

## Care and Maintenance of Stainless Steel

### INTRODUCTION

All grades of stainless steel will stain and discolour due to surface deposits and can never be accepted as completely maintenance free. In order to achieve maximum corrosion resistance the surface of the stainless steel must be kept clean. Provided the grade and the surface finish are correctly selected, and cleaning schedules carried out on a regular basis, good performance and long service life are assured.

### FACTORS AFFECTING MAINTENANCE

Surface contamination and the formation of deposits must be prevented. These deposits may be minute particles of iron or rust from other sources used on the building of new premises and not removed until after the stainless steel items have been fixed. Industrial and even naturally occurring atmospheric conditions can produce deposits, which can equally be corrosive, e.g. salt deposits from marine conditions.

The working environment also offers more aggressive conditions e.g. hot humidity, such as in a swimming pool, increases the speed of discolouration and therefore requires the maintenance to be on a more frequent basis. Modern processes use many cleaners, sterilizers and bleaches for hygienic purposes. All these proprietary solutions, when used in accordance with maker's instructions are safe but if used incorrectly (e.g. warm or concentrated) can cause discolouration and corrosion on the surface of any quality of stainless steel. Strong acid solutions are sometimes used to clean masonry and tiling of buildings but they should never be permitted to come into contact with metals, including stainless steel. If this should happen the acid solution must be removed immediately by copious applications of water.

### MAINTENANCE PROGRAMME

With care taken during fabrication and installation, cleaning before handing over to client should present no special problems, although more attention than normal may be required if the installation period has been prolonged. Where surface contamination is suspected, immediate attention to cleaning after site fixing will encourage a trouble free product. Food handling, pharmaceutical, aerospace and certain nuclear applications require extremely high levels of cleanliness applicable to each industry.

Advice is often sought concerning the frequency of cleaning stainless steel and the answer is quite simple "clean the metal when it is dirty to restore its original appearance". This may vary from once to four times a year for external applications or it may be once a day for an item in hygienic or aggressive situations. Frequency and cost is lower with stainless steel than with many other materials and will often outweigh the initial higher cost of this superior product.

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## CLEANING METHODS

Stainless steel is easy to clean. Washing with soap or a mild detergent and warm water followed by a clean water rinse is usually quite adequate for domestic and architectural equipment. An enhanced aesthetic appearance will be achieved if the cleaning surface is finally wiped dry.

Where Stainless Steel has become extremely dirty with signs of surface discolouration (perhaps following periods of neglect, or misuse) methods of cleaning are detailed on the chart below.

PROBLEM	CLEANING AGENT	COMMENTS
Routine cleaning. All finishes	Soap or mild detergent and water (such as fairy liquid)	Sponge, rinse with clean water and wipe dry if necessary
Fingerprints. All finishes	Soap/warm water or organic solvent (e.g. Usher/Walker thinners No PF8017, acetone, alcohol)	Rinse with clean water and wipe dry if necessary
Stubborn stains and discolouration. All finishes	Mild cleaning solutions, i.e.. CIF, Goddard Stainless Steel Care	Rinse with clean water and wipe dry if necessary
Rust and other corrosion products. All finishes.	Oxalic acid. The cleaning solution should be applied with a swab and allowed to stand for 15-20 minutes before being washed away with water. May continue CIF to give final clean.	Rinse well with clean water. (Precautions for acid should be observed)
Scratches on brush (satin) finish	<b>Slight scratches</b> - impregnated nylon pads. Polishing with scurfs dressed with iron free abrasives. <b>For deeper scratches</b> - apply in direction of polishing, then clean with soap or detergent as per routine cleaning.	

## Precautions

Acids should only be used for on-site cleaning when all other methods have been proved unsatisfactory. Rubber gloves should be used and care taken to see that acid cleaners are not split over adjacent areas. Special precautions are necessary with oxalic acid. Solvents should not be used in closed places. Smoking must be avoided when using solvents.

## Conclusion

If all the suggestions and actions in the table have been attempted stainless steel has the facility to be mechanically or electro polished by specialists on site, as the material is complete and not a surface plating. If in difficulty contact your supplier.

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