

Painted and Anodized Finishes

Certain precautions must be taken when cleaning painted and anodized surfaces:

- Select the appropriate cleaning method after identifying the finish.
- Do not use abrasive household cleaners or materials like steel wool or hard brushes that can wear and harm finishes.
- Excessive abrasive rubbing should not be used since it can damage the finish.
- Avoid drips and splashes and remove run-downs as quickly as possible.
- Consider the effects of run-downs on shrubbery, personnel and equipment and schedule cleaning appropriately.
- Strong cleaners should not be used on window glass and other components where they might come into contact with the aluminum.
- Avoid temperature extremes which can accelerate chemical reactions, evaporate or strengthen cleaning solutions, cause streaking, staining or blotching.
- Do not mix cleaners or substitute a heavy-duty cleaner for a safer, milder cleaner.
- Never use paint removers or aggressive alkaline, acid or abrasive cleaners.
- Always do a test on a small area first and follow manufacturers recommendations for mixing and diluting cleaners.
- Make sure cloths, sponges and cleaning equipment are grit-free.

Cleaning procedures to remove construction or accumulated environmental soils and discoloration should be initiated as soon as possible. Mortar, cement and other alkaline materials will quickly corrode anodic coatings if allowed to dry on the metal surface. Cleaning should start at the top of the building and proceed to the ground level in a continuous drop the width of the stage or scaffolding. The type of procedure depends upon the degree of soiling.

Removal of Light Surface Soil

Trial and error testing employing progressively stronger cleaning procedures can determine which method will be most effective:

- A forceful water rinse should create initial surface agitation.
- If soil is still present after air drying the surface, scrubbing with a soft brush or sponge and concurrent spraying with water should be attempted.
- A 5 percent solution of industrial or commercial detergent and water should be applied with soft brushes, sponges or cloth using uniform alternate horizontal and vertical motion. Detergent should be safe for bare hands—stronger detergents should be spot tested.
- After washing, the surface should be rinsed thoroughly with clean water and allowed to dry. Do not allow detergent solution to dry on aluminum.
- Cleaner run-down should be minimized and rinsed immediately.
- A thorough rinse should remove solution from joints, crevices and surfaces.
- If it is necessary to remove oil, wax, polish or similar materials *from anodized finishes*, MEK, mineral spirits or an equivalent solvent is recommended.
(See cautions † listed under “Removal of Non-Water Soluble Deposits”).

Painted Finishes

Removal of Stains:

- Sodium hypochlorite solution (laundry bleach, Clorox) may assist in removing certain stains from painted finishes.
- Hydrochloric acid, or 10 percent muriatic acid, diluted with 10 volumes of water, may assist in removing rust or alkali mortar stains from Permafluor™ surfaces.
- Limit contact to 5 minutes. *Caution: acid solutions are corrosive and toxic. Flush all surfaces with water immediately after use.*
- Ascectic acid (vinegar) or oxalic acid solutions may be used for the same purpose. Flush with water.
- *Anodized surfaces should not be washed with acidic or caustic solutions.*

Mildew Removal

Remove mildew from painted aluminum finishes with a basic solution of:

- 1/3 cup detergent
 - 2/3 cup trisodium phosphate (TSP)
 - 1 quart sodium hypochlorite, 5% solution (bleach)
- Rinse with clear water immediately.*

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Removal of Stains:

Once all the general cleaning procedures have been exhausted, cleaning with an abrasive pad soaked in clean water or a mild detergent cleaner may be tried:

- Using uniform pressure, hand scrub the metal surface using a palm size nylon cleaning pad. Thoroughly wet with clean water and a mild detergent cleaner or pumice powder. Start at the top and work down, rubbing in the direction of the metal grain.
- After scrubbing, the surface should be rinsed thoroughly with clean water or wiped with solvent to remove all residue.
- The surface should then be air dried or wiped dry with a chamois, squeegee or lint-free cloth, particularly if cleaner has dried on the surface.
- A power cleaning tool, such as an air-driven reciprocating machine fitted with cleaning pads, may be necessary for removal of unusually heavy soils. During this operation, the surface being cleaned must be continually wetted with clean water or a mild detergent cleaning solution to provide lubrication and a medium for carrying away the dirt. The machine should move in alternate vertical and horizontal strokes.
- After machine scrubbing, the area must be rinsed and thoroughly scrubbed again with a stiff bristle brush. A final rinse completes the operation and the cleaned surface is allowed to air dry or is wiped dry. It is important to remove promptly cleaner run-down on uncleaned surfaces to avoid staining.

Removal of Non-Water Soluble Deposits

†Solvents may be used to remove non-water soluble deposits such as tar, grease, oil, paint and graffiti. However, extreme care should be used when using solvents on painted surfaces. Many solvents will reduce the gloss level of painted finishes and, if allowed to remain on the finish for more than a few minutes, may soften the paint and damage the coating. It is suggested that the painted area that comes into contact with the solvent be limited as much as possible.

†Extreme care must be exercised when solvents are used since they may damage organic sealants, gaskets and finishes.

Solvents should never be used on anodic finishes protected by clear organic coatings, such as lacquer, unless the organic coating has deteriorated and is to be removed. Organic solvents should be used only in accordance with manufacturers' safety recommendations.

†Most organic solvents are flammable and/or toxic and must be handled accordingly. Avoid open flames, sparks and electrical motors and use adequate ventilation, protective clothing and goggles.

Removal of Non-Water Soluble Deposits

Alcohols	Petroleum Solvents	Aromatic and Chlorinated	Ketones, Esters and Lacquer Thinner	Acetone Paint Remover
Denatured (ethanol) Isopropyl (rubbing)	VM&P Naphtha Mineral Spirits Turpentine (wood or gum spirits)	Xytol (Xylene) Toluol (Toliene)	Methyl Ethyl Ketone (MEK) Methyl Isobutyl Ketone (MIBK) Ethyl Acetate (nail polish remover) Butyl Acetate Lacquer Thinner	Acetones Paint Removers
Cautions: †Use with care. See cautions above.	Cautions: †Use with care. See cautions above.	Cautions: †Use with care. See cautions above. These solvents should be used with caution on painted surfaces and limited to a maximum of five minutes exposure. A test should be carried out before using them.	Cautions: †Use with care. See cautions above. Use with extreme caution on painted surfaces. Contact should be limited to a maximum of one minute and a test should be carried out prior to use. Manufacturers are not responsible for damage from unrestricted use.	Cautions: †These should NOT be used on painted surfaces.

Reference Publications

Recognizing the need for the aluminum industry to provide information on the care and maintenance of exterior wall finishes, the AAMA has released a two publications:

- AAMA 609, Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum.
- AAMA 610, Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Curtain Wall Panels.

To obtain a copy of these publications, contact: American Architectural Manufacturers Association.

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