Maintenance

Cleaning & Maintenance of Stainless Steel Handrails and Balustrades

Introduction

Stainless steel is very resistant to rust, however this does not mean that they are impervious to it. The attractive and hygienic surface appearance of stainless steel cannot be regarded as completely maintenance free. To achieve maximum corrosion resistance the surface of the stainless steel must be kept clean.



Why maintenance is necessary

Stainless steel must be kept clean and free from contaminants. Surface contamination and the formation of deposits are critical which may lead to drastically reduced life. These contaminants may be minute particles of iron or rust from other non-stainless steel used in nearby construction and not subsequently removed.

Maintenance during installation

Provided that the grade, condition and surface finish were correctly selected for the particular service environment, fabrication and installation procedures are correct and that cleaning schedules are carried out regularly, good performance and long life will be achieved.

Regular ongoing maintenance

Frequent cleaning with mild soap and water or glass cleaner and a cotton cloth is required. Sometimes they will develop corrosion or discoloration. Any discoloration or corrosion should be removed as soon as possible or permanent discoloration and pitting of the surface could occur.

Ongoing maintenance should be from one to four times a year for external applications and be once a day for an item in hygienic or aggressive situations.

General Cleaning & Maintenance Suggestions for Stainless Steel

- Clean frequently with a cleaner and water. Any cleaner that is safe for glass is usually safe for stainless steel. An enhanced appearance will be achieved if the cleaned surface is finally wiped dry.
- Inspect equipment frequently, if you notice discoloration, tarnish or water stains, increase the frequency of your fresh water rinses to reduce accumulated chemicals.
- Remove any rust spots as soon as possible to prevent irreversible pitting.
- Occasionally clean with a non abrasive commercial cleanser and water. Stubborn stains may be removed with a magnesium oxide, ammonia and water paste.
- Consider the following period clean program

  1 can of powered cleanser

  1 scotchbrite pad

  1 spray bottle cleaner

  1 paste automotive wax

Directions

- Wet cleaning pad with fresh water and apply powered cleanser
- Using gentle pressure, rub stained areas in the same direction of the existing polishing grain until stains are removed.
- Rinse with clean water
- Use cleaner de-greaser to remove any stains
- Thoroughly dry the stainless then apply wax
- Let wax dry to a haze and buff to a shine with a clean dry cloth
- Automotive waxes will provide added beauty and protection

The following is a list of common conditions that cause corrosion or discoloration of stainless steel and should be avoided:

- Chloride containing cleansers- this includes bleach and any bleach containing cleansers
- Muriatic acid (hydrochloric acid) – commonly used to clean up after tile/concrete installation
- Concentrated soap residue – chemical additives will cause discoloration and some dried soaps actually look like rust
- Water in high iron content – can leave a rusty residue, especially if allowed to drip continuously
- Contact with iron materials – including steel wool, machining chips, and iron residue/dust from cleaning other steel products.
- Trapped moisture between the product and another object – rubber mats, metal cans of soaps or cleansers
- Salts – contains chlorides

Advanced Cleaning for Stainless Steel

- Routine Cleaning (all finishes) – soap or mild detergent and water, preferably warm, by using a sponge, rinse with clean water, wipe dry. Follow polish lines.
- Fingerprints (all finishes) – soap and warm water or organic solvent e.g. acetone, alcohol, methylated spirits, rinse with clean water and wipe dry. Follow polish lines.
- Stubborn Stains and Discoloration (all finishes) – mild cleaning solutions, e.g. Jif, specialty stainless steel cleansers. Use rag, sponge or fibre brush (soft nylon or natural bristle. A toothbrush can be useful). 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, alcohol, methylated spirits, propriety "safety solvents". 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 – Rust stains can be removed by adding one part of nitric acid to nine parts of warm water. Leave for 30 – 60 minutes, and then wash off with plenty of water. Rinse well with clean water, wear rubber gloves, mix the solution in a glass container and be very careful with the acid.
- 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 can cause further surface problems. Stainless steel and "Scrotch-brite" scouring pads are satisfactory.

Precautions

Acids

Acids should only be handled using gloves and safety glasses. Care must be taken that acids are not spilt over adjacent areas. All residues must be flushed to a treated waste stream. Always dilute by adding acid to water, not water to acid. Use acid-resistant containers such as glass or plastics. If no dulling of the surface can be tolerated a trial treatment should be carried out, especially for pickling operations.

Solvents

Solvents should not be used in confined spaces. Smoking must be avoided when using solvents.