaning solution to dry. If drying in an area occurs, refresh that area with more cleaner, by re-misting the surface. Allow the cleaner to set for several minutes before rinsing.
  - 2. Using the pressure washer (no soap injection), liberally water-blast the surface with clean water. Rinse well past the phase when visual signs of “suds” have disappeared. Rinse from the top to bottom or from side to side.
  - 3. 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 diking or containment of material and collection of material for proper disposal, according to regulation.
- C. Surface Cleaning (Interior)
  - 1. Apply MicroKleen PLC-1 Cleaner onto the surface using a hand atomizer or by other similar means. Dilute the PLC-1 with water; a 1 : 1 ratio. The use of hot water for dilution is preferred.
  - 2. Using a white Scotch Brite (3M) pad scrub the surface following the direction of the grain. Do not scrub cross-grain.
  - 3. Rinse the surface with clean water until soap residues and grime are removed.
  - 4. Wipe the cleaned surface with a chamois to minimize water spotting.

- D. Specific Final Cleaning (Interior/Exterior)
1. Preliminary to installation of the MicroGuard® AD95, wipe the stainless and/or non-ferrous metal surfaces with MicroKleen™ AD1-919 Isopropyl Alcohol (99% Anhydrous).
  2. Lightly saturate a lint-free cotton cloth. If the cloth becomes quickly stained or soiled, continue cleaning with MicroKleen™ PLC-1 and re-rinse with water. Wipe with alcohol.
- E. **STAINLESS STEEL NOTE:** In some instances, it may be advantageous to treat stainless steel surfaces using various acid solutions. Listed below are three common surface treatments that may enhance the stainless surface following the cleaning/degreasing surface preparation phase and will also remove iron impurities.
- a. **Passivating** – After cleaning and degreasing, stainless steel is sometimes ‘passivated’ using a 10% nitric acid solution. Nitric acid can enhance the natural oxide surface film. Rinse well with clean water following passivating. Chamois away water to avoid spotting.
  - b. **Pickling** – A nitric acid/hydrofluoric acid blend (10% HNO<sub>3</sub>, 2% HF) is the most widely used and effective method for removing metallic surface contamination. Pickling may be done by immersion or topical applications. Rinse well with clean water.
  - c. **Electro-polishing** – Using phosphoric acid (MicroKleen™ PLC-35) reduced 1 part acid with 8 parts water, apply the acid to the surface and then rub with copper gauze. Electro-polishing may be done locally to remove heat tint from welded areas or over the whole surface. Rinse with clean water.

These methods help remove a layer several atoms deep from the surface. Removal of the surface layer has the further benefit of removing that area which has become impoverished of chromium. CAUTION: Wear protective eye wear, rubber gloves, protective clothing and respirator protection when working with acids.

### 3.04 Product Preparation, Mixing and/or Catalyzing

- A. Strictly follow Adsil's most current published product instructions detailing any product preparation, mixing, catalyzing or induction times, so as to provide the best quality work.

### 3.05 Application of Inorganic Clear Protective Treatment

- A. All materials shall be applied under adequate illumination, evenly distributed and properly applied.
- B. All materials shall be applied in an even and continuous film, free from skips, holidays or pinholes onto properly prepared surfaces.
1. Spray the Inorganic Clear Protective Treatment onto all areas to be protective treated at 1.0 to 1.5 mils wet film thickness. Completely and uniformly wet the surfaces with product, allowing the treatment to migrate into all recess areas. It is important to achieve complete wetting of all surface areas to be protected, but free from runs. Take care to minimize skips or holidays. Inorganic Clear Protective Treatment will typically attract to bare stainless or aluminum metal.
  2. Surfaces may also receive the Inorganic Clear Protective Treatment by installation with natural hair bristle brush or mohair staining/wiping pads. Apply product in thin and uniform film deposits. Take care to maintain a working wet line. Avoid over working the product.

### 3.06 Clean Up

- A. Thorough cleaning of the spray equipment is essential to ensure its continued operational efficiency.
1. Purge all remaining Inorganic Clear Protective Treatment from the pump, gun and fluid hose. Flush the system with MicroKleen™ AD1-919 Isopropyl Alcohol.
- B. Any drips, spills or over spray of the Protective Treatment, should be cleaned up before the Inorganic Protective Treatment dries to touch.
- C. Remove all tarps, plastic sheeting, scaffolding, etc; following the application of the Inorganic Clear Protective Treatment.
- D. Remove debris from the 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 Treatment Schedule**

- A. As indicated on schedules
  - 1. Stainless Steel
    - a. Apply by spray, brush or pad - one coat of MicroGuard® AD95 Corrosion Protector Clear Treatment onto cleaned and properly prepared surfaces, per specification.
  - 2. Aluminum
    - a. Apply by spray, brush or pad - one coat of MicroGuard® AD95 Corrosion Protector Clear Treatment onto cleaned and properly prepared surfaces, per specification.

### **END OF SECTION – 09880**

(Revision: 10/07)