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Introduction

Aluminium has a natural beauty and lustre. Its surface can be treated in various ways to produce different effects, while in the hands of the skilled architect it lends itself to some excellent effects and variations and contrasts with other materials.

For this reason and because aluminium is so well proven in service, it is now by far the most common material for exterior work such as windows, doors, curtain walls and shop fronts.

The surface finish of aluminium can be spoiled by improper care and the purpose of this booklet is to summarise the methods of maintaining aluminium after proper erection on site. Usually this care is no more than periodic cleaning, on a similar basis to which the glass in the windows is cleaned, and it is often merely lack of appreciation of this factor which can spoil the effects so proudly established in the first place.

Anodising and Coating / Painting substantially enhances appearance and renders the surface more resistant to various forms of attack and facilitates cleaning and maintenance.

Our aim here is to highlight the cleaning aspect since it applies to so many users of architectural aluminium products.

Grime which causes deterioration cannot be prevented from settling on exposed surfaces. If cleaned reasonably frequently then the mildest methods of washing will produce satisfactory results. There are many ways to clean aluminium, from using plain water to harsh abrasives. The type of cleaning that should be used is governed by the finish, degree of soiling, and the size, shape and location of the surface to be cleaned.

The mildest method possible should be used, particularly for aluminium which has been anodised.

The following cleaning materials and procedures are listed in ascending order of harshness. The mildest treatment should be tried on a small area and if not satisfactory only then should the next be examined.

- Plain water
- Mild soap or detergent
- Solvent cleaning, e.g. kerosene, turpentine, white spirit
- Non-etching chemical cleaner
- Wax-based polish cleaner
- Abrasive wax
- Abrasive cleaner

1. Mill & Brush Finish Aluminium Sheets

It is generally accepted that the build up of dirt and grime on Aluminium Surfaces is inevitable, but if cleaned regularly then only the mildest methods of cleaning will be required to maintain a satisfactory appearance.

As a basic guide, and depending on the level of dirt and grime, use the following:

- Water
- A mild detergent diluted with water.
- A proprietary Cleaner (see appendix)

Where possible use a lint free cloth, this will prevent any “fluff” or bits being left on the aluminium surface. Do not leave pools of water / cleaner on the surface. After applying any cleaner wash down the aluminium / product thoroughly and dry with a dry cloth. Again use lint free if possible. Leaving bits on the surface of the aluminium will attract dirt, grime and prevents streakiness. When cleaning extrusions ensure that you clean away any build up of cleaner and grime from corners / angles or folds in the material.

If using a proprietary cleaner always follow the suppliers / manufacturers instructions. Remembering the more abrasive the cleaner the more likely you are of to mark the Aluminium Surface.

The Aluminium Oxide that forms on the surface of Aluminium is a self protecting surface, and although aesthetically displeasing it is protecting the aluminium. Removing it will allow more of it to form.

Cleaning frequency is not easily determined; this will depend on the application, location of product, accessibility and whether aesthetic appearance is important. How frequently you clean will require some self judgement, but where there is no evidence of severe build up or obvious discoloration of the surface every 6 months should maintain Aluminium in its original finish. Should the product / material be placed in close proximity to the sea, or highly polluted areas – man made or not, this frequency may need to be increased.

To improve the longevity of surface finish quality you may want to consider anodised sheet or extrusion, which gives a more aesthetically pleasing finish and additional protection.

2. Anodised Aluminium Sheets and Extrusions

Anodised finish provides both improved aesthetic appearance and protection of the sheet and extrusion. However grime and dirt is still likely to build up on surfaces and in angles and corners.

There is no maintenance-free surface coating for aluminium used within the building industry. Therefore continued maintenance of anodised sheet and extrusion is critical in enhancing the lifetime of the coating.

Consider the atmospheric conditions, they will impact on the amount of build up on the surface finish.

The same materials used to clean Mill & Brushed Finish Aluminium can be used on the anodised surface. Because however anodised finish is generally used for aesthetic reasons, cleaning should be done so that it is not detrimental to the overall finish.

The frequency of cleaning is again determined by the application, location of product and accessibility. It is recommended that external applications should be cleaned at least every 6 months to maintain surface aesthetics. For internal applications it may be good practice to clean aluminium surfaces at the same time/frequency windows are cleaned. This would allow just water to be used, rather than waiting and having to use a more intense cleaning method. Should the product / material be placed in close proximity to the sea, or highly polluted areas – man made or not, this frequency may need to be increased.

3. Painted & Coated Aluminium Sheet & Extrusion.

Like anodised material; painted and coated aluminium sheet and extrusion will need to be cleaned and maintained to ensure continued aesthetic quality.

Painted and coated aluminium is likely to be a different colour to base aluminium so scratches will reveal the original colour of the product. When cleaning; follow the guidelines shown above with particular emphasis on using less abrasive proprietary cleaners.

Where possible cleaning materials should be a neutral detergent with a pH from 5 to 8.

If abrasives are used then the appearance of the aluminium finish may be altered. If there is a grain in the finish then cleaning should always be done with the grain.

To maintain the original finish, for example gloss, polishing may be required. Where a reduction in gloss is observed then an approved renovating cream may be applied using a non abrasive cloth. T-Cut or a similar automotive paint restorer may be used provided that is not too abrasive.

Frequency of cleaning / maintenance, again dependent on a variety of previously mentioned factors but if access is possible then every six months should maintain surface quality. Should the product / material be placed in close proximity to the sea, or highly polluted areas – man made or not, this frequency may need to be increased.

4. Fabricated Aluminium Panels & Products.

As the fabricated items have been manufactured using the materials / finishes mentioned above, the cleaning routines listed above also apply here.

It is recommended that consistency is applied across all the panels and products being cleaned, do not use one method on some and another on the rest.

If there is a grain in the finish always clean with the grain and use the least abrasive cleaning agent you possibly can.

For installed external applications, the recommended cleaning frequency is six months. Should the product / material be placed in close proximity to the sea, or highly polluted areas – man made or not, this frequency may need to be increased. Aggressive stains may appear as a result of a lack of cleaning and this will accelerate degradation through corrosion. Although most coatings come with a specified guarantee, regular thorough cleaning and maintenance will prolong the life of the product and maintain visual appearance.

It is generally recommended that you do not use strong solvents that contain – Chlorinated Hydrocarbons; Esters; Ketones or Abrasive Cleaners / Polishes

5. Fabricated Stainless Steel Products

Like Aluminium the attractive and hygienic surface appearance of fabricated stainless steel products cannot be regarded as completely maintenance free. All grades and finishes of stainless steel may stain, discolour or attain an adhering layer of grime in normal use.

Build up of grime and dirt will give the same results as detailed with Aluminium, so the general guidelines discussed above should be applied to Stainless Steel. Listed below is a set of cleaning guidelines / recommendations. Please note they are only meant as a guide.

Problem	Cleaning Agent	Comments
Routine cleaning – All finishes	Soap or mild detergent and water. (preferably warm)	Sponge rinse with clean water, wipe dry if necessary. Follow polish lines,
Finger prints – All finishes	Soap and warm water, or a proprietary cleaner.	Rinse with clean water and wipe dry. Follow polish lines,
Stubborn stains and discolouration – All finishes	Mild cleaning solutions off the shelf, or a proprietary cleaner.	Use rag, sponge or soft fibre brush. Rinse with clean water and wipe dry. Follow polish lines,
Oil & Grease marks	Proprietary cleaners – normally solvent based.	Rinse with clean water and wipe dry. Follow polish lines,
Scratches on polished finish	Slight scratches – use impregnated nylon pads.	Do not use ordinary steel wool – iron particles can become embedded and cause further problems. Stainless steel and “scotch brite” scouring pads are satisfactory for deeper scratches.

Precautions when using solvents – do not use in confined spaces, wear appropriate gloves and do not smoke. If there is a possibility of splashing, wear eye protection. This applies to use on either Stainless Steel or Aluminium.

Frequency of cleaning / maintenance, again dependent on a variety of previously mentioned factors but if access is possible then every six months should maintain surface quality. Internal applications can be cleaned more frequently using the milder cleaning agents.

Coated stainless steel will provide the same levels of protection as that provided to Aluminium. Follow the same guidelines shown for aluminium. Again coating warranties should provide confidence in the maintenance of surface aesthetics but regular cleaning will enhance / prolong the quality and life of the product.

6. Architectural / Fenestration Systems

o Aluminium Systems - Cleaning & Maintenance

In areas adjacent to the sea, or highly polluted areas man made or not, the external side of the fenestration systems should be cleaned at least every 3 months. In cleaner environments a thorough clean every six months should be sufficient. The internal side should not be neglected, and an annual clean is recommended.

Wash down with clean, preferably warm water and a mild liquid detergent. Using a lint free cloth will stop "fluff" and "bits" being left on the aluminium frames. A sponge or soft brush can also be used. Ensure that all ridges, grooves, joints and drainage channels where dirt and grime can accumulate are well washed out. This will prevent corrosion areas developing.

Rinse thoroughly with clean water and dry using a soft cloth or leather. Lint free cloths are recommended if using a cloth.

To maintain the original finish, or example gloss, polishing may be required. Where a reduction in gloss is observed then an approved renovating cream may be applied using a non abrasive cloth. T-Cut or a similar automotive paint restorer may be used provided that it is not too abrasive.

Care must be taken not to abrade sharp corners of sections or areas of bead too heavily, this is where paint film is normally thinner.

Wax Polishing will enhance the surface quality; polish with a soft cloth once or twice a year will restore gloss.

Blisters and corrosion areas may develop where mechanical damage or scratches have penetrated the paint / coating. These areas may also develop at butt ends, drilled holes, drainage slots or where the aluminium is not protected.

- Use fine grade 400 grit abrasive paper to remove corrosion from the area.
- Wipe with approved proprietary solvent cleaner
- Ensure surface is dry and apply a thin priming coat using a fine brush
- Using a fine brush touch up the primed area with an air drying paint. It is important that you match the colour; you should be able to identify the RAL number or BS 4800 ref' of the paint / coating. Use these references to help select the touch up paint.

N.B. touched up / repaired areas will not have the same weathering properties as the originally applied coating, so touching up and repairs should only be done on small areas.

o Handles / Locks / Hinges

Cleaning:

- To keep the aesthetic look of the product, cleaning often and with the correct solution is essential.
- The hardware should be cleaned frequently.
- For anodised hardware use a mild anti-bacterial detergent and a damp cloth.
- For powder coated and polished hardware use a polish and non-abrasive cloth.

Do not use corrosive chemicals

Lubrication: Handles / Hinges

Lightly lubricate every six months to ensure continuity of movement. Light lubrication of the hinges is also required to avoid doors / windows / concertina panels sticking. A general light lubricating oil should be adequate.

Periodic Inspection:

Periodically inspect all fixings, adjust to secure as and when needed.

Ensure correct sized allen keys, screw drivers and drill bits are used.

Safety mechanisms must also be inspected frequently in case of vandalism.

If vandalism occurs the part should be replaced as soon as possible to avoid any accidents.

7. General Coating information:

Painted & Coated products may have been supplied with Syntha Pulvin or Interpon Approval and Anodised products coated to BS 3987 standard. If you require more detailed information on their cleaning and maintenance recommendations, contact Syntha Pulvin or Interpon direct. But the cleaning & maintenance information supplied within this booklet should help maintain the surface quality of the product supplied to you.

8. Potential Cleaning & Maintenance Products and Suppliers.

An exhaustive list of cleaning products would be difficult to produce, but please find below a list of potential products and suppliers. This information is provided without any prejudice and should be treated as guidance only.

Henkel produces the following products aimed at helping to clean and protect Aluminium surfaces:

P3 – RIMOL 768; Neutral Cleaner for anodised / painted Aluminium
TURCO 1495; Polish – removing corrosion / dirt on anodised Aluminium
TURCO ALBRITE EXTRA; Acid cleaner – removing corrosion / dirt on anodised / painted aluminium. (does not attack glass)
TURCO GUARD; Transparent and permanent protection coating for metals (UV resistant)

Full Technical data sheets are available from Henkel.

There are also many suppliers across the UK who can provide products and advice, they include:

Chemi-com ICS Ltd UK
www.deltacleaning.co.uk
www.TotalCleaningSupplies.co.uk
Chemiclean Products Birmingham, West Midlands, UK
www.kitchenporter.co.uk
A & M Cleaning Supplies Watford, UK
www.besacleaning.co.uk
Bridge Chemicals & Cleaning Supplies Stoke-On-Trent, UK
BuckHickman InOne Coventry, UK
Capital Cleaning (Kent) Ltd Kent, UK
Chemetal P.L.C. Milton Keynes, UK
Edge Performance Aldershot, Hampshire, UK
Everyday Essentials Northern Ireland (NI) Carrickfergus, Co. Antrim, UK
Gramos Applied Ltd Smethwick, West Midlands, UK
Nielsen Chemicals Swadlincote, Derbyshire, UK
Pressure Cleaning Equipment & Repair Ltd Redhill, UK
Vizio Ltd Ashbourne, Derbyshire, UK
Wirral Fospray Ltd Deeside, Flintshire, UK

Also the nationwide Hardware Companies such as Viking, B&Q and Wickes which will also stock cleaners suitable for aluminium.

Alternatively use Kellysearch to find a suitable supplier using the following search queries:

Aluminium Cleaning Products, Non Acidic

Cleaning Chemicals, Biodegradable, Aluminium

Cleaning Chemicals, Biodegradable, Anodized Aluminium

Cleaning Chemicals, Biodegradable, Coloured Aluminium