

STAINLESS STEEL CARE & MAINTENANCE

Stainless Steel Performance

Stainless Steel Performs Best When Clean

Cleanliness of stainless steel is essential for maximum resistance to corrosion. Properly maintained stainless steel provides excellent luster, strength and durability.

In most applications stainless steel won't rust or stain even after many years of service, but it's NOT rust or stain proof. When stainless steel comes in contact with chloride salts, sulfides or other rusting metals, it can discolor or even rust and corrode.

Proper Care and Maintenance

Stainless steel can remain beautiful and functional for years to come, even when it's exposed to marine environments, polluted surroundings, salted highways, or anywhere it might be exposed to corrosive elements.

Proper cleaning must always be done immediately after installation, therefore it is important for the installer to become familiar with the various practices for cleaning stainless steel.

The cleaning methods described in this document include those for removing free-iron contamination on stainless steel surfaces that may be from metalworking tools; and for removing general accumulation of dirt, grime and surface stains that occur during normal handling and exposure to the elements.

Stain "less" Steel

The key point to keep in mind with stainless steel is that it is stain "less" but not completely corrosion-proof, as is commonly thought. Proper cleaning must always be done immediately after installation and some form of routine cleaning is necessary to preserve the appearance and integrity of the surface.



Performance, Beauty & Long Life

Stainless steel offers long life and requires far less cleaning and maintenance than most construction materials. Provided the grade of stainless steel and the surface finish are correctly selected, and cleaning schedules are carried out on a regular basis, then good performance and long service life are assured.

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Grades of Stainless Steel

Steel is naturally corrosive and requires certain added elements to make it stainless. The resulting alloys have characteristics not visible to the naked eye and are distinguished by type according to composition.

In architectural applications, Alloys 201, 304 and 316 are commonly used. Alloys 201 and 304 are used in low corrosion interior applications, with 304 even withstanding mildly corrosive exterior applications. Alloy 316 stainless steel is more resistant to corrosion and is recommended for outdoor use.

Selecting the right stainless steel should be determined by the potential exposure to environmental corrosion.

Corrosion	Application	Description	Alloy 201 or 304	Alloy 316
Low	Indoor	Indoor structures (no wet spaces).	✓	✓
Moderate	Indoor	Indoor structures without noticeable chlorine and sulphur dioxide load (e.g. semi-chemical factories).	✓	✓
Medium	Outdoor	Outdoor structures with moderate chlorine and sulphur dioxide load (e.g. inland, at least 15.5 miles from the coast or other aquatic environments).	✗	✓
High	Outdoor	Outdoor structures with a high degree of corrosion due to chlorine and/or sulphur dioxide load; high humidity; accumulation of harmful substances (e.g. in coastal regions and swimming pool environments).	✗	✓

Stainless Steel Technical Guide

For a comprehensive document on stainless steel and appropriate applications, please refer to “Which Stainless Steel Should Be Specified for Exterior Applications?” by the International Molybdenum Association, IMOA®, available at geobezdan.com.

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Cleaning of Stainless Steel

The level of cleaning required to keep stainless steel attractive in any given environment is determined by the stainless steel grade, finish, location, design, and owner's aesthetic requirements.

Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with the chromium in the stainless steel to form this passive chromium oxide film that protects from further corrosion. Any contamination of the surface by dirt or other materials hinders this passivation process and traps corrosive agents thereby reducing corrosion protection. Therefore, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface.

Stainless steel can be easily cleaned with many different methods. It actually thrives with frequent cleaning, and unlike some other materials, it is impossible to "wear out" stainless steel with excessive cleaning.

Surface Contaminants and Care Treatment

Contaminant	Precaution	Treatment
Dirt	These contaminants will vary greatly in their effect on appearance and corrosivity and ease of removal; it may be necessary to experiment with various cleaners	<ul style="list-style-type: none"> ▶ Wash frequently using warm water with or without a gentle detergent ▶ Mild non-scratching abrasive powders such as household cleaners can be used with warm water, bristle brushes, sponges, or a clean cloth ▶ For more aggressive cleaning, a small amount of vinegar can be added to the scouring powder
Fingerprints and Stains	Fingerprints and mild stains resulting from normal use usually affect only appearance and seldom have an effect on corrosion resistance	<ul style="list-style-type: none"> ▶ Glass cleaner ▶ Gentle rubbing with a paste of soda ash (sodium carbonate) and water applied with a soft rag
Shop Oil and Grease	Shop oils may carry grease, grit and metal chips and may be corrosive or may not allow the surface to maintain passivity	<ul style="list-style-type: none"> ▶ Soap or detergent and water may be tried or a combination of detergent and water plus a solvent ▶ Users are advised to contact suppliers of solvents for recommended instructions

For Optimal Results

It is important to completely remove any cleaning solution post-cleaning. The cleaned surface should be thoroughly rinsed with clean water and wiped dry with a soft cloth. Scratching and corrosion can result if this is not done.

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Cleaner Types and Methods

Scratching can occur on bright mirror finishes by using cleaners that contain hard abrasives, or even by “grit” in wash water. This is typically not a problem on dull finishes or those surfaces finished with a coarse polishing grit. The best preventative measure is to avoid using abrasive cleaners unless absolutely necessary.

When abrasives are needed, first experiment on an inconspicuous area and note that highly polished finishes can be permanently damaged. A “soft abrasive” such as pumice should be used.

Many cleaners contain corrosive ingredients which require thorough post-clean rinsing with clean water; however, thorough rinsing is recommended for all cleaning procedures.

Surface Contaminants and Care Treatment

Cleaner	Description	Method
Water	The simplest, safest, and least costly method that will adequately do the job is always the best method	Soft cloth and clean warm water followed by final rinse with clean water and wipe dry
Solvent	The preferred solvent is one that does not contain chlorine, such as acetone, methyl alcohol, and mineral spirits	Wipe with solvent impregnated cloths
Household Cleaners	<p>Categories:</p> <ul style="list-style-type: none"> ▷ Detergent (non abrasive) ▷ Abrasive <p>Neutral cleaners low in chloride are preferred</p> <p>Labels that state “for stainless steel” are no guarantee the product is non abrasive, non acidic, or low in chloride</p>	Apply to stainless surface. Follow with cloth wiping, OR wipe directly with a cleaner-impregnated soft cloth
Commercial Cleaners	Commercial cleaners compounded from phosphates, synthetic detergents, and alkalis are available for cleaning severely soiled or stained stainless surfaces	<p>Consult manufacturers and follow recommendations whenever using cleaners of this kind</p> <p>General precautions for all other cleaners also apply</p>



Cleaning Products

Find stainless steel cleaners and protective sprays for optimum performance and long life of components.

- ▶ See Accessories, Cleaning Products in the “Metal & Glass Railing” tab.

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Care and Maintenance

Stainless steels offer long life and require far less cleaning and maintenance than most materials. Provided the grade of stainless steel appropriate for the service environment is selected, it has been polished correctly and cleaning schedules are carried out on a regular basis, good performance and long service life are assured.

Follow these guidelines to ensure you enjoy your stainless steel railing for many years to come!

During Installation

- ▶ Keep your stainless steel components properly packaged during storage and installation. This will provide a greater assurance of optimum corrosion resistance. Leave the protective wrapping supplied by the manufacturer in place until installation is complete
- ▶ Handle stainless steel with clean gloves or cloths to guard against stains or finger marks
- ▶ Clean your stainless steel railing thoroughly after initial installation with a soft cloth, warm water and household soap (such as dish soap). Rinse thoroughly with fresh water and dry wipe to remove the possibility of water stains. You can follow with a protective cleaner

Regular Maintenance

- ▶ Continue to clean stainless steel regularly with soap and warm water. Never clean with mineral acids or bleaches. The frequency of cleaning can be determined by; a) if the railing or stainless steel components looks dirty; b) if you wish to restore it to its original appearance. A good rule of thumb is to clean it when you clean other adjacent surfaces (such as a deck)
- ▶ Always remove stains or rust spots as soon as possible with either soap and water or a solvent

Precautions

- ▶ Avoid the use of oily rags or greasy cloths when wiping the surface
- ▶ Never leave stainless steel in contact with iron, steel or other metals. This can cause rust spots or corrosion
- ▶ Never use coarse abrasives like sandpaper or steel wool on stainless steel. Use synthetic pads such as Scotch Brite™ instead
- ▶ On polished finishes, rubbing or wiping should be done in the direction of the polish lines (or grain direction), NOT across them

Disclaimer

The information in the Stainless Steel Care and Maintenance Guide is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by Geo. Bezdan Sales Ltd. (the Company) in respect of any action taken by any third party in reliance thereon.

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