



TECHNICAL TOPIC #1

Cleaning Procedures For Screen Enclosures and Aluminum Railings

The purpose of this Technical Topic Bulletin is to give suggestions on how to maintain aluminum railings and screen enclosures. These surfaces should be cleaned every six months at a minimum.

GENERAL CONSIDERATION

Care and maintenance guidelines for anodized aluminum also apply to painted aluminum. The architect depends on the finish to provide the beauty in the building he has designed. The building owner wants to preserve this beauty thereby preserving the desirability and profitability of the property. All aluminum surfaces should be cleaned every six months as a minimum.

As in the case of anodized aluminum, the Architectural Aluminum Manufacturers Association released a publication entitled "Voluntary Guide specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Certain Wall Panels. AAMA 610.1-1979". This specification covers procedures to be used for sheet and extruded aluminum products found in curtain wall, window and storefront construction.

Organic aluminum coatings do not normally show an appreciable amount of dirt accumulation. In many atmospheres, dirt and soil would not be detrimental to the coating, but cleaning and surface care may be desirable for the sake of appearance. In areas where heavy industrial deposits have dulled the surface; where materials from construction processes have soiled the surface; or cleaner has run-down from other surfaces, surface cleaning is desirable.

Climatic conditions affect the cleanliness of organic coatings in the same way they affect anodized coatings. In some areas rainfall may be sufficient to keep the exterior surface looking clean and bright. In areas of low rainfall or in heavily industrialized areas, periodic cleaning will be necessary.

This is also true of coastal regions with frequent cycles of condensation and drying which, may cause a buildup of atmospheric salts and dirt. In any climate, sheltered areas under overhangs may become soiled from lack of rain washing. Cleaning painted aluminum components in the exterior wall should be scheduled along with cleaning the glass.

If automatic wall cleaning equipment is to be used on a building, a test should be made early in the equipment design to ensure that the cleaning solutions and brushes, as well as the frequency of cleaning, will have no detrimental effect on the coating.



The exact procedure for cleaning will vary depending on the nature and degree of soil. Try to restrict cleaning in mild weather. Cleaning should be done on the shaded side of the building or ideally on a mild, cloudy day. Method of cleaning, type of cleaner, etc., of one component of the building must be used with consideration for other components such as glass, sealants, painted surfaces, etc.

Removal of light surface soil

Removal of light surface soil may be accomplished in several ways. Some testing is recommended to determine the degree of cleaning actually necessary to accomplish the task. Ideally, an initial step of forceful water rinse from top down is recommended prior to any cleaner application. Significant benefit is gained with some type of surface agitation. Low water volume with moderate pressure is much better than considerable volume with little pressure. Physical rubbing of the surface with soft, wet brushes, sponges or cloth is also helpful.

1. The simplest procedure would be to apply the water rinse with moderate pressure to dislodge the soil. If this does not remove the soil, then a concurrent water spray with brushing or sponging should be tested. If soil is still adhering after drying, than a mild detergent will be necessary
2. When a mild detergent or mild soap or necessary for removal of soil, it should be used with brushing or sponging. The washing should be done with uniform pressure, cleaning first with a horizontal motion and then with vertical motion. Apply cleaners only to an area that can be conveniently cleaned without changing position. The surface must be thoroughly rinsed with clean water. It may be necessary to sponge the surface while rinsing, particularly if cleaner is permitted to dry on the surface. The rinsed surface is permitted to air dry or is wiped dry with a chamois or lint free cloth.
3. Run down of cleaner (from any operation) to the lower portions of the building should be minimized and these areas should be rinsed as soon and as long as necessary to lessen streaking, etc. from unavoidable run down. Lower areas should be kept wet or flooded with water. Do not allow cleaning chemicals to collect on surface or to "puddle" on horizontal surface, crevices, etc. These should be flushed with water and dried. Always clean coated surfaces down from top to bottom and follow with a thorough rinsing with clean water (with one story or low elevation buildings, it is recommended to clean from bottom up and rinse from top down).
4. Mild Detergents: Mild soaps or detergents ruled safe for bare hands should be safe for coated aluminum. Stronger detergents such as some dishwasher detergents should be carefully spot tested. Some of the latter would necessitate rubber gloves, long handled brushes, etc. With any, the finish should be thoroughly rinsed with clean water and dried. Some mild cleaning solutions, which would compromise of selected wetting agents in water solution, are available for automatic building washing machines. These machines would have built in brush agitation, squeegee, filtration and recirculation. In some, a fresh water connection may be provided.



Cleaning of Medium to Heavy Soil

Some type of mild solvent such as mineral spirits may be used to remove grease, sealant or caulking compounds. Stronger solvents containing cleaners may have a deleterious or softening effect on paints. To prevent harm to the finish, these types of solvents or emulsion cleaners should be spot tested and the coating manufacturer consulted. Care should be taken to assure that no marring of the surface is taking place in this manner since this could give an undesirable appearance at certain viewing angles. Cleaners of this type are usually applied with a clean cloth and removed with a cloth. Remaining residue should be washed with mild soap and rinsed with clear water. Use solvent cleaners sparingly.

1. It may be possible for solvents to extract materials from sealants which could stain the painted surface or could prove harmful to sealants; therefore, these possible effects must be considered. ***Test SMALL area FIRST***

If cleaning of a heavy surface soil has been postponed or in the cases of an especially tenacious soil, stubborn stains, etc., a more aggressive cleaner and technique may be required. Cleaner and technique should match to the soil and the painted finish. Some local manual cleaning may be needed at this point. Always follow the recommendations of the cleaner manufacturer as to proper cleaner and concentration. Test clean a small area first. Cleaners should not be used indiscriminately. Do not use excessive, abrasive rubbing as such may alter surface texture, impart of "shine" to the surface or cause failure of the coating surface leading to corrosion.

1. Concrete spillage that has dried on the painted surface may become quite stubborn to remove. Special cleaners and/or vigorous rubbing with nonabrasive brushes or plastic scrapers may be necessary.
2. Diluted solutions of Muriatic Acid (under 10 %) may be effective removing dried concrete stains; however, a test area should be tried first and proper handling precautions must be exercised for safety reasons. Also, effective proprietary cleaners for concrete and mortar staining are available.

Never mix cleaner. The mixing of cleaners may not only be ineffective, but also very dangerous. For example, mixing of chlorine containing materials such as bleaches, with other cleaning compounds containing ammonia, can result in poison gas emission. ***Never use Chlorine or Bleach.***

Always rinse after removal of heavy surface soil.