



CLEANING & MAINTENANCE

Stainless Steel

- Periodically clean the surface of the unit to keep it in a sanitary condition and this, as often as necessary.
- Wash the surface with warm water and soap, detergent or a recommended cleaning product to remove all remaining soap residues or other dirt that could have placed itself on the unit.
- If the water is hard, dry the surface with a dry cloth to prevent traces of rust from the water.

CLEANING OF STAINLESS STEEL

Stainless steel needs to be cleaned for aesthetic considerations and to preserve corrosion resistance. 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 material, hinders this passivation process and traps corrosive agents, reducing corrosion protection. Thus, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface. Stainless steel is easily cleaned by many different methods. The actually thrive with frequent cleaning, and, unlike some other materials, it is impossible to "wear out" stainless steel by excessive cleaning. The effect of surface/pattern roughness, grain/pattern orientation, and designs that allow for maximum rain cleaning (exterior application) should be considered.



Types of surface contaminants

Dirt – Like any surface that is exposed to the environment, stainless steel can get dirty. Dirt and soil can consist of accumulated dust and a variety of contaminants that come from many sources, ranging from the wind to everyday use. These contaminants will vary greatly in their effect on appearance and corrosivity and ease of removal. While some may be easily removed, others may require specific cleaners for effective removal. It may be necessary to identify the contaminant or experiment with various cleaners. Frequently, warm water with or without a gentle detergent is sufficient. Next in order are mild non-scratching abrasive powders such as typical household cleaners. These can be used with warm water, bristle brushes, sponges, or clean cloths.

Ordinary carbon steel brushes or steel wool should be avoided as they may leave particles embedded on the surface which can lead to RUSTING.

For more aggressive cleaning, a small amount of vinegar can be added to the scouring powder.

Cleaning should always be followed by rinsing in clean hot water.

When water contains mineral solids, which leave water spots, it is advisable to wipe the surface completely with dry towels.

Fingerprints and stains – Fingerprints and mild stains resulting from normal use in consumer and architectural applications are the most common surface contaminants. Fortunately, these usually affect only appearance and seldom have an effect on corrosion resistance. They are easy to remove by a variety of simple cleaning methods. Fingerprints are probably the most troublesome marks to remove from the surface of smooth polished or bright finished stainless steel. Fortunately, they can be removed with a glass cleaner or by gently rubbing with a paste of soda ash (sodium carbonate) and water applied with a soft rag. Once again, this should be followed by a thorough warm water rinse. There are several special surface finishes where fingerprints present special problems: polished No 6, etched, some abrasive blasted finishes, and light electrochemical colors applied over satin or brushed finishes.

(NOTE: there are several special finishes designed to withstand fingerprints: embossed, swirl patterns, lined patterns, etc.)

TYPES OF CLEANERS AND METHODS

General precautions

In selecting cleaning practices, consider the possibility of scratching and the potential for post-cleaning corrosion caused by incompletely removed cleaners. Scratching can occur on a bright mirror finish by cleaners that contain hard abrasives, or even by "grit" in wash water. This is usually 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. A "soft abrasive," such as pumice, should be used. Abrasives can permanently damage some colored and highly polished finishes. Advice should be obtained from the finish supplier when cleaning special finishes. Many cleaners contain corrosive ingredients which require thorough post-clean rinsing with clean water; however, thorough rinsing is recommended for all cleaning procedures.



Clean Water and Wipe – The simplest, safest, and least costly method that will adequately do the job is always the best method.

Stainless steel a soft cloth and clean warm water should always be the first choice for mild stains and loose dirt and soils. A final rinse with clean water and a dry wipe will complete the process and eliminate the possibility of water stains.

Solvent Cleaning – Organic solvents can be used to remove fresh fingerprints and oils and greases that have not had time to oxidize or decompose. The preferred solvent is one that does not contain chlorine, such as acetone, methyl alcohol, and mineral spirits. There are many compounded or blended organic cleaners that are commercially available and attempt to optimize both cleanability and safety attributes. Cleaning can be accomplished by immersing smaller articles directly into the solvent, wiping with solvent-impregnated cloths, or by sophisticated vapor or spray methods. The wiping with solvent-impregnated cloths, or by sophisticated vapour or spray methods. The wiping technique sometimes leaves a streaked surface.

EFFECTIVE CLEANING METHODS

Job	Cleaning Agents *	Comments
Routine Cleaning	Warm Water, Soap, Ammonia, Detergent	Apply with sponge or soft cloth. Can be used on all finishes.
Fingerprints and smears	3M Stainless Steel Cleaner and Polish, Arcal 20, Lac-O-Nu, Lumin Wash, O'Cedar Cream Polish, Stainless Shine	Provides barrier film to minimize fingerprints. Can be used on all finishes.
Stubborn Stains and Discoloration	3M Stainless Steel Cleaner and Polish, Allchem Concentrated Cleaner, Samae, Twinkle, Comeo Copper Cleaner, Grade FFF or Grade F Italian Pumice, Whiting or talc, Liquid Nu Steel, Copper's or Revere Stainless Steel Cleaner, Household Cleaners, Lumin Cleaner, Zud Restoro, Sta-Clean, Highlite, Allen Polish, Penny-Brite, Copper-Brite	Rub Lightly, using dry damp cloth, in the direction of polish lines on the stainless steel.
Grease and Blood Burnt-on or Baked-on Foods	Scotch-Brite Power Pad 2001, Easy-Off, De-Grease-It, 4% to 6% hot solution of such agents as tri-sodium polyphosphate, 5% to 15% caustic soda solution	Excellent removal on acids, all finishes. Particularly useful where rubbing is not practical.
Grease and Oil	Any good commercial detergent or caustic cleanser.	Apply with sponge or soft cloth in direction of polish lines.

* NOTE: Use of proprietary names is intended only to indicate a type of cleaner and does not constitute an endorsement. Omission of any proprietary cleanser does not imply its inadequacy. All products should be used in strict accordance with instructions on package.



Household Cleaners – Household cleaners fall into two categories: detergent (non-abrasive) and abrasive cleaners. Both are effective for many mild dirt, stain, and soil deposits, as well as light oils such as fingerprints. The abrasive cleaners are more effective but introduce the possibility of scratching the surface. However, the degree of abrasiveness will vary greatly with the particular product, and some brands will produce noticeable scratching on only the most highly polished and some colored surfaces. All of these cleaners vary widely with respect to their acidity and the amount of chloride they contain. A neutral cleaner low in chloride is preferred unless the user is assured that the surface can be thoroughly rinsed after cleaning. The fact that the label states "for stainless steel" is no guarantee that the product is not abrasive, not acidic, or low in chloride. The cleaning method generally employed with these cleaners is to apply them to the stainless surface and follow by cloth wiping, or to wipe directly with a cleaner-impregnated soft cloth. In all cases, the cleaned surface should be thoroughly rinsed with clean water and wiped dry with a soft cloth if water streaking is a consideration.

Commercial Cleaners – Many commercial cleaners compounded from phosphates, synthetic detergents, and alkalis are available for the cleaning of severely soiled or stained stainless surfaces. When used with a variety of cleaning methods, these cleaners can safely provide effective cleaning. Manufacturers should be consulted and their recommendations followed whenever using cleaners of this kind. The general precautions stated above also pertain to these cleaners.

CARE OF STAINLESS STEEL

The cleaner stainless steel can be kept while in storage, being processed or during use, the greater the assurance of optimum corrosion resistance. Some tips on the care of stainless steel are listed below:

- 1) Use paper or other protective wrapping on the surface of the stainless steel until processing is complete. *
- 2) Handle Stainless steel with clean gloves or cloths to guard against stains or finger marks.
- 3) Avoid the use of oily rags or greasy cloths when wiping the surface.
- 4) Do routine cleaning of exposed surfaces. Buildings with window washing systems can utilize this method to clean exterior panels.
- 5) Where possible, after cleaning, rinse thoroughly with water.
- 6) Cleaning with **chloride-containing detergents must be avoided.**
- 7) Even the finest cleaning powders can scratch or burnish a mill-rolled finish. On polished finishes, rubbing or wiping should be done in the direction of the polish lines, **NOT** across them.
- 8) **DO NOT USE SOLVENTS** in closed spaces or while smoking.

* Many adhesive-backed paper and plastic sheets or tape applied to stainless steel or protection "age" in fairly short periods of time and become extremely difficult to remove. Manufacturers should be contacted regarding information as to how long protective films or paper can be left in place

NOTE: The product referred to in this information sheet are understood to be suitable for stainless steel. However, no endorsement of the product of their manufacturers is implied, and it is acknowledged that other manufacturing companies may provide products of equal or better quality

SOURCE: Specialty Steel Industry of North America (www.ssina.com)