



CARE AND CLEANING INSTRUCTIONS - COATED METAL

BACKGROUND

As the owner of coated metal building, roof or structure, you will want to keep your investment functional and attractive for many years into the future. This document will detail the cleaning and care of your painted metal panels or structure. Most panels are either Hot Dipped Galvanized (HDG) or Galvalume, that are painted with a topcoat and backer to insure a fully protected product.

In a coil coating process, the coated steel is first thoroughly cleaned and rinsed so that a uniform surface is provided for a pretreatment phase. The pretreatment is a very thin layer that chemically bonds to the surface of the metal and provides a bonding surface for the subsequent primer and topcoat paint. The primer layer contains corrosion inhibitors and allows for the flexibility of the painted total painted system. The final coat is the top coat which provides colored pigments, gloss and UV radiation protection from the sun. During each application step the paint is control applied to insure film thickness and integrity, then baked to the desired physical properties.

The attractive appearance of your metal building or roof is the result of engineered products manufactured under controlled conditions to insure a quality product. To maintain the attractive appearance of your investment, periodic cleaning will be required.

Care must be taken when cleaning the surface of the painted material, so as not to damage the film integrity of the paint. It is the purpose of these instructions to provide guidance for cleaning your painted metal.

CLEANING COMMON PROBLEMS

All painted metal will chalk and retain dirt to some degree, and mildew will build up in certain environments. These make the painted surface look dull and old over time. Removal of the dirt and surface chalk restores much of the paints brightness, and original color.

The selection of cleaning method will depend on the type of contaminant and to be removed. Common types of contaminants associated with painted metal buildings include;

- 1) **Airborne dirt**, which can collect on building surfaces along with greasy, organic residues, that cannot be removed by rainwater.
- 2) **Chalk**, which is natural degradation of paint systems. Over a period of several years a thin white chalky film is produced on the surface of the paint film, which makes the color appear to fade and reduces the gloss of the original paint.

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- 3) Mildew, or biological growth, commonly appears on surfaces that are exposed to damp or wet environments, shield from direct sunlight, such as under eaves, north facing walls or sheltered areas.
- 4) Rust Stains, may be caused by steel debris left on the building following erection, unprotected cut edges, or unprotected fasteners. These sources of rust stain should be eliminated prior to cleaning.

TYPES OF CLEANERS

A variety of cleaners remove dirt, mildew and chalk:

- ¼ cup phosphate free laundry detergent per gallon of water
- 1 ounce liquid dishwashing detergent per gallon of water
- ¼ cup household bleach per gallon of water
- ¼ cup household ammonia per gallon of water

It is important to rinse cleaners thoroughly from the surface. Detergents, ammoniated cleaners and bleach leave corrosive residues if not properly rinsed. Detergents and dishwashing soap can attract dirt if not thoroughly rinsed. When cleaning compounds are left on a building, not only will they attract dirt more readily, but will tend to corrode the building faster.

Powder and liquid detergents are excellent general cleaners, requiring low concentrations to achieve an acceptable cleanliness. The specific brand is not critical, as most will work fine, but **DO NOT USE** a phosphate detergent.

Some mildews will not come off, even with mild detergents, and will require a stronger cleaning agent. Household bleach, when mixed properly should clean most all mildew stains.

Ammonia is especially good for removing greasy dirt and stains, when solvents are inappropriate. Always dilute and mix ammonia in a well ventilated area outdoors.

Solvents are the most effective agent in cleaning greasy stains, when detergents and ammonia do not achieve an acceptable result. However, there are 3 serious limitations to using solvents for cleaning painted surfaces.

- 1) Solvents are flammable. Always use them in well ventilated areas. Keep away from any open flames, sparks, motors or other source of ignition. Do not use solvents for large cleaning operations.
- 2) Solvents can remove paint. Always test the paint to determine if the solvent will damage the coating. The following presents some guidance on the subject:

- a. Polyesters and Silicon Modified Polyesters (SMP) are less solvent sensitive than Fluropon, Kynar and Platisol topcoats.
 - b. Alcohols are least aggressive solvents.
 - c. Petroleum solvents, such as Kerosene, Naptha, Mineral Spirits, turpentine, Toluol and chlorinated solvents are moderately aggressive.
 - d. Ketones, Esters and paint removers are the most aggressive, and when using them, you should expect to dull or damage the surface of the painted material.
- 3) Most solvents are toxic and great care should be taken in the use and disposal of them. Read the manufacturers information on any cleaning solvent to insure proper use.

DIRT RETENTION

Two types of dirt accumulate on buildings; dry soil and greasy or organic residues. The dry dirt, by itself, washes off with rainwater or high pressure water spray. Greasy residues do not wash off in rain and tend to hold dirt and chalk tightly to the surface. These residues originate from automobile exhaust, fireplaces, ventilation fan oil, pesticides, and various common sources. This is the kind of dirt that requires cleaners to remove. Detergents, ammoniated cleaners and even solvents maybe required to achieve an acceptably clean surface.

Lighter colors tend to show more dirt than darker colors. Polyester and SMP's tend to retain dirt more than Fluropon Kynars.

CHALK

Chalk is the white byproduct of ultra-violet degradation of the paint system. It makes colors look lighter, reduces natural gloss of the paint system, and deposits on lower building surfaces and materials. Chalk builds up of a period of years, as rainwater only partially removes it.

The rate of chalk build up depends heavily on the type of pigment color and resin in the topcoat. In general, plastisols chalk more than polyesters, which chalk more than SMP's, which chalk more than Fluropons. Chalking on dark colors is more noticeable than chalking on lighter colors.

Chalking increases with greater sun exposure. Parts of the building that are southern facing, roofing and areas not shaded from sun may experience greater chalking. Generally high pressure water spray is all that is needed to remove chalk and restore the buildings original appearance.

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MILDEW

Mildew build up, or more generally biological growth, on buildings requires a long wet exposure with proper nutrients to form. There is sufficient supply of organisms in dust to initiate growth anywhere. North facing walls, under eaves and sheltered corners are areas that can have layers of build up. A visible growth of mildew holds moisture easily. Mildew also has corrosion issues since the by-products of bacteriological growth are corrosive.

Remove mildew by wiping or by using power spray. Then wash the area with an antiseptic cleaner such as bleach described above. Rinse the area thoroughly. Eliminating the cause of the mildew prevents its return.

Bleaches can be unsafe to mix with other cleaners. Use pre-mixed laundry detergents with bleach if extra cleaning is needed. Bleach is toxic and corrosive. Avoid eye and skin contact. Keep it off nearby shrubs and plants.

RUST REMOVAL

Cleaning red rust and red rust stains from buildings includes the need to eliminate the source of rust before cleaning. In many circumstances, removing the rust is the final step in the repair of a rust source. The following are examples of rust removal:

- 1) Rust Rundown – Rust can stain panels when rust runs down from a higher, rusting panel. After elimination of the upper panel rusting, cleaning permanently removes rust on the lower panel.
- 2) Rust from Steel Debris – After removal of steel debris left on the building, cleaning permanently removes the stain
- 3) Edge Rust – The bottom edges of panels that have prolonged exposure to wet or damp environments will have red rust. After correcting the edge design, to allow easy drying, cleaning and permanently removes the rust. If it is not possible to correct the design, repainting of the edges following rust removal may be required.
- 4) Painting Rusted Area – Completely remove the rust prior to repainting the area or the repainting will not adhere.

Any cleaner should be thoroughly rinsed off after application. Rinse with tap water very thoroughly. Acid cleaners attack metallic coatings if left in contact for a sufficiently long time.