

Routine cleaning of the ACM surface is recommended. It may be washed with water and mild detergent, followed by a clean water rinse. The frequency with which cleaning is to be carried out and the choice of suitable cleaning agent depends largely on the position of the building being cleaned and degree of contamination.

Do not clean sun-heated surfaces (above 40°C) to avoid rapid drying which may lead to stain formation.

The cleaning operation must be followed by a thorough rinse with clean water to ensure the removal of all remnants of the cleaning agent. A final wipe down by means of a sponge, leather or wiper is necessary to avoid water stains.

The Alubond U.S.A. ACM is resistant to industrial atmospheres and is self-cleansing in most environments. As with all claddings, improvements in durability is achieved by an annual wash down with warm water so to avoid the build up of deposits. Often periodic maintenance is not carried out, and whilst this is not detrimental does not improve the product appearance. The Alubond U.S.A. ACM is more self-cleansing than many of the alternatives.

## Scope

This manual is applied to the cleaning and maintenance procedures for the external cladding of the Alubond U.S.A. ACM panel on which Stove Lacquered based Fluorocarbon (PVDF), Polyester, and Acrylic paint are coated.

## Purpose

The purpose of this chapter is to assist project people such as architects, contractors, building owners, et al., who are concerned with and / or engaged in the cleaning and maintenance of the external cladding of the Alubond U.S.A. ACM panels, especially in establishing safe and sound cleaning procedures.

## General Notes

Not only Stove Lacquered based fluorocarbon coating but also precolor, polyester acrylic resin or normal organic coatings onto aluminum will not show an appreciable amount of dirt collection; however the dirt and soil depends largely on the local atmospheric conditions where the building exists.

In heavily industrialized area, coastal areas and the areas where construction works are being carried out, it might be necessary to increase the cleaning frequency, not only for the sake of appearance but also for the purpose of removing the dirt and soil likely to be detrimental to the coatings surface.

Very often, rainfall is effective to remove dirt and to keep the external cladding clean. In areas of low rainfall, this effect may not be expected and accordingly the cleaning frequency might be increased. Even in the same building, portions which are in direct sight at lower levels might be cleaned more frequently, and less obvious portions might be cleaned less frequently, or in some instances, hardly at all. And in these areas, detrimental components might be deposited on the coated surface. These factors would determine the cleaning schedule.

In planning the actual cleaning schedule of the external cladding, the schedule might be adjusted with other cleaning operations for glass and painted aluminum components.

## Clean Frequency

Cleaning will be required more often in the following areas in general:

- Areas of low rainfall
- Heavily industrialized areas
- The areas where construction works are being carried out
- Foggy coastal regions with frequent cycles of condensation and dry

In foggy and coastal regions, frequent cycles of condensation and dry take place, and salty components and dirt tends to deposit. Especially, sheltered areas such as overhangs may be soiled easily because of lack of washing by rain.

## Machine Cleaning

Once automatic wall cleaning machine is considered to be used, a pre-test should be done in the early stage of equipment design to confirm that there is no detrimental effect on the coating as well as to clarify the cleaning effect and frequency.

## Cleaning Procedures

After project completion, construction soils including concrete or mortar, etc., should be removed as quickly as possible. In most cases, the following suggested frequency would be required to keep the coated surface clean as good as it can remain.

| Building Situated                 | Wash Frequency   |
|-----------------------------------|------------------|
| Rural area                        | 0.5 times/Year   |
| Urban area                        | 0.5 1 times/Year |
| Low rainfall and /or coastal area | 1 times/Year     |
| Heavily industrialized area       | 1 2 times/Year   |

## Prior To Cleaning

Removal of light surface soil in order to remove light soil, it is recommended to do some tests to determine the degree of cleaning actually necessary to accomplish the task. Prior to any cleaner application, a forceful water rinse from the top to down is recommended as an initial step to tests. The lower water volume with moderate pressure is much better than the considerable water volume with little pressure. When cleaner is applied, physical rubbing with soft sponges or soft rags fully dipped into the liquid solution is also helpful.

## Soil Removal

The simplest procedure would be water rinse with moderate pressure to remove the soil. If this does not remove the soil, then a concurrent water spray with sponge should be tested. If the soil is still adhering after dry, then a mild detergent or 5 10% IPA (Isopropyl Alcohol) solution will be necessary.

## Clean Detergents / Solutions

When a mild detergent or 5 10% IPA solution is used for removing soil, it should be used with soft sponges and / or soft rags. The washing should be done with uniform pressure, and normally the operation is done with a horizontal motion first and then with a vertical motion. After washing, the surface should be thoroughly rinsed with clean water, and the rinsed surface is air-dried or wiped with chamois, squeegee or lint-free cloth.

## Operation Sequence

Dripping of cleaner to the lower portions of the buildings should be minimized. When some rundown is unavoidable, the areas should be rinsed as soon as possible, to eliminate streaking. Generally, the clean and rinse operations moves from top to bottom of the building.

Avoid drips and splashes during cleaning. Remove dripping as quickly as possible.

Note:

In case of one story or low elevation buildings, it is recommended to CLEAN FROM BOTTOM UP and RINSE FROM TOP DOWN.

## Coating Protection

Always aware that it is very difficult to remove sealant and machine oils after hardened.

During construction, the protective film should be remained as long as possible, to protect the coated surface from stains caused by sealant and machine oils. If adhered, these stains should be removed as early as possible before hardening, with suitable detergents.

## Remarks

- a. Do not use strong organic solvents, such as MEK (Methyl Ethyl Ketone), MIBK (Methyl Iso-butyl Ketone), Triclene and paint thinner.
- b. Do not mix different cleaners. If cleaners needed to be mixed, please follow the manufacturer's instructions. Generally the cleaner containing abrasives cannot be used. Do not mix cleaners. Avoid excessive rubbing, as it may later the surface gloss.
- c. Avoid extreme temperature to clean the coated surface. Heat may accelerate chemical reactions and may evaporate the water from solution. Extremely low temperature may give the poor cleaning effects. On the contrary, cleaning under higher temperature may result in streaking or straining. Ideally, cleaning should be done on the shaded side of the building under moderate temperature.

## Scratch Prevention

Make sure that Cleaning sponges or rags are grit free, to prevent the coated surface from scratch. Avoid over cleaning or excessive rubbing.

## Miscellaneous

### *Protective Peel-Off Foil*

Unless otherwise specified, Alubond u.s.a. is supplied with a factory applied peel-off foil for protection of the coated surface. Removal of the protective foil is recommended as soon as possible after installation. In hot weather conditions, some residual glue may stick to the stove-lacquered panel's surfaces. Please ask for specific instructions for removal.

### *Ozone Friendly*

Neither during the production of Alubond u.s.a. nor after being applied as a building cladding, are volatile propellant agents of type CFC set free. Alubond u.s.a. core material does not contain nitrogen, chlorine or sulfur. By means of its positive contribution to the protection of the environment, the choice of Alubond u.s.a. for a huge variety of projects is brilliant.

### *Storage*

Protect pallets during storage against strain, penetration of moisture or condensation. Pile pallets in stacks one on top of the other (do not place the panels in an upright position); stacks must not comprise more than 6 pallets of identical size. Avoid storage for a period of more than 6 months.

### *Directional Color Appearance*

To avoid possible reflection differences (for metallic colors only), it is recommended that panels be installed in the same directions i.e. with the orientation of the marking shown on the peel-off-foil of the individual panels running parallel to each other.

### *Recycling*

Alubond u.s.a. ACM is fully recyclable, i.e. both the core material and the aluminum cover sheets can be re-melted and used for the production of new material.