Safeguarding Anodized Aluminum

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Protecting an Anodize Finish

Anodize Entranceway

With its inherent corrosion resistance, aluminum's ability to maintain structural integrity has been documented for decades. However, after the finish has been applied to the material, there is the unfortunate chance for damage during delivery, manufacturing or installation.

While damage often happens from handling, damage during and after installation can also occur when masonry products, or the products used to clean them, come in contact with the finished aluminum and are not readily removed. Run-down, splattering, or splashing from masonry work, mortar, plaster, concrete, and the masonry washes often used on job sites can pose a serious problem to an anodized finish.

A stain is generally the first indication when mortar or masonry products come in contact with aluminum building components, and are allowed to dwell, even for a short time.


Mortar or masonry run-off onto anodized window frame

Anodized aluminum components, including curtain walls, windows, skylights, storefront, and doors installed on a building are considered "finished" products. After these products are installed, work often continues around them on other building components such as the brickwork, concrete, and roof components. It is imperative that the anodized aluminum be well-protected and safeguarded through project completion to avoid damage, as it is difficult, and sometimes impossible, to repair material in the field.

A stain is generally the first indication that masonry products, or the products used to clean them, have come in direct contact with finished aluminum. The color and appearance of the stain will vary depending on the contaminant and the reaction it is having with the finish on the aluminum. Anodized aluminum stains often appear white and chalky, or translucent. If allowed to remain on the anodic surface, mortar or masonry washes will attack and compromise the anodic coating beyond repair, resulting in permanent inconsistencies in the finish.

Upon building completion, a wash is often conducted to clean the exterior of the building and remove dirt, masonry debris, and other contaminants left from the construction process. Strong cleaners and acids used for brick and masonry work should be confined to the target area, avoiding all aluminum surfaces. Chemicals strong enough to dissolve mortar spots can quickly damage aluminum finishes and possibly damage the underlying metal. Once the finish is visually affected, irreversible damage may have occurred and the discolored/damaged part may need replacement.

In the event masonry dust, mortar, or other contaminants come in contact with the anodize, every effort should be made to immediately remove them and avoid permanent damage. Once removed, the area contacted should be flushed with water using moderate pressure to dislodge all foreign soils. If soil still adheres after drying, a mild detergent may be necessary. A mild detergent or soap, safe for use on bare hands, should be employed with brushing or sponging of the aluminum using uniform pressure, cleaning first in a horizontal motion followed by a vertical motion. Thoroughly rinse the surface with clean water.

Mortar run-off onto anodized window frame

For heavy soils such as oil, wax, polish, or a similar material that must be removed, a solvent such as MEK (methyl ethyl ketone), toluene, or isopropanol may be needed. Always check the product MSDS sheet for the proper handling requirements and test product in a non-visual area first. If anything other than water is used to clean an anodized surface, it must be thoroughly rinsed afterward. Tremendous care and caution must be taken when solvents of this type are used as they may damage organic sealants, gaskets, and finishes. Aggressive alkaline, acid, or strong cleaners should never be used on aluminum anodized finishes. In particular, do not use halogenated solvents such as chlorine, fluorine, iodine, or bromine.

Damage to anodized framing from mortar and brick wash

If the use of strong alkaline or acid based building wash cleaners cannot be avoided the following steps must be followed. Once an area of the building has been washed, it should be immediately and thoroughly flushed with water. After the building area surrounding the anodized aluminum has stopped dripping, the aluminum components should be hand rinsed and wiped with water, or a mild soap and water solution, to ensure any diluted building wash has been removed from the surface.

Whether or not a building wash is used, inspect the anodized aluminum building components for the first couple weeks after construction has been completed. Rainfall hitting and running down the building can collect on remnant masonry, concrete, mortar dust, or residual masonry cleaner and can flush them onto the anodized aluminum building components. If slight discoloration is noticed after the first couple of rain events, a thorough washing using water, or a mild soap and water solution, should be employed.

The best way to avoid damage and discoloration during construction is to install the buildings aluminum components all masonry and mortar work have been completed, while still being alert for any run-off onto the aluminum surfaces.

Architectural anodize has been used for more than 80 years, and with proper care and maintenance will last a lifetime.