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**PRODUCT
DATA
SHEET**

**Maintaining & Cleaning
Stainless Steel**

**Stainless
Steels**

Stainless steels are often used in domestic and architectural situations for their excellent and long lasting appearance. With a minimum of care and attention, they will serve without the deterioration which can affect other metals and materials.

The first essential is that the grade of stainless must be chosen to have adequate corrosion resistance for the service environment. Table 1 gives some guidance. Austral Wright Metals should be consulted in case of doubt.

Table 1: Grade selection for atmospheric corrosion resistance

Steel grade	Location											
	Rural			Urban			Industrial			Marine		
	L	M	H	L	M	H	L	M	H	L	M	H
430	2	2	2	X	X	X	X	X	X	X	X	X
304	1	1	1	1	1	2	2	2	X	1	2	X
316	3	3	3	3	1	1	1	1	2	1	1	2
445M2	3	3	3	3	1	1	1	1	1	1	1	1
2205	3	3	3	3	3	3	3	3	1	3	3	1

L Least corrosive conditions within the category - eg low temperature, humidity
M Typical of the category
H Corrosion worst for the category - eg high humidity, ambient temperature, air pollution

1 - Best choice for corrosion resistance and cost
2 - Usable if precautions are taken (use a smooth surface and wash regularly)
3 - Over specified for corrosion
X - Likely to corrode excessively

Traps for young players

Do	Don't
Use stainless steel brushes, and only on stainless steel	Use wire brushes or steel wool made of carbon steel, or stainless steel brushes previously used on carbon steel.
Use dedicated blasting consumables, which will not rust	Shot blast stainless steel surfaces with carbon steel shot, or any other shot/grit that has been used for carbon steel
Wash cement or mortar off stainless steel before it dries, or soak and carefully abrade it off as soon as possible.	Clean up brickwork around stainless steel with hydrochloric acid (muriatic acid, brick cleaning solution) – never splash this acid on stainless steel.

Cleaning rust and other stains

There are several ways in which a stainless steel may be discoloured by rust in architectural applications:

- if the environment is more aggressive than the grade of stainless can resist, e.g marine atmospheres, chlorine containing cleaners, severe industrial pollution

- if the steel has a rough surface finish, or sticky surface deposits, which keep aggressive atmospheric contaminants on the surface
- if the design of the structure includes pockets, narrow gaps and areas where ponds can form
- if the surface is contaminated with carbon steel particles such as grinding swarf, wire rope slings and debris from tools previously used on carbon steel
- if rust from carbon steel fasteners or adjacent carbon steel components washes over the stainless steel.

Careful attention to grade selection and design, and prompt action to wash stains off as they develop, will prevent serious staining in most cases. The table below gives methods for removing all stains and discolourations. The method selected should be tried on an inconspicuous area first.

Stain Type	Cleaning method
Fingerprints	Wash with alcohol, thinners, trichlorethylene or acetone, rinse with clean cold water or glass cleaner, wipe dry with a soft cloth. High traffic areas of low corrosivity benefit from a light wax coating.
Oil & grease	As above, adding a washing step with soap or a mild detergent, before rinsing. For stubborn deposits, oven cleaners containing caustic soda (sodium hydroxide) may be tried.
More stubborn stains	Wash with a mild abrasive cleaning agent, rubbing in the direction of the visible surface structure, rinse with clean cold water, wipe dry OR Wash with 10% phosphoric acid solution, rinse with ammonia solution, then with clean cold water, wipe dry OR Rub gently with sulphamic acid powder on a damp cloth, rinse with clean cold water, wipe dry
Temper colour	Wash with abrasive cleaning agent, as described above, or with a Scotchbrite sponge.
Rust stains	Wet the surface with oxalic acid or 10% nitric acid, leave for 10 – 20 minutes, rinse with ammonia or sodium bicarbonate solution, rinse with clean cold water, wipe dry. This treatment may need to be repeated, depending on the severity of the rust staining. An abrasive cleaning agent may be used on some surfaces to speed rust removal.
Paint	Wash with paint solvent or thinners (use a soft nylon brush), rinse with clean cold water, wipe dry.
Scratches on a ground or brushed surface	Polish with a polishing wheel, using iron free abrasives, in the direction of the surface. Select the abrasives to match the original surface. Remove polishing residues by washing with soap or a mild detergent and water, rinse with clean cold water, wipe dry.

Safety: use solvents, acids etc only when necessary. Wear rubber gloves and eye protection, follow all safety regulations – ensure good ventilation, take fire precautions.