

## PRODUCT DESCRIPTION

# Care and Maintenance of Precoated Kynar 500® PVDF Metal Panels & Accessories

## General

Kynar 500® PVDF is a premium quality factory-applied finish which retains its uniform appearance through many years of normal service and weathering. Proper installation and maintenance are both crucial to guarantee the best possible service life and appearance from metal panels and accessories prefinished with Kynar 500® PVDF resin.

## I. Storage and Installation

Steps to protect precoated metal sheets against moisture before installation are important to prevent rusting (oxidation) of the metal substrate. When prepainted metal sheets which are stacked closely together or coil material are exposed to moisture and heat, discoloration and softening of the paint and oxidation or rusting of the metal substrate can begin. On galvanized steel substrates, the normal sacrificial reaction of the zinc coating will occur, forming a white powder. This type of oxidation can occur beneath the paint film.

Take the following steps to control oxidation damage during storage:

1. Minimize exterior storage time at the job site whenever possible.
2. Position cover panel and slanted bundles of metal sheets to insure proper drainage of rainwater or condensed water vapor. Eliminate sagging when moisture could collect and pool. Remove outer wrapping to prevent moisture from condensing in panel bundles.
3. Don't use moisture-trapping plastic tarpaulins to cover panels or coils. Allow adequate ventilation.
4. Reduce temperature build-up by protecting bundles or coils from direct sunlight exposure.

Proper handling and stacking during transit can help prevent abrasion damage. A common cause of abrasion damage which can easily be avoided is the dragging of whole sheets, edges or corners of metal panels against other panels during installation. If both the paint and galvanized coating are cut through, red rusting will be retarded by the sacrificial action of the zinc coating, but enough damage to the surface appearance can still occur to make a touch-up operation necessary. See note on page two on "Proper Touch-Up Techniques".

Improper cutting and drilling of precoated metal sheets can also cause unsightly rust spotting. Hot chips -- from drilling, saws or cutting discs -- can get embedded in the paint finish and create premature rusting, making it seem that the surfaces are corroding. Chips from adjacent steel work can embed in the paint surface of unprotected metal sheets nearby. Eliminate this problem by shearing whenever possible. Protect the paint surface temporarily with a plastic cover when saws, drills or cutting disks are in use around it. Turning over prepainted sheets while cutting them so that chips will fall on the inside surface also helps.

Workers should take care to avoid stepping on or exerting pressure against any steel chips which could embed the chips in the paint film. Immediately brush steel chips off the paint surface, using a stiff fiber brush. If they've already become embedded, dislodge them by mechanical means.

Installed sheets should never be placed in contact with soil and soil should never be pushed against installed sheets for final grading. All grease, oil, dirt, fingerprints or any other contaminants should be removed after installation to ensure proper service life from the paint film.



## PRODUCT DESCRIPTION

### II. Cleaning Coated Surfaces

Although Kynar 500® PVDF resin-based coating factory-applied finishes are extremely durable, a periodic cleaning to remove build-ups of resins and other residue is a good idea to extend coating life.

Simple washing with plain water using hoses or pressure spray equipment is usually adequate. When surfaces are dulled by heavy deposits of dirt or other contaminants, a heavy-duty dry powdered laundry detergent (such as Tide®) mixed 1/3 cup with water may be used. A long-handled soft bristle brush will make cleaning easier. Following cleaning operation with a clear water rinse.

In areas subject to high humidity levels, mildew can occur. Although Kynar 500® PVDF finishes are inherently mildew-resistant, dirt and spore deposits can permit mildew growth to occur. The following solution is recommended to remove mildew when necessary:

- 1/3 cup dry powdered laundry detergent (such as Tide®)
- 2/3 cup tri-sodium phosphate or TSP (such as Soilax®)
- 1 qt sodium hypochlorite 5% solution (such as Clorox®)
- 3 qts water

**Avoid strong solvent and abrasive-type cleaners.** Remove caulk compounds, oil, grease, tars, wax and similar substances by wiping with a cloth soaked in mineral spirits. Wipe only contaminated areas; follow with detergent cleaning and rinse thoroughly.

### III. Refinishing Factory-Coated Panels & Accessories

Properly refinished exterior building panels and accessories have a "like-new" appearance that protects the substrate from the environment. Carefully selecting the type of coating, along with proper surface preparation and application, are all essential elements of long-term performance satisfaction. Use professional painting of the surface whenever possible. Berridge does not provide paint systems for field coating of metal roofs. These paint systems are available through paint manufacturers such as Tristar, Sherwin Williams, Akzo Nobel and others. Consult these paint manufacturers directly regarding applicable paint systems, surface preparation and application instructions, as this varies by paint manufacturer.

**Note:** for touch-up instructions please refer to Berridge's Product Description titled: *"Proper Touch-Up Techniques for Kynar 500 or Hylar 5000 Air-Dry Formula Paint."*

Note: Kynar 500® is a registered trademark of Arkema, Inc.  
Hylar 5000® is a registered trademark of Solvay Solexis.





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 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:

- I. 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 powder 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 in 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 (benzine)
- 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 applica-

tion; 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.



11 S. LaSalle St. Suite 1400 Chicago, IL 60603  
 (312) 201-0193 • Fax (312) 201-0214  
 or P.O. Box 697 Chicago, IL 60690-0697