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## **PURPOSE**

This section describes non-ferrous metal surface preparation methods. Method selection will be based on the type of metal, condition of the metal, application experience, budget and condition of the current coating system.

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## **INTRODUCTION**

To obtain the best results from a paint system the best possible surface preparation consistent with the degree of sophistication of the system is required. The quality of the paint and surface preparation (i.e. removal of oxides, scale, salts, grease, dirt and loose paint) are the most important factors in determining the lifetime of the paintwork, and therefore the length of time the surface will be protected. First class preparation has the potential to extend the protective life of any paint system.

There are often several surface preparation methods available – dependant on type of surface. The method selected will depend on a number of factors including environmental conditions and cost.

The cost of proper surface preparation may seem expensive but the benefits of extended coating life and reduced maintenance costs will almost always, more than offset any additional surface cleaning cost.

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## **SURFACE CONTAMINANTS**

### **Oil, Grease Fat and Perspiration**

Oil, grease, fat and perspiration deposits cannot be removed by mechanical methods of cleaning. The simplest method of removal is to use a solvent emulsifiable degreaser or biodegradable detergent. Apply the degreaser liberally to the contaminated surface, allow to stand for a short time, then hose off with fresh potable water. Besides liquid solvent degreasing, other methods include:

- Solvent vapour cleaning.
- Alkaline cleaning.
- Biodegradable detergent.

Please refer to AS 1627.1 Metal Finishing – Preparation and Pretreatment of Surfaces - Removal of Oil, Grease and Related Contamination.

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## **SURFACE PREPARATION NON-FERROUS METAL**

A range of other metals can be coated with protective coatings provided the required surface preparation is undertaken. The required surface preparations for galvanised steel, aluminium, stainless steel, cast iron, Zinalume<sup>®</sup>, hot metal spray and Colorbond<sup>®</sup> are described in the following section.

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## **GALVANISED STEEL**

### **Dry Abrasive Blast**

Lightly abrasive blast using a non-metallic grit, to achieve a roughened, uniform flat appearance over the entire surface. Care should be taken not to remove excessive zinc as this will reduce the corrosion protection. Clean the surface to remove all preparation residue.

### **Wet Abrasive Blast**

Lightly wet abrasive blast using a non-metallic grit, to achieve a roughened, uniform flat appearance over the entire surface. High pressure water wash using clean, fresh potable water to remove all blasting residue.

### **Power Tool Clean**

Mechanically abrade the entire surface to achieve a roughened, uniform flat appearance. **DO NOT** use a wire brush as this will tend to polish rather than abrade the surface. Clean the surface to remove all preparation residue.

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**ALUMINIUM**

**Dry Abrasive Blast**

Use a lightly abrasive blast using a non-metallic grit to achieve a uniform, flat appearance over the entire surface profile of 35 – 50 microns. Clean the surface to remove all preparation residue.

**Wet Abrasive Blast**

Lightly wet abrasive blast using a non-metallic grit to achieve a roughened, uniform flat appearance over the entire surface. High pressure water wash using clean, fresh water to remove all blasting residue.

**Power Tool Clean**

Mechanically abrade the entire surface using 40-80 grit paper/disc for below and above the waterline. Clean the surface to remove all preparation residue.

**Etching Solution**

Liberal apply a commercially available aluminium etching solution (typically acid based). Allow the surface to react (a whitening may result) but do not allow to dry. Clean off using copious quantities of clean, fresh potable water to remove all the etching solution. **Note:** These types of materials are hazardous and highly corrosive. Please refer to the suppliers MSDS regarding their proper use and handling.

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**STAINLESS STEEL**

**Dry Abrasive Blast**

Abrasive blast using a non-metallic grit to achieve a uniform, flat appearance over the entire surface, and a surface profile of 35 – 50 microns. Clean surface to remove all preparation residue.

**Wet Abrasive Blast**

Wet abrasive blast using a non-metallic grit to achieve a uniform, flat appearance over the entire surface, and a surface profile of 35 – 50 microns. High pressure wash using clean, fresh potable water to remove all blasting residue.

**Power Tool Clean**

Mechanically abrade the surface using 80 grit paper/disc. Clean the surface to remove all preparation residue.

**ZINCALUME®**

Degrease and then lightly sand the surface. For maximum adhesion, allow the surface to weather for 3 – 6 months prior to painting. Clean the surface to remove all preparation residue.

**HOT METAL SPRAY**

Clean the surface using high pressure water wash.

**COLORBOND®**

Degrease and clean the surface to remove all residue.



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