

# 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 of stainless steel 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 be equally 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 discoloration 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 makers instructions are safe but if used incorrectly (e.g. warm or concentrated) can cause discoloration 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 the 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 in order 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 of cleaning is lower with stainless steel than with many other materials and will often outweigh the initial higher cost of this superior product.

PROBLEM	CLEANING AGENT	COMMENTS
Routine Cleaning. All finishes.	Soap or mild detergent and water. (such as Fairy Liquid).	Sponge, rinse with clean water, wipe dry if necessary.
Fingerprints. All finishes.	Soap or warm water or organic solvent (e.g. Usher/Walker Thinners No. PF8017, acetone, alcohol).	Rinse with clean water, wipe dry if necessary.
Stubborn stains and Discolouration. All finishes.	Mild cleaning solutions i.e. Jif, Goddard Stainless Steel Care.	Rinse well with clean water and wipe dry.
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 using Jif to give final clean.	Rinse well with clean water (precautions for acid cleaners should be observed).
Scratches on Brush (Satin) Finish.	Slight scratches. Impregnated nylon pads. Polishing with scuffs dressed with iron free abrasives. For deeper scratches; apply in direction of polishing. Then clean with soap or detergent as per routine cleaning.	Do not use ordinary steel wool - iron particles can become embedded in stainless steel and cause further surface problems.

## 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 spilt

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.