Austral Wright Metals
at the cutting edge

Austral Bronze Crane Copper Limited
ACN 008 466 840

Sales Offices	Phone	Fax
Adelaide	08 8345 1033	08 8345 1044
Brisbane	07 3722 0800	07 3277 6799
Melbourne	03 9409 8500	03 9408 3946
Sydney	02 9827 0790	02 9757 4486
Perth	08 9258 2600	08 9358 6206

APPLICATION SHEET

Painting Stainless Steel

Stainless Steels

Stainless steels have an aesthetically pleasing appearance, and can be further polished to enhance this feature. Painting may actually reduce the corrosion resistance, but may be required for other reasons such as product marking or identification, or for the protection of carbon steel welded to it.

Surface preparation prior to painting is as important as it is for carbon steel. The preparation required will depend on the surface finish of the stainless steel.

Available Surface Finishes

Finish	Description
HRA or 'black'	Plate supplied for high temperature applications the unpickled condition, with mill scale on the surface.
No 1 or S&D	hot rolled, annealed and pickled. A clean, white, dull finish.
2B	Cold rolled, annealed and pickled and skin passed to a smooth, bright finish.
BA	Cold rolled, bright annealed in a reducing atmosphere and skin passed to a very smooth, reflective finish.
N4	2B or BA feed linished or ground to a directional, non reflective finish.

SURFACE PREPARATION

Cleaning is usually carried out after welding or fabrication, including removing heat tint from welds.

The cleaning required depends on the intended application as well as the coating system to be used. The recommendations of the paint manufacturer should be followed.

CLEANING METHODS

Pickling: Mill scale on HRA and welding or heat treatment heat tints can be removed by pickling with pickling paste, or by immersion in a mixture of nitric and hydrofluoric acids. Consult Austral Wright Metals for details. Thorough rinsing after pickling is essential.

Blasting: this method of cleaning is particularly useful for large structures and is highly effective in removing mill scale. Blasting media must be clean, free from metallic iron, not previously used on carbon steel and free from chlorides. Suitable blasting media are washed silica sand, stainless steel shot, glass beads. It is advisable to passivate the stainless surface with nitric acid after blasting to remove any possible carbon steel contamination and ensure optimum corrosion resistance.

Other: small areas can be cleaned with a stainless steel wire brush, disc grinder, flap wheel or other abrasive. Use only clean, uncontaminated consumables intended for use on stainless steel.

DEGREASING

All fabrications should be degreased to remove the shop soil almost inevitably picked up while being worked.

Water soluble solvent degreasers are most easily used. Consult the paint supplier for details.

Cleanliness can be checked by ensuring that the surface dries water break free.

COATING SYSTEMS

The appropriate paint system depends on the application, the surface condition of the steel, and the degree of protection required.

This guide covers generic paint systems. Manufacturers have their own proprietary versions of the systems, and will provide advice.

Cold rolled stainless steel with a 2B or BA finish has a smooth surface profile, and requires a primer coat to ensure good adhesion.

Environment	Generic Coating Systems		
	No 1 Finish No primer required	Cold rolled finishes	
		Primer	Top Coat
INTERIOR			
Non- corrosive	1 coat alkyd enamel modified acrylic emulsion	Water based vinyl or acrylic	Alkyd enamel
Corrosive (chemical)	Modified vinyl enamel Chlorinated rubber enamel	Vinyl or acrylic copolymer	Vinyl copolymer
EXTERIOR			
Inland	2 coats alkyd enamel 2 coats acrylic emulsion	Water based acrylic	Alkyd enamel
Marine or industrial	1 coat aliphatic isocyanate cured polyurethane 1 coat acrylic modified polyurethane 1 coat epoxy build coat	Acrylic or vinyl Twin pack epoxy	1 coat epoxy build aliphatic isocyanate cured polyurethane acrylic modified polyurethane

GENERAL

Chlorinated rubbers & vinyl top coats should not be used for operating temperatures above 70^{o}C.

Alkyd enamels should not be used in alkaline or aggressive corrosive environments.

Paint manufacturers should be contacted for advice on the suitability of paint systems for particular environments.

When stainless steel is welded to carbon steel, and the carbon steel is to be painted for corrosion protection, the paint should be continued over the weld and about 25 mm of stainless steel adjacent to the weld. This is particularly required for immersion service or wet areas, where the stainless steel could accelerate the corrosion of the carbon steel.

PAINT SUPPLIERS

Consult the local yellow pages for paint suppliers.

A comprehensive list of paint manufacturers is provided at <http://www.apmf.asn.au>

The following information is provided without endorsement by Austral Wright Metals:

Wattyll Pty Ltd phone 132 111 http://www.wattyl.com.au