ASPEN Cleaning & Maintenance Care
for stainless steel

ASPEN STAINLESS

ASPEN Stainless is hardwearing and is guaranteed to last a lifetime. This cleaning and maintenance guide will help to keep your ASPEN Stainless in peak condition.

The instructions are provided as an orientation, and do not serve as grounds for any warranty or damage claims.

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1. Introduction

It is well known that stainless steel has far greater resistance to corrosion than non-alloyed and low alloy steels. They are resistant to numerous aggressive media, and do not require any additional surface protection. Deposits on the surface of the stainless steel can however impair the corrosion resistance, which is why the stainless steel products you have purchased should receive a basic amount of cleaning and care.

2. Initial Cleaning

Initial basic cleaning is usually carried out after building work has been completed, and before the products have been put into initial operation by the developer. Stainless steel surfaces are often effectively protected by plastic film during transport, storage and assembly. This protective film does not however provide permanent protection against light and ultraviolet radiation, and are difficult to remove if in place for a longer period of time. Remnants of protective film that are difficult to remove are left on the surface. It is therefore recommended that the protective film is removed as soon as it is no longer needed for protection on the building site, and within a few weeks of delivery at the latest. The film should always be peeled off from top to bottom.

In order to avoid material sticking to the surface that could prevent creation of the passive layer, any remnants of film should be removed using warm water and a gentle detergent. Lime and mortar splashes can be removed with diluted phosphoric acid, and the area then thoroughly rinsed with a generous amount of clear water. Using de-mineralised water counteracts the creation of lime stains.

Several detergent manufacturers offer special products for this purpose. Under no circumstances should you use cement stain remover for tiles or diluted hydrochloric acid. If either of these products should find its way onto the stainless steel surface, it must be immediately removed with plenty of clear water.

Canal Engineering Ltd, Lenton Lane, Nottingham. NG7 2PQ
0115 986 6321 | aspen@canalengineering.co.uk Registered in England no. 4145340

Other building contractors, e.g. tile layers, are not always aware of the damage that lime stain remover and diluted hydrochloric acid can cause to stainless steel. Iron particles from tools, scaffolding and transportation equipment must be removed without delay.

Grinding dust, swarf and welding splatter from work being done on construction steel in the vicinity of work with stainless steel can accelerate rusting if they are deposited on stainless steel. This can result in localised penetration of the passive layer of the stainless steel causing punctiform corrosion. If these contaminations are recognised in time, they can be removed using standard household (non-ferrite) cleaning pads or special cleansing products. Subsequent rinsing with plenty of clear water will clean the surface and give the material the chance to rebuild the passive layer.

If corrosion has already started, a mechanical (or preferably stain) treatment of the surface is unavoidable. Stains are also available in paste form for local application. It is important to observe all environmental protection rules and the manufacturer's health and safety instructions when using such products. Specialised firms will often carry out such work on site on a subcontract basis.

Treatment with stain will fully restore the original corrosion protection of stainless steel. This can however result in optical changes to the surface, so that it is necessary to finish the surface by sanding and polishing it. It is therefore recommended that contamination by tramp iron should be avoided from the very start, e.g. by using protective film or by carrying out all stainless steel work after work with construction steel has been completed.

3. Routine Cleaning

External Environment

Where stainless steel is used outside, the cleansing effect of rain is usually sufficient to prevent damaging deposits. Surfaces that cannot be reached by rain should be cleaned to ensure that there is no build up of contamination from air pollution. Cleaning stainless steel is particularly important in coastal and industrial surroundings where there can be a concentration of chlorides and sulphur dioxide (this also includes the undersides of horizontal profiles) for which the chosen type of steel is not designed.

Internal Environment

Where stainless steel is used inside, it is especially important to avoid and clean fingerprints. Stainless steel is available with a great variety of surfaces, some of which are specially designed for use in areas frequented by the public. It is possible to minimise later cleaning costs by making the right choice of surface during the planning phase. Fingerprints are an initial phenomenon with the popular brushed and sanded surfaces. Their visibility is significantly reduced after several cleaning sequences.

4. Cleaning Agents

A solution of washing up liquid is usually sufficient for removing fingerprints. Some manufacturers of cleaning materials offer special products whose cleansing effect is enhanced by a care product. Such cleaning agents completely remove fingerprints, leaving behind a fine film which gives the treated surfaces a homogenous appearance. After cleaning, the surface should be polished with a dry cloth. Bright annealed and mirror polished surfaces can be treated with chloride-free glass cleaners.

Stubborn dirt can be removed using standard household cleansing milk, which also removes lime stains and minor discolorations. Subsequent rinsing with demineralised water (as used for steam irons, and usually available in supermarkets) prevents lime stains being created as it dries off. The surface should then be given a dry polishing. Scouring powder is not suitable, as it will scratch the surface.

Very oily and greasy dirt can be removed using alcohol based cleaning agents and solvents, e.g. rectified spirit, isopropyl alcohol or acetone, which are quite safe for stainless steel. Here it is necessary to make sure that the cleaning process does not spread the partially dissolved dirt across the whole surface. Cleaning must therefore be repeated using fresh cloths until all traces have been removed.

Special alkaline and solvent-based cleaning agents are available for paint and graffiti. Knives and scrapers should be avoided, because they will scratch the surface. Seriously neglected surfaces can also be treated with polish, such as that used for looking after chrome on cars. Another option is rubbing compound normally used for aged car paint, whereby it is necessary to take care because it can leave scratches on stainless steel.

Another alternative is special stainless steel cleaner that contains phosphoric acid, as recommended above for the removal of tramp iron contamination. When using this cleaner, it is important that the whole surface is treated to avoid staining. Whenever cleaning is carried out it always necessary to observe environmental and health and safety rules.

Cleaning agents that are unsuitable for stainless steel include:

- Products containing chlorides, especially products containing hydrochloric acid
- Bleaches (in case of accidental application or bleach splashes the stainless steel should be generously rinsed with clear water)
- Silver polish.

5. Cleaning Utensils

A damp cloth or leather is usually sufficient to remove fingerprints. Standard household (iron-free) cleaning pads are used for more stubborn dirt. On no account should abrasive pads that contain iron, steel wool or steel brushes be used, because they will transfer rusting tramp iron to the surface of the stainless steel.

Soft nylon brushes are suitable for cleaning surfaces that have been roller-patterned. Steel brushes (especially carbon steel brushes) cause damage. Where the surfaces have been brushed or sanded (2G, 2J, 2K in accordance with DIN 10088/3) they should always be brushed in the direction they have been brushed/sanded, and not across the “grain”.

When cleaning with water, the surfaces – especially in hard water areas – should then be dry wiped to avoid creating lime stains. De-mineralised water helps avoid this problem. To prevent tramp iron contamination you must not use any cleaning utensils that have been previously used for “normal” steel. You are recommended to keep separate cleaning utensils for use on stainless steel surfaces.

6. Cleaning Intervals

Cleaning intervals for stainless steel used indoors are basically the same as for any other surfaces. To keep the amount of work and costs to a minimum, the surfaces should always be cleaned before larger-scale soiling has a chance to build up. In outside areas, stainless steel can be subjected to a range of corrosive conditions, e.g.

- Coastal atmosphere
- Factory fumes
- Chloride-containing spray
- Air pollution and traffic fumes

These factors can lead to discoloration over time. Cleaning agents that contain phosphoric acid will reliably remove any discoloration. Where very high optical requirements are involved or where the stainless steel is in a corrosive atmosphere, a proven rule of thumb is to clean the surface as often as you would clean glass surfaces. Routine cleaning in low-contamination environments should be carried out every few years. Where there is more serious contamination, especially in covered areas not reached by rain, the surfaces should be cleaned at intervals of several months.

ASPEN Stainless

When maintaining a hygienic environment is a priority, ASPEN Stainless is the logical choice. Full technical data sheets for all standard ASPEN Stainless products are available to download from our website at www.aspen.eu.com.

ASPEN | By Canal Engineering Limited

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Canal Engineering Ltd, Lenton Lane, Nottingham. NG7 2PQ
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