PERMALAC® CLEARCOAT

METAL • WOOD • STONE

Tougher than all outdoors!

Permalac

Prepare carefully. Achieve desired results.

PERMALAC is a crystal clear, durable, air-dry coating. It can be used as a DTM (direct-to-metal) and functions equally well if used over or under other coatings. Its proven reliability has been tested in countless field applications on metal, wood or stone (including ceramics or cement).

From special architectural finishes, to automotive (or motorcycle) trim, to marine hardware, to lighting fixtures, to bronze plaques, to stainless steel signage, Permalac always achieves superior results.

PERMALAC's UV inhibitors are superior to any comparable product currently available. Its resistance to salt air atmosphere makes it the perfect solution for all kinds of seaside applications from cast iron fences to aluminum parking lot lamp posts. Sculptors have found PERMALAC an effective sealant for proprietary oxidizing or coloring processes used to create antique patina and smutting effects on cast bronze or other installations.

PERMALAC cures to an exceptionally hard finish and can withstand abrasives such as wind borne sand. Exterior protection for at least six years has been demonstrated in the field innumerable times. But when it comes time to re-coat, the old Permalac can be quickly removed with acetone.

Surface Preparation

Most clearcoat failures on copper, brass, bronze, and Stainless steel or aluminum are not the fault of the coating, but rather the progressive staining and tarnishing of the metal underneath. To avoid these problems, users should follow the metal finishing procedures detailed below.

Degreasing and Cleaning Solvents

For shop refinishing: A good grade of inhibited Trichloroethylene. For field refinishing: use Peacock Labs Thinner #500 Surface Cleaner or Cleaning Thinner # 69.

Producing A Satin Finish In The Shop

New metal should be evenly abraded by belt sanding, strapping, grinding etc., to achieve a rough satin finish. The metal should be then "dressed" with clean silicon carbide pads such as "Scotch-Brite" (3M Co.) and a mixture of powdered pumice and Cleaning Thinner #69. This produces a fine satin finish. Metal polishing compounds should not be used as they often contain contaminants that are difficult to remove. Next the metal should be washed with Cleaning Thinner # 69 and wiped dry with clean cotton rags. At least two applications of Cleaning Thinner #69 should be made. If any dirt is found on the rag, repeat this cleaning step.

Note: Complete evaporation of the #69 thinner before it can be wiped dry may cause streaking. In finishing large sections where this could be a problem, use Peacock labs thinner # 500 instead of #69.

Producing A High Polish Finish

Finishing new metal to a polished mirror finish in a shop operation can be achieved by conventional buffing and coloring techniques. Following the final coloring buff, the metal should be degreased and cleaned as noted above using soft cotton pads instead of white cotton rags.

Peacock LABORATORIES, INC.

Refinishing

Remove all existing lacquer residues by generously applying a stripper (acetone works well) on all currently coated metal areas.

Note: In some instances, it may be necessary to use a brass wire brush to loosen stubborn finishes. Make sure brush strokes follow the direction of the grain and care should be taken to avoid scratching the surface. When all the lacquer has been removed, wash the metal thoroughly with clean water and wipe dry with cotton rags.

No trace of the lacquer remover or residue should remain. Next, remove all stains (oxides, sulfides, or corrosion products) with an aqueous slurry abrasive of 5% oxalic acid and powdered pumice. The slurry should be rubbed with the grain using stainless steel wool, bronze wool, or scotch-brite (3M pads). Ordinary steel wools should be avoided as many have been treated with amino-type inhibitors, which may stain copper and brass surfaces. Hand rubbing can be substantially reduced by the use of power equipment. When finished the acid-pumice slurry should be thoroughly rinsed from the metal surface with distilled water and wiped dry with clean cotton rags. Commercial metal cleaners should not be used as they leave harmful residues.

Finally, the metal should be "dressed" and cleaned as described above. PERMALAC application should promptly follow the final cleaning. And be sure to avoid handling of cleaned metal prior to the application and drying of the PERMALAC clearcoat finish.

Application

Spray application requires thinning to obtain a level seal. The recommended mixture is 4 parts PERMALAC to 1 part Peacock Labs #281 Thinner. On hot humid days, fast drying PERMALAC could trap moisture underneath the seal which causes a "cloudy" appearance. To prevent this from happening use slower drying Peacock Labs #69 Thinner in the same mix proportions.

Permalac can also be applied by brushing, flow coating, or roller coating. Small parts may be coated with Ronci, or comparable equipment. PERMALAC should always be applied in full coats.

Drying Time

Permalac air-dries to the touch in less than 5 minutes, but may be forced dried faster at 250° F. A full cure finish takes an hour or so, depending on coating thickness, temperature, etc.

Dry Film Physical Characteristics

For optimal protection, the dried film should have a thickness of 0.5-0.75 mils (ASTM D1400).

Chemical Resistance:

(10 is no change, 0 is failure)

- 1% TSP (Trisodium Phosphate) (24 Hours) 10
- 1% Tide (24 Hours) 10
- Synthetic Perspiration (24 Hours) 10
- 50% Alcohol (1 Hour) 6
- 10% Ammonia (1 Hour) 7
- 0.5% Ammonium Sulfide Solution (1 Hour) 9
- Boiling Water (20 Minutes) 6
- Gasoline (To Evaporation) 9

Abrasion Resistance:

- Weight loss, 500 cycles: 31 milligrams (Taber Abrader)
- (Federal Method 6192)
- Gloss: (600 on copper alloy #110) – 95

PERMALAC® CLEARCOAT

Performance Tests

Kitchen Dishwasher, with Electrosol:

- 25 Cycles: No change in appearance.
- 50 Cycles: No significant change in gloss, adhesion, and hardness.

Accelerated Indoor Heat Aging:
(6 weeks at 158° F)

- No significant change.

Thermal Cycling: (10 cycles 350° F to 10° F)

- No significant change.

Salt Exposure: (300 hours)

(A variation of DIN #50021) Panels were immersed in 5% NaCl solution at 40° C at an angle of 60–75 degrees from the horizontal. No significant change in the coating and practically no corrosion creep at scribed X after 300 hours.* Weathermeter: (900 hours)

*No significant change in the coating except decrease in gloss.

Outdoor Exposure:

- Bronze statue, University of Kansas at Lawrence. Coated with PERMALAC. More than 5 years of exposure. No significant change in appearance.

"Jayhawk" by sculptor, Elden Tefft of Lawrence, KS, reset on its base following repairs and refurbishment.

UV Testing:

The PERMALAC used for UV testing was diluted with 3, 4, and 5 parts toluene to 1 part PERMALAC. Many samples at each concentration were tested and subjected to 40+ hours of intense UV light (1100+ W/M2). Results are as follows:

- No noticeable visual degradation.
- No noticeable visual degradation when viewed under a microscope.
- No reduction in IR reflectance values when tested before and after using an infrared spectrometer.
- No change in RF reflectance or transmission values after the UV testing.
- No Visual discoloration.

Adhesion Testing:

The adhesions tests performed on the PERMALAC were done according to the cross-hatch tape test outlined by Sherwin-Williams Paints. The results of the adhesion test are as follows:

- The PERMALAC in all concentrations passed with an excellent rating in all adhesion tests conducted. (The substrates the PERMALAC was applied on for our testing were aluminum and urethane.)

Disclaimer:

The information in this document was obtained from independent sources, which we believe are reliable and correct, however it is only a guide. The information is provided without any representation or warranty expressed or implied regarding accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Peacock Laboratories, Inc. and its employees do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use or disposal of the product.

Peacock LABORATORIES, INC.

PERMALAC®
CLEARCOAT

Peacock
LABORATORIES, INC.

1901 S. 54th St, Philadelphia, PA 19143 • Tel: 215-729-4400/4401 • Fax: 215-729-1380
www.permalac.com