

Application Notes

MAINTENANCE and REFURBISHMENT of Polyester Powder Coatings

INTRODUCTION

When properly applied to a correctly pretreated metal substrate, polyester powder coatings provide a finish with excellent protective and decorative properties.

In order to gain the maximum life from the coating, correct coating maintenance procedures should be followed. The following guidelines provide recommendations for the maintenance program, and suggestions for the refurbishment of the coating should it be required.

1. Maintenance

It is important that maintenance be done on a regular basis. Dirt, grime and airborne salt deposits from the atmosphere are often capable of causing damage to the coating surface and must be regularly removed. It is recommended that cleaning be done routinely at a three monthly interval, six months should be considered the maximum interval. Particular attention should be paid to the cleaning interval in marine or other corrosive environments and in areas prone to atmospheric fallout.

In the cleaning process, the following should be noted:

- a) Cleaning should be done with a dilute solution of a mild liquid detergent in warm water. Avoid excessively hot solutions.
- b) Use a soft bristle brush or similar to clean the surface. Do not use abrasive tools on the coating.
- c) After cleaning, rinse the film thoroughly with fresh water.
- d) Do not use strong solvent type cleaners on the coating. Where it is necessary to remove materials from the surface such as adhesives and a solvent is necessary, the weakest possible solvent should be used. The only solvents recommended are methylated spirits, white spirits or Isopropanol. Ensure the contact time for the solvent is minimal, and that the solvent is thoroughly rinsed from the surface.

A small test area should be checked prior to solvent cleaning to ensure that no damage to the film or colour change will occur.

- e) Where more aggressive cleaning is required, a very mild abrasive such as a high quality automotive cream polish, used in accordance with the manufacturers instructions, may be necessary. The use of strongly abrasive compounds such as cutting compounds is not recommended.
- f) The use of bore water for cleaning is not recommended due to its mineral content, as it can bring about staining of the coating and may instigate long term coating failure.

2. Refurbishing

All organic finishes are prone to some degradation on outdoor exposure and after long service, some change of colour and gloss or chalking may be expected. Whilst the integrity of the film will be maintained, it may prove necessary to refurbish the powder coating to restore the original appearance.

In the case of a very old or severely degraded surface finish it is advisable to check the integrity of the film to be certain it is suitable for standard refurbishing procedures.

A number of techniques are possible for the refurbishment of powder coatings, the technique employed in a given instance will depend on the circumstances and the life expected of the refurbishing. The approach taken may also vary between domestic installations, commercial buildings or the nature of the product that was coated.

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2.1 POLISHING

In domestic situations, the use of a high quality automotive cream polish applied in accordance with the manufacturers instructions will both clean the surface, and provide decorative protection for some months.

Such an approach would not normally be considered in a commercial situation as the cost of the work would almost certainly outweigh the benefits. It should be noted that such polishes may contain silicones or waxes which may lead to difficulties on subsequent recoat unless extreme care is taken in their removal.

2.2 RECOATING

A complete recoat is the only technique which can be considered permanent, and given the cost of refurbishing is probably the only viable option in commercial situations. In recoating, the following points should be noted:

- a) The surface must be properly prepared prior to coating. The powder coating must be well cleaned to remove all traces of dirt, chalk, deposits and previous cleaning compounds.
- b) Mechanical roughening of the powder coating film is recommended in order to achieve optimum adhesion of the paint. Suitable roughening may be achieved by either wet sanding with 360 or finer abrasive paper, alternatively the use of a Scotchbrite (trademark of 3M Co.) pad and water gives a satisfactory result.
Following the roughening, ensure all sanding debris is thoroughly flushed from the surface with clean water.
- c) In the roughening process, great care should be taken on edges to ensure the powder coating film is not cut through and the chromate layer damaged. Should damage to the pretreatment layer occur, the exposed metal should be primed with a good quality etch primer in accordance with the manufacturers instructions.

A number of different types of paint have been evaluated for suitability for use on powder coatings. Whilst the type selected will depend on the particular application, it is recommended that a high performance type be selected in order to complement the life obtained from the powder coating. Types which have been evaluated include:

- two component polyurethanes
- acrylic lacquers
- 100% acrylic emulsions

The paint manufacturer should be consulted for detailed application instructions.

3. Damage Repair

At times during installation and service, there is the possibility that the powder coated metal may suffer mechanical damage requiring repair for both aesthetic and protective reasons.

Where mechanical damage to the powder coating has occurred, and the substrate is exposed, it is certain that the underlying pretreatment film has been damaged. In order to achieve the maximum corrosion resistance it is necessary to replace the pretreatment.

In some cases it will be possible to apply a suitable pretreatment on site, apply a suitable primer and repaint the damaged area in accordance with the recommendations above.

Where on site application of a pretreatment is not possible, the application of a high performance etch primer to the metal is essential to the repair process. Application of a suitable touch up paint is the only recommended method of damage repair.

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