

Stainless Steel Maintenance

At the completion of an installation, removal of the protective plastic film and the underlying adhesive is very important. This should be followed with a general cleaning operation to leave surface clean and ready for service. A regular maintenance cleaning regime must then follow as dictated by the environment. If these prerequisites are followed, long life with little or no change in appearance can be expected. Architects can therefore design in stainless steel and be confident of achieving the desired result for the client.

Cleaning and maintenance at the construction site

Often, absorptive wrappings such as interleaving paper, cardboard, and other materials are used to protect stainless steel during on-site storage. Such material should not be allowed to become wet because water-soaked paper may discolour stainless steel. Tarpaulins or plastic sheeting must be used to protect the stainless steel. This is particularly important on construction jobs where dirt, dust, carbon steel particles from grinding or welding, etc. in the presence of moisture may cause discolouration. Indoor storage is preferred. Note previous comments regarding avoidance of long-term storage with plastic coating.

Any drainage from concrete or mortar containing chlorides must be immediately removed. This is particularly true when cleaning masonry with strong acid cleaners. Stainless steel may discolour if left in contact with salts or acids for extended periods. Also avoid leaving carbon steel items in contact with stainless steel, particularly if wet.

Protective coatings such as adhesive paper or plastic when stripped from the stainless steel can leave small amounts or a very thin coat of adhesive on the metal surface. This facilitates the adherence of airborne dirt particles, and the removal of the adhesive residue is important to maintain good overall appearance. A thorough initial cleaning is therefore required. The recommended practice is as follows:

On-going maintenance of stainless steels in service

The attractive and hygienic surface appearance of stainless steel products cannot be regarded as completely maintenance free. All grades and finishes of stainless steel may in fact stain, discolour or attain an adhering layer of grime in normal service. To achieve maximum corrosion resistance the surface of the stainless steel must be kept clean.

Advice is often sought concerning the frequency of cleaning of products made of stainless steel, and the answer is quite simply "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. In many applications the cleaning frequency is after each use. Frequency and cost of cleaning is lower with stainless steel than with many other materials and this will often out-weigh the higher acquisition cost.

come in!

Cleaning Methods

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

Where the stainless steel has become extremely dirty with samples of surface discolour (perhaps for periods of negligence, or methods of bad use) will apply the methods of cleaning of the following board:

PROBLEM	CLEANING AGENT	COMMENTS
Routine Cleaning All finishes	Soap or mild detergent (Stainless steel cleaner) and water. (Preferably warm)	Sponge, clean water, wipe dry if necessary. On brushed stainless steel, follow the direction of the polish for best results. Drying afterwards makes sure streaky marks aren't left behind. Remember that simply wiping with a damp cloth is not as effective as it can smear dirt without removing it. Routine cleaning prevents any stubborn stains building up.
Fingerprints All finishes	Soap and warm water or organic solvent (e.g. acetone, methylated, Stainless steel cleaner)	Rinse with clean water and wipe dry. Follow polish lines.
Stubborn Stains and Discolouration All finishes except coloured stainless steel.	Mild cleaning solution, e.g. Jif, Ajax, mild abrasive and specially Stainless steel cleaners.	Use a sponge or fibre brush (soft nylon or natural bristle) Rinse well with clean water and wipe dry. Follow polish lines.
Lime Deposits from Hard Water.	Solution of one part vinegar to three parts water.	Soak in solution then brush to loosen. Rinse well with clean water.
Oil or Grease Marks. All finishes.	Organic solvents (e.g. acetone, Stainless steel cleaner, trichlorethane). Baked-on grease can be softened beforehand with ammonia.	Clean after with soap and water, rinse with clean water and dry. Follow polish lines.
Rust and other Corrosion Products. Embedded or Adhering 'Free Iron'.	Rust stains can be removed by using FL-PASSIV	Rinse well with clean water. Wear rubber gloves, mix the solution in a glass container, and be very careful with the acid. (See precautions for acid cleaners)
Scratches on Polished (Satin) Finish	Slight scratches - use impregnated nylon pads. Polish with scurfs dressed with iron-free abrasives for deeper scratches. Follow polish lines. Then clean with soap or detergent as for routine cleaning.	Do not use ordinary steel wool - iron particles can become embedded in stainless steel and cause further surface problems.

Reminders

- Always rub stainless steel in the same direction as the grain. Rubbing against the grain will spoil the finish and stainless will lose its shine. Worse, rubbing against the grain can damage the surface by creating microscopic crevices where dirt can collect. This can lead to corrosion spots. Fortunately, it's usually easy to tell which the right direction is. You need to watch out for items like round handrails, which are often polished around their circumference when they're manufactured, rather than up and down the length of the tube.

If you have to scrub a stain to remove it, make sure you use a clean nylon scourer or a cloth with chalk-based cream cleaner. But test an inconspicuous area first as you could end up with a bright polished spot which doesn't match the rest of the surface.

NEVER EVER use steel wool (wire wool) to clean stainless steel. It is usually made of carbon steel and any fragments left behind will rust onto the stainless steel surface. Using any kind of scourer which has previously been used on ordinary (carbon) steel is also a no-no for the same reason.

Don't Even Think About

- Rubbing with steel wool (wire wool) or scraping with steel tools.
- Using scourers and cleaning cloths that have been used on ordinary steel.
- Rubbing plastic scourers across the grain of brushed surfaces.
- Using concentrated bleach or hydrochloric acid-based cleaning products.

The Architect's Responsibility

The architect can be the most important contributor to a building's low-cost maintenance by careful attention to some basic design considerations.

- The structure should be, as far as possible, self-cleaning by the natural elements.
- The architect should minimise horizontal components that can collect dirt. This dirt, when washed off by rain may cause uneven streaking of the areas below.
- Designs that concentrate or directionalise the flow of rainwater should be avoided. An overhang can be protected beyond any lower one to avoid splatter or concentration of dirt-carrying water.
- Sheltered areas, such as canopies or soffits, should be designed so they can be readily cleaned, particularly in low, street-side locations.
- Joint designs that minimise dirt accumulation should be used.
- The possibility of staining of the stainless steel by run off from other materials, e.g. rust from carbon steel, copper and aluminium, including hidden clips or fasteners, must be avoided.
- Grooves, recesses, and excessively complex contours, which hamper the regular easy cleaning associated with stainless steel, should be avoided.