

## **SURFACE PREPARATION FOR BONDING, COATING OR PAINTING**

How well a surface is prepared will determine the success of any bonding, coating, or painting project. The proper choice of a coating is important & failure is almost always due to improper surface preparation rather than a failure of the coating materials.

To help you determine the proper preparation of various surfaces, the following guidelines should be of assistance. Take note in the preparations below of any special requirements for a particular type of coating material (epoxy, polyester, alkyd, polyurethane, etc.). While there are numerous acceptable methods of surface prep, we have listed those that are commonly suggested for particular materials.

### **ABS (acrylonitrile butadiene styreneplastic) Plastics; Nylon; Plexiglass; Polycarbonate; Polystyrene; PVC :**

1. Degrease with mineral spirits or similar degreasers.
2. Scrape with emery cloth.
3. Degrease again.

### **Aluminum:**

1. Degrease with solvent-type degreaser.
2. Scrape with 80-grit emery cloth.
3. Degrease again.
4. For bonding, no other treatment is required. For coating or painting, apply a zinc chromate primer or a vinyl wash primer as suggested by the manufacturer.

### **Ceramics and/or Glass:**

1. Degrease with solvent-type degreaser.
2. Make a "frost" using wet/dry sandpaper and water.
3. Warm for 30 minutes at 212°F in oven or boiling water.
4. Coat or bond before glass reaches room temperature.

### **Concrete:**

1. Degrease.
2. Use an acid solution containing 5% hydrochloric acid until a surface similar to 100-grit sandpaper is achieved.
3. Rinse with plenty of clean water.

*Note: Repeat steps 2 & 3 as often as needed*

### **Copper, Brass & Bronze:**

1. Degrease with solvent-type degreaser.
2. Scrape with emery cloth.
3. Etch with a mixture of: .75 Gl 42% Ferric Chloride 1.50 Gl  
Concentrated Nitric Acid 10.00 Gl Water
4. Rinse in clean water.

### **Fiberglass:**

1. Sand or grind – never use finer than 80 grit.
2. Clean with MEK solvent and let dry.
3. Apply new coating.

### **Gelcoat:**

1. Sand with 80 grit.
2. Clean with MEK solvent and let dry.
3. Apply new gelcoat or -
  - a. If applying primer to gelcoat, sand with 220 grit first.
  - b. If applying paint to gelcoat or primer, sand with 320 grit first.

### **Galvanized Metals; Zinc & Zinc Alloys:**

1. Degrease.
2. Scrape with emery cloth.
3. Recoat immediately.

*Note: Polyesters are NOT SUITABLE for bonding or coating of galvanized materials.*

### **Natural Rubber (Latex) and/or Synthetic Rubber:**

1. Treat the surface for 5 – 10 minutes with concentrated sulfuric acid.
2. Rinse with clean cold water followed by clean hot water. 3. Dry thoroughly.

*Note: Flex the rubber – the appearance of small hairline cracks indicates the rubber is ready for bonding. Repeat treatment if necessary. If the sulfuric acid treatment fails to produce the hairline cracks on synthetic rubber, repeat the process using concentrated nitric acid.*

### **Polyethylene & Polypropylene:**

*Note: These materials are generally not able to be coated or bonded.*

**Steel – Mild:**

1. Degrease with solvent-type degreaser.
2. Scrape with emery cloth.
3. Surface treat to etch, with phosphoric acid.
4. Rinse in clean water.
5. Dry thoroughly and recoat immediately.

**Steel – Stainless:**

1. Degrease with trichloroethylene.
2. Etch with mixture of:

Oxalic Acid	18lb.
Concentrated Sulfuric Acid	1 gal.
Water	15 gal.
3. Rinse in clean water.
4. Dry thoroughly before cleaning.

**Wood:**

1. Scrape with sandpaper.
2. Remove dust.

WARNING! SOME OF THE CHEMICALS SUGGESTED IN THE ABOVE PROCEDURES ARE HAZARDOUS! THE ORDER OF MIXING OF SOME FORMULAS IS CRITICAL.

GET DETAILED INSTRUCTIONS FROM A QUALIFIED CHEMIST BEFORE ATTEMPTING TO MIX FORMULAS CONTAINING ACIDS.

WHEN MIXING ACIDS AND WATER, ALWAYS ADD ACID TO WATER AND NEVER WATER TO ACID.