

NEW PLYMOUTH STEEL SUPPLIES LTD

Water Staining

Aluminium will not rust as will steel, but under certain conditions it will stain. Staining will have no significant effect on strength but may cause processing problems where additional surface finishing or fabrication is to be performed.

Water staining is generally a white powdery substance on the surface of the aluminium but depending on the alloy or amount of oxidation it may have an iridescent appearance.

Staining can occur when water is trapped between wraps, sheets or other mating surfaces. If there is no air flow to remove the water, prolonged contact between the water and the metal causes a reaction which results in water stain.

Virtually all staining problems occur during shipping, handling, or storage.

To Prevent Water Stain

Keep Aluminium dry and avoid exposure to condensation.

Avoid storing in areas that experience large fluctuations in temperature and humidity.

If the Aluminium feels cold on delivery, do not put in a heated warehouse straight away as it may sweat and become water stained. Leave in a cool dry indoor area away from drafts to allow it to warm up slowly.

During transit & storage flat sheet and plate should be wrapped with paper, plastic film, or laminates that provide reasonable protection against moisture penetration.

During transit the Aluminium should be handled and secured in a way that does not tear or compromise the packaging in any way.

If you experience any signs of moisture, dampness or water staining on your aluminium delivery, please phone our office immediately.

Corrosion

Pure Aluminium, being covered with a thin air-formed inert oxide, has by nature a high resistance to corrosion. This resistance is compromised however, by aggressive environments, and by alloying the metal necessary for certain other properties such as mechanical strength

To Avoid Corrosion

- Avoid dissimilar metal contact whenever possible, do not store with other metals. Line shelving, racks, and bins, with wood.
- Use fasteners that are nobler than the structural parts to minimise galvanic effects. Butt weld where possible.
- Seal all joints and bolt holes
- Eliminate corners and crevices which are difficult to clean
- Never use aluminium in anaerobic (no oxygen) conditions

**Please contact sales staff for information on Galvanic Corrosion effects between Aluminium and other metals, and also corrosion effects between Aluminium and other materials, such as wood, concrete, chemicals etc.*

Pitting / Weathering

Pitting corrosion can develop at localised weak spots in the Aluminium's natural oxide barrier. Contaminants like the salts in sea air and inland dust, or in spray thrown up from asphalted surfaces, produce an active solution sufficient to destabilise the protective oxide film and attack the metal. Regular maintenance and washing down of Aluminium should prevent permanent discolouration from the effects of industrial pollutants.

Cleaning

In cleaning Aluminium one should always start with the mildest method possible (Plain water or mild soap / detergent) and only move to successively harsher treatments (solvents, chemicals, wax based polish, abrasive wax / cleaners) if absolutely necessary. After cleaning, the aluminium should be washed thoroughly and dried to prevent streaking.

A metal polish product such as Autosol (available in stores like Repco etc) can be very effective in cleaning & polishing Aluminium.