

Care & Maintenance Guide for Stainless Steel.

For the preservation of stainless steel regular maintenance is strongly recommended. The following provides a guide to preserving stainless steel, grades 304 and 316.

As for all surfaces, stainless steel requires cleaning to remove dirt and grime. The level of cleaning, maintenance and inspection required depends primarily on the environment. In some exterior instances, normal rain washing is sufficient. In more polluted or corrosive environments, particularly in coastal situations and swimming pools, the surfaces require regular washing to maintain their good looks. We recommend regular washing of stainless steel surfaces. Refer to the cleaning frequency schedule.

Discoloration or tea staining most commonly occurs within 5 kilometers of the coast and becomes progressively worse closer to the water. Note that in situations right on the seafront, it is recommended that cleaning is performed once a month.

Stainless steel does not rust as normal steel does. Rather, corrosion is generally caused by contaminants settling on the surface of the stainless steel. Therefore, a well-managed environment, including maintenance and inspection, is integral to the appearance and longevity of stainless steel.

Cleaning Frequency Guidelines

This will depend very much on the local environment of the building, but experience indicates that the following frequency of cleaning is sufficient to maintain the good looks of stainless steel.

Environment	Type 304	Type 316
Seafront	Grade not recommended	Monthly
Coastal (within 5km of the coast)	Grade not recommended	6-12 months (wire: monthly)
Industrial and Urban	3-6 months	6-12 months (wire: 2-12 per year)
Suburban Rural	Annually or as required by experience	
Internal	As required to maintain appearance	

Cleaning: Interior & Exterior

Clean as required to maintain appearance. It is important to not let dirt accumulate.

Dirt and grease accumulate from many sources. These can usually be removed by routine cleaning using soap, ammonia or detergent and fresh warm water. For bright polished stainless steel it is best to avoid any abrasive cleaners as these will scratch the surface.

A clean, dust and grit free cloth should be used to avoid scratching. In all cases the mildest cleaning procedure that will do the job efficiently should be used. We recommend a wash down with warm fresh water and washing up liquid followed by a wash of clean warm water only, finish by wiping dry with a clean absorbent cloth. For stubborn areas of dirt a soft brush could be used.

Stainless steel items should be cleaned by wiping once a week where practicable. Brown staining of stainless steel items is an indication of either an inadequate cleaning regime or an aggressive environmental atmosphere. Carbon steel brushes or carbon steel wire wool should never be used on stainless steel. Chemical cleaners must be compatible with stainless steel.

It is important to always clean in the direction of the original polish lines.

DO NOT use any harsh abrasives on any polished stainless steel surface.

DO NOT use any strong mineral acids near areas of stainless steel, these should never come into contact. If this does occur, the acid solution should be washed off immediately with plenty of water.

DO NOT use pads of ordinary steel wool incorporating soap. There is a danger that particles of plain carbon steel from the pads may be left behind after rinsing and leave unsightly rust stains.

Cleaning: Powder Coating

Powder coating is one of the most durable colour coatings available and, with very little effort on your part, it will provide you with many years of excellent service. To extend the life of powder coated articles and to comply with any warranty, a regular maintenance program should be implemented.

The effects of ultraviolet light, atmospheric pollution, dirt, grime and airborne salt deposits can all accumulate over time and should be removed at regular intervals.

As a general rule cleaning should take place every three months. In areas where pollutants are more prevalent, such as beachfront houses and industrial or geothermal areas, then a cleaning program should be carried out on a more frequent basis ie, every one to two months.

Clean as required to maintain appearance. It is important to not let dirt accumulate.

Three steps to cleaning your powder coating.

1. Carefully remove any loose surface deposits with a wet sponge.
2. Use a soft brush (nonabrasive) and a dilute solution of a mild detergent, eg, pH-neutral liquid hand dishwashing detergent in warm water (DO NOT use solvents) to remove dust, salt and other deposits.
3. Ensure you thoroughly rinse the surfaces with clean fresh water after cleaning to remove all residues.

DO NOT use turpentine, white spirits, thinner or other aggressive solvents on powder coating (these may be harmful to the extended life of the powder coated surface and should be avoided as the damage may not be visible immediately and may take up to twelve months to appear)

DO use isopropyl alcohol or Methylated spirits and rinse with warm soapy water.

DO NOT rub powder coating excessively, especially metallic finishes.

Keep sunscreens away from powdercoating, some sunscreens adversely affect painted finishes.

Maintaining & Cleaning Wire Rope

Stainless steel wire can be prone to corrosion and tea staining. This is partly due to the long crevices which run up it. These tend to trap salt and other contaminants, and also can remain wet for longer. This damages the chromium oxide layer of the stainless steel, causing rust or 'tea staining'.

To maintain the wire's looks, it must be cleaned regularly (see cleaning frequency guidelines). The wires should be cleaned with a soft cloth using soap or mild detergent and warm water, followed by rinsing with cold water and wiping the surface dry.

Do not use hydrochloric acids as these will stain the surface and may start serious corrosion. To remove stains try [Action Gel](#).

Inspection Procedures

Routine inspection is an integral part of the ongoing care and maintenance of stainless steel. This is particularly true for safety-critical, load bearing components.

All stainless steel components should be examined visually at least twice a year. Safety-critical, load bearing components subject to corrosion should be tested specifically for Stress Corrosion Cracking (SCC).

Cleaning methods for stainless steel

Stainless steel is easy to clean. Washing with soap or mild detergent and warm water followed by a clear water rinse is usually quite adequate for domestic and architectural equipment. Where stainless steel has become extremely dirty with signs of surface discolouration (perhaps following periods of neglect, or misuse) alternative methods of cleaning can be used, as outlined below.

Requirement	Suggested Method	Comments
Routine cleaning of light soiling	Soap, detergent or dilute (1%) ammonia solution in warm clean water. Apply with a clean sponge, soft cloth or soft-fibrebrush then rinse in clean water and dry	Satisfactory on most surfaces
Fingerprints	Detergent and warm water, alternatively, hydrocarbon solvent	Proprietary spray-applied polishes available to clean and minimise remarking
Oil and grease marks	Hydrocarbon solvents (methylated spirit, isopropyl alcohol or acetone)	Alkaline formulations are also available with surfactant additions e.g. 'D7' Polish
Stubborn spots, stains and light discolouration. Water marking. Light rust staining	Mild, non-scratching creams and polishes. Apply with soft cloth or soft sponge and rinse off residues with clean water and dry.	Avoid cleaning pastes with abrasive additions. Suitable cream cleansers are available with soft calcium carbonate additions, e.g. 'Jif', or with the addition of citric acid, e.g. Shiny Sinks. Do not use chloride solutions.
Localised rust stains caused by carbon steel contamination	Proprietary gels, or 10% phosphoric acid solution (followed by ammonia and water rinses), or oxalic acid solution (followed by water rinse).	Small areas may be treated with a rubbing block comprising fine abrasive in a hard rubber or plastic filler. Carbon steel wool should not be used, nor should pads that have previously been used on carbon steel. A test should be carried out to ensure that the original surface finish is not damaged.
Burnt on food or carbon deposits	Pre-soak in hot water with detergent or ammonia solution. Remove deposits with nylon brush and fine scouring powder if necessary. Repeat if necessary and finish with 'routine cleaning'.	Abrasive scouring powder can leave scratch marks on polished surfaces.
Tannin (tea) stains and oily deposits in coffee urns	Tannin stains - soak in a hot solution of washing soda i.e. sodium carbonate. Coffee deposits - soak in a hot solution of baking soda (sodium bicarbonate).	These solutions can also be applied with a soft cloth or sponge. Rinse with clean water. Satisfactory on most surfaces.
Adherent hard water scales and mortar/cement splashes	10-15 volume % solution of phosphoric acid. Use warm, neutralise with dilute ammonia solution, rinse with clean water and dry. Alternatively soak in a 25% vinegar solution and use a nylon brush to remove deposits.	Proprietary formulations available with surfactant additions. Take special care when using hydrochloric acid based mortar removers.
Heating or heavy discolouration	a) Non-scratching cream or polish e.g. Solvol Auto Chrome Metal Polish b) Nylon-type pad, e.g. 'Scotchbrite'	a) Creams are suitable for most finishes, but only use 'Solvol' on bright polished surfaces. Some slight scratching can be left. b) Use on brushed and polished finishes along the grain.
Badly neglected surfaces with accumulated grime deposits	A fine, abrasive paste as used for car body refinishing, e.g. 'T-cut' rinsed clean to remove all paste material and dried.	May brighten dull finishes. To avoid a patchy appearance, the whole surface may need to be treated.
Paint, graffiti	Proprietary alkaline or solvent paint strippers, depending upon paint type. Use soft nylon or bristle brush on patterned surfaces.	Apply as directed by manufacturer.

Notes

1. The products referenced in this information sheet are understood to be suitable for stainless steels. However, no endorsement of the products or their manufacturers is implied and it is acknowledged that other manufacturing companies may provide products of equal or better quality. The following companies manufacture proprietary names mentioned: - 'Jif' - Lever Brothers Ltd, 'Shiny Sinks' - Home Products Ltd, 'Ajax' - Colgate Palmolive Ltd, 'D7 Stainless Steel Polish' - Diversey Ltd, 'T-Cut' - Automotive Chemicals Ltd and 'Solvol Auto Chrome Metal Polish' - Hammerite Products Ltd

2. Cleaning agents should be approved for use under the relevant national environmental regulations and, in addition, prepared and used in accordance with the manufacturers or suppliers' health & safety instructions. Solvents should not be used in enclosed areas.

3. Nylon abrasive pads should be adequate for dealing with most deposits. If a more severe treatment is needed to mask coarse scratches or physical damage on a surface, use the finest abrasive medium consistent with covering the damage marks. With directional brushed and polished finishes, align and blend the new "scratch pattern" with the original finish, checking that the resulting finish is aesthetically acceptable. Silicon carbide media may be used, especially for the final stages of finishing. Avoid using hard objects such as knife blades and certain abrasive/souring agents as it is possible to introduce surface scuffs and scratches. Scratching is particularly noticeable on sink drainer areas. These are usually superficial and can be removed with proprietary stainless steel cleaners or, alternatively, with a car paint restorer, such as 'T-cut'.
4. If wire brushes are used, these should be made of a similar or better grade of stainless steel. Ensure that all abrasive media used are free from sources of contamination, especially iron and chlorides.
5. When cleaning a surface with any chemical preparation or abrasive medium, a trial should be done on a small, unobtrusive hidden or non-critical area of the surface, to check that the resulting finish matches with the original.
6. To avoid water marks, use clean rinsing water, such as reasonable quality potable (tap) water. Drying marks may be avoided using an air blower or wiping with clean disposable wipes.
7. Rust marks or staining on stainless steels is unlikely to be the result of corrosion to the stainless steel itself (similar marks may also be found on porcelain and plastic sinks). These marks are likely to result from small particles of carbon steel from wire wool

References

"Guide to stainless steel." Anzor architectural stainless hardware specialists.

Disclaimer: this is meant only as a guide. Stainless Works Limited does not accept liability for the application of this information.