

## CARE AND MAINTENANCE

### STAINLESS STEEL

#### Background:

The attractive and hygienic surface appearance of stainless steel products cannot be regarded as completely maintenance free. All grades and finishes of stainless steel may in fact stain, discolor or attain an adhering layer of grime in normal service. To achieve maximum corrosion resistance the surface of the stainless steel must be kept clean. Provided the grade, condition and surface finish were correctly selected for the particular service environment, fabrication and installation procedures were correct and that cleaning schedules are carried out regularly, good performance and long life will be achieved. Frequency and cost of cleaning of stainless steel is lower than for many other materials and this will often out-weigh higher acquisition costs.

#### Why Maintenance is Necessary

Surface contamination and the formation of deposits are critical factors which may lead to drastically reduced life. These contaminants may be particles of iron or rust from other non-stainless steels used in nearby construction and not subsequently removed. Industrial, commercial and even domestic and naturally occurring atmospheric conditions can result in deposits which can be quite corrosive. An example is salt deposits from marine conditions.

Working environments can also create more aggressive conditions, such as the warm, high humidity atmosphere above indoor swimming pools. These environments can increase the speed of corrosion and therefore require more frequent maintenance. Modern processes use many cleaners, sterilizers and bleaches for hygienic purposes. All these proprietary solutions, when used in accordance with their makers' instructions are safe, but if used incorrectly (e.g. warm or concentrated) can cause discoloration and corrosion on the surface of stainless steels. Strong acid solutions (e.g. hydrochloric acid or "spirits of salts") are sometimes used to clean masonry and tiling of buildings but they should never be permitted to come into contact with metals, including stainless steel. If this should happen the acid solution must be removed immediately by rinsing with water.

#### On Going Maintenance

Advice is often sought concerning the frequency of cleaning of products made of stainless steel, and the answer is quite simply "clean the metal when it is dirty in order to restore its original appearance". This may vary from once to four times a year for external applications or it may be once a day for an item in hygienic or aggressive situations. In many applications the cleaning frequency is after each use.

## Cleaning Methods

Stainless steel is easy to clean. Washing with soap or a mild detergent and warm water followed by a clean water rinse is usually quite adequate for domestic and architectural equipment. An enhanced appearance will be achieved if the cleaned surface is finally wiped dry. Specific methods of cleaning are as in Table 1.

**Table 1.** Methods of Cleaning Stainless Steel

Routine Cleaning All finishes	Soap or mild detergent and water (Preferably warm)	Sponge, rinse with clean water, wipe dry if necessary. Follow polish lines.
Fingerprints All finishes	Soap and warm water or organic solvent (eg acetone, alcohol, methylated spirits)	Rinse with clean water and wipe dry. Follow polish lines.
Stubborn Stains and Discoloration. All finishes.	Mild cleaning solutions, eg. Jif, specialty stainless steel cleaners.	Use rag, sponge or fiber brush (soft nylon or natural bristle. An old 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 (eg. acetone, alcohol, methylated spirits, proprietary "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. Embedded or Adhering "Free Iron".	Rust stains can be removed by using the "Derustit SS-3" Please see attached manufacturer recommendation for usage.	Rinse well with clean water. Wear rubber gloves, mix the solution in a glass container, and be very careful with the acid. (see Manufacturer instruction on usage)
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 cause further surface problems. Stainless steel and "Scotch-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. All treatments must be followed by thorough rinsing.

#### Solvents

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

## **SOLID SURFACE**

### **General Cleaning**

Use warm soapy water or non-abrasive household cleaners such as cleaner or commercial available solid surface cleaners will remove most residues. Then wipe dry the surface to prevent spotting.

For stubborn residue that will not come out with the typical household cleaners requires a slightly stronger cleaner. Such as Comet® and a damp sponge, buff it in a circular motion and then rinse and wipe dry.

### **Repair Minor Cuts and Scratches**

Apply an abrasive cleaner like Comet® and a damp Scotch-Brite™ pad, rub in a circular motion and then rinse and wipe dry.

## **WOOD - IPE**

### **General Cleaning –**

#### **Unfinished**

Maintenance requirements are minimal. In the event that it may need to be cleaned, such as stubborn residue or if mildew develops, use a stiff brush and soapy water followed by a rinse and wipe dry.

The natural wood coloring can be renewed by thorough sanding and wipe clean.

Ipe like many other woods, will exhibit some checking or small surface cracks over time as a result of exposure to the sun and elements. These surface imperfections do not affect the structural integrity of the wood.

#### **Finished**

A maintenance coat of Hardwood Finish\* should be applied within 6-9 months after the initial application or as soon as oil looks depleted. The next maintenance coat should be done again in approximately 10-12 months or whenever oil looks depleted. Over time, the wood fibers become fully protected and the maintenance will become less frequent. Wash the wood with a mild cleanser and warm water. Rinse well. Allow wood to dry for a minimum of 48 hours before application. Apply maintenance coat of Hardwood Finish. After 20-30 minutes of absorption time, wipe the surface with a nap-free, clean, dry cloth.

**Hardwood Finish\*:** DECKSCAPES™ Oil-Based Semi-Transparent Deck Stain Tint Base A18C50602. BY SHERWIN-WILLIAMS.

## **POWDER COAT**

### **General Cleaning**

Maintenance requirements are minimal. In the event that it may need to be cleaned, clean it with soapy water and then rinse and wipe dry.