CARE AND MAINTENANCE OF STEEL ENTRY DOORS

INTRODUCTION

The factory-applied finish on your metal entry door or door is a baked-on coating designed to give trouble-free performance for years, with little service required. This brochure serves as a guide to maintaining the aesthetic and protective properties of the coating for the life of the door. It is important to read this brochure thoroughly and completely before attempting to clean, touch-up, or repaint the steel door.

CLEANING PAINTED SURFACES

While factory-applied finishes for steel doors are so durable that they will last many years longer than ordinary paints, it is desirable to clean them thoroughly on a routine basis. Apparent discoloration of the paint may occur when it has been exposed in dirt-laden atmospheres for long periods of time. Slight chalking may also cause some change in appearance in areas of strong sunlight. A good cleaning will generally restore the appearance of these coatings and render repainting unnecessary. An occasional light cleaning will also help maintain an aesthetically pleasing appearance. To maintain the original finish of the steel doors, the only regular maintenance necessary is that of annual washing. Mild solutions of non-toxic – biodegradable cleaner or household ammonia will aid in the removal of most dirt, and the following are recommended levels:

1.) One cup of Simple Green®, or other common non-toxic, biodegradable cleaners, which contain less than 0.5% phosphate, dissolved into two gallons of warm water. **NOTE: The use of cleaners containing greater than 0.5% phosphate *is not* recommended for use in general cleaning of steel doors. NEVER BLEND CLEANSERS OR DETERGENTS WITH BLEACH.**

2.) One cup of household ammonia dissolved into five gallons of water (room temperature).

Working from the bottom to the top of the door panels, the steel door may be washed with either solution, or the use of a well-soaked cloth, sponge, brush (with very soft bristles), or a low-pressure spray washer is advised. We ***do not*** recommend the use of scouring powders or industrial solvents since these agents may damage the film. Solvent-containing cleaners such as Fantastic®, however, are very effective and can be used without concern. If mildew or other fungal growth is a problem and cannot be removed as outlined above, household bleach mixed at a concentration of one cup of bleach to five gallons of water, along with one cup of a mild soap (e.g., Ivory®) to aid wetting, is recommended.

Once the door is washed, thorough rinsing with clear water is necessary to eliminate the possibility of residue. Failure to remove all residues from these cleaning steps may damage the film.

REPAINTING OF STEEL DOORS

Should you feel the need to paint your steel door, or to repaint your finish-coated steel door, great care must be taken to prepare the factory-applied surface and to carefully assess the adhesion between this well-prepared surface and the coating to be used to repaint the door.

A. *SURFACE PREPARATION*

Any steel door surface to be repainted must be properly prepared to assure the continued performance of the coating system. The following four problem areas must be addressed before the repainting process can begin:

1.) Dirt and Mildew

Dirt, loose chalk and mildew must be removed as recommended by the cleaning method outlined in the section, "Cleaning Painted Surfaces." Heavier dirt accumulations, which must be addressed prior to repainting, may necessitate the use of a dilute solution of Spic and Span® (1 cup into 5 gallons of warm water). **NOTE: Detergent containing greater than 0.5% phosphate is recommended *only* as a preparation *prior to repainting.* Do not use such detergents for routine cleaning.** Always rinse the surface thoroughly to remove any of the agents used in the cleaning procedure. Residual cleaners left on the surface will damage the adhesion of the newly applied paint system.

2.) Surface Imperfections

Minor scratches, which have not left the metal substrate exposed, can be lightly sanded or buffed to create a smoother surface. Care must be taken, however, not to expose the substrate. Once this exposed condition exists, the likelihood for rusting is greatly increased. Should the metal substrate be observed during this operation, see the following paragraph.

3.) Exposed Metal and Rust

Exposed metal minimum surface preparation is Hand Tool Cleaning per SSPC-SP2[i] and use of a primer specifically designed to protect any exposed galvanized steel metal from corrosion.[1] Care must be taken, however, not to destroy the galvanized surface. Before priming the metal steel door, test for adequate intercoat adhesion (see Section 2 of the Repainting section). Allow sufficient time for the primer to dry before applying the topcoat. For severely rusted steel doors the recommended preparation is

[1] Akzo Nobel's Water-Based Epoxy Maintenance Coat, WA9C32800/GW9C32796 or equivalent primer designed for adhesion to galvanized steel.

SSPC-SP7[ii] – Brush-Off Blast Cleaning. Akzo Nobel's Water-Based Epoxy Maintenance Coat, or a maintenance primer designed for use on hot-dipped galvanized steel, is recommended to protect the metal panel from further rusting.

4.) Additional Surface Preparation Required for New Entry Doors

There may still be a layer of factory-applied wax on the surface of the steel door if it has been installed within the last two years. This material is used to protect the panels during fabrication and transit, and failure to remove this material will result in poor intercoat adhesion with resultant peeling or flaking of the new coating. To remove this wax, it will be necessary to lightly scuff the surface with a **GRAY** (***not green)*** 3M Synthetic Steel Wool pad (equivalent to "000" steel wool) saturated with soapy water. A final wipe and rinse should be done with clean water only, to remove any loose dust or soap film. Once this procedure is completed, perform the adhesion test in Appendix A to assure that acceptable adhesion is evident. If poor adhesion is still observed, repeat step #4. It is imperative, of course, that the factory finish itself not be removed during this process. It is necessary to once again test the intercoat adhesion according to Appendix A. If the test results still indicate poor intercoat adhesion, DO NOT PROCEED! Contact your steel door supplier immediately.

B. *REPAINTING*

1.) Paint

After the door has been properly prepared, it must be coated within 24 hours. The recommended repaint material is a high-quality exterior latex house paint or latex maintenance finish. ***Oil-based Alkyd house paint must not be applied over factory-applied finishes.*** Before repainting the door it is imperative that the intercoat adhesion be ascertained. See the following section.

2.) Testing for Adequate Intercoat Adhesion

Only after the surface has been carefully prepared and the intercoat adhesion between the repaint material and the entry door is known to be acceptable should you proceed in repainting your steel door. Without sufficient intercoat adhesion, delamination after long-term exposure may be encountered (see Appendix A, which describes a method to ascertain the intercoat adhesion properties). **NOTE: It is the sole responsibility of the person doing the repainting to ascertain if acceptable intercoat adhesion is being achieved.**

3.) Mixing and Reduction

The paint must be thoroughly mixed before using. Mechanical mixing is recommended to assure that no settling remains on the bottom of the container. Follow the manufacturer's recommendation to reduce the material for spray.

4.) Application

The surface must be **completely dry** prior to painting. Painting should not be done in the early morning. Avoid painting at temperatures below 50 °F (10 °C). Apply a uniform coat at the manufacturer's recommended dry film thickness.

APPENDIX A

EVALUATING INTERCOAT ADHESION

1.) After properly cleaning the surface to be repainted, repaint a 4" x 4" area with the repaint material according to the manufacturer's instruction. Allow drying completely before proceeding.

2.) Use a utility knife to cut a two-inch "X" into the repaint coating.

3.) Place a three-inch strip of Scotch® 610 tape over the "X" and rub 10 times with heavy pressure leaving a half-inch of tape free for removal.

4.) Pull the tape back over itself at a right angle.

5.) Examine the tape and the entry door panel for any signs of paint removal.

IF THE TAPE REMOVES MORE THAN 1/16" OF THE REPAINT MATERIAL FROM THE "X" CUT, THE INTERCOAT ADHESION IS INADEQUATE.

[i] **SSPC-SP2 – Hand Tool Cleaning**
Hand Tool Cleaning removes all loose mill scale, loose rust and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1[iii]. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No. 2.

[ii] **SSPC-SP7 - Brush-Off Blast Cleaning**
A Brush-Off Blast Cleaned surface when examined without magnification shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Mill scale, rust, and coating are considered adherent if they cannot be removed by lifting with a dull putty knife. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods. For complete instructions, refer to Joint Surface Preparation Standard SSPC-SP7/NACE NO. 4.

[iii] **SSPC-SP1 – Solvent Cleaning**
Solvent Cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No. 1.