



Metal Construction Association

Metal Roof Coating Maintenance

CLEANING PAINTED SURFACES

Polyester and Modified Polyester Coatings

While factory applied finishes for metal building panels 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 thorough cleaning will generally restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will also help maintain an aesthetically pleasing appearance. For any cleaning method used, it is recommended that the process be tested on a small inconspicuous area before use on a large scale.

To maintain the original finish of the building panels, the only regular maintenance necessary is that of an annual washing. Mild solutions of detergents or household ammonia will aid in the removal of most dirt, and the following are recommended levels:

1. One cup of common detergent which contains less than 0.5% phosphate (example - "Tide"), dissolved into 5 gallons of water. NOTE: The use of detergents containing greater than 0.5% phosphate are not recommended for use in general cleaning of building panels. Never mix cleaners, since this could be ineffective as well as dangerous. For example, detergents containing ammonia or ammonia compounds mixed with bleach (which contains chlorine) can result in harmful vapors being formed.

2. One cup of household ammonia dissolved into 5 gallons of water (room temperature).

Working from the top to the bottom of the panels, the building may be washed with either solution using a well soaked cloth, sponge, brush (with very soft bristles) or low pressure spray washer. The use of scouring powders or industrial solvents are not recommended since these agents may damage the film, or leave unsightly sources for dirt accumulation.

Solvent containing cleaners (examples - "Fantastic" or "Formula 409") 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 gallon bleach to five gallons of water, along with one cup of mild soap to aid wetting - is recommended.

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

Polyvinylidene fluoride (PVDF) and Plastisol Coatings

Polyvinylidene fluoride (PVDF) and plastisol present relatively non-adherent surfaces to airborne soil. If needed, a variety of methods for removal of surface deposits is available. Two precautions are given:

1. Do not use wire brushes, abrasives, or similar cleaning tools which will mechanically abrade the coating surface, and 2) in general, the cleaning

agents listed below should be tested on a small, inconspicuous area before use on a large scale.

HOT OR COLD DETERGENT SOLUTIONS

A 5% solution in water of commonly used commercial and industrial detergents will not have any effect on the metal panel surface. Washing with these solutions should be followed by a thorough rinse of water. A cloth or soft bristle brush should be used.

SOLVENTS

Most organic solvents are flammable and/or toxic and must be handled following manufacturer's recommendations. They should be kept away from open flames, sparks, electrical motors and used with adequate ventilation and protective equipment.

Solvents that may be used to remove non-water soluble deposits (examples - tar, grease, oil paint, graffiti, sealants...) from PVDF and plastisol surfaces include:

1. Alcohols -

Denatured alcohol (ethanol)
Isopropyl (rubbing alcohol)
Methanol (wood alcohol)

2. Petroleum Products and Turpentine -

VM&P naphtha (benzene)
Mineral spirits (oleum)
Kerosene
Turpentine (wood or gum spirits)

3. Aromatic and Chlorinated -

Xylol (Xylene)

Toluol (Toluene)

Perchlorethylene (Perclene)

Trichlorethylene (Triclene)

These solvents should be used with caution on PVDF and plastisol surfaces. A small area should be tested before general application; contact should be limited to **five minutes**.

4. Ketones, Esters, Lacquer thinner, Paint Remover -

Methyl ethyl ketone (MEK)

Methyl isobutyl ketone (MIBK)

Ethyl acetate (nail polish remover)

Butyl acetate

Lacquer thinner

Paint remover (non-flammable)

These solvents should be used with caution on PVDF and plastisol surfaces. A small area should be tested before general application; contact should be limited to **one minute**. Paint removers should be carefully tested on small areas following the manufacturer's application recommendations.

5. Acetone should not be used on PVDF and plastisol surfaces.

CHEMICAL SOLUTIONS

Sodium hypochlorite solution
(Laundry bleach, Clorox)

Hydrochloric acid (muriatic acid)

Oxalic acid

Acetic acid (vinegar)

Acid solutions are corrosive and toxic. They should be tested on small areas before general application; contact should be limited to **five minutes**. The panel surface should be thoroughly flushed with water after the chemical solution washing.

Graffiti

Graffiti presents a special problem because of the many possible agents used, generally aerosol paint. It is recommended that less active solvents (examples - alcohols, petroleum solvents and turpentine, aromatic and chlorinated) be tried initially, followed by stronger solvents (examples - ketones, esters, lacquer thinner, paint remover). If none of these are satisfactory, it may be necessary to resort to touch-up paint, total repainting or replacement.

This technical bulletin has been distributed, prior to publication, for review and comment by those organizations believed to have a direct interest in and knowledge of the subject matter.

