



## Introduction

Stainless Steels are inherently corrosion resistant materials that do not need additional surface protection to enhance their appearance and durability. Some routine maintenance and cleaning is needed to keep stainless steel surfaces in good condition so that the aesthetic appearance and corrosion resistance are not compromised. In this respect, stainless steels are no different to other construction materials such as glass, plastics or coated steels, which are never maintenance free throughout the life of a building.

These guidelines are to give building owners, developers and facility manager's advice on efficient, cost-effective cleaning that will allow them to take advantage of the corrosion resistant properties of stainless steel.

## Maintenance Cleaning

On external applications, such as facades, rainfall can normally be expected to wash off accumulations of dirt and other deposits efficiently, depending on the amount of exposure of the elevation.

Special attention should be given to sheltered areas during routine cleaning to ensure that accumulations of airborne contaminants are removed. This is particularly important in marine and industrial environments, where build-up of airborne chlorides or sulphur oxides can result in localised corrosion, if not effectively removed.

On interior applications, finger marks can be an issue. There is a wide range of finishes available for stainless steels, many of which are particularly suitable for use in heavily exposed (high traffic) public areas. Selecting finishes that are less sensitive to fingerprint marking in the design process will reduce the effort and costs of cleaning during the service life of the finished building.

Brushed finishes, which are a popular choice for interiors, may show finger marks in the period immediately after installation, but the visibility of the marking should become less evident after the first few cleaning operations.

## Cleaners

To remove fingerprints and other marks from architectural finishes, soapy water or a mild detergent are usually safe and successful.

Proprietary spray cleaners are available, which combine ease of cleaning with a light film that produces an even and smooth lustre. These spray cleaners remove existing fingerprints and leave the surface in a condition that reduces the tendency for fingerprints to show in subsequent service. After applying the spray to the surface, polish with a dry cloth. Your nearest national stainless steel development association should be able to advise on products locally available.

Mirror-polished stainless steel can be cleaned with glass cleansers. These products should be selected chloride-free.

For more stubborn stains, mild household cream cleansers should be effective. This should also be suitable for cleaning off watermarks and light discolouration. After cleaning, remove the residues with (preferably deionised) water (available in supermarkets, e.g. for steam ironing or car batteries) and dry to avoid streaking and water marks. Scouring powers should not be used as these products can leave scratches on stainless steel surfaces.

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Severe oil and grease marks can be removed with alcohol based products, including methylated spirit and isopropyl alcohol or other solvents such as acetone. These products are not a corrosion hazard to stainless steel. Care is needed with solvents to avoid spreading the staining on the stainless steels, which can then be difficult to fully remove. It is advisable to apply clean solvent several times with a clean, non-scratching cloth, until all traces of the partially dissolved oil / grease are removed.

Paint and graffiti can be treated with proprietary alkaline or solvent-based paint strippers. The use of hard scrapers or knives should be avoided as the underlying stainless steel surface may become scratched.

Heavily neglected surfaces can be treated with metal polishes, such as those for cleaning chromium-plated items (e.g. automotive trim). Furthermore, polishes used for re-finishing car paint can be considered. Care must be taken as highly polished surfaces may become scratched with these cleaners.

Alternatively, use a proprietary stainless steel cleaner containing phosphoric acid to remove contamination, rinse with deionised water and dry. It is advisable that the entire surface of the component is treated so that a patchy appearance is avoided.

Before commencing any task, ensure that you have received the appropriate health and safety literature from the supplier and fully understand it. If in doubt, seek further advice.

Cleaners that should NOT be used on stainless steels include:

- chloride-containing cleansers, especially those containing hydrochloric acid,
- hypochlorite bleaches should not be used on stainless steels; if applied accidentally or spilt on stainless steel surfaces, should be rinsed off immediately with liberal amounts of fresh water,
- silver-cleaners must not be used on stainless steel.

### Cleaning Utensils

A damp cloth or chamois leather will usually be suitable for removing normal soiling, fingerprints, etc.

For more stubborn dirt, nylon pads such those known as "Scotch-Brite" pads are usually satisfactory. Non-stainless steel based scouring pads, cleaning wool or wire brushes must not be used on stainless steel. Apart from scratching the surface, these pads can leave carbon steel deposits on the stainless surface, which can subsequently develop into rust spots, if the surface becomes wet.

Soft nylon brushes can be used for cleaning stainless steel with patterned finishes. Non-stainless steel wire brushes must not be used.

On "grained" directional finishes, such as EN 10088-3 types G, J and K the direction of cleaning strokes should be along the grain and not across it.

Where water has been used for cleaning or rinsing, wiping the surface dry to prevent watermarks, especially in hard water areas may be advisable. The use of deionised water will prevent the formation of hard water staining.

To avoid "cross-contamination" from iron particles, ensure that cleaning utensils have not been used for "ordinary" (i.e. carbon) steel before. Cleaning materials for use on stainless steel items should preferably be reserved exclusively for that purpose.

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